

MARYLAND DEPARTMENT OF THE ENVIRONMENT

**AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT**

DOCKET # 06-23

COMPANY: Herbert Malarkey Roofing Company
LOCATION: 10033 Governor Lane Blvd., Williamsport, MD 21795
APPLICATION: Installation of a wet-formed fiberglass mat manufacturing facility.

<u>ITEM</u>	<u>DESCRIPTION</u>
1	Notice of Application and Opportunity to Request an Informational Meeting
2	Environmental Justice (EJ) Information - EJ Fact Sheet and MDE Score and Screening Report
3	Permit to Construct Application Forms – Forms 5, 5EP, 5T, 6, emissions calculations, material data sheets, and process flow diagram.
4	Zoning Approval

**DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION**

**NOTICE OF APPLICATION AND
OPPORTUNITY TO REQUEST AN INFORMATIONAL MEETING**

The Maryland Department of the Environment, Air and Radiation Administration (ARA) received a permit-to-construct application from Herbert Malarkey Roofing Company on February 8, 2023, for the installation of a wet-formed fiberglass mat manufacturing facility. The proposed installation will be located at 10033 Governor Lane Blvd., Williamsport, MD 21795 in Washington County.

In accordance with HB 1200/Ch. 588 of 2022, the applicant provided an environmental justice (EJ) Score for the census tract in which the project is located using the Maryland EJ mapping tool. The EJ Score, expressed as a statewide percentile, was shown to be 28% which the Department has verified. This score considers three demographic indicators – minority population above 50%, poverty rate above 25% and limited English proficiency above 15%.

Copies of the application, the EJ mapping tool screening report (which includes the score), and other supporting documents are available for public inspection on the Department's website at <https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx> (click on Docket Number 06-23. Any applicant-provided information regarding a description of the environmental and socioeconomic indicators contributing to that EJ score can also be found at the listed website. Such information has not yet been reviewed by the Department. A review of the submitted information will be conducted when the Department undertakes its technical review of all documents included in the application.

Pursuant to the Environment Article, Section 1-603, Annotated Code of Maryland, the Department will hold an informational meeting to discuss the application and the permit review process if the Department receives a written request for a meeting within 10 working days from the date of the second publication of this notice. A requested informational meeting will be held virtually using teleconference or internet-based conferencing technology unless a specific request for an in-person informational meeting is received. All requests for an informational meeting should be directed to the attention of Ms. Shannon Heafey, Air Quality Permits Program, Air and Radiation Administration, 1800 Washington Boulevard, Baltimore, Maryland 21230.

Further information may be obtained by calling Ms. Shannon Heafey at 410-537-4433.

Christopher R. Hoagland, Director
Air and Radiation Administration



December 21, 2022

Ms. Suna Yi Sariscak
Manager, Air Quality Permits Program
Air and Radiation Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230-1720

RE: Permit to Construct Application for Herbert Malarkey Roofing Company – Williamsport Plant

Dear Ms. Sariscak,

Enclosed please find three copies of a Permit to Construct application for a fiberglass mat manufacturing plant in Williamsport, MD to be owned and operated by the Herbert Malarkey Roofing Company (Malarkey).

Malarkey appreciates your review of this Permit to Construct application. If you have any questions about this application, please do not hesitate to contact Tony Silva at tsilva@malarkeyroofing.com or 503.240.7867.

Sincerely,

Herbert Malarkey Roofing Company

Tony Silva
Director of Environmental Health and Safety

Enclosures

PERMIT TO CONSTRUCT APPLICATION

**Herbert Malarkey Roofing Company
Williamsport, MD Plant**

Prepared By:

TRINITY CONSULTANTS

5320 Spectrum Dr.
Suite A
Frederick, MD 21703
240.379.7490

December 2022

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	1-1
2. FACILITY DESCRIPTION	2-1
2.1 Process Description.....	2-1
2.2 Potential Emissions.....	2-1
3. REGULATORY REVIEW	3-1
3.1 Major New Source Review Applicability	3-1
3.2 Title V Applicability	3-1
3.3 Maryland Regulatory Applicability	3-2
3.3.1. COMAR 26.11.02 - Permits, Approvals, and Registration	3-2
3.3.2. COMAR 26.11.06 - General Emission Standards, Prohibitions, and Restrictions	3-2
3.3.3. COMAR 26.11.15 and 26.11.16 - Toxic Air Pollutants.....	3-3
3.4 Federal Regulatory Applicability	3-3
3.4.1. New Source Performance Standards.....	3-3
3.4.2. National Emission Standards for Hazardous Air Pollutants	3-4
APPENDIX A. TAP COMPLIANCE DEMONSTRATION	
APPENDIX B. MDE APPLICATION FORMS	
APPENDIX C. EMISSIONS CALCULATIONS	
APPENDIX D. SAFETY DATA SHEETS	
APPENDIX E. PROCESS FLOW DIAGRAMS	

LIST OF TABLES

Table 2-1. Summary of Potential Emissions at Williamsport Plant	2-1
Table 2-2. Summary of Potential GHG Emissions at Williamsport Plant	2-2
Table 3-1. Major NSR Applicability	3-1
Table 3-2. Title V Applicability	3-2

1. EXECUTIVE SUMMARY

Over the last several years, Holcim Ltd (Holcim Group) has been expanding its core business through the growth of its Solutions and Products (Holcim S&P) business segment. This segment expands the product offerings beyond the traditional construction materials (e.g., cement, concrete, aggregate, asphalt, etc.) by providing a broad range of solutions to make buildings smarter from rooftop to foundation. From roofing and waterproofing to insulation and renovation, this segment offers advanced systems aimed at making buildings more energy-efficient, enduring, and resilient throughout their lifecycle consistent with Holcim's core value of Building Progress for People and the Planet.

In the US, this business segment is legally identified as Holcim Solutions and Products (US), LLC and includes among other offerings, a polymer modified asphalt (PMA) shingle manufacturing business that primarily services the residential housing market. This premium shingle business of Holcim is operated as the legal entity Herbert Malarkey Roofing Company (Malarkey) and doing business as Malarkey Roofing Products.

A critical raw material in the PMA shingle manufacturing process is fiberglass mat, which serves as the base material for the asphalt and granule coating of shingles. With the recent supply constraints, Malarkey is looking to further insulate itself from changing market conditions and to meet product demands by increasing its internal fiberglass mat manufacturing capacity following Holcim's core values that remain true to sustainability and the environment.

In evaluating options for increasing capacity, Malarkey recently acquired a facility in Williamsport, Maryland that was built for coating fiberglass mat but had plans to expand capabilities to include the manufacture of fiberglass mat. The facility later decided to abandon its plans for manufacturing fiberglass mat and is not operating. The current owner of the facility approached Holcim and Malarkey regarding the purchase of the facility and its assets.

Malarkey purchased the facility and assets located at 10033 Governor Lane Boulevard, Williamsport, Washington County, Maryland and intends to operate the facility as both a fiberglass mat manufacturing and fiberglass mat coating facility. As such, Malarkey is submitting this Permit to Construct application to the Maryland Department of the Environment (MDE) for the improvement of the current facility and assets to manufacture quality fiberglass mat and operate the coating lines.

This permit application is structured as follows:

- ▶ Section 2 Facility Description: Describes the major processes at the Williamsport Plant and emissions
- ▶ Section 3 Regulatory Review: Provides a detailed review of the air quality regulatory framework
- ▶ Appendix A: Provides a Toxic Air Pollutant (TAP) compliance demonstration
- ▶ Appendix B: Includes completed MDE Permit to Construct forms
- ▶ Appendix C: Includes potential emissions calculations for the project source
- ▶ Appendix D: Provides applicable safety data sheets (SDS)
- ▶ Appendix E: Includes a process flow diagram

2. FACILITY DESCRIPTION

2.1 Process Description

The Williamsport Plant located at 10033 Governor Lane Boulevard, Williamsport, Washington County, Maryland will be a fiberglass mat manufacturing facility comprised of the following manufacturing process elements.

- ▶ **Material Receiving/Handling:** Includes delivery of chopped glass, limestone, and mat line/coating line chemicals. There are two (2) dust collectors as a part of this process, one on the limestone silo and one in the coating kitchen where limestone is mixed into the coating material.
- ▶ **Mat Line Process:** Wet chop fiberglass is mixed with white water in mixing tanks (White Water Process). The glass fiber slurry from the White Water Process is placed on belts, resin is applied to the mat and then the fiberglass mat is heated/cured. The moving belts pass over a moisture collection system, where liquid is pulled through the material to be recycled in the White Water Process. Emissions from the process are controlled through a regenerative thermal oxidizer (RTO). Eight (8) natural gas-fired process heaters are used to dry and cure mats.
- ▶ **Coating Lines:** Limestone, water and chemicals are mixed in the coating kitchen which shared between the two (2) coating lines. Fiberglass mats are coated in one of two (2) coating lines. Nine (9) natural gas-fired process heaters (four (4) in Line 1 and five (5) in Line 2) are used for heating and curing after the application of each coat.

Appendix E includes a process flow diagram.

2.2 Potential Emissions

Emissions associated with each process are provided in Table 2-1 and inform the regulatory review in Section 3. Emissions are based on an anticipated production rate of 25,000 tons of fiberglass mat per year.

Table 2-1. Summary of Potential Emissions at Williamsport Plant

Process	Potential Controlled Emissions (tpy)						Total HAPs
	NO _x	CO	SO ₂	VOC	PM ^a	CH ₂ O	
Receiving/Handling	-	-	-	-	2.0	-	-
Mat Line	11.9	10.0	0.1	1.7	7.2	1.7	1.88
Coating Line 1	1.9	1.6	0.0	11.9	0.1	0.0	0.04
Coating Line 2	2.4	2.0	0.0	12.0	0.2	0.0	0.04
TOTALS	16.2	13.6	0.1	25.6	9.5	1.7	2.0

^a PM (particulate matter) is assumed to all be smaller than 2.5 microns.

^b NO_x = nitrogen oxides, CO = carbon monoxide, SO₂ = sulfur dioxide, CH₂O = formaldehyde, HAP = hazardous air pollutant

Greenhouse gas (GHG) emissions are primarily associated with process heater emissions related to the Mat Line and Coating Line processes. Potential GHG emissions associated with the Williamsport Plant are provided in Table 2-2.

Table 2-2. Summary of Potential GHG Emissions at Williamsport Plant

Process	Potential Controlled Emissions (tpy)			
	CO₂	CH₄	N₂O	CO₂e
Mat Line	14,200.3	0.3	0.0	14,214.9
Coating Line 1	2,254.4	0.0	0.0	2,256.7
Coating Line 2	2,818.0	0.1	0.0	2,820.9
TOTALS	19,272.7	0.4	0.0	19,292.5

^b CO₂ = carbon dioxide, CH₄ = methane, N₂O = nitrous oxide, CO₂e = carbon dioxide equivalent

Detailed emissions calculations are provided in Appendix C.

3. REGULATORY REVIEW

This section provides a summary of the applicable state and federal regulations to the proposed operations at the Williamsport Plant.

3.1 Major New Source Review Applicability

Major New Source Review (NSR) applicability is based on a stationary source’s potential to emit (PTE). Washington County has been designated as attainment for all pollutants. However, all of Maryland is part of the ozone transport region (OTR) which is treated as nonattainment for ozone. In areas designated nonattainment or part of the OTR, the major NSR program that applies is nonattainment New Source Review (NNSR) for the pollutant(s) that the area is designated as in nonattainment (i.e., NO_x and VOC as ozone precursors).

For pollutants other than NO_x and VOC, the major NSR program that applies is Prevention of Significant Deterioration (PSD). To determine if this facility is subject to NNSR or PSD, the site-wide PTE is compared with the NNSR definition of a Major Stationary Source from the Code of Maryland Regulations (COMAR) 26.11.17.01 for NO_x and VOC and the PSD definition of Major Stationary Source from 40 Code of Federal Regulations (CFR) 52.21, which is incorporated into COMAR 26.11.06.14 by reference.

Table 3-1 shows that this project does not trigger NNSR or PSD as it does not meet the definition of a major stationary source.

Table 3-1. Major NSR Applicability

Pollutant	Facility Wide PTE (tpy)	Major Stationary Source Threshold (tpy)	Major NSR Program	Above Threshold?
CO	13.6	250	PSD	No
NO ₂	16.2	250	PSD	No
NO _x	16.2	100	NNSR	No
VOC	25.6	50	NNSR	No
SO ₂	0.1	250	PSD	No
PM	9.5	250	PSD	No
PM ₁₀	9.5	250	PSD	No
PM _{2.5}	9.5	250	PSD	No

3.2 Title V Applicability

Per COMAR 26.11.03.01A(1), major sources in Maryland are required to obtain a Title V Operating Permit. For the purposes of the Title V permitting program, the major source thresholds are found in COMAR 26.11.02.01C. Table 3-2 provides the major source thresholds applicable to the Williamsport Plant compared to facility PTE. As shown in Table 3-2, the facility is not subject to Title V permitting. This facility will be classified as a minor source.

Table 3-2. Title V Applicability

Pollutant	Facility-Wide PTE (tpy)	Title V Applicability Threshold (tpy)	Above Threshold?
CO	13.6	100	No
NO _x	16.2	100	No
VOC	25.6	50	No
SO ₂	0.1	100	No
PM	9.5	100	No
PM ₁₀	9.5	100	No
PM _{2.5}	9.5	100	No
Single HAP	1.7	10	No
Total HAP	2.0	25	No

3.3 Maryland Regulatory Applicability

This section of the application provides a summary of the applicable regulations contained in the Title 26 of the COMAR Subtitle 11 with respect to the emission sources at the Williamsport Plant.

3.3.1. COMAR 26.11.02 - Permits, Approvals, and Registration

Under COMAR 26.11.02, this project requires a Permit to Construct for the material handling equipment, white water process, mat production line, and two (2) coating lines. These processes do not qualify for any of the exemptions in COMAR 26.11.02.10.

The Williamsport Plant also has a space heater in the Coating Kitchen and hot water heater, each burning natural gas and rated at 0.15 and 0.0751 million British Thermal Units per hour (MMBtu/hr), respectively. These units are exempt from obtaining a Permit to Construct per COMAR 26.11.02.10C.

3.3.2. COMAR 26.11.06 - General Emission Standards, Prohibitions, and Restrictions

The following regulations are generally applicable to the emission sources that will operate at the Williamsport Plant. The equipment at the Williamsport Plant will be operated in accordance with the applicable requirements of these regulations:

► COMAR 26.11.06.02 – Visible Emissions

COMAR 26.11.06.02C(1) limits visible emissions from any installation or building in excess of 20% opacity for sources located in the Area I region of the state. Per COMAR 26.11.06.02A(2), this regulation does not apply to emissions during start-up and process modifications or adjustments, or occasional cleaning of control equipment, if the visible emissions are not greater than 40 percent opacity and the visible emissions do not occur for more than 6 consecutive minutes in any 60-minute period.

► COMAR 26.11.06.03 – Particulate Matter

COMAR 26.11.06.03B(1)(a) limits the particulate matter discharged from any installation which is a confined source constructed on or after January 17, 1972 for sources in the Area I region. This section also requires facilities to take reasonable precaution to control particulate matter emissions from unconfined sources per COMAR 26.11.06.03C and from materials handling and construction per COMAR 26.11.06.03D.

► **COMAR 26.11.06.05 – Sulfur Compounds from Other than Fuel-Burning Equipment**

COMAR 26.11.06.05B contains sulfur dioxide and sulfuric acid emission standards for installations that are not fuel burning equipment, which are generally applicable.

► **COMAR 26.11.06.08 – Nuisance Air Pollution and COMAR 26.11.06.09 – Odors**

COMAR 26.11.06.08 and 26.11.06.09 contain generally applicable nuisance and odor standards, respectively.

COMAR 26.11.06.06 contains standards for VOC, which are not applicable to the Williamsport Plant since it is located in Washington County.

3.3.3. COMAR 26.11.15 and 26.11.16 - Toxic Air Pollutants

COMAR 26.11.15.02 requires a facility to meet applicable 40 CFR 63 National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements. Refer to Section 3.2 for discussions on the applicability of the NESHAP regulations to the proposed project. In addition, the Williamsport Plant is required to demonstrate compliance with the ambient limits for TAP per COMAR 26.11.15.03. A compliance demonstration for TAP is provided in Appendix A.

Per COMAR 26.11.15.05(A), new and reconstructed installations are required to install and operate the best available control technology for toxics (T-BACT). Malarkey is proposing the use of the RTO to control formaldehyde emissions as T-BACT for the Mat Line. Other TAP emissions will be controlled through the use of good operating practices.

3.4 Federal Regulatory Applicability

3.4.1. New Source Performance Standards

New Source Performance Standards (NSPS) are promulgated under 40 CFR Part 60 and apply to certain types of equipment that are newly constructed, modified, or reconstructed after a given applicability date. Potentially applicable NSPS are reviewed in this section.

3.4.1.1. NSPS Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (NOT APPLICABLE)

NSPS Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels, provides standards of performance for volatile organic liquid storage vessels constructed or modified after July 23, 1984. Although the tanks in the White Water Process contain volatile organic liquids, process tanks are not included in the definition of a "storage vessel" in 40 CFR 60.111b. Other NSPS rules related to storage vessels (e.g., Subparts K and Ka) are specific to petroleum liquids, which are not present in the White Water Process.

3.4.1.2. NSPS Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants (NOT APPLICABLE)

NSPS Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants, applies to specific equipment at nonmetallic mineral processing plants. Although the limestone handling process at the Williamsport Plant is potentially subject to NSPS Subpart OOO, the Williamsport Plant does not process the limestone and therefore does not meet the definition of a nonmetallic mineral processing plant.

3.4.2. National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAPs) have been established in 40 CFR 61 and 63 to control the emissions of hazardous air pollutants (HAPs). NESHAP regulations codified in 40 CFR 63 establish maximum achievable control technology (MACT) standards for specific types of equipment at qualifying facilities. The Williamsport Plant will not be a major source of HAPs as individual HAP emissions will be below the ten (10) tpy major source threshold and aggregate HAP emissions will be below the 25 tpy major source threshold.

3.4.2.1. NESHAP Subpart HHHH – National Emission Standards for Hazardous Air Pollutants for Wet-Formed Fiberglass Mat Production (NOT APPLICABLE)

Subpart HHHH, National Emission Standards for Hazardous Air Pollutants for Wet-Formed Fiberglass Mat Production establishes emission limits for drying and curing ovens. Per 40 CFR 63.2981(b), Subpart HHHH only applies to major sources of HAP. As shown in Table 3-2, the Williamsport Plant is an area source of HAP and therefore not subject to Subpart HHHH.

3.4.2.2. NESHAP Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants: Industrial, Commercial, and Institutional Boilers and Process Heaters (NOT APPLICABLE)

NESHAP Subpart DDDDD contains emissions guidelines and compliance times for commercial and industrial boilers and process heaters. The Williamsport Plant will not be a major source of HAP and is therefore not subject to this rule.

3.4.2.3. NESHAP Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (NOT APPLICABLE)

40 CFR Part 63, Subpart JJJJJJ contains emissions guidelines and compliance times for commercial and industrial boilers at area sources of HAP. The Williamsport Plant is an area source of HAP. All heaters at the Williamsport Plant will combust natural gas only and as such, are exempt under 40 CFR 63.11195(e).

APPENDIX A. TAP COMPLIANCE DEMONSTRATION

Malarkey submitted a TAP modeling protocol to MDE on December 8, 2022. The TAP compliance demonstration will be submitted once the protocol is approved by MDE.

APPENDIX B. MDE APPLICATION FORMS



REDACTED VERSION
AIR QUALITY PERMIT TO CONSTRUCT
APPLICATION CHECKLIST

OWNER OF EQUIPMENT/PROCESS	
COMPANY NAME:	Herbert Malarkey Roofing Company
COMPANY ADDRESS:	3131 North Columbia Boulevard, Portland, Oregon 97217
LOCATION OF EQUIPMENT/PROCESS	
PREMISES NAME:	Malarkey Williamsport
PREMISES ADDRESS:	10033 Governor Lane Boulevard, Williamsport, MD 21795
CONTACT INFORMATION FOR THIS PERMIT APPLICATION	
CONTACT NAME:	Tony Silva
JOB TITLE:	Environmental, Health and Safety
PHONE NUMBER:	503-240-7867
EMAIL ADDRESS:	tsilva@malarkeyroofing.com
DESCRIPTION OF EQUIPMENT OR PROCESS	
Wet-formed fiberglass mat manufacturing facility	

Application is hereby made to the Department of the Environment for a Permit to Construct for the following equipment or process as required by the State of Maryland Air Quality Regulation, COMAR 26.11.02.09.

Check each item that you have submitted as part of your application package.

- Application package cover letter describing the proposed project
- Complete application forms (Note the number of forms included or NA if not applicable.)
- | | |
|-----------------------|-----------------------|
| No. <u>4</u> Form 5 | No. <u>NA</u> Form 11 |
| No. <u>1</u> Form 5T | No. <u>NA</u> Form 41 |
| No. <u>3</u> Form 5EP | No. <u>NA</u> Form 42 |
| No. <u>3</u> Form 6 | No. <u>NA</u> Form 44 |
| No. <u>NA</u> Form 10 | |
- Vendor/manufacturer specifications/guarantees
- Evidence of Workman's Compensation Insurance
- Process flow diagrams with emission points
- Site plan including the location of the proposed source and property boundary
- Material balance data and all emissions calculations
- Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.
- Certificate of Public Convenience and Necessity (CPCN) waiver documentation from the Public Service Commission ⁽¹⁾
- Documentation that the proposed installation complies with local zoning and land use requirements ⁽²⁾
- Environmental Justice (EJ) Score Report ⁽²⁾
- The EJ Score is an overall evaluation of an area's environment and existing environmental justice indicators including pollution burden exposure, pollution burden environmental effects, sensitive populations, and socioeconomic factors. Provide the EJ Score results from the use of a Maryland EJ Tool for the census tract where an applicant is seeking a permit.
- The EJ Score can be generated using the MDE's EJ Screening Tool at:
<https://mdewin64.mde.state.md.us/EJ/>
Save the Screening Report utilized to develop the EJ Score and attach it to your application.
- Enter overall EJ Score here:** 27.861%

⁽¹⁾ Required for emergency and non-emergency generators installed on or after October 1, 2001 and rated at 2001 kW or more.

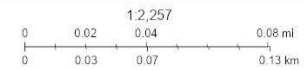
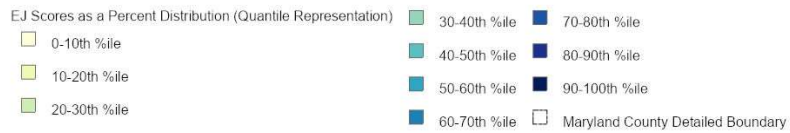
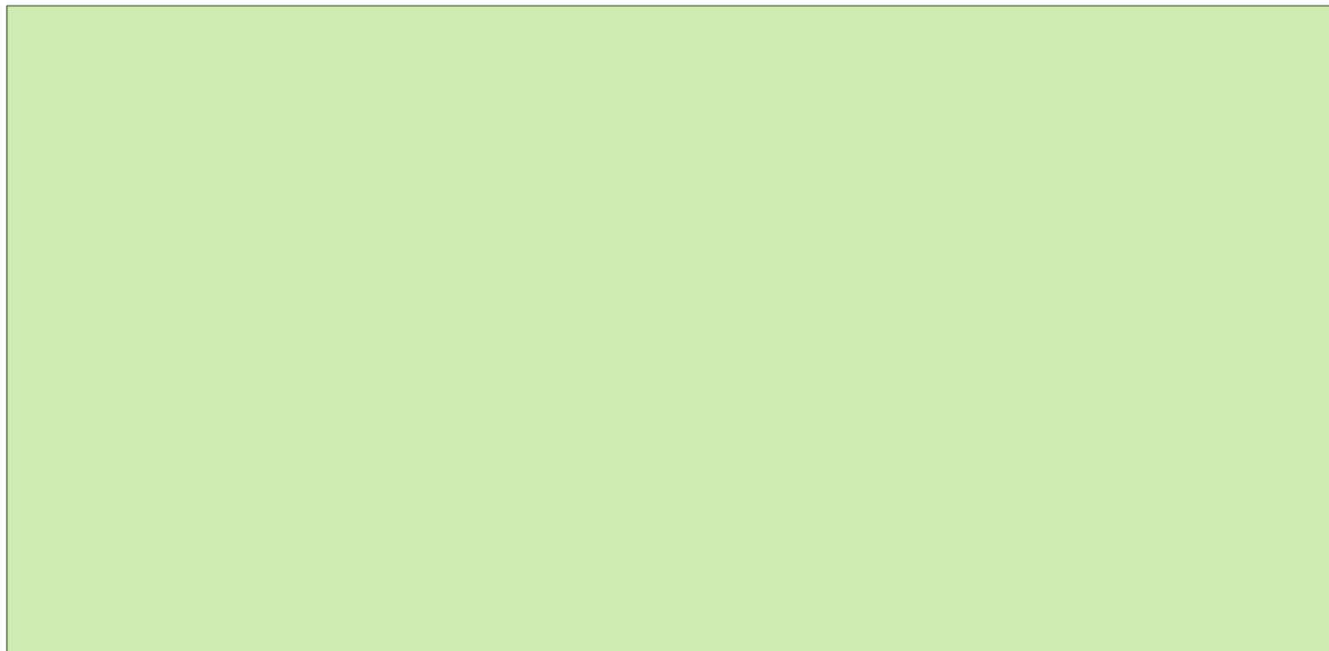
⁽²⁾ Required for applications subject to Expanded Public Participation Requirements under Maryland Environment Article §1-601.



MDE EJ Screening Report

Area of Interest (AOI) Information

Dec 15 2022 12:42:33 Eastern Standard Time



MDE, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Summary

Name	Count	Area(ft ²)	Length(ft)
EJ Scores as a Percent Distribution (Quantile Representation)	1	N/A	N/A
Active High Air Emission Facilities	0	N/A	N/A
LRP Facilities	0	N/A	N/A
Maryland Dam Locations	0	N/A	N/A
Maryland Pond Locations	0	N/A	N/A
Wastewater Discharge Facilities	0	N/A	N/A
Historic Mine Locations	0	N/A	N/A
Significant Wastewater Treatment Plants	0	N/A	N/A
Point Source Discharges	0	N/A	N/A
All Permitted Solid Waste Acceptance Facilities	0	N/A	N/A
Municipal Solid Waste Acceptance Facilities	0	N/A	N/A

EJ Scores as a Percent Distribution (Quantile Representation)

#	Geographic Area Name	Percent Minority	Percent Poverty	Percent_Limited_English_Proficiency	SocioScore Percent Tract Only	Socio Percentile (All MD)	Socio Percentile (All MD) %	Area(ft ²)
1	Census Tract 108.02, Washington County, Maryland	9.30	27.51	0.00	12.27	27.86	27.861%	N/A

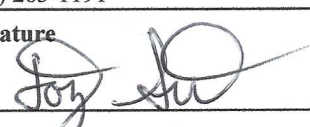
MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd - Baltimore, Maryland 21230
(410) 537-3230 - 1-800-633-6101 - www.mde.state.md.us

Air and Radiation Management Administration Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct Registration Update Initial Registration

<p>1A. OWNER OF EQUIPMENT/COMPANY NAME Herbert Malarkey Roofing Company</p> <hr/> <p>Mailing Address 3131 North Columbia Boulevard Street Address</p> <p>Portland OR 97217 City State Zip</p> <p>Telephone Number (503) 283-1191</p> <p>Signature </p> <hr/> <p>Tony Silva Director of Environmental Health and Safety 12/21/22 Print Name and Title Date</p>	<p align="center">DO NOT WRITE IN THIS BLOCK</p> <p align="center">2. REGISTRATION NUMBER</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"> <p>County No. <input type="text"/><input type="text"/> 1-2</p> <p>Registration Class <input type="text"/> 7</p> <p>Data Year <input type="text"/><input type="text"/> 12-13</p> </td> <td style="width:50%; border: none;"> <p>Premises No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 3-6</p> <p>Equipment No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 8-11</p> <p>Application Date _____</p> </td> </tr> </table>	<p>County No. <input type="text"/><input type="text"/> 1-2</p> <p>Registration Class <input type="text"/> 7</p> <p>Data Year <input type="text"/><input type="text"/> 12-13</p>	<p>Premises No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 3-6</p> <p>Equipment No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 8-11</p> <p>Application Date _____</p>	
<p>County No. <input type="text"/><input type="text"/> 1-2</p> <p>Registration Class <input type="text"/> 7</p> <p>Data Year <input type="text"/><input type="text"/> 12-13</p>	<p>Premises No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 3-6</p> <p>Equipment No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 8-11</p> <p>Application Date _____</p>			
<p>1B. EQUIPMENT LOCATION AND TELEPHONE NUMBER (IF DIFFERENT FROM ABOVE) 10033 Governor Lane Boulevard Street Number and Street Name</p> <p>Williamsport Maryland 21795 (503) 283-1191 City/Town State Zip Telephone Number</p> <p>Williamsport Plant Premises Name (if different from above)</p>				
<p>3. STATUS (A=New, B=Modification to Existing Equipment, C=Existing Equipment)</p> <table style="width:100%; border: none;"> <tr> <td style="width:33%; text-align: center;"> <p>New Construction Begun MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 15 16-19</p> </td> <td style="width:33%; text-align: center;"> <p>New Construction Completed MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p> </td> <td style="width:33%; text-align: center;"> <p>Existing Initial Operation MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p> </td> </tr> </table> <p>* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.</p>		<p>New Construction Begun MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 15 16-19</p>	<p>New Construction Completed MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p>	<p>Existing Initial Operation MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p>
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<p>4. DESCRIBE THIS EQUIPMENT: MAKE, MODEL, FEATURES, MANUFACTURER (INCLUDE MAXIMUM HOURLY INPUT RATE, ETC.)</p> <p>Fiberglass mat line including white water process, 8 identical heaters with a maximum fuel usage rating of 3,084 scfh, and an RTO.</p>				
<p>5. WORKMEN'S COMPENSATION COVERAGE</p> <p align="center">WLR C50740493 10/1/2023 Binder/Policy Number Expiration Date</p> <p>Company Indemnity Insurance Company of North America</p> <p>NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.</p>				
<p>6A. NUMBER OF PIECES OF IDENTICAL EQUIPMENT UNITS TO BE REGISTERED/PERMITTED AT THIS TIME <u>1</u></p> <p>6B. NUMBER OF STACKS/EMISSION POINTS ASSOCIATED WITH THIS EQUIPMENT <u>1</u></p>				

7. PERSON INSTALLING THIS EQUIPMENT (IF DIFFERENT FROM NUMBER 1 ON PAGE 1)
 NAME Same as Number 1 on Page 1 TITLE _____
 COMPANY _____
 MAILING ADDRESS/STREET _____
 CITY, TOWN _____ STATE _____ TELEPHONE () _____

8. MAJOR ACTIVITY, PRODUCT OR SERVICE OF COMPANY AT THIS LOCATION
 Fiberglass mat manufacturing and coating

9. CONTROL DEVICES ASSOCIATED WITH THIS EQUIPMENT

None
 24-0

SIMPLE/MULTIPLE CYCLONE <input type="checkbox"/> 24-1	SPRAY/ADSORB TOWER <input type="checkbox"/> 24-2	VENTURI SCRUBBER <input type="checkbox"/> 24-3	CARBON ADSORBER <input type="checkbox"/> 24-4	ELECTROSTATIC PRECIPITATOR <input type="checkbox"/> 24-5	BAGHOUSE <input type="checkbox"/> 24-6	THERMAL/ CATALYTIC AFTERBURNER <input type="checkbox"/> 24-7	DRY SCRUBBER <input type="checkbox"/> 24-8
--	---	---	--	---	--	--	---

OTHER
 24-9 Regenerative thermal oxidizer
 DESCRIBE _____

10. ANNUAL FUEL CONSUMPTION FOR THIS EQUIPMENT

* Combined for RTO (21,900 mcf) and heaters (216,127 mcf)

OIL - 1000 GALLONS* <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 26-31	SULFUR % <input type="text"/> <input type="text"/> 32-33	GRADE <input type="text"/> 34	NATURAL GAS - 1000 FT ³ * <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 2 3 8 , 0 2 7 35-41	LP GAS - 100 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 42-45	GRADE <input type="text"/> 43-46
COAL - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 46-52	SULFUR % <input type="text"/> <input type="text"/> <input type="text"/> 53-55	ASH % <input type="text"/> <input type="text"/> <input type="text"/> 56-58	WOOD - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 59-63	MOISTURE % <input type="text"/> <input type="text"/> 64-65	

Other Fuels _____ Annual Amount Consumed _____ Other Fuels _____ Annual Amount Consumed _____
 (Specify Type) 66-1 (Specify Units of Measure) (Specify Type) 66-2 (Specify Units of Measure)

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE [for this equipment]

CONTINUOUS OPERATION <input checked="" type="checkbox"/> 67-1	BATCH PROCESS <input type="checkbox"/> 67-2	HOURS PER BATCH <input type="text"/> <input type="text"/> 68-69	BATCH PER WEEK <input type="text"/> 69-70	HOURS PER DAY <input type="text"/> <input type="text"/> 2 4 70-71	DAYS PER WEEK <input type="text"/> 7 72	DAYS PER YEAR <input type="text"/> <input type="text"/> <input type="text"/> 3 6 5 73-75
--	--	--	--	---	---	--

SEASONAL VARIATION IN OPERATION:

NO VARIATION <input checked="" type="checkbox"/> 76	WINTER PERCENT <input type="text"/> <input type="text"/> 77-78	SPRING PERCENT <input type="text"/> <input type="text"/> 79-80	SUMMER PERCENT <input type="text"/> <input type="text"/> 81-82	FALL PERCENT <input type="text"/> <input type="text"/> 83-84	(TOTAL SEASONS=100%)
---	--	--	--	--	----------------------

12. EQUIVALENT STACK INFORMATION - IS EXHAUST THROUGH DOORS, WINDOWS, ETC., ONLY?

(Y/N) N
85

IF NOT, THEN →

HEIGHT ABOVE GROUND (FT)	INSIDE DIAMETER AT TOP (FT)	EXIT TEMPERATURE (°F)	EXIT VELOCITY (FT/SEC)
<input type="text"/> <input type="text"/> <input type="text"/> 3 <input type="text"/> 2	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 3	<input type="text"/> <input type="text"/> 4 <input type="text"/> 1 <input type="text"/> 0	<input type="text"/> <input type="text"/> <input type="text"/> 3 <input type="text"/> 5
86-88	89-91	92-95	96-98

NOTE: ATTACH A BLOCK DIAGRAM OF PROCESS/PROCESS LINE, INDICATING NEW EQUIPMENT AS REPORTED ON THIS FORM AND ALL EXISTING EQUIPMENT, INCLUDING CONTROL DEVICES AND EMISSION POINTS.

13. INPUT MATERIALS [for this equipment only]

IS ANY OF THIS DATA TO BE CONSIDERED CONFIDENTIAL? Y or N

NAME	CAS NUMBER (if applicable)	PER HOUR	INPUT RATE		
			UNITS	PER YEAR	UNITS
1. Chopped Glass					Redacted
2. Dispersant					Redacted
3. Defoamer					Redacted
4. Flocculant					Redacted
5. Water					Redacted
6. pH Stabilizer					Redacted
7. Resin					Redacted
8.					
9.					
TOTAL					

14. OUTPUT MATERIALS [for this equipment]

NAME	CAS NUMBER (if applicable)	PER HOUR	OUTPUT RATE		
			UNITS	PER YEAR	UNITS
1. Fiberglass Mat					Redacted
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. WASTE STREAMS - SOLID AND LIQUID

NAME	CAS NUMBER (if applicable)	PER HOUR	OUTPUT RATE		
			UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					


MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd - Baltimore, Maryland 21230
(410) 537-3230 - 1-800-633-6101 - www.mde.state.md.us

Air and Radiation Management Administration Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct Registration Update Initial Registration

<p>1A. OWNER OF EQUIPMENT/COMPANY NAME Herbert Malarkey Roofing Company</p> <hr/> <p>Mailing Address 3131 North Columbia Boulevard Street Address</p> <p>Portland OR 97217 City State Zip</p> <p>Telephone Number (503) 283-1191</p> <p>Signature </p> <hr/> <p>Tony Silva Director of Environmental Health and Safety Print Name and Title</p>	<p align="center">DO NOT WRITE IN THIS BLOCK</p> <p align="center">2. REGISTRATION NUMBER</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"> <p>County No. 1-2 <input type="text"/><input type="text"/></p> </td> <td style="width:50%; border: none;"> <p>Premises No. 3-6 <input type="text"/><input type="text"/><input type="text"/><input type="text"/></p> </td> </tr> <tr> <td style="border: none;"> <p>Registration Class 7 <input type="text"/></p> </td> <td style="border: none;"> <p>Equipment No. 8-11 <input type="text"/><input type="text"/><input type="text"/><input type="text"/></p> </td> </tr> <tr> <td style="border: none;"> <p>Data Year 12-13 <input type="text"/><input type="text"/></p> </td> <td style="border: none;"> <p>Application Date _____</p> </td> </tr> </table> <hr/> <p>Tony Silva Director of Environmental Health and Safety 12/21/22 Date</p>	<p>County No. 1-2 <input type="text"/><input type="text"/></p>	<p>Premises No. 3-6 <input type="text"/><input type="text"/><input type="text"/><input type="text"/></p>	<p>Registration Class 7 <input type="text"/></p>	<p>Equipment No. 8-11 <input type="text"/><input type="text"/><input type="text"/><input type="text"/></p>	<p>Data Year 12-13 <input type="text"/><input type="text"/></p>	<p>Application Date _____</p>										
<p>County No. 1-2 <input type="text"/><input type="text"/></p>	<p>Premises No. 3-6 <input type="text"/><input type="text"/><input type="text"/><input type="text"/></p>																
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<p>1B. EQUIPMENT LOCATION AND TELEPHONE NUMBER (IF DIFFERENT FROM ABOVE) 10033 Governor Lane Boulevard Street Number and Street Name</p> <p>Williamsport Maryland 21795 (503) 283-1191 City/Town State Zip Telephone Number</p> <p>Williamsport Plant Premises Name (if different from above)</p>																	
<p>3. STATUS (A=New, B=Modification to Existing Equipment, C=Existing Equipment)</p> <table style="width:100%; border: none;"> <tr> <td style="width:25%;"></td> <td style="width:25%; text-align: center;">New Construction Begun</td> <td style="width:25%; text-align: center;">New Construction Completed</td> <td style="width:25%; text-align: center;">Existing Initial Operation</td> </tr> <tr> <td style="text-align: center;">STATUS</td> <td style="text-align: center;">MONTH/YEAR</td> <td style="text-align: center;">MONTH/YEAR</td> <td style="text-align: center;">MONTH/YEAR</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/> B</td> <td style="text-align: center;"><input type="text"/><input type="text"/><input type="text"/><input type="text"/></td> <td style="text-align: center;"><input type="text"/><input type="text"/><input type="text"/><input type="text"/></td> <td style="text-align: center;"><input type="text"/><input type="text"/><input type="text"/><input type="text"/></td> </tr> <tr> <td style="text-align: center;">15</td> <td style="text-align: center;">16-19</td> <td style="text-align: center;">20-23</td> <td style="text-align: center;">20-23</td> </tr> </table> <p>* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.</p>			New Construction Begun	New Construction Completed	Existing Initial Operation	STATUS	MONTH/YEAR	MONTH/YEAR	MONTH/YEAR	<input checked="" type="checkbox"/> B	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	15	16-19	20-23	20-23
	New Construction Begun	New Construction Completed	Existing Initial Operation														
STATUS	MONTH/YEAR	MONTH/YEAR	MONTH/YEAR														
<input checked="" type="checkbox"/> B	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>														
15	16-19	20-23	20-23														
<p>4. DESCRIBE THIS EQUIPMENT: MAKE, MODEL, FEATURES, MANUFACTURER (INCLUDE MAXIMUM HOURLY INPUT RATE, ETC.)</p> <p>Fiberglass mat coating line 1 including 4 identical heaters each with a maximum heat input of 1.1 MMBtu/hr and emissions from coating mixing tanks in the Coating Kitchen</p>																	
<p>5. WORKMEN'S COMPENSATION COVERAGE</p> <p align="center">WLR C50740493 10/1/2023 Binder/Policy Number Expiration Date</p> <p>Company Indemnity Insurance Company of North America</p> <p>NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.</p>																	
<p>6A. NUMBER OF PIECES OF IDENTICAL EQUIPMENT UNITS TO BE REGISTERED/PERMITTED AT THIS TIME 1</p> <p>6B. NUMBER OF STACKS/EMISSION POINTS ASSOCIATED WITH THIS EQUIPMENT 0 - fugitive emissions only</p>																	

7. PERSON INSTALLING THIS EQUIPMENT (IF DIFFERENT FROM NUMBER 1 ON PAGE 1)
 NAME Same as Number 1 on Page 1 TITLE _____
 COMPANY _____
 MAILING ADDRESS/STREET _____
 CITY, TOWN _____ STATE _____ TELEPHONE () _____

8. MAJOR ACTIVITY, PRODUCT OR SERVICE OF COMPANY AT THIS LOCATION
 Fiberglass mat manufacturing and coating

9. CONTROL DEVICES ASSOCIATED WITH THIS EQUIPMENT

None
 24-0

SIMPLE/MULTIPLE CYCLONE <input type="checkbox"/> 24-1	SPRAY/ADSORB TOWER <input type="checkbox"/> 24-2	VENTURI SCRUBBER <input type="checkbox"/> 24-3	CARBON ADSORBER <input type="checkbox"/> 24-4	ELECTROSTATIC PRECIPITATOR <input type="checkbox"/> 24-5	BAGHOUSE <input type="checkbox"/> 24-6	THERMAL/ CATALYTIC AFTERBURNER <input type="checkbox"/> 24-7	DRY SCRUBBER <input type="checkbox"/> 24-8
--	---	---	--	---	--	--	---

OTHER
 24-9 DESCRIBE _____

10. ANNUAL FUEL CONSUMPTION FOR THIS EQUIPMENT

OIL - 1000 GALLONS* <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 26-31	SULFUR % <input type="text"/> <input type="text"/> 32-33	GRADE <input type="text"/> 34	NATURAL GAS - 1000 FT ³ * <input type="text"/> 3 <input type="text"/> 7 <input type="text"/> , <input type="text"/> 7 <input type="text"/> 8 <input type="text"/> 8 35-41	LP GAS - 100 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 42-45	GRADE <input type="text"/>
COAL - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 46-52	SULFUR % <input type="text"/> <input type="text"/> <input type="text"/> 53-55	ASH % <input type="text"/> <input type="text"/> <input type="text"/> 56-58	WOOD - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 59-63	MOISTURE % <input type="text"/> <input type="text"/> 64-65	

Other Fuels _____ Annual Amount Consumed _____ Other Fuels _____ Annual Amount Consumed _____
 (Specify Type) 66-1 (Specify Units of Measure) (Specify Type) 66-2 (Specify Units of Measure)

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE [for this equipment]

CONTINUOUS OPERATION <input checked="" type="checkbox"/> 67-1	BATCH PROCESS <input type="checkbox"/> 67-2	HOURS PER BATCH <input type="text"/> <input type="text"/> 68-69	BATCH PER WEEK <input type="text"/> 69-70	HOURS PER DAY <input type="text"/> 2 <input type="text"/> 4 70-71	DAYS PER WEEK <input type="text"/> 7 72	DAYS PER YEAR <input type="text"/> 3 <input type="text"/> 6 <input type="text"/> 5 73-75
--	--	--	--	--	--	---

SEASONAL VARIATION IN OPERATION:

NO VARIATION <input checked="" type="checkbox"/> 76	WINTER PERCENT <input type="text"/> <input type="text"/> 77-78	SPRING PERCENT <input type="text"/> <input type="text"/> 79-80	SUMMER PERCENT <input type="text"/> <input type="text"/> 81-82	FALL PERCENT <input type="text"/> <input type="text"/> 83-84	(TOTAL SEASONS=100%)
---	--	--	--	--	----------------------

12. EQUIVALENT STACK INFORMATION - IS EXHAUST THROUGH DOORS, WINDOWS, ETC., ONLY?

(Y/N) Y
85

IF NOT, THEN →

HEIGHT ABOVE GROUND (FT)	INSIDE DIAMETER AT TOP (INCHES)	EXIT TEMPERATURE (°F)	EXIT VELOCITY (FT/SEC)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
86-88	89-91	92-95	96-98

NOTE: ATTACH A BLOCK DIAGRAM OF PROCESS/PROCESS LINE, INDICATING NEW EQUIPMENT AS REPORTED ON THIS FORM AND ALL EXISTING EQUIPMENT, INCLUDING CONTROL DEVICES AND EMISSION POINTS.

13. INPUT MATERIALS [for this equipment only]

IS ANY OF THIS DATA TO BE CONSIDERED CONFIDENTIAL? Y or N

* Inputs are combined for Coating Lines 1 and 2

NAME	CAS NUMBER (if applicable)	PER HOUR	INPUT RATE		
			UNITS	PER YEAR	UNITS
1. Uncoated Fiberglass Mat					Redacted
2. Dispersant					Redacted
3. Latex					Redacted
4. Viscosity Modifier					Redacted
5. Water					Redacted
6. Limestone					Redacted
7.					
8.					
9.					
TOTAL					

14. OUTPUT MATERIALS [for this equipment]

* Outputs are combined for Coating Lines 1 and 2

NAME	CAS NUMBER (if applicable)	PER HOUR	OUTPUT RATE		
			UNITS	PER YEAR	UNITS
1. Fiberglass Mat					Redacted
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. WASTE STREAMS - SOLID AND LIQUID

NAME	CAS NUMBER (if applicable)	PER HOUR	OUTPUT RATE		
			UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. TOTAL STACK EMISSIONS (FOR THIS EQUIPMENT ONLY) IN POUNDS PER OPERATING DAY

PARTICULATE MATTER

 99-104

OXIDES OF SULFUR

 105-110

OXIDES OF NITROGEN

 111-116

CARBON MONOXIDE

 117-122

VOLATILE ORGANIC COMPOUNDS

 123-128

PM-10

 129-134

17. TOTAL FUGITIVE EMISSIONS (FOR THIS EQUIPMENT ONLY) IN POUNDS PER OPERATING DAY

Refer to Appendix C
 PARTICULATE MATTER

 135-139

OXIDES OF SULFUR

 140-144

OXIDES OF NITROGEN

 145-149

CARBON MONOXIDE

 150-154

VOLATILE ORGANIC COMPOUNDS

 155-159

PM-10

 160-164

METHOD USED TO DETERMINE EMISSIONS (1 = ESTIMATE 2 = EMISSION FACTOR 3 = STACK TEST 4 = OTHER)

TSP

 165

SOX

 166

NOX

 167

CO

 168

VOC

 169

PM10

 170

AIR MANAGEMENT USE ONLY

18. DATE REC'D. LOCAL _____ DATE REC'D. STATE _____ RETURN TO LOCAL JURISDICTION
 DATE _____ BY _____

REVIEWED BY LOCAL JURISDICTION _____ REVIEWED BY STATE _____
 DATE _____ BY _____ DATE _____ BY _____

19. INVENTORY DATE

MONTH YEAR

 171-174

EQUIPMENT CODE

 175-177

SCC CODE

 178-185

20. ANNUAL OPERATING RATE MAXIMUM DESIGN HOURLY RATE PERMIT TO OPERATE TRANSACTION DATE

ANNUAL OPERATING RATE

 186-192

MAXIMUM DESIGN HOURLY RATE

 193-199

PERMIT TO OPERATE MONTH

 200-201

TRANSACTION DATE (MM/DD/YR)

 202-207

STAFF CODE

 208-210

VOC CODE

 211 212

SIP CODE

 213 214

REGULATION CODE

 215-218

CONFIDENTIALITY

 219

POINT DESCRIPTION

 220-238

ACTION

 239 A: ADD
 C: CHANGE

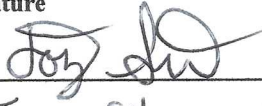
MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct Registration Update Initial Registration

<p>IA. OWNER OF EQUIPMENT/COMPANY NAME Herbert Malarkey Roofing Company</p> <hr/> <p>Mailing Address 3131 North Columbia Boulevard Street Address</p> <p>Portland OR 97217 City State Zip</p> <p>Telephone Number (503) 283-1191</p> <p>Signature </p> <hr/> <p>Tony Silva Director of Environmental Health and Safety 12/21/22 Print Name and Title Date</p>	<p align="center">DO NOT WRITE IN THIS BLOCK</p> <p align="center">2. REGISTRATION NUMBER</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"> <p>County No. <input type="text"/><input type="text"/> 1-2</p> <p>Registration Class <input type="text"/> 7</p> <p>Data Year <input type="text"/><input type="text"/> 12-13</p> </td> <td style="width:50%; border: none;"> <p>Premises No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 3-6</p> <p>Equipment No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 8-11</p> <p>Application Date _____</p> </td> </tr> </table>	<p>County No. <input type="text"/><input type="text"/> 1-2</p> <p>Registration Class <input type="text"/> 7</p> <p>Data Year <input type="text"/><input type="text"/> 12-13</p>	<p>Premises No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 3-6</p> <p>Equipment No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 8-11</p> <p>Application Date _____</p>	
<p>County No. <input type="text"/><input type="text"/> 1-2</p> <p>Registration Class <input type="text"/> 7</p> <p>Data Year <input type="text"/><input type="text"/> 12-13</p>	<p>Premises No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 3-6</p> <p>Equipment No. <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 8-11</p> <p>Application Date _____</p>			
<p>1B. EQUIPMENT LOCATION AND TELEPHONE NUMBER (IF DIFFERENT FROM ABOVE) 10033 Governor Lane Boulevard Street Number and Street Name</p> <p>Williamsport Maryland 21795 (503) 283-1191 City/Town State Zip Telephone Number</p> <p>Williamsport Plant Premises Name (if different from above)</p>				
<p>3. STATUS (A=New, B=Modification to Existing Equipment, C=Existing Equipment)</p> <table style="width:100%; border: none;"> <tr> <td style="width:33%; text-align: center;"> <p>New Construction Begun MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 15 16-19</p> </td> <td style="width:33%; text-align: center;"> <p>New Construction Completed MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p> </td> <td style="width:33%; text-align: center;"> <p>Existing Initial Operation MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p> </td> </tr> </table> <p>* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.</p>		<p>New Construction Begun MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 15 16-19</p>	<p>New Construction Completed MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p>	<p>Existing Initial Operation MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p>
<p>New Construction Begun MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 15 16-19</p>	<p>New Construction Completed MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p>	<p>Existing Initial Operation MONTH/YEAR <input type="text"/><input type="text"/><input type="text"/><input type="text"/> 20-23</p>		
<p>4. DESCRIBE THIS EQUIPMENT: MAKE, MODEL, FEATURES, MANUFACTURER (INCLUDE MAXIMUM HOURLY INPUT RATE, ETC.)</p> <p>Fiberglass mat coating line 2 including 5 identical heaters each with a maximum heat input of 1.1 MMBtu/hr and emissions from coating mixing tanks in the Coating Kitchen</p>				
<p>5. WORKMEN'S COMPENSATION COVERAGE</p> <p align="center">WLR C50740493 10/1/2023 Binder/Policy Number Expiration Date</p> <p>Company Indemnity Insurance Company of North America</p> <p>NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.</p>				
<p>6A. NUMBER OF PIECES OF IDENTICAL EQUIPMENT UNITS TO BE REGISTERED/PERMITTED AT THIS TIME 1</p> <p>6B. NUMBER OF STACKS/EMISSION POINTS ASSOCIATED WITH THIS EQUIPMENT 0 - fugitive emissions only</p>				

7. PERSON INSTALLING THIS EQUIPMENT (IF DIFFERENT FROM NUMBER 1 ON PAGE 1)
 NAME Same as Number 1 on Page 1 TITLE _____
 COMPANY _____
 MAILING ADDRESS/STREET _____
 CITY, TOWN _____ STATE _____ TELEPHONE () _____

8. MAJOR ACTIVITY, PRODUCT OR SERVICE OF COMPANY AT THIS LOCATION
 Fiberglass mat manufacturing and coating

9. CONTROL DEVICES ASSOCIATED WITH THIS EQUIPMENT

None
 24-0

SIMPLE/MULTIPLE CYCLONE <input type="checkbox"/> 24-1	SPRAY/ADSORB TOWER <input type="checkbox"/> 24-2	VENTURI SCRUBBER <input type="checkbox"/> 24-3	CARBON ADSORBER <input type="checkbox"/> 24-4	ELECTROSTATIC PRECIPITATOR <input type="checkbox"/> 24-5	BAGHOUSE <input type="checkbox"/> 24-6	THERMAL/ CATALYTIC AFTERBURNER <input type="checkbox"/> 24-7	DRY SCRUBBER <input type="checkbox"/> 24-8
--	---	---	--	---	--	--	---

OTHER
 24-9 DESCRIBE _____

10. ANNUAL FUEL CONSUMPTION FOR THIS EQUIPMENT

OIL - 1000 GALLONS* <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 26-31	SULFUR % <input type="text"/> <input type="text"/> 32-33	GRADE <input type="text"/> 34	NATURAL GAS - 1000 FT ³ * <input type="text"/> 4 <input type="text"/> 7 <input type="text"/> , <input type="text"/> 2 <input type="text"/> 3 <input type="text"/> 5 35-41	LP GAS - 100 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 42-45	GRADE <input type="text"/>
COAL - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 46-52	SULFUR % <input type="text"/> <input type="text"/> <input type="text"/> 53-55	ASH % <input type="text"/> <input type="text"/> <input type="text"/> 56-58	WOOD - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 59-63	MOISTURE % <input type="text"/> <input type="text"/> 64-65	

Other Fuels _____ Annual Amount Consumed _____ Other Fuels _____ Annual Amount Consumed _____
 (Specify Type) 66-1 (Specify Units of Measure) (Specify Type) 66-2 (Specify Units of Measure)

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE [for this equipment]

CONTINUOUS OPERATION <input checked="" type="checkbox"/> 67-1	BATCH PROCESS <input type="checkbox"/> 67-2	HOURS PER BATCH <input type="text"/> <input type="text"/> 68-69	BATCH PER WEEK <input type="text"/> 69-70	HOURS PER DAY <input type="text"/> 2 <input type="text"/> 4 70-71	DAYS PER WEEK <input type="text"/> 7 72	DAYS PER YEAR <input type="text"/> 3 <input type="text"/> 6 <input type="text"/> 5 73-75
--	--	--	--	--	--	---

SEASONAL VARIATION IN OPERATION:

NO VARIATION <input checked="" type="checkbox"/> 76	WINTER PERCENT <input type="text"/> <input type="text"/> 77-78	SPRING PERCENT <input type="text"/> <input type="text"/> 79-80	SUMMER PERCENT <input type="text"/> <input type="text"/> 81-82	FALL PERCENT <input type="text"/> <input type="text"/> 83-84	(TOTAL SEASONS=100%)
---	--	--	--	--	----------------------

12. EQUIVALENT STACK INFORMATION - IS EXHAUST THROUGH DOORS, WINDOWS, ETC., ONLY?

(Y/N) Y
85

IF NOT, THEN →

HEIGHT ABOVE GROUND (FT)	INSIDE DIAMETER AT TOP (INCHES)	EXIT TEMPERATURE (°F)	EXIT VELOCITY (FT/SEC)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
86-88	89-91	92-95	96-98

NOTE: ATTACH A BLOCK DIAGRAM OF PROCESS/PROCESS LINE, INDICATING NEW EQUIPMENT AS REPORTED ON THIS FORM AND ALL EXISTING EQUIPMENT, INCLUDING CONTROL DEVICES AND EMISSION POINTS.

13. INPUT MATERIALS [for this equipment]

IS ANY OF THIS DATA TO BE CONSIDERED CONFIDENTIAL? Y or N

* Inputs are combined for Coating Lines 1 and 2

NAME	CAS NUMBER (if applicable)	PER HOUR	INPUT RATE		
			UNITS	PER YEAR	UNITS
1. Uncoated Fiberglass Mat					Redacted
2. Dispersant					Redacted
3. Latex					Redacted
4. Viscosity Modifier					Redacted
5. Water					Redacted
6. Limestone					Redacted
7.					Redacted
8.					
9.					
TOTAL					

14. OUTPUT MATERIALS [for this equipment]

* Outputs are combined for Coating Lines 1 and 2

NAME	CAS NUMBER (if applicable)	PER HOUR	OUTPUT RATE		
			UNITS	PER YEAR	UNITS
1. Fiberglass Mat					Redacted
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. WASTE STREAMS - SOLID AND LIQUID

NAME	CAS NUMBER (if applicable)	PER HOUR	OUTPUT RATE		
			UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. TOTAL STACK EMISSIONS (FOR THIS EQUIPMENT ONLY) IN POUNDS PER OPERATING DAY

PARTICULATE MATTER

 99-104

OXIDES OF SULFUR

 105-110

OXIDES OF NITROGEN

 111-116

CARBON MONOXIDE

 117-122

VOLATILE ORGANIC COMPOUNDS

 123-128

PM-10

 129-134

17. TOTAL FUGITIVE EMISSIONS (FOR THIS EQUIPMENT ONLY) IN POUNDS PER OPERATING DAY

Refer to Appendix C
 PARTICULATE MATTER

 135-139

OXIDES OF SULFUR

 140-144

OXIDES OF NITROGEN

 145-149

CARBON MONOXIDE

 150-154

VOLATILE ORGANIC COMPOUNDS

 155-159

PM-10

 160-164

METHOD USED TO DETERMINE EMISSIONS (1 = ESTIMATE 2 = EMISSION FACTOR 3 = STACK TEST 4 = OTHER)

TSP

 165

SOX

 166

NOX

 167

CO

 168

VOC

 169

PM10

 170

AIR MANAGEMENT USE ONLY

18. DATE REC'D. LOCAL _____ DATE REC'D. STATE _____ RETURN TO LOCAL JURISDICTION
 DATE _____ BY _____

REVIEWED BY LOCAL JURISDICTION _____ REVIEWED BY STATE _____
 DATE _____ BY _____ DATE _____ BY _____

19. INVENTORY DATE

MONTH YEAR

 171-174

EQUIPMENT CODE

 175-177

SCC CODE

 178-185

20. ANNUAL OPERATING RATE MAXIMUM DESIGN HOURLY RATE PERMIT TO OPERATE TRANSACTION DATE

ANNUAL OPERATING RATE

 186-192

MAXIMUM DESIGN HOURLY RATE

 193-199

PERMIT TO OPERATE MONTH

 200-201

TRANSACTION DATE (MM/DD/YR)

 202-207

STAFF CODE

 208-210

VOC CODE

 211 212

SIP CODE

 213 214

REGULATION CODE

 215-218

CONFIDENTIALITY

 219

POINT DESCRIPTION

 220-238

ACTION

 239 A: ADD
 C: CHANGE

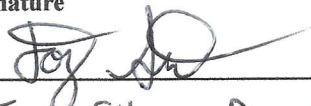
MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd - Baltimore, Maryland 21230
(410) 537-3230 - 1-800-633-6101 - www.mde.state.md.us

Air and Radiation Management Administration Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct Registration Update Initial Registration

<p>1A. OWNER OF EQUIPMENT/COMPANY NAME Herbert Malarkey Roofing Company</p> <hr/> <p>Mailing Address 3131 North Columbia Boulevard Street Address</p> <p>Portland OR 97217 City State Zip</p> <p>Telephone Number (503) 283-1191</p> <p>Signature </p> <hr/> <p>Tony Silva Director of Environmental Health and Safety Print Name and Title</p>	<p align="center">DO NOT WRITE IN THIS BLOCK</p> <p align="center">2. REGISTRATION NUMBER</p> <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"> <p>County No. 1-2 Registration Class 7 Data Year 12-13</p> </td> <td style="width:50%; border: none;"> <p>Premises No. 3-6 Equipment No. 8-11 Application Date</p> </td> </tr> </table>	<p>County No. 1-2 Registration Class 7 Data Year 12-13</p>	<p>Premises No. 3-6 Equipment No. 8-11 Application Date</p>						
<p>County No. 1-2 Registration Class 7 Data Year 12-13</p>	<p>Premises No. 3-6 Equipment No. 8-11 Application Date</p>								
<p align="right">Date <u>12/21/22</u></p>									
<p>1B. EQUIPMENT LOCATION AND TELEPHONE NUMBER (IF DIFFERENT FROM ABOVE) 10033 Governor Lane Boulevard Street Number and Street Name</p> <p>Williamsport Maryland 21795 (503) 283-1191 City/Town State Zip Telephone Number</p> <p>Williamsport Plant Premises Name (if different from above)</p>									
<p>3. STATUS (A=New, B=Modification to Existing Equipment, C=Existing Equipment)</p> <table style="width:100%; border: none;"> <tr> <td style="width:25%;"></td> <td style="width:25%; text-align: center;">New Construction Begun MONTH/YEAR</td> <td style="width:25%; text-align: center;">New Construction Completed MONTH/YEAR</td> <td style="width:25%; text-align: center;">Existing Initial Operation MONTH/YEAR</td> </tr> <tr> <td style="text-align: center;">STATUS <input checked="" type="checkbox"/> B 15</td> <td style="text-align: center;"><input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 16-19</td> <td style="text-align: center;"><input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 20-23</td> <td style="text-align: center;"><input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 20-23</td> </tr> </table> <p>* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.</p>			New Construction Begun MONTH/YEAR	New Construction Completed MONTH/YEAR	Existing Initial Operation MONTH/YEAR	STATUS <input checked="" type="checkbox"/> B 15	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 16-19	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 20-23	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 20-23
	New Construction Begun MONTH/YEAR	New Construction Completed MONTH/YEAR	Existing Initial Operation MONTH/YEAR						
STATUS <input checked="" type="checkbox"/> B 15	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 16-19	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 20-23	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 20-23						
<p>4. DESCRIBE THIS EQUIPMENT: MAKE, MODEL, FEATURES, MANUFACTURER (INCLUDE MAXIMUM HOURLY INPUT RATE, ETC.)</p> <p>Limestone handling including two dust collectors</p>									
<p>5. WORKMEN'S COMPENSATION COVERAGE</p> <p align="center">WLR C50740493 10/1/2023 Binder/Policy Number Expiration Date</p> <p>Company Indemnity Insurance Company of North America</p> <p>NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.</p>									
<p>6A. NUMBER OF PIECES OF IDENTICAL EQUIPMENT UNITS TO BE REGISTERED/PERMITTED AT THIS TIME <u>1</u></p> <p>6B. NUMBER OF STACKS/EMISSION POINTS ASSOCIATED WITH THIS EQUIPMENT <u>2</u></p>									

7. PERSON INSTALLING THIS EQUIPMENT (IF DIFFERENT FROM NUMBER 1 ON PAGE 1)
 NAME Same as Number 1 on Page 1 TITLE _____
 COMPANY _____
 MAILING ADDRESS/STREET _____
 CITY, TOWN _____ STATE _____ TELEPHONE () _____

8. MAJOR ACTIVITY, PRODUCT OR SERVICE OF COMPANY AT THIS LOCATION
 Fiberglass mat manufacturing and coating

9. CONTROL DEVICES ASSOCIATED WITH THIS EQUIPMENT

None
 24-0

SIMPLE/MULTIPLE CYCLONE <input type="checkbox"/> 24-1	SPRAY/ADSORB TOWER <input type="checkbox"/> 24-2	VENTURI SCRUBBER <input type="checkbox"/> 24-3	CARBON ADSORBER <input type="checkbox"/> 24-4	ELECTROSTATIC PRECIPITATOR <input type="checkbox"/> 24-5	BAGHOUSE <input type="checkbox"/> 24-6	THERMAL/ CATALYTIC AFTERBURNER <input type="checkbox"/> 24-7	DRY SCRUBBER <input type="checkbox"/> 24-8
--	---	---	--	---	--	--	---

OTHER
 24-9 2 dust collectors
 DESCRIBE _____

10. ANNUAL FUEL CONSUMPTION FOR THIS EQUIPMENT

OIL - 1000 GALLONS* <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 26-31	SULFUR % <input type="text"/> <input type="text"/> 32-33	GRADE <input type="text"/> 34	NATURAL GAS - 1000 FT ³ * <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 35-41	LP GAS - 100 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 42-45	GRADE <input type="text"/> 43-46
COAL - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 46-52	SULFUR % <input type="text"/> <input type="text"/> <input type="text"/> 53-55	ASH % <input type="text"/> <input type="text"/> <input type="text"/> 56-58	WOOD - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 59-63	MOISTURE % <input type="text"/> <input type="text"/> 64-65	

Other Fuels _____ Annual Amount Consumed _____ Other Fuels _____ Annual Amount Consumed _____
 (Specify Type) 66-1 (Specify Units of Measure) (Specify Type) 66-2 (Specify Units of Measure)

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE [for this equipment]

CONTINUOUS OPERATION <input checked="" type="checkbox"/> 67-1	BATCH PROCESS <input type="checkbox"/> 67-2	HOURS PER BATCH <input type="text"/> <input type="text"/> 68-69	BATCH PER WEEK <input type="text"/> 69-70	HOURS PER DAY <input type="text"/> <input type="text"/> 70-71	DAYS PER WEEK <input type="text"/> 72	DAYS PER YEAR <input type="text"/> <input type="text"/> <input type="text"/> 73-75
--	--	--	--	--	--	---

SEASONAL VARIATION IN OPERATION:

NO VARIATION <input checked="" type="checkbox"/> 76	WINTER PERCENT <input type="text"/> <input type="text"/> 77-78	SPRING PERCENT <input type="text"/> <input type="text"/> 79-80	SUMMER PERCENT <input type="text"/> <input type="text"/> 81-82	FALL PERCENT <input type="text"/> <input type="text"/> 83-84	(TOTAL SEASONS=100%)
---	--	--	--	--	----------------------

12. EQUIVALENT STACK INFORMATION - IS EXHAUST THROUGH DOORS, WINDOWS, ETC., ONLY?

(Y/N) N
85

Refer to Form 5EP for stack parameters

IF NOT, THEN →

HEIGHT ABOVE GROUND (FT)	INSIDE DIAMETER AT TOP (INCHES)	EXIT TEMPERATURE (°F)	EXIT VELOCITY (FT/SEC)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
86-88	89-91	92-95	96-98

NOTE: ATTACH A BLOCK DIAGRAM OF PROCESS/PROCESS LINE, INDICATING NEW EQUIPMENT AS REPORTED ON THIS FORM AND ALL EXISTING EQUIPMENT, INCLUDING CONTROL DEVICES AND EMISSION POINTS.

13. INPUT MATERIALS [for this equipment only]

IS ANY OF THIS DATA TO BE CONSIDERED CONFIDENTIAL? Y or N

NAME	CAS NUMBER (if applicable)	PER HOUR	INPUT RATE		UNITS
			UNITS	PER YEAR	
1. Limestone			Redacted		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. OUTPUT MATERIALS [for this equipment]

NAME	CAS NUMBER (if applicable)	PER HOUR	OUTPUT RATE		UNITS
			UNITS	PER YEAR	
1. Limestone			Redacted		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. WASTE STREAMS - SOLID AND LIQUID

NAME	CAS NUMBER (if applicable)	PER HOUR	OUTPUT RATE		UNITS
			UNITS	PER YEAR	
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

MARYLAND DEPARTMENT OF THE ENVIRONMENT

Air and Radiation Management Administration • Air Quality Permits Program

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Herbert Malarkey Roofing Company

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
Coating kitchen dust collector - This unit vents indoors. Emissions to atmosphere are fugitive.

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

The coating kitchen dust collector will control emissions from the transfer of limestone from silo into the coating kitchen tanks.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	Seasonal Variation Check box if none: <input checked="" type="checkbox"/> Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	N/A	Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):	N/A		N/A	N/A	
Exit temperature (°F):	N/A	Inside diameter at top of round stack (ft):		N/A	
Exit velocity (ft/min):	N/A	Distance from emission point to nearest property line (ft):		~175	
Exhaust gas volumetric flow rate (acfm):	N/A	Building dimensions if emission point is located on building (ft)	Height 25	Length 325	Width 125

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. **A Form 6 is also required for each control device.** If none check none:

- | | | | |
|---|-----------|--|--|
| <input type="checkbox"/> None | | <input type="checkbox"/> Thermal Oxidizer | No. _____ |
| <input type="checkbox"/> Baghouse | No. _____ | <input type="checkbox"/> Regenerative | |
| <input type="checkbox"/> Cyclone | No. _____ | <input type="checkbox"/> Catalytic Oxidizer | No. _____ |
| <input type="checkbox"/> Elec. Precipitator (ESP) | No. _____ | <input type="checkbox"/> Nitrogen Oxides Reduction | No. _____ |
| <input type="checkbox"/> Dust Suppression System | No. _____ | <input type="checkbox"/> Selective | <input type="checkbox"/> Non-Selective |
| <input type="checkbox"/> Venturi Scrubber | No. _____ | <input type="checkbox"/> Catalytic | <input type="checkbox"/> Non-Catalytic |
| <input type="checkbox"/> Spray Tower/Packed Bed | No. _____ | <input checked="" type="checkbox"/> Other | No. <u>1</u> |
| <input type="checkbox"/> Carbon Adsorber | No. _____ | Specify: <u>Dust Collector</u> | |
| <input type="checkbox"/> Cartridge/Canister | | | |
| <input type="checkbox"/> Regenerative | | | |

REDACTED VERSION
FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	See Attached			
Particulate Matter (filterable as PM2.5)	Appendix C			
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO ₂)	See Attached			
Methane (CH ₄)	Appendix C			
Nitrous Oxide (N ₂ O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF ₆)				
Total GHG (as CO ₂ e)				
List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
See Attached Appendix C				

(Attach additional sheets as necessary.)

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Hebert Malarkey Roofing Company

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
Limestone silo dust collector

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
The limestone silo dust collector will collect fugitive emissions from pneumatic loading to the silo.

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	Seasonal Variation Check box if none: <input checked="" type="checkbox"/> Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	Unknown	Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):	Unknown		NA	NA	
Exit temperature (°F):	Ambient	Inside diameter at top of round stack (ft):		Unknown	
Exit velocity (ft/min):	Unknown	Distance from emission point to nearest property line (ft):		~180	
Exhaust gas volumetric flow rate (acfm):	Unknown	Building dimensions if emission point is located on building (ft)	Height NA	Length NA	Width NA

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. **A Form 6 is also required for each control device.** If none check none:

- | | | | |
|---|-----------|--|--|
| <input type="checkbox"/> None | | <input type="checkbox"/> Thermal Oxidizer | No. _____ |
| <input type="checkbox"/> Baghouse | No. _____ | <input type="checkbox"/> Regenerative | |
| <input type="checkbox"/> Cyclone | No. _____ | <input type="checkbox"/> Catalytic Oxidizer | No. _____ |
| <input type="checkbox"/> Elec. Precipitator (ESP) | No. _____ | <input type="checkbox"/> Nitrogen Oxides Reduction | No. _____ |
| <input type="checkbox"/> Dust Suppression System | No. _____ | <input type="checkbox"/> Selective | <input type="checkbox"/> Non-Selective |
| <input type="checkbox"/> Venturi Scrubber | No. _____ | <input type="checkbox"/> Catalytic | <input type="checkbox"/> Non-Catalytic |
| <input type="checkbox"/> Spray Tower/Packed Bed | No. _____ | <input checked="" type="checkbox"/> Other | No. <u>1</u> |
| <input type="checkbox"/> Carbon Adsorber | No. _____ | Specify: <u>Dust Collector</u> | |
| <input type="checkbox"/> Cartridge/Canister | | | |
| <input type="checkbox"/> Regenerative | | | |

REDACTED VERSION
FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	See Attached			
Particulate Matter (filterable as PM2.5)	Appendix C			
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO ₂)	See Attached			
Methane (CH ₄)	Appendix C			
Nitrous Oxide (N ₂ O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF ₆)				
Total GHG (as CO ₂ e)				
List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
See Attached Appendix C				

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Hebert Malarkey Roofing Company

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
Regenerative Thermal Oxidizer RTO

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:

The RTO is the control and exhaust for the Fiberglass Mat Line manufacturing

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	Seasonal Variation Check box if none: <input checked="" type="checkbox"/> Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	24	Spring Percent	
Days per week:	7	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	32	Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):	0		N/A	N/A	
Exit temperature (°F):	410	Inside diameter at top of round stack (ft):		3	
Exit velocity (ft/min):	2122	Distance from emission point to nearest property line (ft):		~155	
Exhaust gas volumetric flow rate (acfm):	15000	Building dimensions if emission point is located on building (ft)	Height N/A	Length N/A	Width N/A

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. **A Form 6 is also required for each control device.** If none check none:

- | | | | |
|---|-----------|--|--|
| <input type="checkbox"/> None | | <input checked="" type="checkbox"/> Thermal Oxidizer | No. <u>1</u> |
| <input type="checkbox"/> Baghouse | No. _____ | <input checked="" type="checkbox"/> Regenerative | |
| <input type="checkbox"/> Cyclone | No. _____ | <input type="checkbox"/> Catalytic Oxidizer | No. _____ |
| <input type="checkbox"/> Elec. Precipitator (ESP) | No. _____ | <input type="checkbox"/> Nitrogen Oxides Reduction | No. _____ |
| <input type="checkbox"/> Dust Suppression System | No. _____ | <input type="checkbox"/> Selective | <input type="checkbox"/> Non-Selective |
| <input type="checkbox"/> Venturi Scrubber | No. _____ | <input type="checkbox"/> Catalytic | <input type="checkbox"/> Non-Catalytic |
| <input type="checkbox"/> Spray Tower/Packed Bed | No. _____ | <input type="checkbox"/> Other | No. _____ |
| <input type="checkbox"/> Carbon Adsorber | No. _____ | Specify: | |
| <input type="checkbox"/> Cartridge/Canister | | | |
| <input type="checkbox"/> Regenerative | | | |

REDACTED VERSION
FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	See Attached			
Particulate Matter (filterable as PM2.5)	Appendix C			
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				
Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO ₂)	See Attached			
Methane (CH ₄)	Appendix C			
Nitrous Oxide (N ₂ O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF ₆)				
Total GHG (as CO ₂ e)				
List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
See Attached Appendix C				

(Attach additional sheets as necessary.)

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Applicant Name: Herbert Malarkey Roofing Company

Step 1: Quantify premises-wide emissions of Toxic Air Pollutants (TAP) from new and existing installations in accordance with COMAR 26.11.15.04. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Class I or Class II?	Screening Levels (µg/m ³)			Estimated Premises Wide Emissions of TAP				
			1-hour	8-hour	Annual	Actual Total Existing TAP Emissions (lb/hr)	Projected TAP Emissions from Proposed Installation (lb/hr)	Premises Wide Total TAP Emissions (lb/yr)		
			ex. ethanol	64175	II	18843	3769	N/A	0.60	0.15
ex. benzene	71432	I	80	16	0.13	0.5	0.75	1.00	400	
See Attached Appendix A										

(attach additional sheets as necessary.)

Note: Screening levels can be obtained from the Department's website (<http://www.mde.maryland.gov>) or by calling the Department.

Step 2: Determine which TAPs are exempt from further review. A TAP that meets either of the following Class I or Class II small quantity emitter exemptions is exempt from further TAP compliance demonstration requirements under Step 3 and Step 4.

Class II TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(a))
 A Class II TAP is exempt from Step 3 and Step 4 if the Class II TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour, and any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m³.

Class I TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(b))
 A Class I TAP is exempt from Step 3 and Step 4 if the Class I TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour and 350 pounds per year, any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m³, and any applicable annual screening level for the TAP must be greater than 1 µg/m³.

If a TAP meets either the Class I or Class II TAP Small Quantity Emitter Exemption Requirements, no further review under Step 3 and Step 4 are required for that specific TAP.

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Step 3: Best Available Control Technology for Toxics Requirement (T-BACT, COMAR 26.11.15.05)

In the following table, list all TAP emission reduction options considered when determining T-BACT for the proposed installation. The options should be listed in order beginning with the most effective control strategy to the least effective strategy. Attach supporting documentation as necessary.

Target Pollutants	Emission Control Option	% Emission Reduction	Costs		T-BACT Option Selected? (yes/no)
			Capital	Annual Operating	
ex. ethanol and benzene	Thermal Oxidizer	99	\$50,000	\$100,000	no
ex. ethanol and benzene	Low VOC materials	80	0	\$100,000	yes
See Report					

(attach additional sheets as necessary)

Step 4: Demonstrating Compliance with the Ambient Impact Requirement (COMAR 26.11.15.06)

Each TAP not exempt in Step 2 must be individually evaluated to determine that the emissions of the TAP will not adversely impact public health. The evaluation consists of a series of increasingly non-conservative (and increasingly rigorous) tests. Once a TAP passes a test in the evaluation, no further analysis is required for that TAP. "Demonstrating Compliance with the Ambient Impact Requirement under the Toxic Air Pollutant (TAP) Regulations (COMAR 26.11.15.06)" provides guidance on conducting the evaluation. Summarize your results in the following table. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels (µg/m ³)			Premises Wide Total TAP Emissions	Allowable Emissions Rate (AER) per COMAR 26.11.16.02A		Off-site Concentrations per Screening Analysis (µg/m ³)			Compliance Method Used? AER or Screen
		1-hour	8-hour	Annual		(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	
ex. ethanol	64175	18843	3769	N/A	1500	0.89	N/A	N/A	N/A	N/A	AER
ex. benzene	71432	80	16	0.13	400	0.04	36.52	1.5	1.05	0.12	Screen
See Attached											
Appendix A											

(attach additional sheets as necessary)

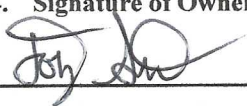
If compliance with the ambient impact requirement cannot be met using the allowable emissions rate method or the screening analysis method, refined dispersion modeling techniques may be required. Please consult with the Department's Air Quality Permit Program prior to conducting dispersion modeling methods to demonstrate compliance.

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Air and Radiation Management Administration Air Quality Permits Program

Application for Permit to Construct
Gas Cleaning or Emission Control Equipment

1. Owner of Installation	Telephone No.	Date of Application
Herbert Malarkey Roofing Company	(503) 283-1191	
2. Mailing Address	City	Zip Code
3131 North Columbia Boulevard	Portland	97217
3. Equipment Location	City/Town or P.O.	County
10033 Governor Land Boulevard	Williamsport	Washington
4. Signature of Owner or Operator	Title	Print or Type Name
	Director of Environmental Health and Safety	Tony Silva
5. Application Type:	Alteration <input type="checkbox"/>	New Construction <input checked="" type="checkbox"/>
6. Date Construction is to Start:	N/A - Existing	Completion Date (Estimate): Unknown
* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.		
7. Type of Gas Cleaning or Emission Control Equipment		
Simple Cyclone <input type="checkbox"/>	Multiple Cyclone <input type="checkbox"/>	Afterburner <input type="checkbox"/>
Scrubber <input type="checkbox"/>	Other <input checked="" type="checkbox"/>	Electrostatic Precipitator <input type="checkbox"/>
_____ (type)		Dust Collector _____ (type)
8. Gas Cleaning Equipment Manufacturer	Model No.	Collection Efficiency (Design Criteria)
Kraemer	B21	90% collection
9. Type of Equipment which Control Equipment is to Service:		
This dust collector will collect fugitive dust emissions from products moving from the limestone silo into the coating kitchen tanks.		
10. Stack Test to be Conducted:		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	_____ (Date)
		(Stack Test to be Conducted By)
11. Cost of Equipment Purchased as part of property acquisition _____		
Estimated Erection Cost _____		

12. The Following Shall Be Design Criteria:

	<u>INLET</u>		<u>OUTLET</u>	
Gas Flow Rate	<u>Varies</u>	ACFM*	<u>Varies</u>	ACFM*
Gas Temperature	<u>Ambient</u>	°F	<u>Ambient</u>	°F
Gas Pressure	<u>Varies</u>	INCHES W.G.	<u>Varies</u>	INCHES W.G.
		PRESSURE DROP		<u>Unknown</u>
Dust Loading	<u>Varies</u>	GRAINS/ACFD**	<u>Varies</u>	GRAINS/ACFD**
Moisture Content	<u>Varies</u>	%	<u>Varies</u>	%
		OR		
Wet Bulb Temperature	<u>Varies</u>	°F	<u>Varies</u>	°F
Liquid Flow Rate (Wet Scrubber)	<u>N/A</u>	GALLONS/MINUTE		

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

<u>Size of Dust Particles Entering Cleaning Unit</u>	<u>% of Total Dust</u>	<u>% to be Collected</u>
0 to 10 Microns	<u>100</u>	<u>90% collection</u>
10 to 44 Microns	<u>0</u>	<u>N/A</u>
Larger than 44 Microns	<u>0</u>	<u>N/A</u>

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)
 Gas Inlet Temperature _____ °F
 Capacity of Afterburner _____ BTU/HR
 Diameter (or area) of Afterburner Throat _____
 Combustion Chamber _____ Operating Temperature at Afterburner _____ °F
 (diameter) (length)
 Retention Time of Gases _____ Information remains to be determined since manufacturer has not been chosen

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See attached process flow diagrams in Appendix E.


Date Received: Local _____ State _____
Acknowledgement Date: _____ By _____
Reviewed By: Local _____ State _____
Returned to Local: Date _____ By _____
Application Returned to Applicant: Date _____ By _____
REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
PREMISES NUMBER: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Emissions Calculations Revised By _____ Date _____

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Air and Radiation Management Administration Air Quality Permits Program

Application for Permit to Construct
 Gas Cleaning or Emission Control Equipment

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2. Mailing Address	City	Zip Code
3131 North Columbia Boulevard	Portland	97217
		County
		Multnomah
3. Equipment Location	City/Town or P.O.	County
10033 Governor Land Boulevard	Williamsport	Washington
4. Signature of Owner or Operator	Title	Print or Type Name
	Director of Environmental Health and Safety	Tony Silva
5. Application Type:	Alteration <input type="checkbox"/>	New Construction <input checked="" type="checkbox"/>
6. Date Construction is to Start:	N/A - Existing	Completion Date (Estimate): Unknown
* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.		
7. Type of Gas Cleaning or Emission Control Equipment		
Simple Cyclone <input type="checkbox"/>	Multiple Cyclone <input type="checkbox"/>	Afterburner <input type="checkbox"/>
		Electrostatic Precipitator <input type="checkbox"/>
Scrubber <input type="checkbox"/>	Other <input checked="" type="checkbox"/>	Dust Collector
	(type)	(type)
8. Gas Cleaning Equipment Manufacturer	Model No.	Collection Efficiency (Design Criteria)
MAC	SB17	90% collection
9. Type of Equipment which Control Equipment is to Service:		
This dust collector will collect fugitive dust emissions from truck unloading into the limestone silo.		
10. Stack Test to be Conducted:		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(Stack Test to be Conducted By)		(Date)
11. Cost of Equipment Purchased as part of property acquisition		
Estimated Erection Cost		

12. The Following Shall Be Design Criteria:

	<u>INLET</u>		<u>OUTLET</u>	
Gas Flow Rate	<u>Varies</u>	ACFM*	<u>Varies</u>	ACFM*
Gas Temperature	<u>Ambient</u>	°F	<u>Ambient</u>	°F
Gas Pressure	<u>Varies</u>	INCHES W.G.	<u>Varies</u>	INCHES W.G.
		PRESSURE DROP	<u>Unknown</u>	
Dust Loading	<u>Varies</u>	GRAINS/ACFD**	<u>Varies</u>	GRAINS/ACFD**
Moisture Content	<u>Varies</u>	%	<u>Varies</u>	%
		OR		
Wet Bulb Temperature	<u>Varies</u>	°F	<u>Varies</u>	°F
Liquid Flow Rate (Wet Scrubber)	<u>N/A</u>	GALLONS/MINUTE		

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

<u>Size of Dust Particles Entering Cleaning Unit</u>	<u>% of Total Dust</u>	<u>% to be Collected</u>
0 to 10 Microns	<u>100</u>	<u>90% collection</u>
10 to 44 Microns	<u>0</u>	<u>N/A</u>
Larger than 44 Microns	<u>0</u>	<u>N/A</u>

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)
 Gas Inlet Temperature _____ °F
 Capacity of Afterburner _____ BTU/HR
 Diameter (or area) of Afterburner Throat _____
 Combustion Chamber _____ (diameter) _____ (length) Operating Temperature at Afterburner _____ °F
 Retention Time of Gases _____ Information remains to be determined since manufacturer has not been chosen

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See attached process flow diagrams in Appendix E.

Form Number: 6

Revision Date: 0/2000

TTY Users 1-800-735-2258


Date Received: Local _____ State _____
Acknowledgement Date: _____ By _____
Reviewed By: Local _____ State _____
Returned to Local: Date _____ By _____
Application Returned to Applicant: Date _____ By _____
REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
PREMISES NUMBER: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Emissions Calculations Revised By _____ Date _____

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3. Equipment Location	City/Town or P.O.	County
10033 Governor Land Boulevard	Williamsport	21795
		Washington
4. Signature of Owner or Operator	Title	Print or Type Name
	Director of Environmental Health and Safety	Tony Silva
5. Application Type:	Alteration <input type="checkbox"/>	New Construction <input checked="" type="checkbox"/>
6. Date Construction is to Start:	N/A - Existing	Completion Date (Estimate): Unknown
* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.		
7. Type of Gas Cleaning or Emission Control Equipment		
Simple Cyclone <input type="checkbox"/>	Multiple Cyclone <input type="checkbox"/>	Afterburner <input type="checkbox"/>
		Electrostatic Precipitator <input type="checkbox"/>
Scrubber <input type="checkbox"/>	Other <input checked="" type="checkbox"/>	Regenerative Thermal Oxidizer
	(type)	(type)
8. Gas Cleaning Equipment Manufacturer	Model No.	Collection Efficiency (Design Criteria)
Durr Systems, Inc.	Ecopure RL15	98% collection
9. Type of Equipment which Control Equipment is to Service:		
This regenerative thermal oxidized will be used to treat the VOCs from the Fiberglass Mat Line manufacturing exhaust and 8 heaters.		
10. Stack Test to be Conducted:		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
	(Stack Test to be Conducted By)	(Date)
11. Cost of Equipment Purchased as part of property acquisition		
Estimated Erection Cost		

12. The Following Shall Be Design Criteria:

	<u>INLET</u>		<u>OUTLET</u>	
Gas Flow Rate	<u>15,000</u>	ACFM*	<u>15,000</u>	ACFM*
Gas Temperature	<u>315</u>	°F	<u>410</u>	°F
Gas Pressure	<u>2</u>	INCHES W.G.	<u> </u>	INCHES W.G.
		PRESSURE DROP	<u> </u>	
Dust Loading	<u> </u>	GRAINS/ACFD**	<u> </u>	GRAINS/ACFD**
Moisture Content	<u>50</u>	%	<u> </u>	%
		OR		
Wet Bulb Temperature	<u> </u>	°F	<u> </u>	°F
Liquid Flow Rate	<u> </u>	GALLONS/MINUTE	<u> </u>	

(Wet Scrubber)

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

*= ACTUAL CUBIC FEET PER MINUTE **= ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

<u>Size of Dust Particles Entering Cleaning Unit</u>	<u>% of Total Dust</u>	<u>% to be Collected</u>
0 to 10 Microns	<u> </u>	<u> </u>
10 to 44 Microns	<u> </u>	<u> </u>
Larger than 44 Microns	<u> </u>	<u> </u>

14. For Afterburner Construction Only:

Volume of Contaminated Air	<u>15,000</u>	CFM	(DO NOT INCLUDE COMBUSTION AIR)
Gas Inlet Temperature	<u>315</u>	°F	
Capacity of Afterburner	<u>2,550,000</u>	BTU/HR	
Diameter (or area) of Afterburner Throat	<u>Unknown</u>		
Combustion Chamber	<u>12 individual chambers</u>	Operating Temperature at Afterburner	<u>1550</u> °F
	(diameter) (length)		
Retention Time of Gases	<u>Unknown</u>		

Form Number: 6

Revision Date: 0/2000

TTY Users 1-800-735-2258

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.

See attached process flow diagrams in Appendix E.

Expected/Approximate Inlet concentration: 100 ppmvd Total NMVOC (as propane)

Outlet concentration: 1.8 ppmvd Total NMVOC (as propane)

NOTE: RTO is being permitted with a 96% control efficiency (NESHAP HHHH destruction efficiency).

Concentration values above are based on Malarkey stack test at similar facility.

Date Received: Local _____ State _____
Acknowledgement Date: _____ By _____
Reviewed By: Local _____ State _____
Returned to Local: Date _____ By _____
Application Returned to Applicant: Date _____ By _____
REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
PREMISES NUMBER: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Emissions Calculations Revised By _____ Date _____

APPENDIX C. EMISSIONS CALCULATIONS

Table C1. Malarkey Williamsport, MD Fiberglass Mat Plant - Potential Emissions Summary

Source Group	Emissions (tpy)												
	NO _x	CO	SO ₂	VOC ¹	PM	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ e	CH ₂ O	HAPs
Limestone Silo and Handling	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00
Mat Line	11.9	10.0	0.1	1.7	7.2	7.2	7.2	14,200.3	0.3	0.0	14,214.9	1.66	1.88
Coating Line 1	1.9	1.6	0.0	11.9	0.1	0.1	0.1	2,254.4	0.0	0.0	2,256.7	0.00	0.04
Coating Line 2	2.4	2.0	0.0	12.0	0.2	0.2	0.2	2,818.0	0.1	0.0	2,820.9	0.00	0.04
TOTALS	16.2	13.6	0.1	25.6	9.5	9.5	9.5	19,272.6	0.4	0.0	19,292.5	1.67	1.96

Table C2. Malarkey Williamsport, MD Fiberglass Mat Plant - HAP Summary

Pollutant	Emissions (tpy)				
	Coating Line 1 Heater	Coating Line 2 Heater	Mat Line	RTO	Project Total
2-Methylnaphthalene	4.53E-07	5.67E-07	2.59E-06	2.63E-07	3.88E-06
3-Methylchloranthrene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
7,12-Dimethylbenz(a)anthracene	3.02E-07	3.78E-07	1.73E-06	1.75E-07	2.58E-06
Acenaphthene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Acenaphthylene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Anthracene	4.53E-08	5.67E-08	2.59E-07	2.63E-08	3.88E-07
Arsenic	3.78E-06	4.72E-06	2.16E-05	2.19E-06	3.23E-05
Benz(a)anthracene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Benzene	3.97E-05	4.96E-05	2.27E-04	2.30E-05	3.39E-04
Benzo(a)pyrene	2.27E-08	2.83E-08	1.30E-07	1.31E-08	1.94E-07
Benzo(b)fluoranthene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Benzo(g,h,i)perylene	2.27E-08	2.83E-08	1.30E-07	1.31E-08	1.94E-07
Benzo(k)fluoranthene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Beryllium	2.27E-07	2.83E-07	1.30E-06	1.31E-07	1.94E-06
Cadmium	2.08E-05	2.60E-05	1.19E-04	1.20E-05	1.78E-04
Chromium	2.65E-05	3.31E-05	1.51E-04	1.53E-05	2.26E-04
Chrysene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Cobalt	1.59E-06	1.98E-06	9.08E-06	9.20E-07	1.36E-05
Dibenzo(a,h)anthracene	2.27E-08	2.83E-08	1.30E-07	1.31E-08	1.94E-07
Dichlorobenzene	2.27E-05	2.83E-05	1.30E-04	1.31E-05	1.94E-04
Fluoranthene	5.67E-08	7.09E-08	3.24E-07	3.29E-08	4.85E-07
Fluorene	5.29E-08	6.61E-08	3.03E-07	3.07E-08	4.52E-07
Formaldehyde	1.42E-03	1.77E-03	3.24E-04	1.66E+00	1.67
Hexane	3.40E-02	4.25E-02	1.95E-01	1.97E-02	0.29
Indeno(1,2,3-cd)pyrene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Lead	9.45E-05	1.18E-04	5.40E-04	5.48E-05	8.08E-04
Manganese	7.18E-06	8.97E-06	4.11E-05	4.16E-06	6.14E-05
Mercury	4.91E-06	6.14E-06	2.81E-05	2.85E-06	4.20E-05
Naphthalene	1.15E-05	1.44E-05	6.59E-05	6.68E-06	9.85E-05
Nickel	3.97E-05	4.96E-05	2.27E-04	2.30E-05	3.39E-04
Phenanathrene	3.21E-07	4.02E-07	1.84E-06	1.86E-07	2.75E-06
Pyrene	9.45E-08	1.18E-07	5.40E-07	5.48E-08	8.08E-07
Selenium	4.53E-07	5.67E-07	2.59E-06	2.63E-07	3.88E-06
Toluene	6.42E-05	8.03E-05	3.67E-04	3.72E-05	5.49E-04
TOTAL HAPS	0.04	0.04	0.20	1.68	1.96

Table C3. Malarkey Williamsport, MD Fiberglass Mat Plant - Limestone Handling Potential to Emit Calculations

Description	Potential Throughput short tpy	Dust Collectors		Spray and Building Controls		Uncontrolled Emission Factor (lb/ton of throughput)				Controlled Emission Rates (tpy) ¹		
		Dust Collector ID	DC Control Efficiency	Type of Control	Control Efficiency	PM _{fil}	PM _{10-fil}	PM _{2.5-fil}	Reference	PM _{fil}	PM _{10-fil}	PM _{2.5-fil}
Pneumatic loading to the silo		Limestone Silo DC	90%	None	0%	6.10E-01	6.10E-01	6.10E-01	AP-42 Table 11.17-4 Product Loading, Enclosed Truck	1.983	1.983	1.983
From silo into coating kitchen tanks		Coating Kitchen DC	90%	Inside building	50%	3.00E-03	1.10E-03	1.10E-03	AP-42 Table 11.19.2-2, Conveyor Transfer Point	0.005	0.002	0.002
TOTAL:										1.99	1.98	1.98

Table C4. Malarkey Williamsport, MD Fiberglass Mat Plant - White Water Process Potential to Emit Calculations

$$E = \frac{(V)}{(R)(T)} \times \sum_{i=1}^n (P_i)(MW_i) \quad (\text{Eq. 11})$$

Source
40 CFR 63 Subpart GGG

Flocculant Calculations - Emissions per Vessel

Variable	Variable Definition	Value	Units
V	Volume of gas displaced from the vessel	486	ft ³ /yr
R	Ideal gas law constant	10.73	psi-ft ³ /lbmol - R
T	Absolute temperature of the vessel vapor space	528.00	R
P _i	Partial pressure of the individual compound	0.0087	psi
MW _i	Molecular weight of the individual compound	176.00	--
E	Mass emitted	1.50E-05	lb/hr VOC
E	Mass emitted	1.31E-01	lb/yr VOC
E	Mass emitted	6.57E-05	tpy VOC

NOTE: Calculation assumes flocculant is 100% hydrotreated light petroleum distillates (NALCO 7768)

Dispersant Calculations - Emissions per Vessel

Variable	Variable Definition	Value	Units
V	Volume of gas displaced from the vessel	7,658	ft ³ /yr
R	Ideal gas law constant	10.73	psi-ft ³ /lbmol - R
T	Absolute temperature of the vessel vapor space	528.00	R
P _i	Partial pressure of the individual compound	0.0004	psi
MW _i	Molecular weight of the individual compound	106.12	--
E	Mass emitted	6.41E-06	lb/hr VOC
E	Mass emitted	5.61E-02	lb/yr VOC
E	Mass emitted	2.81E-05	tpy VOC

NOTE: Calculation assumes dispersant is 100% DEG (NALCO 8493)

Defoamer Calculations - Emissions per Vessel

Variable	Variable Definition	Value	Units
V	Volume of gas displaced from the vessel	5,799	ft ³ /yr
R	Ideal gas law constant	10.73	psi-ft ³ /lbmol - R
T	Absolute temperature of the vessel vapor space	528.00	R
P _i	Partial pressure of the individual compound	0.0087	psi
MW _i	Molecular weight of the individual compound	176.00	--
E	Mass emitted	1.79E-04	lb/hr VOC
E	Mass emitted	1.57E+00	lb/yr VOC
E	Mass emitted	7.83E-04	tpy VOC

NOTE: Calculation assumes Defoamer is 100% heavy paraffinic distillate (NALCO PP03-3078).

Heavy paraffinic distillate properties conservatively assumed equal to light distillates.

pH Stabilizer Calculations

Defoamer Calculations - Emissions per Vessel

Variable	Variable Definition	Value	Units
	Annual Usage	100	gal
	% VOC	90	%
	Mass Emitted	5.72E-01	tpy VOC

NOTE: Calculation assumed pH Stabilizer is NALCO 8735. pH stabilizer will only be used occasionally if needed, annual usage based on conservative estimate

Total Emissions

Variable	Variable Definition	Value	Units
E	Mass emitted	1.15E+03	lb/yr VOC
E	Mass emitted	5.74E-01	tpy VOC

PRODUCT	Density (lb/gal)
Flocculant	8.80
Dispersant	8.38
Defoamer	9.3
pH Stabilizer	12.7

Table C5. Malarkey Williamsport, MD Fiberglass Mat Plant - RTO Potential to Emit Calculations

Operating Information

Parameter	Value	Units	Source/Basis
Maximum Heat Input Rating	2,500	scf/hr	
Maximum Heat Input Rating	2.55	MMBtu/hr	
Natural Gas Heating Value	1,020	Btu/scf	AP 42 Section 1.4.1
Potential Operating Hours	8,760	hr/yr	

Combustion Units

Pollutant	Emission Factor	Unit	Source/Basis	Total Potential Emissions		
				(lb/hr)	(lb/yr)	(tpy)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2	0.0	166.4	0.1
PM ₁₀	7.6	lb/MMscf	Assume all PM is PM10	0.0	166.4	0.1
PM _{2.5}	7.6	lb/MMscf	Assume all PM is PM2.5	0.0	166.4	0.1
VOC (uncontrolled)	2.6	lb/ton mat	Malarkey Stack Test - Inlet Loading Total NMVOC	6.3	55,063.9	27.5
VOC (controlled)	0.10	lb/ton mat	40 CFR 63 Subpart HHHH VOC Destruction Limit	0.3	2,202.6	1.1
SO ₂	0.6	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	13.1	0.0
CO	84	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.2	1,839.6	0.9
NO _x	100	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.3	2,190.0	1.1

GHG Emissions Summary - Combustion

Pollutant	Emission Factor	Units	Source/Basis	Total Potential Emissions		
				(lb/hr)	(lb/yr)	(tpy)
CO ₂	53.06	kg/MMBtu	40 CFR 98 Table C-1	298.3	2,613,035.3	1,306.5
CH ₄	0.001	kg/MMBtu	40 CFR 98 Table C-2	0.0	49.2	0.0
N ₂ O	0.0001	kg/MMBtu	40 CFR 98 Table C-2	0.0	4.9	0.0
CO ₂ e	53.11	kg/MMBtu	GWPs from 40 CFR 98 Table A-1	298.6	2,615,734.0	1,307.9

REDACTED VERSION

Table C5. Malarkey Williamsport, MD Fiberglass Mat Plant - RTO Potential to Emit Calculations
 Hazardous/Toxic Air Pollutants Emissions Summary - Combustion

Pollutant	CAS Number	Emission Factor	Units	Source/Basis	Total Potential Emissions		
					(lb/hr)	(lb/yr)	(tpy)
2-Methylnaphthalene	91-57-6	2.40E-05	lb/MMscf	AP-42 Table 1.4-3	6.0E-08	5.3E-04	2.6E-07
3-Methylchloranthrene	56-49-5	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
7,12-Dimethylbenz(a)anthracene		1.60E-05	lb/MMscf	AP-42 Table 1.4-3	4.0E-08	3.5E-04	1.8E-07
Acenaphthene	83-32-9	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Acenaphthylene	203-96-8	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Anthracene	120-12-7	2.40E-06	lb/MMscf	AP-42 Table 1.4-3	6.0E-09	5.3E-05	2.6E-08
Arsenic	7440-38-2	2.00E-04	lb/MMscf	AP-42 Table 1.4-4	5.0E-07	4.4E-03	2.2E-06
Benz(a)anthracene	56-55-3	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Benzene	71-43-2	2.10E-03	lb/MMscf	AP-42 Table 1.4-3	5.3E-06	4.6E-02	2.3E-05
Benzo(a)pyrene	50-32-8	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	3.0E-09	2.6E-05	1.3E-08
Benzo(b)fluoranthene	205-99-2	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Benzo(g,h,i)perylene	191-24-2	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	3.0E-09	2.6E-05	1.3E-08
Benzo(k)fluoranthene	207-08-9	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Beryllium	7440-41-7	1.20E-05	lb/MMscf	AP-42 Table 1.4-4	3.0E-08	2.6E-04	1.3E-07
Cadmium	7440-43-9	1.10E-03	lb/MMscf	AP-42 Table 1.4-4	2.8E-06	2.4E-02	1.2E-05
Chromium	7440-47-3	1.40E-03	lb/MMscf	AP-42 Table 1.4-4	3.5E-06	3.1E-02	1.5E-05
Chrysene	218-01-9	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Cobalt	7440-48-4	8.40E-05	lb/MMscf	AP-42 Table 1.4-4	2.1E-07	1.8E-03	9.2E-07
Dibenzo(a,h)anthracene	53-70-3	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	3.0E-09	2.6E-05	1.3E-08
Dichlorobenzene	106-46-7	1.20E-03	lb/MMscf	AP-42 Table 1.4-3	3.0E-06	2.6E-02	1.3E-05
Fluoranthene	206-44-0	3.00E-06	lb/MMscf	AP-42 Table 1.4-3	7.5E-09	6.6E-05	3.3E-08
Fluorene	86-73-7	2.80E-06	lb/MMscf	AP-42 Table 1.4-3	7.0E-09	6.1E-05	3.1E-08
Formaldehyde	50-00-0	1.54E-01	lb/ton mat	Malarkey Stack Test, 96% Control from NESHAP Subpart HHH	3.8E-01	3.3E+03	1.7E+00
Hexane	110-54-3	1.80E+00	lb/MMscf	AP-42 Table 1.4-3	4.5E-03	3.9E+01	2.0E-02
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Lead	PBC	5.00E-03	lb/MMscf	AP-42 Table 1.4-2	1.3E-05	1.1E-01	5.5E-05
Manganese	7439-96-5	3.80E-04	lb/MMscf	AP-42 Table 1.4-4	9.5E-07	8.3E-03	4.2E-06
Mercury	7439-97-6	2.60E-04	lb/MMscf	AP-42 Table 1.4-4	6.5E-07	5.7E-03	2.8E-06
Naphthalene	91-20-3	6.10E-04	lb/MMscf	AP-42 Table 1.4-3	1.5E-06	1.3E-02	6.7E-06
Nickel	7400-02-0	2.10E-03	lb/MMscf	AP-42 Table 1.4-4	5.3E-06	4.6E-02	2.3E-05
Phenanathrene	85-01-8	1.70E-05	lb/MMscf	AP-42 Table 1.4-3	4.3E-08	3.7E-04	1.9E-07
Pyrene	129-00-0	5.00E-06	lb/MMscf	AP-42 Table 1.4-3	1.3E-08	1.1E-04	5.5E-08
Selenium	7782--49-2	2.40E-05	lb/MMscf	AP-42 Table 1.4-4	6.0E-08	5.3E-04	2.6E-07
Toluene	108-88-3	3.40E-03	lb/MMscf	AP-42 Table 1.4-3	8.5E-06	7.4E-02	3.7E-05
Total					3.8E-01	3.4E+03	1.7E+00

Table C6. Malarkey Williamsport, MD Fiberglass Mat Plant - Mat Line Heaters Potential to Emit Calculations

Operating Information

Parameter	Value	Units	Source/Basis
Maximum Heat Input Rating	3,084	SCFH	RS 70/M spec sheet
	0.003	MMscf/hr	Conversion
Fuel High Heat Value	1,020	Btu/scf	AP-42 Section 1.4.1
Hours of Operation	8,760	hr/yr	
Number of Units	8	--	

Potential Emissions of Gaseous Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
NO _x	100	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.3	1.4	2.5	10.8
CO	84	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.3	1.1	2.1	9.1
SO ₂	0.6	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.1
VOC - Controlled	0.2	lb/MMscf	AP-42 Section 1.4 Table 1.4-2, 96% Control from 40 CFR 63 Subpart HHH	0.0	0.0	0.0	0.0
CO ₂	53	kg/MMBtu	40 CFR 98 Table C-1	368.0	1,611.7	2,943.8	12,893.8
CH ₄	0.0	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.1	0.2
N ₂ O	0.0	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.0
CO ₂ e			GWPs from 40 CFR 98 Table A-1	368.4	1,613.4	2,946.8	12,907.1

Potential Emissions of Particulate Matter

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2	0.0	0.1	0.2	0.8
PM ₁₀	7.6	lb/MMscf	Assume all PM is PM10	0.0	0.1	0.2	0.8
PM _{2.5}	7.6	lb/MMscf	Assume all PM is PM2.5	0.0	0.1	0.2	0.8

REDACTED VERSION

Table C6. Malarkey Williamsport, MD Fiberglass Mat Plant - Mat Line Heaters Potential to Emit Calculations
Potential Emissions of Hazardous Air Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
2-Methylnaphthalene	2.40E-05 lb/MMscf		AP-42 Table 1.4-3	7.40E-08	3.24E-07	5.92E-07	2.59E-06
3-Methylchloranthrene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05 lb/MMscf		AP-42 Table 1.4-3	4.93E-08	2.16E-07	3.95E-07	1.73E-06
Acenaphthene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Acenaphthylene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Anthracene	2.40E-06 lb/MMscf		AP-42 Table 1.4-3	7.40E-09	3.24E-08	5.92E-08	2.59E-07
Arsenic	2.00E-04 lb/MMscf		AP-42 Table 1.4-4	6.17E-07	2.70E-06	4.93E-06	2.16E-05
Benz(a)anthracene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Benzene	2.10E-03 lb/MMscf		AP-42 Table 1.4-3	6.48E-06	2.84E-05	5.18E-05	2.27E-04
Benzo(a)pyrene	1.20E-06 lb/MMscf		AP-42 Table 1.4-3	3.70E-09	1.62E-08	2.96E-08	1.30E-07
Benzo(b)fluoranthene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Benzo(g,h,i)perylene	1.20E-06 lb/MMscf		AP-42 Table 1.4-3	3.70E-09	1.62E-08	2.96E-08	1.30E-07
Benzo(k)fluoranthene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Beryllium	1.20E-05 lb/MMscf		AP-42 Table 1.4-4	3.70E-08	1.62E-07	2.96E-07	1.30E-06
Cadmium	1.10E-03 lb/MMscf		AP-42 Table 1.4-4	3.39E-06	1.49E-05	2.71E-05	1.19E-04
Chromium	1.40E-03 lb/MMscf		AP-42 Table 1.4-4	4.32E-06	1.89E-05	3.45E-05	1.51E-04
Chrysene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Cobalt	8.40E-05 lb/MMscf		AP-42 Table 1.4-4	2.59E-07	1.13E-06	2.07E-06	9.08E-06
Dibenzo(a,h)anthracene	1.20E-06 lb/MMscf		AP-42 Table 1.4-3	3.70E-09	1.62E-08	2.96E-08	1.30E-07
Dichlorobenzene	1.20E-03 lb/MMscf		AP-42 Table 1.4-3	3.70E-06	1.62E-05	2.96E-05	1.30E-04
Fluoranthene	3.00E-06 lb/MMscf		AP-42 Table 1.4-3	9.25E-09	4.05E-08	7.40E-08	3.24E-07
Fluorene	2.80E-06 lb/MMscf		AP-42 Table 1.4-3	8.64E-09	3.78E-08	6.91E-08	3.03E-07
Formaldehyde - Controlled	3.00E-03 lb/MMscf		AP-42 Table 1.4-3, 96% Control from 40 CFR 63 Subpart HHH	9.25E-06	4.05E-05	7.40E-05	3.24E-04
Hexane	1.80E+00 lb/MMscf		AP-42 Table 1.4-3	5.55E-03	2.43E-02	4.44E-02	1.95E-01
Indeno(1,2,3-cd)pyrene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Lead	5.00E-03 lb/MMscf		AP-42 Table 1.4-2	1.54E-05	6.75E-05	1.23E-04	5.40E-04
Manganese	3.80E-04 lb/MMscf		AP-42 Table 1.4-4	1.17E-06	5.13E-06	9.38E-06	4.11E-05
Mercury	2.60E-04 lb/MMscf		AP-42 Table 1.4-4	8.02E-07	3.51E-06	6.41E-06	2.81E-05
Naphthalene	6.10E-04 lb/MMscf		AP-42 Table 1.4-3	1.88E-06	8.24E-06	1.50E-05	6.59E-05
Nickel	2.10E-03 lb/MMscf		AP-42 Table 1.4-4	6.48E-06	2.84E-05	5.18E-05	2.27E-04
Phenanthrene	1.70E-05 lb/MMscf		AP-42 Table 1.4-3	5.24E-08	2.30E-07	4.19E-07	1.84E-06
Pyrene	5.00E-06 lb/MMscf		AP-42 Table 1.4-3	1.54E-08	6.75E-08	1.23E-07	5.40E-07
Selenium	2.40E-05 lb/MMscf		AP-42 Table 1.4-4	7.40E-08	3.24E-07	5.92E-07	2.59E-06
Toluene	3.40E-03 lb/MMscf		AP-42 Table 1.4-3	1.05E-05	4.59E-05	8.39E-05	3.67E-04
TOTAL HAPs				0.0	0.0	0.0	0.2

Table C7. Malarkey Williamsport, MD Fiberglass Mat Plant - Mat Line Drying/Curing PM Potential to Emit Calculations

Description	Hours	lb PM/hr	Uncontrolled Emissions (tpy)			Controlled Emission Rates (tpy)		
			PM _{fil}	PM _{10-fil}	PM _{2.5-fil}	PM _{fil}	PM _{10-fil}	PM _{2.5-fil}
Drying and Curing	8,760	1.4	6.26	6.26	6.26	6.26	6.26	6.26

¹ Particulate emission rates are based on the particulate matter emission limit in Title V Permit No. 0747-AOP-R6 for the Line 2 drying process at the Owens Corning fiberglass mat manufacturing facility in Ft. Smith, Arkansas. Permit is available online at: <https://www.adeq.state.ar.us/home/pdssql/pds.aspx>. The PM emission rate is scaled based on production rate of the two processes.

Owens-Corning Emission Limit	7.6	lb PM/hr
Owens-Corning Production Rate	30,365	lb mat/hr
Malarkey Williamsport Plant Production Rate	5,708	lb mat/hr
Malarkey Williamsport Plant Emission Limit	1.4	lb PM/hr

Table C8. Malarkey Williamsport, MD Fiberglass Mat Plant - Coating Line Materials Potential to Emit Calculations

Materials	Usage (lbs/yr)	Annual Usage (gal/yr)	Density (lb/gal)	VOC Content (lb/gal)	HAP Content (lb/gal)	Annual Emissions	
						VOC (tpy)	HAP (tpy)
Latex			9.18	0.016	0.00	2.35E+01	0.00E+00
Dispersant			9.18	0.002	0.00	1.31E-01	0.00E+00
Viscosity Modifier			9.18	0.00	0.00	0.00E+00	0.00E+00
Bulk Limestone			22.60	0.00	0.00	0.00E+00	0.00E+00
Total						2.37E+01	0.00E+00

Table C9. Malarkey Williamsport, MD Fiberglass Mat Plant - Coating Line 1 Heaters Potential to Emit Calculations

Operating Information

Parameter	Value	Units	Source/Basis
Maximum Heat Input Rating	0.0011	MMscf/hr	
	1.1	MMBtu/hr	Carlin Burner Specifications
Fuel High Heat Value	1,020	Btu/scf	AP-42 Section 1.4.1
Hours of Operation	8,760	hr/yr	
Number of Units	4	--	

Potential Emissions of Gaseous Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
NO _x	100	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.1	0.5	0.4	1.9
CO	84	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.1	0.4	0.4	1.6
SO ₂	0.6	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.0
VOC	5.5	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.1
CO ₂	53.06	kg/MMBtu	40 CFR 98 Table C-1	128.7	563.6	514.7	2,254.4
CH ₄	0.0010	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.0
N ₂ O	0.0001	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.0
CO ₂ e	53.11	kg/MMBtu	GWPs from 40 CFR 98 Table A-1	128.8	564.2	515.2	2,256.7

Potential Emissions of Particulate Matter

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2	0.0	0.0	0.0	0.1
PM ₁₀	7.6	lb/MMscf	Assume all PM is PM ₁₀	0.0	0.0	0.0	0.1
PM _{2.5}	7.6	lb/MMscf	Assume all PM is PM _{2.5}	0.0	0.0	0.0	0.1

Table C9. Malarkey Williamsport, MD Fiberglass Mat Plant - Coating Line 1 Heaters Potential to Emit Calculations
Potential Emissions of Hazardous Air Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
2-Methylnaphthalene	2.40E-05	lb/MMscf	AP-42 Table 1.4-3	2.59E-08	1.13E-07	1.04E-07	4.53E-07
3-Methylchloranthrene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/MMscf	AP-42 Table 1.4-3	1.73E-08	7.56E-08	6.90E-08	3.02E-07
Acenaphthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Acenaphthylene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Anthracene	2.40E-06	lb/MMscf	AP-42 Table 1.4-3	2.59E-09	1.13E-08	1.04E-08	4.53E-08
Arsenic	2.00E-04	lb/MMscf	AP-42 Table 1.4-4	2.16E-07	9.45E-07	8.63E-07	3.78E-06
Benz(a)anthracene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Benzene	2.10E-03	lb/MMscf	AP-42 Table 1.4-3	2.26E-06	9.92E-06	9.06E-06	3.97E-05
Benzo(a)pyrene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	5.18E-09	2.27E-08
Benzo(b)fluoranthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Benzo(g,h,i)perylene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	5.18E-09	2.27E-08
Benzo(k)fluoranthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Beryllium	1.20E-05	lb/MMscf	AP-42 Table 1.4-4	1.29E-08	5.67E-08	5.18E-08	2.27E-07
Cadmium	1.10E-03	lb/MMscf	AP-42 Table 1.4-4	1.19E-06	5.20E-06	4.75E-06	2.08E-05
Chromium	1.40E-03	lb/MMscf	AP-42 Table 1.4-4	1.51E-06	6.61E-06	6.04E-06	2.65E-05
Chrysene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Cobalt	8.40E-05	lb/MMscf	AP-42 Table 1.4-4	9.06E-08	3.97E-07	3.62E-07	1.59E-06
Dibenzo(a,h)anthracene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	5.18E-09	2.27E-08
Dichlorobenzene	1.20E-03	lb/MMscf	AP-42 Table 1.4-3	1.29E-06	5.67E-06	5.18E-06	2.27E-05
Fluoranthene	3.00E-06	lb/MMscf	AP-42 Table 1.4-3	3.24E-09	1.42E-08	1.29E-08	5.67E-08
Fluorene	2.80E-06	lb/MMscf	AP-42 Table 1.4-3	3.02E-09	1.32E-08	1.21E-08	5.29E-08
Formaldehyde	7.50E-02	lb/MMscf	AP-42 Table 1.4-3	8.09E-05	3.54E-04	3.24E-04	1.42E-03
Hexane	1.80E+00	lb/MMscf	AP-42 Table 1.4-3	1.94E-03	8.50E-03	7.76E-03	3.40E-02
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Lead	0.005	lb/MMscf	AP-42 Table 1.4-2	5.39E-06	2.36E-05	2.16E-05	9.45E-05
Manganese	3.80E-04	lb/MMscf	AP-42 Table 1.4-4	4.10E-07	1.79E-06	1.64E-06	7.18E-06
Mercury	2.60E-04	lb/MMscf	AP-42 Table 1.4-4	2.80E-07	1.23E-06	1.12E-06	4.91E-06
Naphthalene	6.10E-04	lb/MMscf	AP-42 Table 1.4-3	6.58E-07	2.88E-06	2.63E-06	1.15E-05
Nickel	2.10E-03	lb/MMscf	AP-42 Table 1.4-4	2.26E-06	9.92E-06	9.06E-06	3.97E-05
Phenanathrene	1.70E-05	lb/MMscf	AP-42 Table 1.4-3	1.83E-08	8.03E-08	7.33E-08	3.21E-07
Pyrene	5.00E-06	lb/MMscf	AP-42 Table 1.4-3	5.39E-09	2.36E-08	2.16E-08	9.45E-08
Selenium	2.40E-05	lb/MMscf	AP-42 Table 1.4-4	2.59E-08	1.13E-07	1.04E-07	4.53E-07
Toluene	3.40E-03	lb/MMscf	AP-42 Table 1.4-3	3.67E-06	1.61E-05	1.47E-05	6.42E-05
TOTAL HAPs				0.00	0.01	0.01	0.04

Table C10. Malarkey Williamsport, MD Fiberglass Mat Plant - Coating Line 2 Heaters Potential to Emit Calculations

Operating Information

Parameter	Value	Units	Source/Basis
Maximum Heat Input Rating	0.0011	MMscf/hr	
	1.1	MMBtu/hr	Carlin Burner Specifications
Fuel High Heat Value	1,020	Btu/scf	AP-42 Section 1.4.1
Hours of Operation	8,760	hr/yr	
Number of Units	5	--	

Potential Emissions of Gaseous Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
NO _x	100	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.1	0.5	0.5	2.4
CO	84	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.1	0.4	0.5	2.0
SO ₂	0.6	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.0
VOC	5.5	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.1
CO ₂	53.06	kg/MMBtu	40 CFR 98 Table C-1	128.7	563.6	643.4	2,818.0
CH ₄	0.0010	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.1
N ₂ O	0.0001	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.0
CO ₂ e	53.115	kg/MMBtu	GWPs from 40 CFR 98 Table A-1	128.8	564.2	644.0	2,820.9

Potential Emissions of Particulate Matter

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2	0.0	0.0	0.0	0.2
PM ₁₀	7.6	lb/MMscf	Assume all PM is PM10	0.0	0.0	0.0	0.2
PM _{2.5}	7.6	lb/MMscf	Assume all PM is PM2.5	0.0	0.0	0.0	0.2

Table C10. Malarkey Williamsport, MD Fiberglass Mat Plant - Coating Line 2 Heaters Potential to Emit Calculations
Potential Emissions of Hazardous Air Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
2-Methylnaphthalene	2.40E-05	lb/MMscf	AP-42 Table 1.4-3	2.59E-08	1.13E-07	1.29E-07	5.67E-07
3-Methylchloranthrene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/MMscf	AP-42 Table 1.4-3	1.73E-08	7.56E-08	8.63E-08	3.78E-07
Acenaphthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Acenaphthylene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Anthracene	2.40E-06	lb/MMscf	AP-42 Table 1.4-3	2.59E-09	1.13E-08	1.29E-08	5.67E-08
Arsenic	2.00E-04	lb/MMscf	AP-42 Table 1.4-4	2.16E-07	9.45E-07	1.08E-06	4.72E-06
Benz(a)anthracene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Benzene	2.10E-03	lb/MMscf	AP-42 Table 1.4-3	2.26E-06	9.92E-06	1.13E-05	4.96E-05
Benzo(a)pyrene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	6.47E-09	2.83E-08
Benzo(b)fluoranthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Benzo(g,h,i)perylene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	6.47E-09	2.83E-08
Benzo(k)fluoranthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Beryllium	1.20E-05	lb/MMscf	AP-42 Table 1.4-4	1.29E-08	5.67E-08	6.47E-08	2.83E-07
Cadmium	1.10E-03	lb/MMscf	AP-42 Table 1.4-4	1.19E-06	5.20E-06	5.93E-06	2.60E-05
Chromium	1.40E-03	lb/MMscf	AP-42 Table 1.4-4	1.51E-06	6.61E-06	7.55E-06	3.31E-05
Chrysene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Cobalt	8.40E-05	lb/MMscf	AP-42 Table 1.4-4	9.06E-08	3.97E-07	4.53E-07	1.98E-06
Dibenzo(a,h)anthracene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	6.47E-09	2.83E-08
Dichlorobenzene	1.20E-03	lb/MMscf	AP-42 Table 1.4-3	1.29E-06	5.67E-06	6.47E-06	2.83E-05
Fluoranthene	3.00E-06	lb/MMscf	AP-42 Table 1.4-3	3.24E-09	1.42E-08	1.62E-08	7.09E-08
Fluorene	2.80E-06	lb/MMscf	AP-42 Table 1.4-3	3.02E-09	1.32E-08	1.51E-08	6.61E-08
Formaldehyde	7.50E-02	lb/MMscf	AP-42 Table 1.4-3	8.09E-05	3.54E-04	4.04E-04	1.77E-03
Hexane	1.80E+00	lb/MMscf	AP-42 Table 1.4-3	1.94E-03	8.50E-03	9.71E-03	4.25E-02
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Lead	5.00E-03	lb/MMscf	AP-42 Table 1.4-2	5.39E-06	2.36E-05	2.70E-05	1.18E-04
Manganese	3.80E-04	lb/MMscf	AP-42 Table 1.4-4	4.10E-07	1.79E-06	2.05E-06	8.97E-06
Mercury	2.60E-04	lb/MMscf	AP-42 Table 1.4-4	2.80E-07	1.23E-06	1.40E-06	6.14E-06
Naphthalene	6.10E-04	lb/MMscf	AP-42 Table 1.4-3	6.58E-07	2.88E-06	3.29E-06	1.44E-05
Nickel	2.10E-03	lb/MMscf	AP-42 Table 1.4-4	2.26E-06	9.92E-06	1.13E-05	4.96E-05
Phenanathrene	1.70E-05	lb/MMscf	AP-42 Table 1.4-3	1.83E-08	8.03E-08	9.17E-08	4.02E-07
Pyrene	5.00E-06	lb/MMscf	AP-42 Table 1.4-3	5.39E-09	2.36E-08	2.70E-08	1.18E-07
Selenium	2.40E-05	lb/MMscf	AP-42 Table 1.4-4	2.59E-08	1.13E-07	1.29E-07	5.67E-07
Toluene	3.40E-03	lb/MMscf	AP-42 Table 1.4-3	3.67E-06	1.61E-05	1.83E-05	8.03E-05
TOTAL HAPs				0.00	0.01	0.01	0.04

APPENDIX D. SAFETY DATA SHEETS

Safety Data Sheets

White Water Process

Nalco 7768 – Flocculant

Nalco 8493 – Dispersant

Nalco PP03-3078 – Defoamer

Nalco 8735 – pH Stabilizer

Mat Line

Nippon Electric Glass – Chopped Fiberglass

Owens Corning – Chopped Fiberglass

Bakelite – Resin

Coating Line

Dow Rhoplex 1034 – Latex

Dow Tamol 1254 – Dispersant

Acrysol DR-5500 – Viscosity Modifier

Limestone GPR 325 – Limestone



SAFETY DATA SHEET

NALCLEAR™ 7768

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCLEAR™ 7768

Other means of identification : Not applicable.

Recommended use : FLOCCULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/19/2019

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Eye irritation : Category 2B

GHS Label element

Signal Word : Warning

Hazard Statements : Causes eye irritation.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. Do NOT induce vomiting.
Storage:
Mix thoroughly before use. Protect product from freezing.

Other hazards : If swallowed a jelly mass may form which in digestion may cause blockage. Water in contact with the product will cause slippery floor conditions.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Concentration: (%)
Hydrotreated Light Distillate (petroleum)	64742-47-8	10 - 30
Oxyalkylated alcohol	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.

SAFETY DATA SHEET**NALCLEAR™ 7768**

- In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.
- If swallowed : Rinse mouth. Get medical attention if symptoms occur.
- If inhaled : Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically. If swallowed a jelly mass may form which in digestion may cause blockage.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : Do not use water unless flooding amounts are available.
- Specific hazards during firefighting : Phase separation of the product may occur after prolonged storage. The top phase will be combustible hydrocarbon solvent.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Spills of this product are very slippery. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

SAFETY DATA SHEET

NALCLEAR™ 7768

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Wash hands thoroughly after handling. Use only with adequate ventilation. Stir well prior to use.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers. Store separately from oxidizers. Protect product from freezing.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Hastelloy C-276, Stainless Steel 316L, Stainless Steel 304, Plasite 7122, Inconel 625, Plasite 4300, CPVC (rigid), Polypropylene (rigid), Polyethylene (rigid), PTFE, Fluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Brass, Neoprene, Buna-N, Natural rubber, Polyurethane, EPDM, Mild steel, Galvanized metals, Polyethylene tubing, Chlorosulfonated polyethylene rubber

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Hydrotreated Light Distillate (petroleum)	64742-47-8	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
		TWA (Mist)	5 mg/m ³	OSHA Z1
		TWA (Mist)	5 mg/m ³	NIOSH REL
		STEL (Mist)	10 mg/m ³	NIOSH REL

- Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

- Eye protection : Safety goggles
- Hand protection : Wear protective gloves. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Wear suitable protective clothing.
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SAFETY DATA SHEET**NALCLEAR™ 7768****Section: 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	: Emulsion
Colour	: off-white
Odour	: mild
Flash point	: > 93.3 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: 6.8,(1 %), Method: ASTM E 70
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: -3 °C, ASTM D-97
Initial boiling point and boiling range	: 102 °C, Method: ASTM D 86
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 1.04, (25 °C), ASTM D-1298
Density	: 8.55 - 9.05 lb/gal
Water solubility	: emulsifiable
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: 200 - 1,700 mPa.s (25 °C), Method: ASTM D 2983
Viscosity, kinematic	: 194 mm ² /s (25 °C)
Molecular weight	: no data available
VOC	: 15.90 %, EPA Method 24

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Freezing temperatures.
Incompatible materials	: Strong oxidizing agents Addition of water results in gelling.

SAFETY DATA SHEET

NALCLEAR™ 7768

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NOx)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes eye irritation.
Skin : Health injuries are not known or expected under normal use.
Ingestion : Health injuries are not known or expected under normal use.
Inhalation : Health injuries are not known or expected under normal use.
Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Irritation
Skin contact : No symptoms known or expected.
Ingestion : No symptoms known or expected.
Inhalation : No symptoms known or expected.

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity : no data available
Acute dermal toxicity : no data available
Skin corrosion/irritation : no data available
Serious eye damage/eye irritation : Result: Mild eye irritation
Respiratory or skin sensitization : no data available
Carcinogenicity : no data available
Reproductive effects : no data available
Germ cell mutagenicity : no data available
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : no data available

SAFETY DATA SHEET

NALCLEAR™ 7768

Aspiration toxicity : no data available

Components

Acute inhalation toxicity : Oxyalkylated alcohol
 LC50 rat: > 50 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

Section: 12. ECOLOGICAL INFORMATION
--

Ecotoxicity

Environmental Effects : Harmful to aquatic life.

Product

Toxicity to fish : LC50 *Cyprinodon variegatus* (sheepshead minnow): > 1,000 mg/l
 Exposure time: 96 hrs
 Test substance: 1% Aqueous Solution of a Similar Product

LC50 *Oncorhynchus mykiss* (rainbow trout): 8,500 mg/l
 Exposure time: 96 hrs
 Test substance: 1% Aqueous Solution of Product

LC50 Inland Silverside: 90.7 mg/l
 Exposure time: 96 hrs
 Test substance: Product

LC50 *Oncorhynchus mykiss* (rainbow trout): 157.5 mg/l
 Exposure time: 96 hrs
 Test substance: Product

NOEC *Cyprinodon variegatus* (sheepshead minnow): 1,000 mg/l
 Exposure time: 96 hrs

NOEC *Oncorhynchus mykiss* (rainbow trout): 1,300 mg/l
 Exposure time: 96 hrs
 Test substance: 1% Aqueous Solution of Product

NOEC Inland Silverside: 50 mg/l
 Exposure time: 96 hrs
 Test substance: Product

NOEC *Oncorhynchus mykiss* (rainbow trout): 62.5 mg/l
 Exposure time: 96 hrs
 Test substance: Product

LC50 Zebra Danio: 10 - 100 mg/l
 Exposure time: 96 hrs
 Test substance: Representative polymer tested in water with DOC

Toxicity to daphnia and other : LC50 *Daphnia magna* (Water flea): 200 mg/l

SAFETY DATA SHEET

NALCLEAR™ 7768

aquatic invertebrates

Exposure time: 48 hrs
Test substance: 1% Aqueous Solution of Product

LC50 Mysid Shrimp (*M. litoralis*): 188.9 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Mysid Shrimp (*Mysidopsis bahia*): 67.4 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 *Daphnia magna* (Water flea): 400 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of a Similar Product

LC50 *Daphnia magna* (Water flea): 0.12 mg/l
Exposure time: 48 hrs
Test substance: Similar Product

LC50 *Daphnia magna* (Water flea): 0.694 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC *Daphnia magna* (Water flea): 130 mg/l
Exposure time: 48 hrs
Test substance: 1% Aqueous Solution of Product

NOEC Mysid Shrimp (*Mysidopsis bahia*): 12.5 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC *Daphnia magna* (Water flea): 180 mg/l
Exposure time: 96 hrs
Test substance: 1% Aqueous Solution of a Similar Product

NOEC *Daphnia magna* (Water flea): 0.065 mg/l
Exposure time: 48 hrs
Test substance: Similar Product

NOEC *Daphnia magna* (Water flea): 0.313 mg/l
Exposure time: 48 hrs
Test substance: Product

EC50 *Daphnia magna* (Water flea): 2.0 mg/l
Exposure time: 48 h
Test substance: Tested with 20 mg/L Humic Acid

NOEC *Daphnia magna* (Water flea): 0.81 mg/l
Exposure time: 48 h
Test substance: Tested with 20 mg/L Humic Acid

LC50 *Daphnia magna*: 10 - 100 mg/l
Exposure time: 48 hrs
Test substance: Representative polymer tested in water with DOC

SAFETY DATA SHEET**NALCLEAR™ 7768**

Toxicity to algae : EC50 Marine Algae (*Skeletonema costatum*): 23 mg/l
 Exposure time: 72 hrs
 Test substance: Product

Components

Toxicity to bacteria : Hydrotreated Light Distillate (petroleum)
 > 1,000 mg/l
 Exposure time: 48 h

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Chemical Oxygen Demand (COD): 429,000 mg/l

Biochemical Oxygen Demand (BOD):

Incubation Period	Value	Test Descriptor
5 d	200,000 mg/l	Product

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	: 5 - 10%
Water	: 30 - 50%
Soil	: 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

SAFETY DATA SHEET

NALCLEAR™ 7768

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This product does not contain a RQ substance, or this product contains a substance with a RQ, however the calculated RQ exceeds the reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Serious eye damage or eye irritation

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

SAFETY DATA SHEET

NALCLEAR™ 7768

On the inventory, or in compliance with the inventory

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

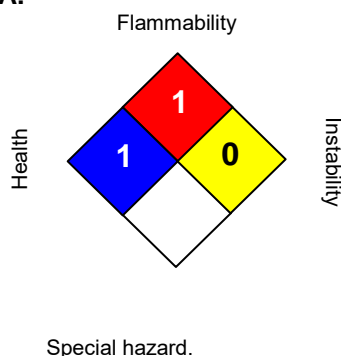
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

Revision Date : 02/19/2019
 Version Number : 1.2
 Prepared By : Regulatory Affairs

SAFETY DATA SHEET**NALCLEAR™ 7768**

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.



SAFETY DATA SHEET

8493

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 8493

Other means of identification : Not applicable.

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
 1601 W. Diehl Road
 Naperville, Illinois 60563-1198
 USA
 TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 10/18/2017

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Precautionary Statements : **Prevention:**
 Wash hands thoroughly after handling.
Response:
 Specific measures: consult SDS Section 4.
Storage:
 Store in accordance with local regulations.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Diethylene Glycol	111-46-6	5 - 10

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.

In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

SAFETY DATA SHEET

8493

- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : No special environmental precautions required.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8. Wash hands after handling.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : Keep in properly labelled containers.

SAFETY DATA SHEET

8493

Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Diethylene Glycol	111-46-6	TWA	10 mg/m ³	AIHA WEEL

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : Safety glasses

Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : No personal respiratory protective equipment normally required.

Hygiene measures : Wash hands before breaks and immediately after handling the product.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : clear

Odour : odourless

Flash point : > 100 °C, Method: ASTM D 1310, open cup

pH : 8.2,(100 %)

Odour Threshold : no data available

Melting point/freezing point : no data available

Initial boiling point and boiling range : 100 °C

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : no data available

Relative vapour density : no data available

Relative density : 1.023,

Density : 8.38 lb/gal

SAFETY DATA SHEET

8493

Water solubility : completely soluble
 Solubility in other solvents : no data available
 Partition coefficient: n-octanol/water : no data available
 Auto-ignition temperature : no data available
 Thermal decomposition : no data available
 Viscosity, dynamic : no data available
 Viscosity, kinematic : no data available
 Molecular weight : no data available
 VOC : 14.95 %, EPA Method 24

Section: 10. STABILITY AND REACTIVITY

Chemical stability : Stable under normal conditions.
 Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
 Conditions to avoid : None known.
 Incompatible materials : None known
 Hazardous decomposition products : Decomposition products may include the following materials:
 Carbon oxides
 nitrogen oxides (NOx)
 Sulphur oxides
 Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Health injuries are not known or expected under normal use.
 Skin : Health injuries are not known or expected under normal use.
 Ingestion : Health injuries are not known or expected under normal use.
 Inhalation : Health injuries are not known or expected under normal use.
 Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : No symptoms known or expected.
 Skin contact : No symptoms known or expected.

SAFETY DATA SHEET**8493**

Ingestion : No symptoms known or expected.

Inhalation : No symptoms known or expected.

Toxicity**Product**

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg

Acute inhalation toxicity : no data available

Acute dermal toxicity : no data available

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity : no data available

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

ComponentsAcute dermal toxicity : Diethylene Glycol
LD50 rabbit:**Section: 12. ECOLOGICAL INFORMATION****Ecotoxicity**

Environmental Effects : This product has no known ecotoxicological effects.

ComponentsToxicity to fish : Diethylene Glycol
LC50 Pimephales promelas (fathead minnow):**Components**Toxicity to daphnia and other aquatic invertebrates : Diethylene Glycol
EC50 Daphnia magna (Water flea):**Components**Toxicity to algae : Diethylene Glycol
EC50 :**Persistence and degradability**

no data available

SAFETY DATA SHEET

8493

Mobility

no data available

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SAFETY DATA SHEET

8493

- SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Canadian Domestic Substances List (DSL)

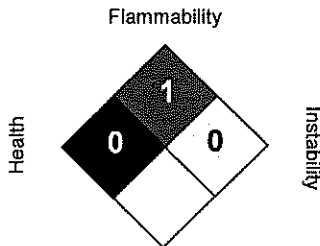
This product contains substance(s) which are found on the Non-Domestic Substances List (NDSL), or are not in compliance with other Canadian Acts.

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Section: 16. OTHER INFORMATION

NFPA:



Special hazard.

HMIS III:

HEALTH	0
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

- Revision Date : 10/18/2017
Version Number : 1.1
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality

SAFETY DATA SHEET

8493

specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.



SAFETY DATA SHEET

PP03-3078 DEFOAMER

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : PP03-3078 DEFOAMER

Other means of identification : Not applicable.

Recommended use : DEFOAMER

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
 1601 W. Diehl Road
 Naperville, Illinois 60563-1198
 USA
 TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) . CHEMTREC


Issuing date : 10/25/2017

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin sensitization : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : May cause an allergic skin reaction.

Precautionary Statements : **Prevention:**
 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves.
Response:
 IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.
Disposal:
 Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture
 CLP Mixture

SAFETY DATA SHEET**PP03-3078 DEFOAMER**

Chemical Name	CAS-No.	Concentration: (%)
Hydrotreated Heavy Paraffinic Distillate	64742-54-7	10 - 30
Octadecanoic acid, reaction products with triethylenetetramine	Proprietary	0.1 - 1

Section: 4. FIRST AID MEASURES

In case of eye contact	: Rinse with plenty of water. Get medical attention if symptoms occur.
In case of skin contact	: Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
If swallowed	: Rinse mouth. Get medical attention if symptoms occur.
If inhaled	: Get medical attention if symptoms occur.
Protection of first-aiders	: In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	: Treat symptomatically.
Most important symptoms and effects, both acute and delayed	: See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: None known.
Specific hazards during firefighting	: Not flammable or combustible.
Hazardous combustion products	: Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
Special protective equipment for firefighters	: Use personal protective equipment.
Specific extinguishing methods	: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
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SAFETY DATA SHEET

PP03-3078 DEFOAMER

- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : Keep in properly labelled containers.
- Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Hydrotreated Heavy Paraffinic Distillate	64742-54-7	TWA (Inhalable fraction)	5 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	NIOSH REL
		STEL (Mist)	10 mg/m ³	NIOSH REL
		TWA (Mist)	5 mg/m ³	OSHA Z1

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety glasses
- Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Wear suitable protective clothing.
- Respiratory protection : No personal respiratory protective equipment normally required.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SAFETY DATA SHEET**PP03-3078 DEFOAMER****Section: 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	: Liquid
Colour	: off-white
Odour	: hydrocarbon-like
Flash point	: > 121 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: no data available
Odour Threshold	: no data available
Melting point/freezing point	: no data available
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 0.97, (27 °C), ASTM D-1298
Density	: 7.8 - 8.3 lb/gal
Water solubility	: insoluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: 800 - 2,000 mPa.s (26.6 °C)
Viscosity, kinematic	: 23 mm ² /s (< 40.0 °C)
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

SAFETY DATA SHEET**PP03-3078 DEFOAMER**

Hazardous decomposition products : Decomposition products may include the following materials:
 Carbon oxides
 nitrogen oxides (NOx)
 Sulphur oxides
 Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Health injuries are not known or expected under normal use.
 Skin : May cause allergic skin reaction.
 Ingestion : Health injuries are not known or expected under normal use.
 Inhalation : Health injuries are not known or expected under normal use.
 Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : No symptoms known or expected.
 Skin contact : Redness, Irritation, Allergic reactions
 Ingestion : No symptoms known or expected.
 Inhalation : No symptoms known or expected.

Toxicity**Product**

Acute oral toxicity : no data available
 Acute inhalation toxicity : Acute toxicity estimate: 16.77 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Acute dermal toxicity : no data available
 Skin corrosion/irritation : no data available
 Serious eye damage/eye irritation : no data available
 Respiratory or skin sensitization : no data available
 Carcinogenicity : no data available
 Reproductive effects : no data available
 Germ cell mutagenicity : no data available

SAFETY DATA SHEET

PP03-3078 DEFOAMER

Teratogenicity : no data available
 STOT - single exposure : no data available
 STOT - repeated exposure : no data available
 Aspiration toxicity : no data available

Components

Acute oral toxicity : Hydrotreated Heavy Paraffinic Distillate
 LD50 rat: > 5,000 mg/kg

Components

Acute dermal toxicity : Hydrotreated Heavy Paraffinic Distillate
 LD50 rabbit: > 5,000 mg/kg

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : This product has no known ecotoxicological effects.

Components

Toxicity to fish : Hydrotreated Heavy Paraffinic Distillate
 LC50 Fish: > 100 mg/l
 Exposure time: 96 h

Persistence and degradability

no data available

Mobility

no data available

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SAFETY DATA SHEET

PP03-3078 DEFOAMER

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Australia. Industrial Chemical (Notification and Assessment) Act

SAFETY DATA SHEET

PP03-3078 DEFOAMER

not determined

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
not determined

Japan. ENCS - Existing and New Chemical Substances Inventory
not determined

Korea. Korean Existing Chemicals Inventory (KECI)
not determined

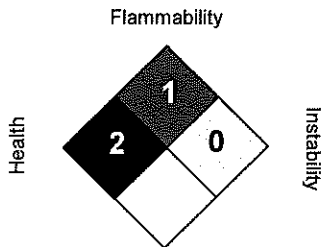
Philippines Inventory of Chemicals and Chemical Substances (PICCS)
not determined

China Inventory of Existing Chemical Substances
not determined

Taiwan Chemical Substance Inventory
not determined

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 10/25/2017
Version Number : 1.2
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

NALCO

An Ecolab Company

SAFETY DATA SHEET**NALCO® 8735****Section: 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : NALCO® 8735

Other means of identification : Not applicable.

Recommended use : pH STABILIZER

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 09/02/2015

Section: 2. HAZARDS IDENTIFICATION**GHS Classification**

Corrosive to metals : Category 1

Skin corrosion : Category 1A

Serious eye damage : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : May be corrosive to metals.
Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention:**
Keep only in original container. Wash skin thoroughly after handling. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Storage:
Store locked up. Store in corrosive resistant stainless steel container with a

SAFETY DATA SHEET

NALCO® 8735

resistant inner liner.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Mixture

Chemical Name	CAS-No.	Concentration: (%)
Sodium Hydroxide	1310-73-2	30 - 60
Potassium Hydroxide	1310-58-3	10 - 30

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion : Not applicable.

SAFETY DATA SHEET

NALCO® 8735

products

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Stainless Steel 304, Stainless Steel 316L, Hastelloy C-276, Buna-N, Nylon, Polyethylene, Polypropylene, PVC, HDPE (high density polyethylene), Plexiglass, PTFE, Perfluoroelastomer, Chlorosulfonated polyethylene rubber

Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Aluminum, Mild steel, Natural rubber, Brass, Copper, Ethylene propylene, Neoprene, Polyurethane, Fluoroelastomer

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Sodium Hydroxide	1310-73-2	Ceiling	2 mg/m3	ACGIH

SAFETY DATA SHEET

NALCO® 8735

		Ceiling	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z1
Potassium Hydroxide	1310-58-3	Ceiling	2 mg/m3	ACGIH
		Ceiling	2 mg/m3	NIOSH REL

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid
 Colour : colourless
 Odour : odourless
 Flash point : does not flash
 pH : 14, 5 %
 Method: ASTM E 70

Odour Threshold : no data available
 Melting point/freezing point : FREEZING POINT: -23 °C, ASTM D-1177
 Initial boiling point and boiling range : 145 °C Method: ASTM D 86
 Evaporation rate : no data available
 Flammability (solid, gas) : no data available
 Upper explosion limit : no data available
 Lower explosion limit : no data available
 Vapour pressure : 0.5 mm Hg (37.7 °C)

SAFETY DATA SHEET

NALCO® 8735

Relative vapour density	: no data available
Relative density	: 1.50 - 1.53 (15.6 °C) ASTM D-1298
Density	: 1.50 - 1.53 g/cm ³ 12.5 - 12.7 lb/gal
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition temperature	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Extremes of temperature
Incompatible materials	: Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Gives off hydrogen by reaction with metals.
Hazardous decomposition products	: No hazardous decomposition products are known.

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	: Causes serious eye damage.
Skin	: Causes severe skin burns.
Ingestion	: Causes digestive tract burns.
Inhalation	: May cause nose, throat, and lung irritation.
Chronic Exposure	: Health injuries are not known or expected under normal use.

SAFETY DATA SHEET

NALCO® 8735

Experience with human exposure

Eye contact : Redness, Pain, Corrosion

Toxicity

Product

Acute oral toxicity : rat: 205 mg/kg

Acute inhalation toxicity : no data available

Acute dermal toxicity : rabbit: 1,260 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity : no data available

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Harmful to aquatic life.

Product

Toxicity to fish : LC50 Pimephales promelas (fathead minnow): 102 mg/l
 Exposure time: 96 hrs
 Test substance: Similar Product

LC50 Gambusia affinis (Mosquito fish): 125 mg/l
 Exposure time: 96 hrs
 Test substance: Active Substance

SAFETY DATA SHEET

NALCO® 8735

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna (Water flea): 180 mg/l
 Exposure time: 48 hrs
 Test substance: Similar Product

LC50 Daphnia magna (Water flea): 156 mg/l
 Exposure time: 48 hrs
 Test substance: Active Substance

Persistence and degradability

The product does not contain any organic substances.

Chemical Oxygen Demand (COD): 140 mg/l

Biochemical Oxygen Demand (BOD):

Incubation Period	Value	Test Descriptor
5 d	0 mg/l	Product

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	: <5%
Water	: 30 - 50%
Soil	: 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: : D002

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

SAFETY DATA SHEET

NALCO® 8735

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Proper shipping name : CAUSTIC ALKALI LIQUID, N.O.S.
 Technical name(s) : SODIUM HYDROXIDE, POTASSIUM HYDROXIDE
 UN/ID No. : UN 1719
 Transport hazard class(es) : 8
 Packing group : II
 Reportable Quantity (per package) : 2,999 lbs
 RQ Component : SODIUM HYDROXIDE

Air transport (IATA)

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Proper shipping name : CAUSTIC ALKALI LIQUID, N.O.S.
 Technical name(s) : SODIUM HYDROXIDE, POTASSIUM HYDROXIDE
 UN/ID No. : UN 1719
 Transport hazard class(es) : 8
 Packing group : II
 Reportable Quantity (per package) : 2,999 lbs
 RQ Component : SODIUM HYDROXIDE

Sea transport (IMDG/IMO)

Proper shipping name : CAUSTIC ALKALI LIQUID, N.O.S.
 Technical name(s) : SODIUM HYDROXIDE, POTASSIUM HYDROXIDE
 UN/ID No. : UN 1719
 Transport hazard class(es) : 8
 Packing group : II

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

SAFETY DATA SHEET

NALCO® 8735

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium Hydroxide	1310-73-2	1000	2999

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

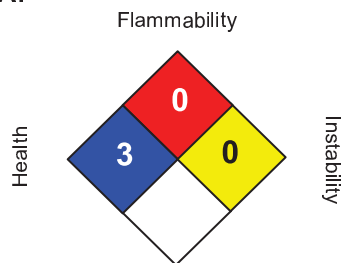
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

NALCO® 8735

NFPA:



Special hazard.

HMIS III:

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

Revision Date : 09/02/2015
 Version Number : 1.1
 Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

SAFETY DATA SHEET



Date of issue / Date of revision: **March 2021**

Version: **4**

Section 1. Identification

Product name: **Fiberglass, Continuous Filament**

Other means of identification: **Product Family; Product Name:**
Chopped Strand: T-Series Chopped Strands, ChopVantage®, ChopVantage®XM, ChopVantage®HP, ChopVantage®XM HP, Delta Chop®, Chopped Strands for Nonwovens.
Direct Roving: HYBON®, TUFROV®, InnoFiber®NTY, LFT4000, LFT9000.
Yarn: FiberGlass Yarn, L.E.X.® Yarn, TEXO® Yarn, InnoFiber®DCS
Mat: Chopped Strand Mat, MatVantage® II Continuous Strand Mat
Roving: Roving for Continuous Laminating, Roving for Pultrusion / Filament Winding.
INNOFIBER®: CR, HP, LD, TS, XM
Insulation: Texo® HTM Mat
Recycled Products: Chop/Open ESM, Chop/Open Plastic Reinforcement, Chop/Open 10 micron, Chop/Open 900, Reject Roving, Reject Chopped Strand

Relevant identified uses of the substance or mixture and uses advised against

Product use: Industrial applications
Use of substance/mixture: Industrial applications
Uses advised against: None identified

Manufacturer: Nippon Electric Glass
 940 Washburn Switch Road
 Shelby, NC 28150

Emergency telephone number: 1-704-434-2307 (U.S.)

Technical telephone number: 1-704-434-2261 ext. 22150

Section 2. Hazards identification

OSHA/HCS status:

While this material is not classified as hazardous by the OSHA Hazard Communication Standard (29CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture:

Not classified

GHS label elements

Signal word:

No signal word

Hazard statements:

No known significant effects or critical hazards

Precautionary statements

Prevention:

Not applicable

Response:

Not applicable

Storage:

Not applicable

Disposal:

Not applicable

Other hazards:

May emit toxic fumes when heated

Hazards not otherwise classified:

None known

Section 3. Composition / information on ingredients

Product name:

Fiberglass, Continuous Filament

Other means of identification:

Product Family; Product Name:

Chopped Strand: T-Series Chopped Strands, ChopVantage®, ChopVantage®XM, ChopVantage®HP, ChopVantage®XM HP, Delta Chop®, Chopped Strands for Nonwovens.

Direct Roving: HYBON®, TUFROV®, InnoFiber®NTY, LFT4000, LFT9000.

Yarn: FiberGlass Yarn, L.E.X.® Yarn, TEXO® Yarn, InnoFiber®DCS

Mat: Chopped Strand Mat, MatVantage® II Continuous Strand Mat

Roving: Roving for Continuous Laminating, Roving for Pultrusion / Filament Winding.

INNOFIBER®: CR, HP, LD, TS, XM

Insulation: Texo® HTM Mat

Recycled Products: Chop/Open ESM, Chop/Open Plastic Reinforcement, Chop/Open 10 micron, Chop/Open 900, Reject Roving, Reject Chopped Strand

Section 3. Composition / information on ingredients (continued)

Ingredient name	%
Fiberglass, Continuous Filament	> 95
Organic surface binder / sizing	< 5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the manufacturer and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Some fiberglass wet chop products may contain residual water / solvents.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occurs during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM or PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact:

Do Not Rub or Scratch Eyes. Immediately flush eyes with tepid running water, keeping eyelids open. Check for and remove contact lenses, if possible. Repeat flushing with tepid running water for at least 15 minutes. If irritation persists, seek medical attention.

Skin contact:

Do Not Rub or Scratch Affected Area. Remove contaminated clothing and shoes. Gently wash with plenty of soap and cold water. If irritation persists or if glass fiber becomes imbedded, seek medical attention.

Inhalation:

Move to fresh air and keep comfortable. Seek medical attention if irritation persists.

Ingestion:

Ingestion of this material is an unlikely route of exposure.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact:

Dusts/fibers from this product may cause temporary mechanical irritation.

Inhalation:

Dusts/fibers from this product may cause mechanical irritation of the nose, throat and respiratory tract.

Skin contact:

Dusts/fibers from this product may cause temporary mechanical irritation.

Ingestion:

Although ingestion of this product is not likely to occur in industrial applications, accidental ingestion may cause illness or irritation of the mouth and gastrointestinal tract.

Section 4. First aid measures (continued)

Over-exposure signs/symptoms

Eye contact:	No specific data.
Inhalation:	No specific data.
Skin contact:	No specific data.
Ingestion:	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Note to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments:	No specific treatment.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical:

No specific fire or explosion hazard. Material is not an electrical conductor and may accumulate static charge.

Hazardous thermal decomposition products:

Fiberglass will not burn, but smoking of the product may occur at approximately 400 – 500°F (approximately 200 – 260°C) due to decomposition of the sizings/binders. Sizings/binders may decompose in a fire situation and release carbon monoxide, carbon dioxide and water. Additionally, there are many chemicals that can evolve during any partial decomposition of chemical products. The amounts or identities cannot be predicted and can differ in each situation.

Special protective actions for fire-fighters:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters:

Fiberglass itself will not support combustion, but in a sustained fire, proper protection against products of combustion from the fuel and sizings/binders must be worn.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel:** No special protection is required.
- For emergency responders:** No special protection is required.
- Environmental precautions:** Fiberglass is generally considered to be an inert solid waste. No special precautions are needed in case of a release or spill.

Methods and materials for containment and cleaning up

- Small spill:** Vacuum or sweep material and place in a designated, labeled waste container. Avoid creating dust.
- Large spill:** Vacuum or sweep material and place in a designated, labeled waste container. Avoid creating dust.
- Reference to other sections:** See Section 1 for emergency contact information
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures:** Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 8. Exposure controls / personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Fiberglass/Synthetic vitreous fibers	<p>OSHA PEL (United States) TWA; 5 mg/m³ Form: PNOR/Respirable dust TWA; 15 mg/m³ Form: PNOR/Total dust</p> <p>ACGIH TLV (United States) TWA; 3 mg/m³ Form: PNOS/Respirable dust TWA; 10 mg/m³ Form: PNOS/Total dust TWA; 5 mg/m³ (Inhalable) Form: Continuous filament glass fibers TWA; 1 f/cc (Respirable) Form: Continuous filament glass fibers</p> <p>According to the WHO definition, respirable fibers have a diameter (d) smaller than 3µm; length greater than (>) 5µm; aspect ratio equal to or greater than (≥)3:1 as determined by the membrane filter method at 400-450X magnification (4-mm objective) using phase contrast illumination</p>
Organic Surface Binder / Sizing	None.

Note: As manufactured, continuous filament glass fibers are non-respirable.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

OSHA = Occupational Safety and Health Administration

PNOS = Particulates Not Otherwise Specified

PNOR = Particulates Not Otherwise Regulated

TLV = Threshold Limit Value

TWA = Time Weighted Average

PEL = Permissible Exposure Limit

Recommended monitoring

procedures:

Personal, workplace atmosphere monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances also will be required.

Appropriate engineering controls:

Local exhaust ventilation or effective general ventilation should be sufficient to maintain exposures below occupational exposure limits.

Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 8. Exposure controls / person protection (continued)

Individual protection measures

Hygiene measures:

Wash hands before breaks and after handling of material. Head coverings, protective gloves, cotton coveralls or long sleeved loose fitting clothing will maximize comfort. Appropriate techniques should be used to remove potentially contaminated clothing. Work clothing should be laundered separately from other clothing before reuse. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye / face protection:

Safety goggles or safety glasses with side shields.

Skin protection

Hand protection:

Use gloves to protect against physical irritation or injury if required by handling conditions.

Body protection:

Wear clean, body-covering clothing (i.e., long sleeved shirts and long pants).

Other skin protection:

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection:

If dust/fiber is generated and ventilation is inadequate, use respirator that will protect against dust/fiber such as a properly fitted NIOSH approved N95/N100 disposable filtering face-piece respirator (i.e., dust mask) or equivalent. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state:	Solid.
Color:	White to yellowish.
Odor:	Odorless.
Odor threshold:	Not available.
pH:	Not available.
Melting point:	Not available.
Boiling point:	Not available.
Flash point:	Closed cup: Not applicable [Product does not sustain combustion].
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Flammability (solid, gas):	Not available

Section 9. Physical and chemical properties (continued)

Lower and upper explosive

(flammable) limits:

Not available.

Evaporation rate:

Not available.

Vapor pressure:

Not available.

Vapor density:

Not available.

Relative density:

2.65 to 2.7

Solubility:

Insoluble.

Partition coefficient:

n-octanol/water:

Not available.

Viscosity:

Not applicable.

Volatility:

0% (v/v), 0% (w/w)

% solid (w/w):

100, with exception of wet chop (see Section 3)

Section 10. Stability and reactivity

Reactivity:

No specific test data related to reactivity is available for this product or its ingredients.

Chemical stability:

Stable under recommended storage and handling conditions (see Section 7).

Possibility of hazardous reactions:

Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid:

When exposed to high temperatures - may produce hazardous decomposition products. Refer to protective measures listed in Sections 7 and 8.

Incompatible materials:

None known.

Hazardous decomposition products:

Fiberglass products may release small amounts of acetic acid and other organic materials at elevated temperatures.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion / summary:

No known significant effects or critical hazards.

Irritation / Corrosion

Conclusion / summary

Skin:

No known significant effects or critical hazards.

Eyes:

No known significant effects or critical hazards.

Respiratory:

No known significant effects or critical hazards.

Section 11. Toxicological information (continued)

Sensitization

Conclusion / summary

Skin: No known significant effects or critical hazards.
Respiratory: No known significant effects or critical hazards.

Mutagenicity

Conclusion / summary: No known significant effects or critical hazards.

Carcinogenicity

Conclusion / summary: No known significant effects or critical hazards.

Classification

Product / ingredient name	OSHA	IARC	NTP
Fiberglass, Continuous Filament	-	3	-

Carcinogen Classification Code:

IARC: Group 3 - *Not classifiable as to its carcinogenicity to humans*

TLV: A4 – *Not classifiable as a human carcinogen*

Not listed / not regulated: -

Reproductive toxicity

Conclusion / summary: No known significant effects or critical hazards.

Teratogenicity

Conclusion / summary: No known significant effects or critical hazards.

Specific target organ toxicity

(single exposure): Not available.

Specific target organ toxicity

(repeated exposure): Not available.

Target organs:

Contains material which may cause damage to the following organs:
upper respiratory tract, skin, eyes.

Aspiration hazard:

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact: Dusts/fibers from this product may cause temporary mechanical irritation.

Inhalation: Dusts/fibers from this product may cause mechanical irritation of the nose, throat and respiratory tract.

Skin contact: Dusts/fibers from this product may cause temporary mechanical irritation.

Section 11. Toxicological information (continued)

Ingestion: Although ingestion of this product is not likely to occur in industrial applications, accidental ingestion may cause illness or irritation of the mouth and gastrointestinal tract.

Over-exposure signs / symptoms

Eye contact: No specific data.
Inhalation: No specific data.
Skin contact: No specific data.
Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion / summary: There are no known health effects from the long term use or contact with non-respirable continuous filament fibers, which is the type of fiberglass that NEG produces. According to the WHO definition, respirable fibers have a diameter (d) smaller than 3 microns, a length (l) larger than 5 microns and an l/d-ratio greater than or equal to 3. Fibers with diameters greater than 3 microns, which is the case for continuous filament glass fiber, do not reach the lower respiratory tract and, therefore have no possibility of causing serious pulmonary disease.

Animal study: In 2000, the Institute of Occupational Medicine (IOM) in Scotland published the results of a long term inhalation study in animals exposed to fibers that were manufactured to be RESPIRABLE. Animals were exposed to a very high concentration of these RESPIRABLE fibers (1022 fibers/cc for 5 hours/day, 7 days/week for 52 weeks). Exposure to these microfibers resulted in the development of fibrosis, lung cancer and mesothelioma as a result of the fibers being able to reach the lower regions of the lung.

Chopped, crushed or severely mechanically processed fiberglass may contain a very small amount of respirable fibers that could reach the deep lung. The measured airborne concentration of these respirable fibers in areas where severe processing of fiberglass occurred has been shown to be extremely low and well below the TLV.

Repeated or prolonged exposure to respirable glass fibers may cause fibrosis, lung cancer and mesothelioma. NEG fiberglass, in the form supplied, does not contain respirable fibers.

Section 11. Toxicological information (continued)

Epidemiology Studies: Two major studies in the US (performed by the University of Pittsburgh) and Europe (performed by the International Agency for Research on Cancer) showed no increase in lung cancer or respiratory disease among people working in production facilities producing NON-RESPIRABLE continuous filament fiberglass. An additional smaller study performed in Canada also did not show an association between exposure of workers to fiberglass and respiratory cancer.

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health issues

General: No known significant effects or critical hazards.

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity Not available.

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Mobility in soil

Soil/water partition

coefficient (K_{oc}): Not available.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 13. Disposal considerations (continued)

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7. Handling and Storage and Section 8: Exposure Control / Personal Protection for additional handling information and protection of employees. Also refer to Section 6: Accidental Release measures.

Section 14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No	No	No
Marine pollutant substances	Not applicable	Not applicable	Not applicable

Additional information

DOT: None identified.
 IMDG: None identified.
 IATA: None identified.

Special precautions for user: None identified.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304

SARA 304 RQ: Not applicable.

Composition / information on ingredients:

No products were found.

SARA 311/312

Classification: Not applicable.

Composition / information on ingredients:

No products were found.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

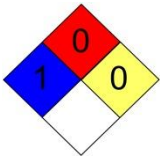
Health	1
Flammability	0
Physical Hazard	0

(*) – Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



HEALTH = 1 FIRE = 0 INSTABILITY = 0

Date of previous issue: January 2020

Organization that prepared SDS: EHS

Key to abbreviations:

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

Log P_{ow} = logarithm of the octanol/water partition coefficient

MARPOL = international convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 (Marpol = marine pollution).

UN = United Nations

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by NEG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.



SAFE USE INSTRUCTION SHEET

Creation Date 29-May-2015

Revision Date 22-Oct-2019

Version 3

0. General Information

This Safe Use Instruction Sheet is the document provided by Owens Corning to communicate recommended safe handling and use instruction for articles not regulated by OSHA Hazard Communication Standard, 29 CFR 1910.1200

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Continuous Filament Glass Fiber Products: Wet Used Chopped Strands		
Synonyms	WUCS, Wet-Use Chopped Strand, Wet Chopped Strand, 9550, 9560, 9570, 9580, 9581, 9582, 2301, 777B, 777C, 777S, 9501, 9503, 790C, 790C HS, 9703, 691A, 1530, 1545		
Document code	OCCM10003		
Recommended Use	Industrial use, reinforcement of plastic		
Supplier Address	Owens Corning Composite Materials, LLC One Owens Corning Parkway Toledo, Ohio 43659	Manufacturer Address	Owens Corning Composite Materials, LLC One Owens Corning Parkway Toledo, Ohio 43659
Company Phone Number	+ 33 479 75 53 00 (8:00am-5:00pm Central European Time)		
E-mail address	productcompliance@owenscorning.com		
Company Website	http://www.owenscorning.com/		

2. HAZARDS IDENTIFICATION

Regulatory Status	This product is not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200. Continuous Filament Glass Fiber (CFGF) Products are Articles Articles which meet the definition of 29 CFR 1910.1200 (b)(6)(v) (a manufactured item other than a fluid or a particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical (as determined in paragraph (d) of this section), and does not pose a physical hazard or health risk to employees) are not regulated by OSHA HazCom Standard
Other Information	As manufactured continuous filament glass fibers are non-respirable. May cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers. Under normal conditions of use, these products may release dust and non-respirable fibers (Particulates Not Otherwise Regulated). Under severe process conditions (e.g. shredding, crushing), these products may release very small amount of respirable particulate, some of which may be fiber-like in terms of l/d ratio (so-called "shards"). See Section 8 for Exposure Limit Data

3. COMPOSITION/INFORMATION ON INGREDIENTS

CFGF products are made of glass which is given a specific shape (filament) and dimension (filament diameter). A surface treatment (sizing) is applied to the filaments which are gathered to form a strand. The strand is further processed into a specific product design according to the downstream use of the article. The sizing is a mixture of chemicals, i.e. coupling agent, film former and polymeric resin/emulsion. The sizing content is usually below 3%

4. FIRST AID MEASURES

Description of First Aid Measures

- | | |
|---------------------|--|
| Eye contact | <ul style="list-style-type: none">• DO NOT rub or scratch eyes• Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes• If eye irritation persists: Get medical advice/attention |
| Skin contact | <ul style="list-style-type: none">• Wash off immediately with soap and plenty of cold water• DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of fibers and dust• DO NOT rub or scratch affected area• Use a wash cloth to help remove fibers and dust• If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin• If skin irritation persists, call a physician |
| Inhalation | <ul style="list-style-type: none">• Move victim to fresh air• If symptoms persist, call a physician |
| Ingestion | <ul style="list-style-type: none">• Rinse mouth with water and drink water to remove fibers from the throat• If symptoms persist, call a physician |

5. FIRE-FIGHTING MEASURES

- | | |
|--|---|
| Flammable properties | <ul style="list-style-type: none">• Continuous Filament Glass Fiber products are not flammable, are incombustible and do not support combustion. Only the organic part is combustible and could release small quantities of undetermined hazardous substances in case of major and prolonged heat or fire |
| Suitable extinguishing media | <ul style="list-style-type: none">• Use CO2, dry chemical, or foam• Water spray or fog |
| Protective equipment and precautions for firefighters | <ul style="list-style-type: none">• As in any fire, wear self-contained breathing apparatus (SCBA) and full fire-fighting protective gear |

6. ACCIDENTAL RELEASE MEASURES

- | | |
|--------------------------------|--|
| Personal precautions | <ul style="list-style-type: none">• Avoid contact with eyes and skin• Avoid creating dust• Use personal protections recommended in Section 8 |
| Methods for cleaning up | <ul style="list-style-type: none">• Avoid dry sweeping• Avoid creating dust• Take up mechanically, placing in appropriate containers for disposal• Pick up and transfer to properly labeled containers• Use an industrial vacuum cleaner with a high efficiency filter to clean up dust and fiber contamination• After cleaning, flush away traces with water |

7. HANDLING AND STORAGE

- | | |
|--------------------------------------|--|
| Precautions for safe handling | <ul style="list-style-type: none">• Prevent and/or minimize dust formation• Wear appropriate personal protective equipment in case of direct contact with the product |
| Storage Conditions | <ul style="list-style-type: none">• Keep product in packaging until use to minimize potential dust generation |

Incompatible materials • None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

As manufactured continuous filament glass fibers are non-respirable. May cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers. Under normal conditions of use, these products may release dust and non-respirable fibers (Particulates Not Otherwise Regulated). Under severe process conditions (e.g. shredding, crushing), these products may release very small amount of respirable particulate, some of which may be fiber-like in terms of l/d ratio (so-called "shards").

Chemical name	ACGIH TLV	OSHA PEL	NIOSH REL
Continuous filament glass fiber, non-respirable -	TWA: 1 fiber/cm ³ respirable fibers: length >5 μm, diameter less than 3 μm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination TWA: 5 mg/m ³ inhalable particulate matter	-	-

OSHA PEL: TWA for Inert or Nuisance Dust are: 5 mg/m³ (Respirable fraction) and 15 mg/m³ (Total dust)

Engineering Controls Provide local exhaust and/or general ventilation to maintain exposure below regulatory and recommended limits, Local exhaust ventilation should be provided at areas of cutting, milling or other similar processing to remove airborne dust and fibers

Individual protection measures, such as personal protective equipment

- Eye/face protection** • Wear safety glasses with side shields (or goggles)
- Skin and body protection** • Wear protective gloves
• Wear long-sleeved shirt and long pants
- Respiratory protection** • If exposure limits are exceeded, wear appropriate respiratory protections (e.g.: FFP2 or N95 or KN95) to be chosen according to the actual airborne exposure level and in accordance with applicable local regulations

General Hygiene Considerations • Wash hands before breaks and immediately after handling products
• Remove and wash contaminated clothing before re-use

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Appearance	Continuous filament glass fibers, with filament diameter larger than 6 micron
Odor	Odorless
Color	White, or, Off-white
Water solubility	Insoluble in water
Softening point	> 800°C ; > 1500°F (glass)
Density	2.6 (glass)
Explosive properties	Not an explosive

10. STABILITY AND REACTIVITY

- Stability** • Stable under normal conditions
- Possibility of Hazardous Reactions** • None under normal processing conditions
- Hazardous Decomposition Products** • None under normal use conditions
• Small quantities of undetermined hazardous decomposition products may be released in case of heat exposure or during a fire

11. TOXICOLOGICAL INFORMATION

Product Information	Dusts and fibers may cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers. Mechanical abrasion is not considered as a health hazard in the meaning of the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Inhalation may cause coughing, nose and throat irritation and sneezing. High exposures may cause difficult breathing, congestion and chest tightness. Continuous filament glass fibers are not respirable according to the World Health Organization (WHO) definition. Respirable fibers have a diameter (d) smaller than 3µm, a length (l) larger than 5µm and a l/d-ratio larger than or equal to 3. Fibers with diameters greater than 3 microns, which is the case for continuous filament glass fiber, do not reach the lower respiratory tract and, therefore have no possibility of causing serious pulmonary disease. Continuous filament glass fibers do not possess cleavage planes which would allow them to split length-wise into fibers with smaller diameters, rather they break across the fiber, resulting in fibers which are of the same diameter as the original fiber with a shorter length and a small amount of dust. Microscopic examination of dust from highly chopped and pulverised glass demonstrated the presence of small amounts of respirable dust particles. Among these respirable particles, some were fiber-like in terms of l/d ratio (so-called "shards"). It can be clearly observed however that they are not regular shaped fibers but irregular shaped particles with fiber-like dimensions. To the best of our knowledge, the exposure levels of these fiber-like dust particles measured at our manufacturing plants are of the order of magnitude between 50 to 1000 below existing applicable limits
ACGIH (American Conference of Governmental Industrial Hygienists)	Continuous filament glass fibers are classified as A4 - Not Classifiable as a Human Carcinogen
IARC (International Agency for Research on Cancer)	The International Agency for Research on Cancer (IARC) in June, 1987, and in October, 2001 (see IARC Monographs on the Evaluation of Carcinogenic risks to humans – Man-made Vitreous Fibers – Volume 81), categorized continuous filament fiber glass as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human as well as animal studies was evaluated by IARC as insufficient to classify continuous filament glass fiber as a confirmed, probable or even possible cancer-causing material
NTP (National Toxicology Program)	Continuous filament glass fibers are not listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Continuous filament glass fibers are not listed in the Table of harmonized classification entries in Annex VI to CLP Regulation. Mechanical abrasion is not considered as a health hazard in the meaning of European Regulation 1272/2008 (CLP).

12. ECOLOGICAL INFORMATION

This product is not expected to be hazardous for the environment

13. DISPOSAL CONSIDERATIONS

Continuous filament glass fiber waste is a non hazardous waste. Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

These products are not classified as dangerous goods according to international transport regulations

15. REGULATORY INFORMATION**International Inventories**

Continuous filament glass fiber products are articles. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDSL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS), TCSI (Taiwan)

California Proposition 65

This product is not regulated under California Proposition 65

16. OTHER INFORMATION**Prepared By**

FCs

Creation Date

29-May-2015

Revision Date

22-Oct-2019

Revision Note

complete review

Disclaimer

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use

End of Safe Use Instruction Sheet

SAFETY DATA SHEET

BK 500A15 Glass Mat Resin



Section 1. Identification

GHS product identifier : BK 500A15 Glass Mat Resin
Other means of identification : RUSR500A15
Product type : Liquid

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Industrial use only.
Uses advised against : Product is not intended for consumer use.

Supplier's details : Bakelite Chemicals LLC
 1040 Crown Pointe Parkway, Suite 700
 Atlanta, GA 30338

 T+ 1-502-449-6020
 SDS@bakelite.com
 Contact: Product Safety Stewardship

Emergency telephone number (with hours of operation) : Call CHEMTREC (CCN9387) at 1-800-424-9300 or +703-527-3887 (Int'l) 24hrs

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.
Hazard statements : No known significant effects or critical hazards.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : RUSR500A15

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Formaldehyde	<p>[Air contaminant - Curing] OSHA PEL Z2 (United States, 2/2013). TWA: 0.75 ppm 8 hours. STEL: 2 ppm 15 minutes. OSHA PEL (United States, 5/2018). TWA: 0.75 ppm 8 hours. STEL: 2 ppm 15 minutes. ACGIH TLV (United States, 3/2020). Skin sensitizer. Inhalation sensitizer. STEL: 0.3 ppm 15 minutes. TWA: 0.1 ppm 8 hours.</p>

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid
- Color** : White.
- Odor** : Formaldehyde. [Slight]
- Odor threshold** : Not available.
- pH** :

Section 9. Physical and chemical properties and safety characteristics

8

- Melting point/freezing point** : Not available.
- Boiling point, initial boiling point, and boiling range** : 100°C (212°F)
- Flash point** : Closed cup: Not applicable.
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Not available.
- Vapor pressure** :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
methanol	126.96	16.9				
Proprietary	54	7.2				
water	23.8	3.2				
Formaldehyde	1	0.13				

- Relative vapor density** : Not available.
- Relative density** : 1.24
- Density** : 1.24 g/cm³
- Solubility** : Not available.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not applicable.
- Auto-ignition temperature** :

Ingredient name	°C	°F	Method
Proprietary	249	480.2	
Formaldehyde	430	806	
methanol	455	851	DIN 51794

- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Flow time (ISO 2431)** : Not available.
- Particle characteristics**
- Median particle size** : Not applicable.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Conclusion/Summary

: The International Agency for Research on Cancer (IARC) and The National Toxicology Program (NTP) classify formaldehyde as a carcinogen due to cancers of the upper respiratory system and leukemia. OSHA regulates formaldehyde as a potential carcinogen for exposures at or exceeding 0.5 ppm. The weight of the scientific evidence surrounding the potential association between formaldehyde and cancer risk for both upper respiratory cancer as well as leukemia is conflicting even when significant and prolonged exposure to inhaled formaldehyde are involved.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact

: No known significant effects or critical hazards.

Inhalation

: No known significant effects or critical hazards.

Skin contact

: No known significant effects or critical hazards.

Ingestion

: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

: No specific data.

Inhalation

: No specific data.

Skin contact

: No specific data.

Ingestion

: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects

: Not available.

Section 11. Toxicological information

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

N/A

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

BK 500A15 Glass Mat Resin

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-				
Transport hazard class(es)	-				
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 311: Formaldehyde; sodium hydroxide; Proprietary

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Formaldehyde	<0.1	Yes.	500	73.9	100	14.8

SARA 304 RQ : 111111.1 lbs / 50444.4 kg [10746.8 gal / 40681 L]

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

State regulations

Massachusetts : None of the components are listed.

BK 500A15 Glass Mat Resin

Section 15. Regulatory information

- New York** : None of the components are listed.
- New Jersey** : None of the components are listed.
- Pennsylvania** : None of the components are listed.
- California Prop. 65**

⚠ WARNING: This product can expose you to chemicals including Formaldehyde, which is known to the State of California to cause cancer, and Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Formaldehyde	Yes.	-
Methanol	-	Yes.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

- Australia** : Not determined.
- Canada** : All components are listed or exempted.
- China** : Not determined.
- Europe** : Not determined.
- Japan** : **Japan inventory (CSCL):** Not determined.
Japan inventory (ISHL): Not determined.
- New Zealand** : Not determined.
- Philippines** : Not determined.
- Republic of Korea** : Not determined.
- Taiwan** : Not determined.
- Thailand** : Not determined.
- Turkey** : Not determined.
- United States** : All components are active or exempted.
- Viet Nam** : Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	1
Flammability		0
Physical hazards		0

Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Not classified.

History

Date of printing	: 7/22/2022
Date of issue/Date of revision	: 7/22/2022
Date of previous issue	: No previous validation
Version	: 0.01
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available SGG = Segregation Group UN = United Nations

References

✓ Indicates information that has changed from previously issued version.

Notice to reader

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY*

Product name: RHOPLEX™ AC-1034 Emulsion

Issue Date: 08/29/2018
Print Date: 10/03/2018

THE DOW CHEMICAL COMPANY* encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: RHOPLEX™ AC-1034 Emulsion

Recommended use of the chemical and restrictions on use

Identified uses: This product is used in coatings, textiles, binders and adhesives.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY*
 Agent for Rohm and Haas Chemicals LLC
 400 ARCOLA ROAD
 COLLEGEVILLE PA 19426-2914
 UNITED STATES

Customer Information Number:

215-592-3000
 SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1 800 424 9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200
 Not a hazardous substance or mixture.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Acrylic emulsion

This product is a mixture.

Component

CASRN

Concentration

Acrylic polymer(s)	Not hazardous	>= 46.0 - 49.0 %
Residual monomers	Not required	< 0.05 %
Aqua ammonia	1336-21-6	<= 0.1 %
Water	7732-18-5	>= 51.0 - 54.0 %

4. FIRST AID MEASURES

Description of first aid measures

Inhalation: Move to fresh air.

Skin contact: Wash with water and soap as a precaution. If skin irritation persists, call a physician.

Eye contact: Rinse with plenty of water. If eye irritation persists, consult a specialist.

Ingestion: Drink 1 or 2 glasses of water. Consult a physician if necessary. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: No data available

Unusual Fire and Explosion Hazards: Material can splatter above 100C/212F. Dried product can burn.

Advice for firefighters

Fire Fighting Procedures: No data available

Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep people away from and upwind of spill/leak. Material can create slippery conditions.

Environmental precautions: CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Methods and materials for containment and cleaning up: Contain spills immediately with inert materials (e.g., sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep container tightly closed. Do not breathe vapors, mist or gas.

Conditions for safe storage: Keep from freezing - product stability may be affected. STIR WELL BEFORE USE.

Storage stability

Storage temperature: 1 - 49 °C (34 - 120 °F)

Other data: Monomer vapors can be evolved when material is heated during processing operations. See SECTION 8, for types of ventilation required. Due to the crosslinking nature of this material, this product will generate additional formaldehyde upon cure. Lack of adequate ventilation may result in airborne levels of formaldehyde above established exposure limits in the workplace. Monitoring the workplace to determine actual formaldehyde levels is recommended. NOTE: Formaldehyde will be generated under acidic conditions. Maintain adequate ventilation under these conditions to prevent exposure to formaldehyde above the Rohm and Haas Co. recommended ceiling of 0.3 ppm.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Residual monomers	Dow IHG	TWA	4 ppm
	Dow IHG	TWA	SKIN
	Dow IHG	STEL	10 ppm
	Dow IHG	STEL	SKIN
	ACGIH	TWA	20 ppm
Aqua ammonia	Dow IHG	TWA	10 ppm
	Dow IHG	STEL	30 ppm
	OSHA Z-1	TWA	35 mg/m ³ 50 ppm
	ACGIH	TWA	25 ppm, Ammonia
	ACGIH	STEL	35 ppm, Ammonia

Exposure controls

Engineering controls: Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5 m/sec.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A

Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility.

Individual protection measures

Eye/face protection: Safety glasses with side-shields Eye protection worn must be compatible with respiratory protection system employed.

Skin protection

Hand protection: The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): Neoprene gloves

Respiratory protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. For airborne concentrations up to 10 times the exposure limit, wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) ammonia/methylamine cartridges and N95 filters. If oil mist is present, use R95 or P95 filters.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	liquid Milky
Color	white
Odor	Ammonia odor
Odor Threshold	No data available
pH	6.0 - 7.5
Melting point/range	0 °C (32 °F) Water
Freezing point	No data available
Boiling point (760 mmHg)	100.00 °C (212.00 °F) Water
Flash point	Noncombustible
Evaporation Rate (Butyl Acetate = 1)	<1.00 Water
Flammability (solid, gas)	Not Applicable
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	17 mmHg at 20 °C (68 °F) Water
Relative Vapor Density (air = 1)	<1.0000 Water
Relative Density (water = 1)	1.0000 - 1.2000
Water solubility	Dilutable
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	Not Applicable
Decomposition temperature	No data available

Dynamic Viscosity	500 - 2,000 mPa.s
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Percent volatility	51 - 54 % Water

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable

Possibility of hazardous reactions: None known.
Product will not undergo polymerization.

Conditions to avoid: No data available

Incompatible materials: There are no known materials which are incompatible with this product.

Hazardous decomposition products: Thermal decomposition may yield acrylic monomers.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

LD50, Rat, > 5,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity

Product test data not available. Refer to component data.

Skin corrosion/irritation

May cause transient irritation.

Serious eye damage/eye irritation

No eye irritation

Sensitization

Product test data not available. Refer to component data.

Specific Target Organ Systemic Toxicity (Single Exposure)

Product test data not available. Refer to component data.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Product test data not available. Refer to component data.

Carcinogenicity

Product test data not available. Refer to component data.

Teratogenicity

Product test data not available. Refer to component data.

Reproductive toxicity

Product test data not available. Refer to component data.

Mutagenicity

Product test data not available. Refer to component data.

Aspiration Hazard

Product test data not available. Refer to component data.

Additional information

No data are available for this material. The information shown is based on profiles of compositionally similar materials.

COMPONENTS INFLUENCING TOXICOLOGY:**Acrylic polymer(s)****Acute inhalation toxicity**

The LC50 has not been determined.

Sensitization

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No relevant data found.

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

No relevant data found.

Aspiration Hazard

No aspiration toxicity classification

Residual monomers**Acute inhalation toxicity**

The LC50 has not been determined.

LC50, Rat, 4 Hour, dust/mist, > 1 mg/l OECD Test Guideline 403

Sensitization

Did not cause allergic skin reactions when tested in guinea pigs.

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Repeated excessive exposures may cause

Respiratory effects.

Carcinogenicity

Did not cause cancer in laboratory animals.

Teratogenicity

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Reproductive toxicity

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

In vitro genetic toxicity studies were negative in some cases and positive in other cases.

Animal genetic toxicity studies were negative.

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Aqua ammonia**Acute inhalation toxicity**

LC50, Rat, male, 1 Hour, dust/mist, 9.850 mg/l

Sensitization

For skin sensitization:

No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Carcinogenicity

Did not cause cancer in laboratory animals.

Teratogenicity

Available data are inadequate for evaluation of potential to cause fetotoxicity.

Reproductive toxicity

Available data are inadequate to determine effects on reproduction.

Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

General Information

There is no data available for this product.

Toxicity**Acrylic polymer(s)****Acute toxicity to fish**

No relevant data found.

Residual monomers**Acute toxicity to fish**

No relevant data found.

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), flow-through test, 96 Hour, 85 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), flow-through test, 48 Hour, > 130 mg/l

Acute toxicity to algae/aquatic plants

ErC50, *Scenedesmus capricornutum* (fresh water algae), static test, 72 Hour, Growth rate, 45 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, *Pseudomonas putida*, static test, 17 Hour, Respiration rates., 100 mg/l

Chronic toxicity to fish

NOEC, Danio rerio (zebra fish), flow-through test, 35 d, number of offspring, 10 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), flow-through test, 21 d, number of offspring, 53 mg/l

Aqua ammonia**Acute toxicity to fish**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, Fish, 96 Hour, 0.89 mg/l

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), static test, 48 Hour, 101 mg/l

Acute toxicity to algae/aquatic plants

Based on data from similar materials

EC50, Chlorella vulgaris (Fresh water algae), 18 d, 2,700 mg/l

Chronic toxicity to fish

Based on data from similar materials

LOEC, Oncorhynchus mykiss (rainbow trout), 33 d, <= 0.05 mg/l

Chronic toxicity to aquatic invertebrates

Based on data from similar materials

NOEC, Daphnia magna (Water flea), 21 d, 0.42 mg/l

Persistence and degradability**Acrylic polymer(s)**

Biodegradability: No relevant data found.

Residual monomers

Biodegradability: No relevant data found.

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 86 %

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 6.884 Hour

Method: Estimated.

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: Ozone.

Atmospheric half-life: 1.007 d

Method: Estimated.

Aqua ammonia

Biodegradability: Material is expected to be readily biodegradable. Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Theoretical Oxygen Demand: 3.76 mg/mg Estimated.

Bioaccumulative potential

Acrylic polymer(s)

Bioaccumulation: No relevant data found.

Residual monomers

Bioaccumulation: No relevant data found. No bioconcentration is expected because of the relatively high water solubility.

Partition coefficient: n-octanol/water(log Pow): 0.93 Measured

Bioconcentration factor (BCF): 3.16 Fish Estimated.

Aqua ammonia

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Mobility in soil

Acrylic polymer(s)

No relevant data found.

Residual monomers

No relevant data found.

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 15

Aqua ammonia

No specific, relevant data available for assessment.

13. DISPOSAL CONSIDERATIONS

Disposal methods: Coagulate the emulsion by the stepwise addition of ferric chloride and lime. Remove the clear supernatant and flush to a chemical sewer. For disposal, incinerate or landfill at a permitted facility in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

No SARA Hazards

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

Calculated RQ exceeds reasonably attainable upper limit.

Components	CASRN	RQ (RCRA Code)
Aqua ammonia	1336-21-6	100 lbs RQ

Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

California Prop. 65

This product contains a chemical that is at or below California Propositions 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System

HMIS

Health	Flammability	Physical Hazard
1	0	0

Revision

Identification Number: 10311230 / 1001 / Issue Date: 08/29/2018 / Version: 2.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
SKIN	Absorbed via skin
STEL	Short term exposure limit
TWA	Time weighted average

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY* urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: TAMOL™ 1254 Dispersant

Issue Date: 04/06/2015

Print Date: 09/27/2017

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: TAMOL™ 1254 Dispersant

Recommended use of the chemical and restrictions on use

Identified uses: Coating additives, Dispersants.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: CHEMTREC +1 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Salt of polycarboxylic acid

This product is a mixture.

Component

CASRN

Concentration

Salt of polycarboxylic acid	Not Hazardous	>= 34.0 - 36.0 %
Residual monomers	Not available	< 500.0 PPM
Water	7732-18-5	>= 64.0 - 66.0 %

4. FIRST AID MEASURES

Description of first aid measures

Inhalation: Move to fresh air.

Skin contact: Wash with water and soap as a precaution. If skin irritation persists, call a physician.

Eye contact: Rinse with plenty of water. If eye irritation persists, consult a specialist.

Ingestion: Drink 1 or 2 glasses of water. Consult a physician if necessary. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media: no data available

Special hazards arising from the substance or mixture

Hazardous combustion products: no data available

Unusual Fire and Explosion Hazards: Material can splatter above 100C/212F. Dried product can burn.

Advice for firefighters

Fire Fighting Procedures: no data available

Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep people away from and upwind of spill/leak. Material can create slippery conditions.

Environmental precautions: CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Methods and materials for containment and cleaning up: Contain spills immediately with inert materials (e.g., sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Monomer vapors can be evolved when material is heated during processing operations. See SECTION 8, for types of ventilation required.

Conditions for safe storage: Keep from freezing - product stability may be affected. STIR WELL BEFORE USE.

Storage stability

Storage temperature: 1 - 49 °C (34 - 120 °F)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Exposure controls

Engineering controls: Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5 m/sec.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility.

Individual protection measures

Eye/face protection: Safety glasses with side-shields. Eye protection worn must be compatible with respiratory protection system employed.

Skin protection

Hand protection: The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): Neoprene gloves

Respiratory protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required under normal operating conditions. Where vapors and/or mists may occur, wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	liquid Clear to hazy
Color	no data available
Odor	Mild odor
Odor Threshold	no data available
pH	6.2 - 7.8
Melting point/range	no data available
Freezing point	no data available
Boiling point (760 mmHg)	100.00 °C (212.00 °F) Water
Flash point	Noncombustible
Evaporation Rate (Butyl Acetate = 1)	<1.00 Water
Flammability (solid, gas)	Not Applicable
Lower explosion limit	Not Applicable
Upper explosion limit	Not Applicable
Vapor Pressure	22.6666667 mmHg at 20.00 °C (68.00 °F) Water 22.6648080 Pa at 20.00 °C (68.00 °F) Water
Relative Vapor Density (air = 1)	<1.0000 Water
Relative Density (water = 1)	1.0000 - 1.2000
Water solubility	Dilutable
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	Not Applicable
Decomposition temperature	no data available
Dynamic Viscosity	125.000 mPa.s maximum 125.000 mPa.s maximum
Kinematic Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available
Molecular weight	no data available
Percent volatility	64.000 - 66.000 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: no data available

Possibility of hazardous reactions: None known.
Product will not undergo polymerization.
Stable

Conditions to avoid: no data available

Incompatible materials: There are no known materials which are incompatible with this product.

Hazardous decomposition products: Thermal decomposition may yield acrylic monomers.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

LD50, Rat, > 5,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 2,000 mg/kg

Acute inhalation toxicity

Product test data not available.

Skin corrosion/irritation

slight irritation

Serious eye damage/eye irritation

No eye irritation

Sensitization

Does not cause skin sensitisation.

Specific Target Organ Systemic Toxicity (Single Exposure)

Product test data not available.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

A 28 day dermal toxicity study (rats): No Observed Effect Level = 1000 mg/kg, the highest allowable (limit) dose.

Carcinogenicity

Product test data not available.

Teratogenicity

Product test data not available.

Reproductive toxicity

Product test data not available.

Mutagenicity

Ames mutagenicity: Negative

Aspiration Hazard

Product test data not available.

COMPONENTS INFLUENCING TOXICOLOGY:**Residual monomers****Acute inhalation toxicity**

The LC50 has not been determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Toxicity**Acute toxicity to fish**

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, >1,000 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Zebra fish (Danio/Brachydanio rerio), 96 Hour, >100 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna, 48 Hour, >1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, Algae (Selenastrum capricornutum), 96 Hour, Growth rate, 6.3 - 68 mg/l, OECD Test Guideline 201 or Equivalent

Persistence and degradability**Biodegradability:**

Biodegradation: 65 %

Exposure time: 20 d

Method: OECD Test Guideline 302A or Equivalent

Bioaccumulative potential**Residual monomers**

Bioaccumulation: No relevant data found.

Mobility in soil**Residual monomers**

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: For disposal, incinerate or landfill at a permitted facility in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):**Transport in bulk
according to Annex I or II
of MARPOL 73/78 and the
IBC or IGC Code**Not regulated for transport
Consult IMO regulations before transporting ocean bulk**Classification for AIR transport (IATA/ICAO):**

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is considered non-hazardous under the OSHA Hazard Communication Standard (29CFR1910.1200).

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

:

16. OTHER INFORMATION

Hazard Rating System

HMIS

Health	Flammability	Physical Hazard
1	0	0

Revision

Identification Number: 101101469 / A001 / Issue Date: 04/06/2015 / Version: 2.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY*

Product name: ACRY SOL™ DR-5500 Rheology Modifier

Issue Date: 04/08/2015

Print Date: 05/15/2018

THE DOW CHEMICAL COMPANY* encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: ACRY SOL™ DR-5500 Rheology Modifier

Recommended use of the chemical and restrictions on use

Identified uses: This product is used in coatings, textiles, binders and adhesives.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY*
Agent for Rohm and Haas Chemicals LLC
400 ARCOLA ROAD
COLLEGEVILLE PA 19426-2914
UNITED STATES

Customer Information Number:

215-592-3000

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1 800 424 9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration

Acrylic polymer(s)	Not hazardous	>= 29.0 - <= 31.0 %
Residual monomers	Not available	< 0.05 %
Water	7732-18-5	>= 69.0 - <= 71.0 %

4. FIRST AID MEASURES

Description of first aid measures

Inhalation: Move to fresh air.

Skin contact: Wash with water and soap as a precaution. If skin irritation persists, call a physician.

Eye contact: Rinse with plenty of water. If eye irritation persists, consult a specialist.

Ingestion: Drink 1 or 2 glasses of water. Consult a physician if necessary. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media: no data available

Special hazards arising from the substance or mixture

Hazardous combustion products: no data available

Unusual Fire and Explosion Hazards: Material can splatter above 100C/212F. Dried product can burn.

Advice for firefighters

Fire Fighting Procedures: no data available

Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep people away from and upwind of spill/leak. Material can create slippery conditions.

Environmental precautions: CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Methods and materials for containment and cleaning up: Contain spills immediately with inert materials (e.g., sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep container tightly closed. Do not breathe vapors, mist or gas.

Conditions for safe storage: Keep from freezing - product stability may be affected. STIR WELL BEFORE USE.

Storage stability

Storage temperature: 1 - 49 °C (34 - 120 °F)

Other data: Monomer vapors can be evolved when material is heated during processing operations. See SECTION 8, for types of ventilation required.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Exposure controls

Engineering controls: Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5 m/sec.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility.

Individual protection measures

Eye/face protection: Safety glasses with side-shields. Eye protection worn must be compatible with respiratory protection system employed.

Skin protection

Hand protection: The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): Neoprene gloves

Respiratory protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required under normal operating conditions. Where vapors and/or mists may occur, wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	liquid milky
Color	white
Odor	no data available
Odor Threshold	no data available
pH	2.6 - 3.8
Melting point/range	0 °C (32 °F) Water
Freezing point	no data available
Boiling point (760 mmHg)	100 °C (212 °F) Water
Flash point	Noncombustible
Evaporation Rate (Butyl Acetate = 1)	<1.0 Water
Flammability (solid, gas)	Not Applicable
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	17 mmHg at 20 °C (68 °F) Water
Relative Vapor Density (air = 1)	<1.0 Water
Relative Density (water = 1)	1.0 - 1.2
Water solubility	Dilutable
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
Dynamic Viscosity	no data available
Kinematic Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available
Molecular weight	no data available
Percent volatility	69 - 71 % Water

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: Stable

Possibility of hazardous reactions: None known.
Product will not undergo polymerization.

Conditions to avoid: no data available

Incompatible materials: There are no known materials which are incompatible with this product.

Hazardous decomposition products: Thermal decomposition may yield acrylic monomers.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

LD50, Rat, > 5,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity

Product test data not available.

Skin corrosion/irritation

May cause transient irritation.

Serious eye damage/eye irritation

No eye irritation

Sensitization

Product test data not available.

Specific Target Organ Systemic Toxicity (Single Exposure)

Product test data not available.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Product test data not available.

Carcinogenicity

Product test data not available.

Teratogenicity

Product test data not available.

Reproductive toxicity

Product test data not available.

Mutagenicity

Product test data not available.

Aspiration Hazard

Product test data not available.

Additional information

No data are available for this material. The information shown is based on profiles of compositionally similar materials.

COMPONENTS INFLUENCING TOXICOLOGY:

Acrylic polymer(s)

Acute inhalation toxicity

The LC50 has not been determined.

Residual monomers

Acute inhalation toxicity

The LC50 has not been determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

General Information

There is no data available for this product.

Toxicity

Acrylic polymer(s)

Acute toxicity to fish

No relevant data found.

Residual monomers

Acute toxicity to fish

No relevant data found.

Persistence and degradability

Acrylic polymer(s)

Biodegradability: No relevant data found.

Residual monomers

Biodegradability: No relevant data found.

Bioaccumulative potential

Acrylic polymer(s)

Bioaccumulation: No relevant data found.

Residual monomers

Bioaccumulation: No relevant data found.

Mobility in soil

Residual monomers

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: Coagulate the emulsion by the stepwise addition of ferric chloride and lime. Remove the clear supernatant and flush to a chemical sewer. For disposal, incinerate or landfill at a permitted facility in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

	Not regulated for transport
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is considered non-hazardous under the OSHA Hazard Communication Standard (29CFR1910.1200).

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

California (Proposition 65)

This product contains trace levels of a component or components known to the state of California to cause cancer:

Components

CASRN

Ethyl acrylate

140-88-5

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

:

16. OTHER INFORMATION

Hazard Rating System

HMIS

Health	Flammability	Physical Hazard
1	0	0

Revision

Identification Number: 101168469 / 1001 / Issue Date: 04/08/2015 / Version: 2.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY* urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and

understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



Kinsley

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
 Revision Date: 07/21/2015 Date of issue: 07/21/2015 Supersedes Date: 06/01/2012

Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Kinsley

Trade Name: Ground Calcium Carbonate

Synonyms: Limestone, Ground Calcium Carbonate

1.2. Intended Use of the Product

Various

1.3. Name, Address, and Telephone of the Responsible Party

Company

Kinsley Materials

PO Box 2886

York, PA 17405

T 717-846-6711

www.rkinsley.com

Manufacturer

Kinsley Materials-Pen Roc Operations

425 Pen Roc Drive

York, PA 17408

T 717-846-6711

1.4. Emergency Telephone Number

Emergency Number : 1-800-284-1046

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Carc. 1A H350

STOT RE 1 H372

Full text of H-phrases: see section 16

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)

:



GHS08

Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H350 - May cause cancer (inhalation).

H372 - Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation).

Precautionary Statements (GHS-US)

: P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P260 - Do not breathe dust.

P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P280 - Wear protective gloves, protective clothing, and eye protection.

P308+P313 - If exposed or concerned: Get medical advice/attention.

P405 - Store locked up.

P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US) No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable

Kinsley

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

3.2. Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Calcium Carbonate	(CAS No) 1317-65-3	75 - 90	Not classified
Magnesium Carbonate	(CAS No) 546-93-0	5 - 10, 10 - 15	Not classified
Quartz	(CAS No) 14808-60-7	0.1 - 1, 1 - 2	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372

Full text of H-phrases: see section 16

More than one of the ranges of concentration prescribed by the Controlled Products Regulations has been used where necessary, due to varying composition.

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Rinse with plenty of water. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: May cause cancer (inhalation). Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation).

Inhalation: Cough, dyspnea (breathing difficulty), wheezing; decreased pulmonary function, progressive respiratory symptoms (silicosis). Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five years of the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the progression is more rapid.

Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis can be fatal.

Skin Contact: Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Eye Contact: Dust from this product may cause minor eye irritation.

Ingestion: May cause irritation of the gastrointestinal tract.

Chronic Symptoms: Pre-existing lung diseases such as emphysema or asthma may be aggravated by exposure to dusts. Pulmonary function may be reduced by inhalation of respirable crystalline silica. Also lung scarring produced by such inhalation may lead to a progressive massive fibrosis of the lung which may aggravate other pulmonary conditions and diseases and which increases susceptibility to pulmonary tuberculosis. Progressive massive fibrosis may be accompanied by right heart enlargement, heart failure, and pulmonary failure. Smoking aggravates the effects of exposure. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂).

Unsuitable Extinguishing Media: Do not use water. Do not use extinguishing media containing water.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product itself is not explosive but if dust is generated, dust clouds suspended in air can be explosive.

Kinsley

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Reactivity: Calcium salts will form in the presence of acid.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.

Firefighting Instructions: Do not allow run-off from fire fighting to enter drains or water sources. Do not breathe fumes or vapors from fire. Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Thermal decomposition generates: Carbon oxides (CO, CO₂). Oxides of calcium. Oxides of magnesium.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid breathing dust.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid. Avoid generation of dust during clean-up of spills.

Methods for Cleaning Up: Avoid generation of dust during clean-up of spills. Practice good housekeeping - spillage can be slippery on smooth surface either wet or dry. Vacuum clean-up is preferred. If sweeping is required use a dust suppressant. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up. Transfer spilled material to a suitable container for disposal. Use only non-sparking tools.

6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Accumulation and dispersion of dust with an ignition source can cause a combustible dust explosion. Keep dust levels to a minimum and follow applicable regulations.

Precautions for Safe Handling: Take precautionary measures against static discharge. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Use good housekeeping practices during storage, transfer, handling, to avoid excessive dust accumulation. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a cool, dry place. Keep away from moisture, extremely high or low temperatures, ignition sources, and incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Fluorine.

7.3. Specific End Use(s)

Various

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Kinsley

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Calcium Carbonate (1317-65-3)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³ (total dust)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (total dust) 3 mg/m ³ (respirable fraction)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass) 10 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass) 10 mg/m ³ (total mass)
Québec	VEMP (mg/m ³)	10 mg/m ³ (Limestone, containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	30 mppcf 10 mg/m ³
Quartz (14808-60-7)		
Mexico	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable fraction)
USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
USA ACGIH	ACGIH chemical category	A2 - Suspected Human Carcinogen
USA OSHA	OSHA PEL (STEL) (mg/m ³)	250 mppcf/%SiO ₂ +5, 10mg/m ³ /%SiO ₂ +2
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ (respirable dust)
USA IDLH	US IDLH (mg/m ³)	50 mg/m ³ (respirable dust)
Alberta	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable particulate)
British Columbia	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable)
Manitoba	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
New Brunswick	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable fraction)
Newfoundland & Labrador	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Nova Scotia	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Nunavut	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable mass) 0.3 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable mass) 0.3 mg/m ³ (total mass)
Ontario	OEL TWA (mg/m ³)	0.10 mg/m ³ (designated substances regulation-respirable)
Prince Edward Island	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Québec	VEMP (mg/m ³)	0.1 mg/m ³ (respirable dust)
Saskatchewan	OEL TWA (mg/m ³)	0.05 mg/m ³ (respirable fraction)
Yukon	OEL TWA (mg/m ³)	300 particle/mL
Magnesium Carbonate (546-93-0)		
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (total dust) 3 mg/m ³ (respirable fraction)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (particulate matter containing no Asbestos and

Kinsley

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

		<1% Crystalline silica)
Ontario	OEL TWA (mg/m ³)	10 mg/m ³ (containing no Asbestos and <1% Crystalline silica-total dust)
Québec	VEMP (mg/m ³)	10 mg/m ³ (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³

8.2. Exposure Controls

Appropriate Engineering Controls: Provide adequate ventilation to minimize dust concentrations. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Ensure all national/local regulations are observed.

Personal Protective Equipment: Protective goggles. Gloves. Protective clothing. Dust formation: dust mask.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Environmental Exposure Controls: Avoid release to the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: White or gray in powder or granular form
Odor	: Odorless
Odor Threshold	: Not available
pH	: 9.2 - 9.7 (in water)
Evaporation Rate	: Not available
Melting Point	: 1339 °C (2442.2 °F) @ 103 ATM
Freezing Point	: None, solid
Boiling Point	: Not available
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: Not available
Specific Gravity	: 2.71
Solubility	: 0.14 g CaCO ₃ @ 25 °C in water Soluble in acids
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: None, solid
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge

Kinsley

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Calcium salts will form in the presence of acid.
- 10.2. Chemical Stability:** Stable under normal ambient conditions.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, and incompatible materials. Sources of ignition.
- 10.5. Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers. Fluorine.
- 10.6. Hazardous Decomposition Products:** Carbon dioxide (CO₂). Oxides of calcium. Oxides of magnesium.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

pH: 9.2 - 9.7 (in water)

Serious Eye Damage/Irritation: Not classified

pH: 9.2 - 9.7 (in water)

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: May cause cancer (inhalation)

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation)

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Cough, dyspnea (breathing difficulty), wheezing; decreased pulmonary function, progressive respiratory symptoms (silicosis). Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five years of the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the progression is more rapid. Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis can be fatal

Symptoms/Injuries After Skin Contact: Dust may cause irritation in skin folds or by contact in combination with tight clothing

Symptoms/Injuries After Eye Contact: Dust from this product may cause minor eye irritation

Symptoms/Injuries After Ingestion: May cause irritation of the gastrointestinal tract

Chronic Symptoms: Pre-existing lung diseases such as emphysema or asthma may be aggravated by exposure to dusts. Pulmonary function may be reduced by inhalation of respirable crystalline silica. Also lung scarring produced by such inhalation may lead to a progressive massive fibrosis of the lung which may aggravate other pulmonary conditions and diseases and which increases susceptibility to pulmonary tuberculosis. Progressive massive fibrosis may be accompanied by right heart enlargement, heart failure, and pulmonary failure. Smoking aggravates the effects of exposure. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg
Magnesium Carbonate (546-93-0)	
LD50 Oral Rat	> 2000 mg/kg

Kinsley

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Quartz (14808-60-7)	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

SECTION 12: ECOLOGICAL INFORMATION

- 12.1. Toxicity** No additional information available
- 12.2. Persistence and Degradability** Not available
- 12.3. Bioaccumulative Potential** Not available
- 12.4. Mobility in Soil** Not available
- 12.5. Other Adverse Effects**

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Sewage Disposal Recommendations: Do not empty into drains. Do not dispose of waste into sewer.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

SECTION 14: TRANSPORT INFORMATION

- 14.1. In Accordance with DOT** Not regulated for transport
- 14.2. In Accordance with IMDG** Not regulated for transport
- 14.3. In Accordance with IATA** Not regulated for transport
- 14.4. In Accordance with TDG** Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Kinsley	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard
Calcium Carbonate (1317-65-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Quartz (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
Magnesium Carbonate (546-93-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. US State Regulations


Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Calcium Carbonate (1317-65-3)	
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List	
Quartz (14808-60-7)	
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List	
Magnesium Carbonate (546-93-0)	
U.S. - Massachusetts - Right To Know List	

Kinsley

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

15.3. Canadian Regulations

Kinsley	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
	

Calcium Carbonate (1317-65-3)	
Listed on the Canadian NDSL (Non-Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Quartz (14808-60-7)	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Magnesium Carbonate (546-93-0)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 07/21/2015
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

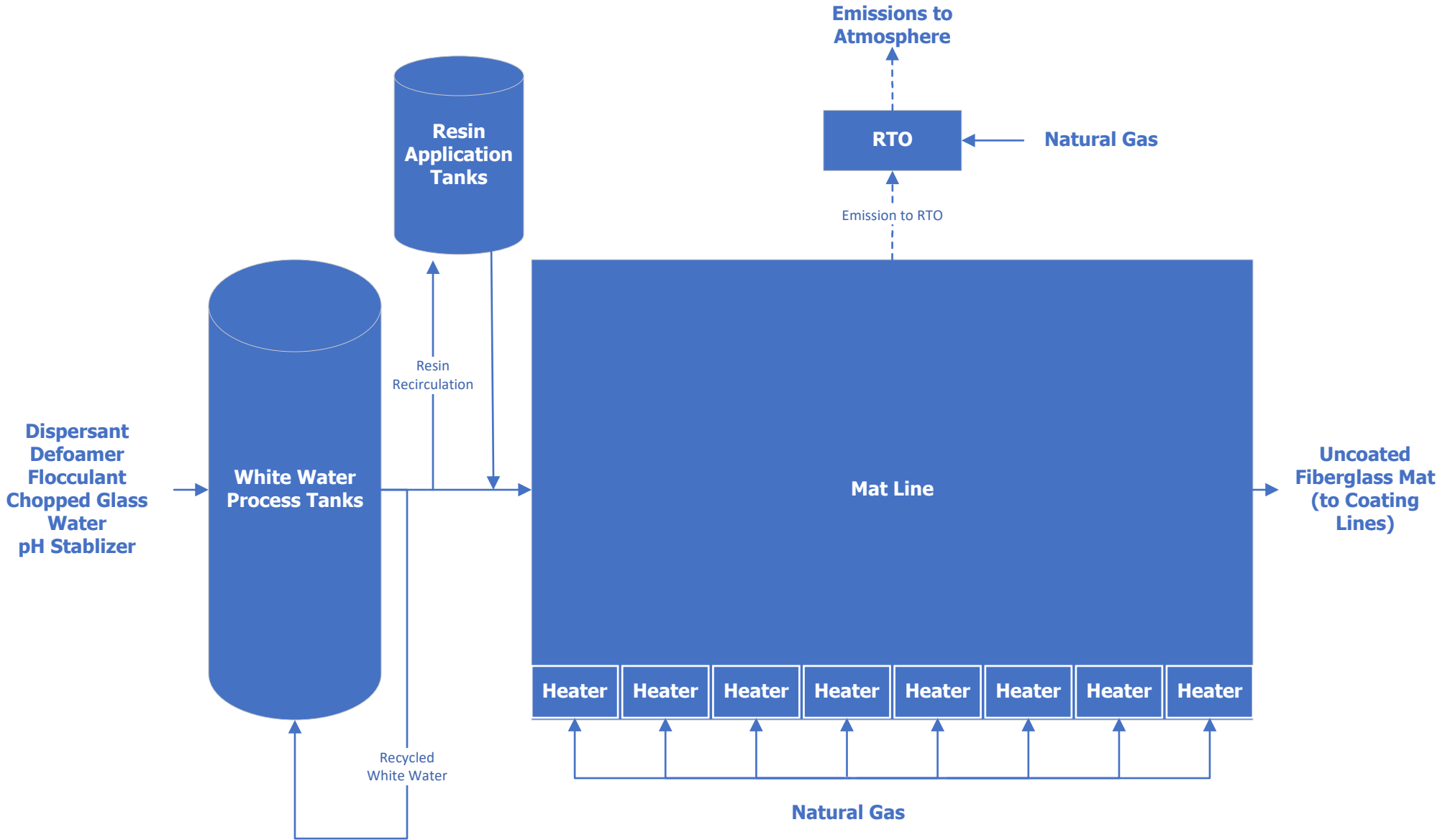
Carc. 1A	Carcinogenicity Category 1A
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure

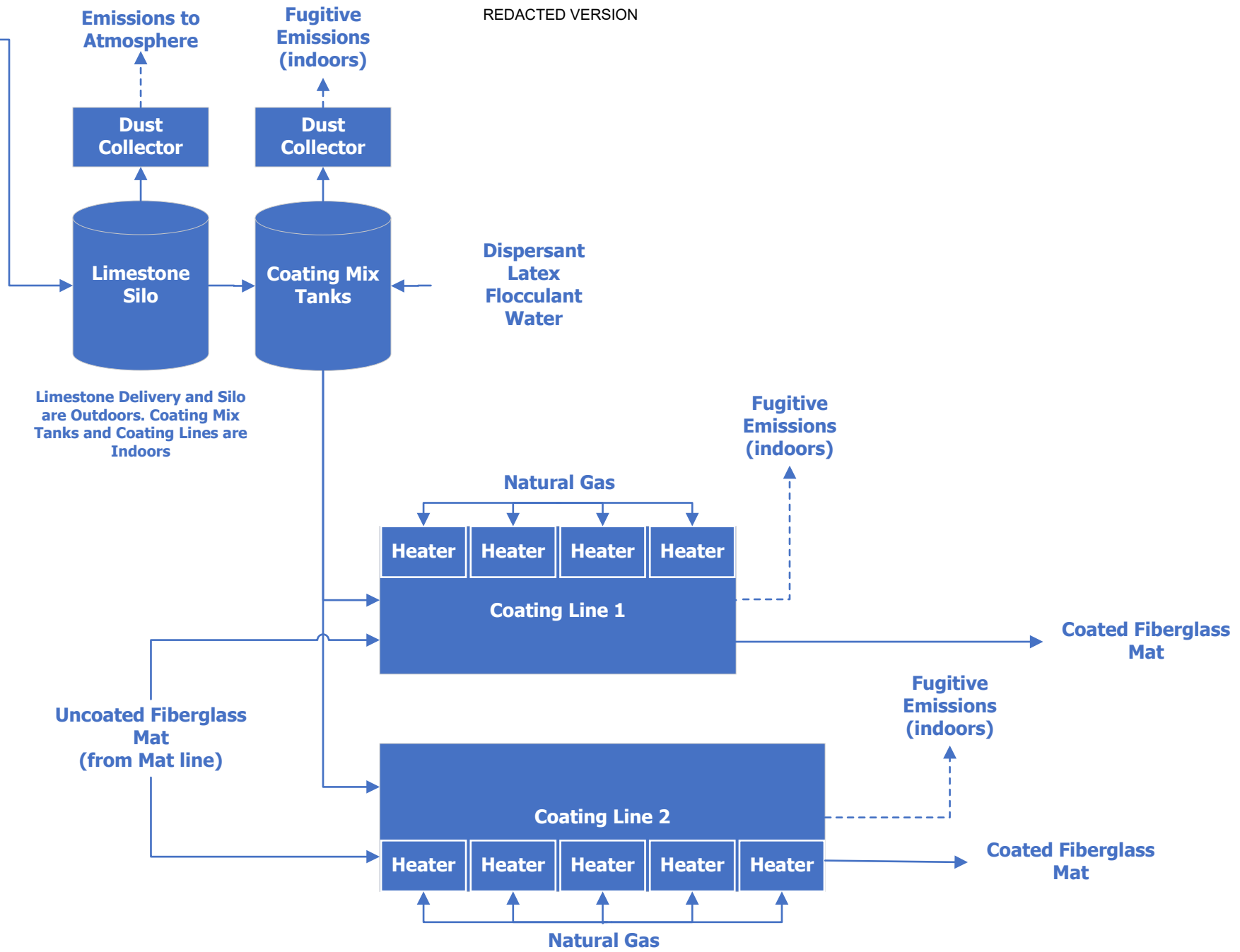
Party Responsible for the Preparation of This Document

Kinsley Materials
 T 717-846-6711

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

APPENDIX E. PROCESS FLOW DIAGRAMS





Malarkey Williamsport, MD Facility Process Flow Diagram – Coating Lines – December 2022



DEPARTMENT OF PLANNING & ZONING
PLANNING | ZONING | LAND PRESERVATION | FOREST CONSERVATION | GIS

February 7, 2023

Maryland Department of the Environment
Attention: Matt Hafner
1800 Washington Boulevard
Baltimore, Maryland 21230



RE: 10033 Governor Lane Boulevard, Williamsport, MD 21795 Tax ID 02-005344

Dear Mr. Hafner,

In response to your request for information regarding the above referenced property, we have researched our files and present the following:

- The current zoning classification for the subject property is PI – Planned Industrial which is governed by Article 18 of the Washington County, Maryland Zoning Ordinance.
- The anticipated use of “manufacturing coating glass facer, indoor storage and outdoor material and equipment storage” is permitted as principal use in the PI district with the following conditions:
 - Outdoor storage must conform to Section 18.93 of the Washington County, Maryland zoning ordinance. This section delineates location, fencing, and screening requirements.
- The subject property is not located within any special, restrictive, or overlay district.
- There are no active zoning violations for the subject property.
- Fire code violation questions should be directed to the State Fire Marshal Office.
- Water supply and/or allocation questions should be directed to the City of Hagerstown Water Department.
- Sewer allocation and discharge questions should be directed to the Division of Environmental Management, Water Quality Office for Washington County, Maryland.
- The property is currently conforming to the existing zoning district.
- Variance was applied for and granted for a commination tower; formal opinion attached.
- In the event of casualty, in whole or in part, the structures located on the subject property may be rebuilt in their current form provided the use doesn’t change or becoming non-conforming.
- The most recent certificate of occupancy was issued to the property owner Governors Lane LLC for a fiberglass manufacturing company “Glass Tech Materials”. See attached certificate.
- If the property is sold but the user/occupant remains the same, a new certificate of occupancy is not required.
- If the user/occupant of the property changes but the use remains the same a new certificate of occupancy is not needed, however, an updated zoning certification should be sought.

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- There are no known actions/hearings/requests before the Board of County Commissioners of Washington County or any of its subcommittees or commissions.
- Bulk requirement information is included in the attached copy of the PI zoning district.

This information was researched on February 7, 2022 by the undersigned per request and as a public service. The undersigned certifies that the above information contained herein is believed to be accurate and is based upon or relates to the information supplied by the requestor. The Authority assumes no liability for errors or omissions. All information was obtained from public records which may be inspected during regular business hours.

Sincerely,



Katie Rathvon
Zoning Coordinator

Cc Tony Silva

GOVERNORS LANE LLC
16151 Elliott Pky
Williamsport, Maryland 21795

Appellant

: BOARD OF ZONING APPEALS FOR
: WASHINGTON COUNTY, MARYLAND
:
: APPEAL NO. AP2001-071

OPINION

This is an appeal for a variance from the minimum 195 feet setback to 130 feet along a portion of the common boundary with Penn Central Railroad right-of-way for the installation of a communication tower. The subject property is located at 10033 Governor Lane Boulevard, is owned by the Appellant, and is zoned Planned Industrial.

A public hearing was held before a 4-member Board on June 20, 2001. Appellant was given the opportunity to continue the case until a date on which it could be heard by a full Board, but elected to proceed as scheduled. Matthew Chakola and William C. Wantz, attorney for Appellant, offered evidence and testimony in support of the appeal. There was no opposition.

FINDINGS OF FACT

Based upon the testimony given and all data and other evidence presented, and upon a study of the specific property involved, as well as the neighborhood, this Board makes the following findings of fact:

1. Appellant requests a variance from the minimum 195 feet setback to 130 feet along a portion of the common boundary with Penn Central Railroad right-of-way for the installation of a communication tower.
2. Received into evidence as Appellant's Exhibit No. 1 was a site plan indicating Maryland Paper Corporation as proprietor of the leased area.
3. Mr. Chakola states that Appellant will lease a 195' cellular tower to Dobson Cellular Communication.
4. There is 78,000 feet of warehousing for Maryland Paper Corporation – existing use.
5. Received into evidence as Appellant's Exhibit No. 2 was a copy of the Deed of the subject property to Appellant.

6. An existing railroad siding inhibits meeting the required setback. The railroad siding is needed as a backup-up for transportation of paper products should there be a trucker's strike, etc.
7. Mature trees surround the railroad siding. The proposed tower could not be seen from Governor Lane Boulevard.
8. Michael Grossman, Vice-President of Strategic Communications Services, Inc., has entered into a lease with Governors Lane LLC.
9. Potential spaces consist of 6 leases to future tenant for co-habitation of other communication services.
10. Brian Muck, manager of Dobson Communications, 5330 Spectrum Drive, Frederick, Maryland, testifies that he does searches for Gap & Service (call quality areas), and that computer studies are performed for the above.
11. Received into evidence as Appellant's Exhibit No. 3 was a diagram of the current Dobson coverage propagation map.
12. Received into evidence as Appellant's Exhibit No. 4 was a drawing depicting the tower location and proposed coverage. The coverage does not include the Potomac River -- it's a dividing point by the FCC.
13. Todd Stiles, 2250 Millennium Drive, Enola Pennsylvania, that the purposed area is conducive to the tower location -- industrial area residences will not be affected. The tower will not need to be lighted.
14. Received into evidence as Appellant's Exhibit No. 5 was a site coverage map.
15. Received into evidence as Appellant's Exhibit No. 6 was a colored map of existing towers in the area.
16. Mr. Stiles states that co-locations could occur 15 feet apart on the 195' tower.
17. Received into evidence as Appellant's Exhibit No. 7 was a drawing depicting co-location settings.
18. Received into evidence as Appellant's Exhibit No. 8 was an Affidavit stating approval of co-location.
19. Received into evidence as Appellant's Exhibit No. 9 was an Affidavit stating non-existence of other towers.

20. Received into evidence as Appellant's Exhibit No. 10 was a tax map with the site location color-depicted.
21. Daniel Ianello, 2002 Bemont Pl, Mishauaka, Indiana, representing Pirod Inc., manufacturer of communication towers (Pirod, Inc., has been in business since 1973), states that the proposed tower will be steel constructed with a 70-mph wind speed design.
22. A fence will be installed around the proposed tower.
23. There was no opposition to this request from any affected property owners.

RATIONALE

This appeal is governed by Section 4.22A.1 of the Zoning Ordinance. A practical difficulty exists due to the existing railroad siding which prohibits compliance with the Zoning Ordinance required setback. It appears that the request is consistent with the spirit and intent of the Ordinance, and there was no opposition of Appellant's request from any affected property owners.

The Appellant has met the burden of demonstrating that strict compliance with the Ordinance would unreasonably prevent the use of the property for a permitted purpose or render conformance unnecessarily burdensome; denying the variance would do substantial injustice to the applicant and a lesser relaxation than that applied for would not give substantial relief; and granting the variance would observe the spirit of the Ordinance and secure public safety and welfare.

Accordingly, having considered all of the factors set forth in Section 25.56 of the Zoning Ordinance, the request for a variance from the minimum 195 feet setback to 130 feet along a portion of the common boundary with Penn Central Railroad right-of-way for the installation of a communication tower, is hereby granted this 17th day of July, 2001.

BOARD OF ZONING APPEALS

BY: 

Robert C. Veil, Jr.
Board Chairman

ARTICLE 18 "PI" PLANNED INDUSTRIAL DISTRICT (INDUSTRIAL PARK)¹²²

Section 18.0 Purpose

The Planned Industrial District is intended to foster industrial development in Planned Industrial Parks. The District allows a wide range of manufacturing, assembly, processing, research and development, and office uses. Due to the pre-planned and comprehensively designed nature of an industrial park and increased site design and aesthetic standards, Planned Industrial Districts can be located, built and operated with a minimum of nuisance and mapped in locations where other industrial districts may be inappropriate. Uses in the Planned Industrial District shall be served with adequate public or community water and sewerage service meeting Health Department standards.

The Planned Industrial District is intended to be assigned to large single parcels or an assemblage of parcels for planning, resubdivision, and development of a cohesively designed industrial park with multiple lots, interior streets, and other amenities. Previously approved plans for industrial parks in Planned Industrial Districts that existed at the time of the adoption of these requirements are still valid to the degree that the design does not violate current regulations.

The Planned Industrial District may also be assigned to an individual parcel for development with a single use.

Section 18.1 Principal Permitted Uses

The following principal permitted uses shall be allowed in the Planned Industrial District:

- (a) Principal permitted uses allowed in the "IR," "IG," "ORT," and "ORI" Districts, except those prohibited in Section 18.2 herein.
- (b) Office buildings for services oriented to the needs of industries and businesses located in the park and their respective employees or for the local community. These may include offices for doctors, medical clinics or laboratories, engineers, banks, data processing centers, post offices, and local retail services, provided that such office buildings shall not be the first use erected in the industrial park. It is intended that these uses be permitted only in a multi-use structure and not as stand-alone uses on individual lots.
- (c) Wholesale warehousing establishments where no retail sales are permitted.
- (d) Truck terminals or warehouses.
- (e) Heliport, subject to the standards recommended by the Federal Aviation Agency.

¹²²

Revision 17, Article 18 deleted and replaced, 4/17/12, eff. 7/1/12 (RZ-10-005/ORD-2012-07)

- (f) Public utility buildings, structures, or uses not considered essential utility equipment, as defined in Article 28A.
- (g) Child day care centers and nursery schools.
- (h) Hotels, motels, and conference centers.
- (i) Restaurants providing both on-premises and carry-out food service, including those serving alcoholic beverages on the premises only. Drive-up or drive-through service is not included as a permitted use.
- (j) Signs, Outdoor Advertising, subject to the provisions of Section 22.24 and 22.25.
- (k) Agriculture, as defined in Article 28A, including animal husbandry facilities, as defined in Article 28A, which shall be subject to the requirements set forth in Article 22, Division IX.
- (l) Helipads.

Section 18.2 Prohibited Uses¹²³

The following uses are prohibited in the Planned Industrial District:

- (a) Any new dwelling, mobile homes, mobile home parks, or institutions for human care, and uses first allowed in a business district, except as permitted in Section 18.1(b).
- (b) Brick yards, manufacture of pottery, tile, terra cotta, clay products.
- (c) Electric or steam generating plants.
- (d) Flour mills and grain or feed drying or processing.
- (e) Planned business (Regional Shopping Center).
- (f) Sawmills, unless they are operated within a completely enclosed structure. Outside storage of pre- or post-processed lumber is subject to screening requirements of Section 18.83 below.
- (g) Signs, except as authorized herein.
- (h) Special exception uses in "IR" and "IG" Districts, with the exception of Solar Energy Generating Systems in accordance with Section 4.26.

¹²³

Revision 17, Section 18.2 amended (RZ-13-002/ORD-2013-25)

Section 18.3 Accessory Uses

Uses shall be allowed which are customarily incidental to or are demonstrably related to permitted uses in an industrial park, including indoor and outdoor recreational facilities, cafeterias, clinics, helipads, training facilities, meeting rooms, and display rooms related to or primarily restricted to the industries and businesses located in the industrial park.

Section 18.4 Development Procedures in Existing and New Planned Industrial Districts

(a) Existing Planned Industrial Districts with Approved Industrial Park Concept Plans

In existing Planned Industrial Districts with industrial park concept plans, development plans, or subdivisions previously approved by the Planning Commission, development on individual lots may proceed with an application for subdivision and/or site plan approval as needed. Subdivisions and site plans shall be designed and approved according to the design standards contained in this Article, site plan requirements contained in Section 4.11, and any other applicable standards contained in this Ordinance.

(b) Existing Planned Industrial Districts Without Approved Concept or Development Plans

In existing Planned Industrial Districts without concept or development plans approved by the Planning Commission, the following shall apply:

1. On a parcel or a combination of several parcels greater than twenty-five (25) acres or when subdivision is proposed on any size parcel to create three (3) or more lots or prior to an application for subdivision approval of the fourth (4th) lot from the original parcel, a preliminary consultation, as described in the Subdivision Ordinance, shall be required. Following the consultation and Planning Commission review and recommended revisions, a concept plan that is consistent with the guidance and intent of the Planned Industrial District shall be approved by the Planning Commission. The approved concept plan shall be the guide for the future subdivision of the property and development of the infrastructure to serve the various uses established on the individual lots.

The preliminary consultation described above is optional for parcels less than twenty-five (25) acres or the proposed subdivision of less than three (3) lots.

The Planning Commission may waive the requirement for a preliminary consultation for the subdivision of a fourth (4th) lot where it

is apparent that there will be no land area available for future subdivision or development after the development of the fourth (4th) lot.

2. The concept plan shall include the following minimum information:
 - i. The location and size of the tract.
 - ii. The proposed layout of streets, lots, and other elements basic to the proposed industrial park or use. The plan shall contain a graphic display of the proposed street and highway network for the new development and the connections to the existing surrounding road network.
 - iii. The proposed methods and general arrangement of the sewage disposal, storm water management and water supply systems, and provisions for other utilities.
 - iv. Minimum topographic information sufficient to determine surface drainage patterns and principal drainage areas. Any area of steep slope as defined in Section 202.54 of the Subdivision Ordinance shall also be identified.
 - v. The source of existing contours as they are shown on the plan.
 - vi. The location of any 100-year floodplain as regulated by the Washington County Floodplain Management Ordinance.
 - vii. The location of any perennial or intermittent stream as defined in the Subdivision Ordinance, Section 202.55.
 - viii. The location of the Appalachian Trail if within one thousand (1,000) feet of the proposed development. (This information may be shown in the vicinity or location map)
 - ix. Where applicable, notation of the property's location within the watershed boundaries of the Edgemont or Smithsburg Reservoirs or the Upper Beaver Creek Drainage Basin as delineated on maps prepared and provided by the Washington County Planning Commission.
 - x. The zoning and land use on adjacent parcels.
 - xi. An approved Forest Stand Delineation including an indication of the existence of the habitat of a plant or animal species determined by the U.S. Fish and Wildlife Service to be threatened or endangered according to the definitions contained in 50 CFR 17.

- xii. A preliminary proposal for any required forest conservation mitigation.
 - xiii. The location of historic inventory sites on the property.
3. When reviewing the concept plan, the Planning Commission shall consider:
- i. The layout of the industrial park with respect to internal roads and the access of such to public highways.
 - ii. Preservation of natural topographic, environmental, and historic features.
 - iii. Grading plans, drainage structures, water and sewerage facilities, and other utilities.
 - iv. Orientation and compatibility with uses on adjacent properties.
 - v. Landscape proposals.

(c) Applications for New Planned Industrial Districts

Applications for new Planned Industrial Districts shall comply with the zoning amendment procedures contained in Article 27 and the requirements for a preliminary consultation and approved industrial park concept plan contained in this Article, Section 18.4(b).

Section 18.5 General Requirements for Applications for New Planned Industrial Districts

Prior to acceptance of an application for a new Planned Industrial District, a concept plan for the subject property shall be approved following the guidelines and procedures pertaining to preliminary consultations contained in Section 18.4(b).

The applicant shall provide a concept plan containing the information required at Section 18.4(b)2. A preliminary consultation shall be conducted. The Planning Commission shall have completed at least one review of the concept plan and summary of staff and review agency recommendations during a regularly scheduled Planning Commission meeting before an amendment application for a new Planned Industrial District may be accepted.

Section 18.6 Data to Accompany Application

Applications for a Planned Industrial District shall be accompanied by an approved Forest Stand Delineation, preliminary Forest Conservation Plan and the concept plan required by Section 18.4(b) that has been revised according to the results of the preliminary consultation and the Planning Commission recommendations. The concept plan shall be prepared by a licensed architect, engineer, landscape architect, or certified planner. The concept plan shall be drawn to scale and contain all of the information required by Section 18.4(b)2 above.

The zoning amendment application shall also be accompanied by preliminary traffic data that includes available current traffic counts for existing roads within a one (1) mile radius of the site, a projection of the additional traffic (amount and type) predicted to be generated by the proposed development, peak hour estimates, and the distribution and direction of travel of the projected vehicles.

Section 18.7 Planning Commission and County Commissioner Review and Action

Upon receipt of an application for a zoning map amendment for a Planned Industrial District, accompanied by the required concept plans and information, the application shall follow the amendment procedures and policies specified in Article 27, Amendments. The Planning Commission shall review the proposed development, considering its relationship to the surrounding area and to the development pattern outlined in the adopted Comprehensive Plan for the County.

Upon conclusion of the amendment proceedings, if the proposed amendment is approved by the Board of County Commissioners and the land is assigned the Planned Industrial Zoning District, but before beginning development, the applicant shall submit a final concept plan to the Planning Commission. The final concept plan, after adoption by the Planning Commission, shall be deemed an official development plan. The official development plan shall be signed by the Planning Commission's Chairman and by the property owner indicating his/her willingness to abide by the conditions and terms of the adopted plan. The Planning Commission shall maintain appropriate records of all concept plan approvals and official development plans. The official development plan may be amended, the procedure being the same as in the case of the original plan. Minor amendments of official development plan features may be approved through the site plan approval by the Planning Commission without an additional hearing.

The Planning Commission shall determine the degree of change from the official development plan and the need for additional public hearings.

The official development plan may be approved even though it does not show exact lot sizes or locations of future buildings. It is recognized that full development of planned industrial areas may require a number of years, and some flexibility is needed to accommodate the needs of future industries. However, no zoning permit shall be issued on any lot unless the Planning Commission shall have approved a development plan for the entire industrial park and a site plan for each lot therein as it is proposed for development. Planning Commission review of individual site plans after an overall development plan has been approved shall not require separate public hearings.

In reviewing the site plan for a lot in the Planned Industrial District, the Planning Commission shall consider the following, in addition to the design standards contained in Section 18.8 and the site plan requirements contained in Section 4.11.

- (a) Layout of the site with respect to the arrangement and width of its driveways and parking areas and their relationship to off-site roadways within the industrial park and to external public highways.

- (b) Preservation of natural topographic features, such as trees and watercourses.
- (c) Grading plan and plans for all utilities, including water and sewerage facilities, storm drainage, parking lots, loading docks, lighting and screening.
- (d) Lot layout, including front, side, and rear yard lines.
- (e) Location, height and orientation of proposed buildings.
- (f) Identity of occupant and nature of operations.
- (g) Employee information, as to number and shifts.
- (h) Location, size, and lighting of signs.
- (i) Outdoor storage areas, including location, screening, and safety features.

Section 18.8 Required Conditions

- (a) All manufacturing uses shall be conducted in an enclosed building, except for parking, loading, and storage.
- (b) All uses in the Planned Industrial District shall comply with the performance standards contained in Section 4.12.
- (c) All uses in the Planned Industrial District shall be served by public water and sewer facilities approved by the Washington County Health Department.
 - 1. The Planning Commission may waive this requirement after consultation and advice from the Health Department.
 - 2. Prior to a decision to grant or not grant a waiver of this requirement, the Planning Commission shall consider the following:
 - i. The need to protect environmental resources from potential pollution from failing septic systems.
 - ii. The availability and proximity of existing public water and sewer facilities.
 - iii. The status of any available plans for utility extensions in the future that may serve the area.
 - iv. The existence and operation of private, on-site health facilities in the vicinity.
 - v. Recommendations of the Washington County Health Department.

- vi. The adopted Washington County Water and Sewerage Plan.
 - vii. Recommendations of the potential service provider.
 - viii. Any grant of a waiver to allow the use of a private, on-site well or septic system is conditional upon the agreement to abandon the private system and connect to the public utility when it becomes available.
 - ix. When the Planning Commission has determined that a waiver from the required use of public water and sewer facilities is appropriate, the minimum lot size shall be the result of the application of the minimum lot size, setback, and yard requirements specified in Section 18.99 and 18.100. Lot dimensions shall also conform to any applicable minimum requirements affecting lot size, width, or separations imposed by the Washington County Health Department.
 - x. Any private on-site well or septic system shall meet all Health Department requirements.
- (d) All new development in the Planned Industrial District shall comply with the requirements of the Washington County Adequate Public Facilities Ordinance.

Section 18.9 Design Standards

Section 18.91 Vehicular Access

- (a) Vehicular access to industrial parks shall be permitted only from public roads or highways and not from any residential street.
- (b) Road access to an industrial park may be at points prescribed by the appropriate agency or jurisdiction, but in no case less than the following:
 - (1) For state roads, not less than seven hundred fifty (750) feet between points of access.
 - (2) For county roads, not less than two hundred (200) feet between points of access.
- (c) All streets within an industrial park shall be designed to County specifications for the expected type and volume of traffic and shall be offered for ownership and maintenance by the County through the existing dedication procedures.

Section 18.92 Parking and Loading Facilities

- (a) There shall be provided for, in each plan, sufficient space for off-street parking and storage of vehicles for personnel. Parking facilities shall comply with the standards contained in Article 22, Division I.
- (b) All uses shall provide an appropriately-sized area for parking vehicles to load and unload goods and materials. The designated loading area shall not be located where it will interfere with the flow of traffic in the parking lot or on adjacent public or private streets. Loading areas shall be provided in accordance with the regulations and guidelines contained in Article 22, Division I.
- (c) Industrial park developers and tenants are encouraged to utilize shared parking facilities, where appropriate, in accordance with the guidelines contained in Article 22, Division I, and when approved by the Planning Commission.

Section 18.93 Outdoor Storage

- (a) No outdoor storage shall be permitted in the front yard of any operation permitted by this Article. Front yards shall be defined as the area facing the major highway or artery in the immediate vicinity, whether adjacent or nearby. If it is indeterminable from this factor, then what would ordinarily be considered the front of the major structure would be considered the front portion of the yard and/or operation.
- (b) Any outside material storage yards shall include a fence or a dense screen planting of trees, shrubs, or other plant materials, or both, to the full length of the outdoor storage area to serve as a barrier to visibility, air borne particles, glare, or noise. Such screen planting shall be in accordance with the following requirements:
 - 1. Plant materials used in the screen planting shall be of such species and size as will produce a complete visual screen at a height appropriate for the material being screened.
 - 2. A fence, when erected as a screen, shall be of a height appropriate for the material being screened and shall be placed no closer than three (3) feet from any street or property line.
 - 3. The screen planting shall be placed so that at maturity it will be no closer than ten (10) feet from any street or property line.
 - 4. No structure, fence, planting, or other obstruction shall be permitted which would interfere with traffic visibility across the corner of a lot or at access driveways within a required clear sight triangle. Such clear sight triangle shall be maintained in the area between a plane two (2)

feet above curb level and a plane seven (7) feet above curb level.

5. The screen planting or fence shall be broken only at points of vehicular or pedestrian access.
6. The screening materials shall be maintained in order to insure that the screening effect is in place at all times.

Section 18.94 Building Appearance, Location, and Landscaping

- (a) Drawings or photographs of the proposed architectural treatment of the proposed buildings on the site shall be provided with the site plan to assist the Planning Commission in visualizing the ultimate site appearance.

High quality architectural designs can mitigate the perceived impact of industrial structures and uses and can create a positive impression of the industry, the industrial park, and the Washington County, Maryland community. Designers of buildings in the industrial park are encouraged to employ the following guidelines in building siting and design.

- (b) Site Considerations

1. Utilize to the greatest degree possible existing site features, such as topography, orientation, tree cover, and existing structures.
2. Create an individual and cohesive site identity that is also compatible with adjacent properties and structures.
3. Any part of a lot not used for buildings, parking, loading, driveways, outside storage, or walkways shall be planted with grass or other ground cover, trees, shrubs, and/or flowers, and shall be properly maintained at all times. A landscaping plan shall be included with each site plan and shall be consistent with the guidelines contained in Article 22, Division II.

- (c) Buildings

1. Apply consistent design principles on all buildings and structures on the site to create unity.
2. Apply design principles on all building facades and surfaces, not just the front.
3. Create visual interest and minimize bulk with architectural designs that include varied but complementary building materials, surface treatments, textures, varying roof and wall planes, color and window and door arrangements.

- (d) Industrial buildings shall be constructed of high-quality natural materials finished in low-reflectance earth tone colors and finishes. Materials may

include brick, wood, stone, tinted textured concrete masonry units, architectural or patterned concrete block or other material approved by the Planning Commission.

- (e) Public-oriented facades and the roof line of buildings and any façade that is located within three hundred (300) feet of a residential zoning district shall be articulated and constructed with architectural elements so as to appear as a series of smaller buildings or to minimize the appearance of excessive mass.
- (f) Minimize the views of mechanical equipment, storage, loading facilities, and refuse collection by considering the need for screening and incorporating it into the building design and overall site design, orientation, and landscaping used throughout the project.
- (g) Non-enclosed areas for storage of pallets, recycling, refuse and other materials shall be permanently defined and screened with walls and/or fences and/or heavy evergreen landscaping consistent with materials and landscaping used throughout the project.
- (h) Parking and service area lighting shall be full cut-off units designed to project downward or ornamental street lights. The height of light poles shall be consistent with the lighting standards contained in Article 22, Division X.
- (i) A landscaping plan shall be included with each site plan and shall be consistent with the guidelines contained in Article 22, Division XI. If the new use is adjacent to any lot occupied by a dwelling, school, place of worship, or institution for human care not located on the same lot as said use or buildings, or any lot which is part of a duly recorded residential subdivision, it shall be effectively screened according to the buffering requirements contained in Article 22, Division XI.

Section 18.95 Utilities

Any overhead wires determined necessary shall be run along the rear property lines where practical, and any control instrument station or substations shall be screened.

Section 18.96 Signs and Lighting

- (a) The design, lettering, lighting and location of all signs shall be included so far as possible as part of the site plan submitted for approval of the Planning Commission.
- (b) Signs for identifying the use or the occupant on a lot shall be a part of the architectural design and be attached to the building. Any signs detached from buildings shall be landscaped.

- (c) All sites which will receive night use shall be provided lighting for safety and aesthetics. Lighting shall be provided in accordance with the regulations and guidelines contained in Article 22, Division X.

Whenever possible, signage should be combined to eliminate visual clutter. Additional signage at park entrances that list all tenants in the park or serves as a directory are permitted according to the guidelines contained in Article 22, Division II.

Section 18.97 Noise

All uses in the Planned Industrial District shall be subject to compliance with the noise limitations as specified below:

- (a) Noise will be measured with a sound level meter. Impact noise will be measured using the fast response of the sound level meter. Impact noises are intermittent sounds such as from a punch press or drop force hammer.
- (b) The following table describes the maximum sound pressure level permitted from any industrial source as measured at any property line adjacent to a residential district, commercial district, other PI zoned lot, or other non-industrial use.

MAXIMUM PERMITTED SOUND LEVELS, DB(A)

Sound Measured to:	Decibels Continuous Slow Meter Response	Impact Fast Meter Response
Residential District	55	60
Commercial District	64	70
Other PI Zoned Lot	70	80

- (c) The following sources of noise are exempt.
 1. Transportation vehicles not under the control of the industrial use.
 2. Occasionally-used safety signals, warning devices, and emergency pressure relief valves.
 3. Temporary construction activity between 7:00 a.m. and 7:00 p.m.
 4. Agricultural activities.
 5. Emergency generators for essential operations of a facility for the duration of an emergency and/or interruption in electric power service.

Section 18.98 Height Regulations

- (a) No building shall exceed seventy-five (75) feet in height, except as provided in Section 23.4 of this Ordinance.

Section 18.99 Area Requirements

- (a) No industrial park considered herein shall comprise less than ten (10) acres if it is a completely separate tract. No area limitation shall be placed on an industrial park if it (1) is an addition to another industrial park, or (2) has a common boundary with an existing "IR" or "IG" District.
- (b) The minimum lot area for any lot for a principal building shall be two (2) acres and the minimum lot frontage shall be two hundred (200) feet.
- (c) The maximum lot area coverage of any lot by a principal building or buildings shall not exceed fifty (50) percent of the total lot area.

Section 18.100 Yard Setback Requirements

- (a) A front yard adjacent to an expressway or primary highway as shown on the Washington County Highway Plan shall be one hundred fifty (150) feet. Front yards on other County or municipal streets or interior roads within an industrial park shall be fifty (50) feet.

- (b) Side or rear yards shall be as follows:

Adjoining a residential district, one hundred fifty (150) feet or seventy-five (75) feet where proper screening as determined by the Planning Commission along the property line is provided.

Adjoining a business or industrial district, seventy-five (75) feet.

Section 18.101 Site Plan

A site plan is required for any principally permitted or approved special exception use except agriculture. Animal husbandry facilities shall be subject to the requirements set forth in Article 22, Division IX.

All site plans shall contain information as required by Section 4.11 and shall not be approved without compliance with the regulations contained in the applicable sections of this Ordinance governing parking, lighting, landscaping, buffers, and signage.

All uses in the Industrial General District shall provide the required information and meet the performance standards contained in Section 4.12 of this Ordinance.

Areas of a Planned Industrial District or industrial park that are not part of individual lots or are intended for the common benefit of all tenants of the park, such as park identification signs, lighting, landscaping, or recreation areas, may be designed and approved on site plans for individual lots or as part of the approval of the official development plan or on a separate site plan for common industrial park amenities.

Section 18.102 Special Exception Uses (Requiring Board Authorization After Public Hearing)

Solar Energy Generating Systems in accordance with Section 4.26.



WASHINGTON COUNTY DIVISION OF PLAN REVIEW & PERMITTING

80 West Baltimore Street | Hagerstown, MD 21740-6003 | P: 240.313.2460 | F: 240.313.2461 | Hearing Impaired: 7-1-1

CERTIFICATE OF OCCUPANCY

Property Owner: GOVERNORS LANE LLC

Date of Issuance: 09/09/2021

16144 ELLIOTT PKWY
WILLIAMSPORT MD 21795

Record No: 2018-01046

Tax Account No: 02005344

Job Address: 10033 GOVERNOR LANE BLVD

Description: 29,276 sq ft one story addition to the rear of existing building to be used as raw material storage, equipment pit, men and women's restrooms, (2) electrical rooms,(2) bay doors, 744 sq ft concrete ramp to the rear of building, new truck scale near existing entrance, remove crawl space under electrical room and fill in with new concrete slab, 704 sq ft two story control room, and Zoning Certification for "Glass Tech Materials" a fiberglass manufacturing company, hours of operation: 24 hours per day, 7 days per week, number of employees: 50 Maryland Fiberglass

Construction Code: 2015 IBC

Foundation Type: Concrete

Occupancy Class:

Building Type:

Design Occupant Load:

Sprinklers Provided:

Sprinklers Required:

Sub-Type: 320: Industrial Building

Exterior Finish: metal

Type of Heat:

The Scope of Work authorized by the above referenced permit is hereby certified to have been completed in accordance with the requirements of the Building Code of Washington County and is authorized for Use and Occupancy.

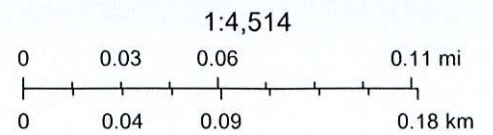
Richard W. Eichelberger, Building Code Official

Washington County Zoning Review Map



2/7/2023, 3:52:18 PM

- Parcels
- Growth Area Boundaries
- Planned Industrial
- Residential, Suburban
- Highway Interchange
- Municipal



Washington County Planning Department, MD iMAP, DoIT

MARYLAND DEPARTMENT OF THE ENVIRONMENT

**AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT**

**SUPPLEMENT TO
DOCKET # 06-23**

COMPANY: Herbert Malarkey Roofing Company
LOCATION: 10033 Governor Lane Blvd., Williamsport, MD 21795
APPLICATION: Installation of a wet-formed fiberglass mat manufacturing facility.

<u>ITEM</u>	<u>DESCRIPTION</u>
1	Notice of Tentative Determination, Opportunity to Request a Public Hearing, and Opportunity to Submit Written Comments
2	Fact Sheet and Tentative Determination
3	Draft Permit to Construct and Conditions
4	Supplemental Information Standard Reference List Coating Line 1 & 2 Redacted Form 5s, Submitted December 7, 2023 Emails with Stack Information Updated Emissions Summary and Calculations Nalco 7320 Safety Data Sheet TAPS Air Dispersion Modeling Report
5	Privilege Log

**MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION**

**NOTICE OF TENTATIVE DETERMINATION, OPPORTUNITY TO REQUEST
A PUBLIC HEARING, AND OPPORTUNITY TO SUBMIT WRITTEN COMMENTS**

FIRST NOTICE

The Department of the Environment, Air and Radiation Administration (ARA) has completed its review of an application for a Permit to Construct submitted by Herbert Malarkey Roofing Company on February 8, 2023 for the installation of a wet-formed fiberglass mat manufacturing facility. The proposed installation will be located at 10033 Governor Lane Blvd., Williamsport, MD 21795 in Washington County.

Pursuant to Section 1-604, of the Environment Article, Annotated Code of Maryland, the Department has made a tentative determination that the Permit to Construct can be issued and is now ready to receive public comment on the application. Copies of the Department's tentative determination, the application, the draft permit to construct with conditions, and other supporting documents are available for public inspection on the Department's website. Look for Docket # 06-23 at the following link:

<https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx>

In accordance with HB 1200/Ch. 588 of 2022, the applicant provided an environmental justice (EJ) Score for the census tract in which the project is located using the Maryland EJ mapping tool. The EJ Score, expressed as a statewide percentile, was shown to be 28, which the Department has verified. This score considers three demographic indicators – minority population above 50%, poverty rate above 25%, and limited English proficiency above 15%. The Department's review of the environmental and socioeconomic indicators contributing to that EJ score is included in the tentative determination that is available for public inspection.

Interested persons may request a public hearing and/or submit written comments on the tentative determination. Requests for a public hearing must be submitted in writing and must be received by the Department no later than 20 days from the date of this notice. A requested public hearing will be held virtually using teleconference or internet-based conferencing technology unless a specific request for an in-person public hearing is received. Written comments must be received by the Department no later than 30 days from the date of this notice.

Interested persons may request an extension to the public comment period. The extension request must be submitted in writing and must be received by the Department no later than 30 days from the date of this notice or within 5 days after the hearing (if a hearing is requested), whichever is later. The public comment period may only be extended one time for a 60-day period.

All requests for a public hearing, requests for an extension to the public comment period, and all written comments should be directed to the attention of Ms. Shannon Heafey, Air Quality Permits Program by email to shannon.heafey@maryland.gov or by mail to the Air and Radiation Administration, 1800 Washington Boulevard, Baltimore, Maryland 21230.

Further information may be obtained by calling Ms. Shannon Heafey at 410-537-4433.

Christopher R. Hoagland, Director
Air and Radiation Administration

**MARYLAND DEPARTMENT OF ENVIRONMENT
AIR AND RADIATION ADMINISTRATION**

**FACT SHEET AND TENTATIVE DETERMINATION
HERBERT MALARKEY ROOFING COMPANY**

**PROPOSED INSTALLATION OF ONE (1) WET FORMED FIBERGLASS MAT
MANUFACTURING FACILITY**

I. INTRODUCTION

The Maryland Department of the Environment (the "Department") received an application from the Herbert Malarkey Roofing Company ("Malarkey") on February 8, 2023, for a Permit to Construct for one (1) wet formed fiberglass mat manufacturing facility. The proposed installation will be located at 10033 Governor Lane Blvd., Williamsport, MD 21795 (Washington County).

A notice was placed in Herald-Mail March 27, 2023 and April 3, 2023 announcing an opportunity to request an informational meeting to discuss the application for a Permit to Construct. An informational meeting was not requested.

As required by law, all public notices were also provided to elected officials in all State, county, and municipality legislative districts located within a one-mile radius of the facility's property boundary.

The Department has reviewed the application and has made a tentative determination that the proposed installation is expected to comply with all applicable air quality regulations. A notice will be published to provide the public with opportunities to request a public hearing and to comment on the application, the Department's tentative determination, the draft permit conditions, and other supporting documents. The Department will not schedule a public hearing unless a legitimate request is received.

If the Department does not receive any comments that are adverse to the tentative determination, the tentative determination will automatically become a final determination. If adverse comments are received, the Department will review the comments, and will then make a final determination with regard to issuance or denial of the permit. A notice of final determination will be published in a newspaper of general circulation in the affected area. The final determination may be subject to judicial review pursuant to Section 1-601 of the Environment Article, Annotated Code of Maryland.

II. PROPOSED INSTALLATION

Malarkey Roofing Products proposes to install one (1) wet formed fiberglass mat line and two (2) coating lines for mat product in the manufacturing facility.

Processing areas include:

- Material Handling
- White Water Process
- Resin Application
- Mat Line
- Coating Mix Room
- Coating Lines 1 & 2
- Cooling Tower
- Insignificant Activities – Coating Mix Room space heater, Coating Mix Room hot water heater.

The Material Handling area includes a limestone silo controlled by a dust collector.

The White-Water Process manufactures the glass slurry that will eventually become the final fiberglass product. There are no air controls associated with the White-Water Process, and the tanks are open top.

In the Resin Application System, resin (AKA “binder”), the binder, defoamer, and thickener are mixed in the open top Binder Circulation tank and are fed to the Binder Application step of the Mat Line.

In the Mat Line, glass slurry and binder are combined to form a mat and sent to the oven. The oven is heated with eight (8) direct fired burners and is circulated with fans. The oven vents to an RTO for VOC and formaldehyde control. Dried and cured fiberglass mat is wound into cardboard cores and delivered to storage.

In the Coating Mix Room, limestone from the Material Handling Area is mixed with dispersant, flocculant, latex, and water.

There are two (2) Coating Lines. The Coating Lines receive wound, uncoated fiberglass mat from storage. The mat is unwound and fed through a coating pan, where it is coated with the mixture from the Coating Mix Room and cured in an Oven/Dryer. The Coating Line 1 Oven/Dryer has four (4) indirect fired natural gas burners, with a 1.1 MMBtu/hr capacity for **each** burner. The Coating Line 2 Oven/Dryer has five (5) indirect fired natural gas burners, with a 1.1 MMBtu/hr capacity for **each** burner. The process emissions from the Oven/Driers are fugitive emissions, the combustion emissions are discharged out the stack of each Oven/Dryer.

This facility has 13 stacks.

1. The Limestone silo stack, which is controlled by a MAC SB17 dust collector.
2. The RTO stack, the process emissions and combustion emissions from the direct fired Mat Line oven [EU-024] vent out the RTO stack.
3. The Coating Mix Room stack, controlled by a Kraemer B21 Dust Collector, vent inside the building.

4. Coating Line 1 Oven/Dryer, combustion emissions from the indirect fired burner exit the building via a stack. (5 stacks/ for four burners)
5. Coating Line 2 Oven/Dryer, combustion emissions from the indirect fired burner exit the building via a stack. (5 stacks/ one for each burner)

III. APPLICABLE REGULATIONS

The proposed installation is subject to all applicable Federal and State air quality control regulations, including, but not limited to the following:

- (a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.
- (b) COMAR 26.11.02.04B, which states that a permit to construct or an approval expires if, as determined by the Department:
 - (i) Substantial construction or modification is not commenced within 18 months after the date of issuance of the permit or approval, unless the Department specifies a longer period in the permit or approval;
 - (ii) Construction or modification is substantially discontinued for a period of 18 months after the construction or modification has commenced;
or
 - (iii) The source for which the permit or approval was issued is not completed within a reasonable period after the date of issuance of the permit or approval.
- (c) COMAR 26.11.02.09A, which requires that the Permittee obtain a permit-to-construct if an installation is to be modified in a manner that would cause changes in the quantity, nature, or characteristics of emissions from the installation as referenced in this permit.
- (d) COMAR 26.11.06.02C(1), which limits visible emissions other than uncombined water to not more than 20 percent opacity.
- (e) COMAR 26.11.06.03B(1), which limits the concentration of particulate matter in any exhaust gases to not more than 0.05 grains per standard cubic foot of dry exhaust gas.
- (f) COMAR 26.11.09.05A (1), which limits visible emissions other than uncombined water to not more than 20 percent opacity.

Note: This applies to the indirect fired Coating Line Oven/Dryers.

- (g) COMAR 26.11.02.13A (52), which requires that the Permittee obtain from the Department, and maintain and renew as required, a valid State permit-to-operate.
- (h) COMAR 26.11.02.14D, which requires that the Permittee submit to the Department not later than 60 days prior to initiating operation of the installation for which this permit is issued a completed application for a State permit-to-operate.
- (i) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.
- (j) COMAR 26.11.15.05, which requires that the Permittee implement “Best Available Control Technology for Toxics” (T – BACT) to control emissions of toxic air pollutants.
- (k) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions would unreasonably endanger human health.

IV. GENERAL AIR QUALITY

The U.S. Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) for six (6) criteria pollutants, i.e., sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, ozone, and lead. The primary standards were established to protect public health, and the secondary standards were developed to protect against non-health effects such as damage to property and vegetation.

The Department utilizes a statewide air monitoring network, operated in accordance with EPA guidelines, to measure the concentrations of criteria pollutants in Maryland’s ambient air. The measurements are used to project statewide ambient air quality, and currently indicate that Washington County complies with the NAAQS for ozone, sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, and lead.

With regard to toxic air pollutants (TAPs), screening levels (i.e., acceptable ambient concentrations for toxic air pollutants) are generally established at 1/100 of allowed worker exposure levels (TLVs)¹. The Department has also developed additional screening levels for

¹ TLVs are threshold limit values (exposure limits) established for toxic materials by the American Conference of Governmental Industrial Hygienists (ACGIH). Some TLVs are established for short-term exposure (TLV – STEL), and some are established for longer-term exposure (TLV – TWA), where TWA is an acronym for time-weight average.

carcinogenic compounds. The additional screening levels are established such that continuous exposure to the subject TAP at the screening level for a period of 70 years is expected to cause an increase in lifetime cancer risk of no more than 1 in 100,000.

V. ENVIRONMENTAL JUSTICE ANALYSIS

The concept behind the term environmental justice (EJ) is that regardless of race, color, national origin, or income, all Maryland residents and communities should have an equal opportunity to enjoy an enhanced quality of life. How to assess whether equal protection is being applied is the challenge.

Communities surrounded by a disproportionate number of polluting facilities puts residents at a higher risk for health problems from environmental exposures. It is important that residents who may be adversely affected by a proposed source be aware of the current environmental issues in their community in order to have meaningful involvement in the permitting process. Resources may be available from government and private entities to ensure that community health is not negatively impacted by a new source located in the community.

Extensive research has documented that health disparities exist between demographic groups in the United States, such as differences in mortality and morbidity associated with factors that include race/ethnicity, income, and educational attainment.

The Maryland General Assembly passed HB 1200, effective October 1, 2022, that adds to MDE's work incorporating diversity, equity and inclusion into our mission to help overburdened and underserved communities with environmental issues. In accordance with HB 1200/Ch, 588 of 2022, the applicant provided an environmental justice (EJ) Score for the census tract in which the proposed source is located using the Maryland EJ mapping tool. The EJ Score, expressed as a statewide percentile, was shown to be 28 which the Department has verified. This score considered three demographic indicators – minority population above 50%, poverty rate above 25% and limited English proficiency above 15%.

To account for other sources of pollution surrounding the proposed source, the Department conducted an additional EJ Score analysis to evaluate the impact of other sources located within 1 mile of the proposed source. The highest EJ Score in a census tract located within 1 mile of the proposed source, expressed as a statewide percentile, was shown to be 28.

An EJ Score of 28 indicates that the proposed installation is located in an area that is not disproportionately impacted by sources of pollution or at a higher risk of health problems from environmental exposures than other areas in Maryland. The Department has reviewed the air quality impacts from this proposed installation and has determined that the proposed installation will meet all applicable air quality standards.

VI. COMPLIANCE DEMONSTRATION AND ANALYSIS

The proposed installation must comply with all State imposed emissions limitations and screening levels, as well as the NAAQS. The Department has conducted an engineering and air quality review of the application. The emissions were projected based on material usage estimates and AP-42 emission factors. The conservative U.S. EPA's SCREEN3 model was used to project the maximum ground level concentrations from the proposed facility, which were then compared to the screening levels and the NAAQS. The exceptions are Cadmium Annual concentrations and Formaldehyde 8-hr & Annual concentrations, which were projected by EPA's AERMOD model.

- A. **Estimated Emissions** - The maximum emissions of air pollutants of concern from the proposed installation are listed in Table I.
- B. **Compliance with National Ambient Air Quality Standards** - The maximum ground level concentrations for particulate matter, sulfur dioxide, nitrogen oxides, and carbon monoxide based on the emissions from the proposed installation are listed in column 2 of Table II. The combined impact of the projected contribution from the proposed installation and the ambient background concentration for each pollutant shown in column 3 of Table II is less than the NAAQS for each pollutant shown in column 4.
- C. **Compliance with Air Toxics Regulations** – The toxic air pollutants of concern that would be emitted from this installation are listed in column 1 of Table III. The predicted maximum off-site ambient concentrations of these toxic air pollutants are shown in column 4 of Table III, and in each case the maximum concentration is less than the corresponding screening level for the toxic air pollutant shown in column 2.

VII. TENTATIVE DETERMINATION

Based on the above information, the Department has concluded that the proposed installation will comply with all applicable Federal and State air quality control requirements. In accordance with the Administrative Procedure Act, Department has made a tentative determination to issue the Permit to Construct.

Enclosed with the tentative determination is a copy of the draft Permit to Construct.

**TABLE I
PROJECTED MAXIMUM EMISSIONS FROM THE PROPOSED INSTALLATION**

POLLUTANT	PROJECTED MAXIMUM EMISSIONS FROM PROPOSED INSTALLATION	
	(lbs/day)	(tons/year)
Nitrogen Dioxide (NO ₂)	89	16.2
Sulfur Dioxide (SO ₂)	0.55	0.1
Carbon Monoxide (CO)	74	13.6
Volatile Organic Compounds (VOC)	151	27.6
Particulate Matter (PM ₁₀)	52	9.4

**TABLE II
PROJECTED IMPACT OF EMISSIONS OF CRITERIA POLLUTANTS FROM THE PROPOSED INSTALLATION ON AMBIENT AIR QUALITY**

POLLUTANTS	MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS CAUSED BY EMISSIONS FROM PROPOSED PROCESS (µg/m ³)	BACKGROUND AMBIENT AIR CONCENTRATIONS (µg/m ³)*	NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) (µg/m ³)**
Nitrogen Dioxide (NO ₂)	annual avg. → 9	annual avg. → 28.8	annual avg. → 100
Carbon Monoxide (CO)	8-hour max → 65 1-hour max → 93	8-hr max. → 1495 1-hr max. → 2185	8-hr max. → 10,000 1-hr max. → 40,000
Sulfur Dioxide (SO ₂)	24-hour max. → 0.04 annual avg. → 0.01	24-hour max. → 21.2 annual avg. → 1.6	24-hour max. → 366 annual avg. → 78.5
Particulate Matter (PM ₁₀)	24-hr max → 11	24-hr max. → 23	24-hr max. → 150

*Background concentrations were obtained from Maryland air monitoring stations as follows:

- NO₂ → Interstate 95 South Welcome Center in Howard County, highest in Maryland selected.
- CO → 600 Dorsey Ave. in Baltimore County, highest in Maryland selected.
- SO₂ → 8515 Jenkins Rd Riviera Beach in Anne Arundel County, highest in Maryland selected.
- PM₁₀ → 3900 Hillen Rd Baltimore City, highest in Maryland selected.

**TABLE III
PREDICTED MAXIMUM OFF-SITE AMBIENT CONCENTRATIONS FOR
TOXIC AIR POLLUTANTS EMITTED FROM THE PROPOSED INSTALLATION**

TOXIC AIR POLLUTANTS	SCREENING LEVELS ($\mu\text{g}/\text{m}^3$)	PROJECTED WORST-CASE FACILITY-WIDE EMISSIONS (lbs/hr)*	PREDICTED MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)
7, 12 Dimethylbenz(a)anthracene	1-hour→ None 8-hour→ 4.76 Annual→ None	4.35E-07	1-hour→ N/A 8-hour→ 3.48E-06 Annual→ N/A
Benzene	1-hour→ 79.9 8-hour→ 16.0 Annual→ 0.130	5.71E-05	1-hour→ 5.73E-03 8-hour→ 4.01E-03 Annual→ 4.57E-04
Acenaphthene	1-hour→ None 8-hour→ 20.0 Annual→ None	4.89E-08	1-hour→ N/A 8-hour→ 3.44E-06 Annual→ N/A
Ammonia	1-hour→ 244 8-hour→ 174 Annual→ None	5.24E-01	1-hour→ 52.6 8-hour→ 36.8 Annual→ N/A
Fluorene	1-hour→ None 8-hour→ 20.0 Annual→ None	7.61E-08	1-hour→ N/A 8-hour→ 5.35E-06 Annual→ N/A
Anthracene	1-hour→ None 8-hour→ 20.0 Annual→ None	6.52E-08	1-hour→ N/A 8-hour→ 4.58E-06 Annual→ N/A
Pyrene	1-hour→ None 8-hour→ 20.0 Annual→ None	1.36E-07	1-hour→ N/A 8-hour→ 9.56E-06 Annual→ N/A
Benzo(g,h,i)perylene	1-hour→ None 8-hour→ 20.0 Annual→ None	3.26E-08	1-hour→ N/A 8-hour→ 2.29E-06 Annual→ N/A
Acenaphthylene	1-hour→ None 8-hour→ 24.6 Annual→ None	4.89E-08	1-hour→ N/A 8-hour→ 3.44E-06 Annual→ N/A
Lead	1-hour→ None 8-hour→ 0.50 Annual→ None	1.36E-04	1-hour→ N/A 8-hour→ 9.56E-03 Annual→ N/A

TOXIC AIR POLLUTANTS	SCREENING LEVELS ($\mu\text{g}/\text{m}^3$)	PROJECTED WORST-CASE FACILITY-WIDE EMISSIONS (lbs/hr)*	PREDICTED MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)
Manganese	1-hour→ None 8-hour→ 2.00 Annual→ None	1.03E-05	1-hour→ N/A 8-hour→ 7.24E-04 Annual→ N/A
Mercury	1-hour→ 0.30 8-hour→ 0.10 Annual→ None	7.06E-06	1-hour→ 7.09E-04 8-hour→ 4.96E-04 Annual→ N/A
Arsenic	1-hour→ None 8-hour→ 0.10 Annual→ 0.0002	5.43E-06	1-hour→ N/A 8-hour→ 3.82E-04 Annual→ 4.34E-05
Beryllium	1-hour→ None 8-hour→ 0.0005 Annual→ 0.0004	3.26E-07	1-hour→ N/A 8-hour→ 2.29E-05 Annual→ 2.61E-06
Chromium	1-hour→ None 8-hour→ 5.00 Annual→ None	3.80E-05	1-hour→ N/A 8-hour→ 2.67E-03 Annual→ N/A
Selenium	1-hour→ None 8-hour→ 2.00 Annual→ None	6.52E-07	1-hour→ N/A 8-hour→ 4.58E-05 Annual→ N/A
Nickel	1-hour→ None 8-hour→ 1.00 Annual→ None	5.71E-05	1-hour→ N/A 8-hour→ 4.01E-03 Annual→ N/A
Cobalt	1-hour→ None 8-hour→ 0.20 Annual→ None	2.28E-06	1-hour→ N/A 8-hour→ 1.60E-04 Annual→ N/A
Polyethylene Glycol	1-hour→ None 8-hour→ 346 Annual→ None	2.02E-01	1-hour→ N/A 8-hour→ 14.2 Annual→ N/A
Sodium Bromide	1-hour→ None 8-hour→ 98.0 Annual→ None	1.34E-02	1-hour→ N/A 8-hour→ 9.42E-01 Annual→ N/A
Dibromoacetonitrile	1-hour→ None 8-hour→ 4.05 Annual→ None	2.46E-03	1-hour→ N/A 8-hour→ 1.73E-01 Annual→ N/A
Cadmium	1-hour→ None 8-hour→ 0.020 Annual→ 0.0006	2.99E-05	1-hour→ N/A 8-hour→ 2.10E-03 Annual→ 1.0E-04

TOXIC AIR POLLUTANTS	SCREENING LEVELS ($\mu\text{g}/\text{m}^3$)	PROJECTED WORST-CASE FACILITY-WIDE EMISSIONS (lbs/hr)*	PREDICTED MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)
Formaldehyde	1-hour→ None 8-hour→ 20.30 Annual→ 0.80	3.80E-01	1-hour→ N/A 8-hour→ 11.04 Annual→ 0.48

*The values represent maximum facility-wide emissions of toxic air pollutants during any 1-hour period of facility operation.

**The values are based on worst-case emissions from the proposed facility and were predicted by EPA's SCREEN3 model, which provides conservative estimations concerning the impact of pollutants on ambient air quality. The exceptions are Cadmium Annual concentrations and Formaldehyde 8-hr & Annual concentrations, which were predicted by EPA's AERMOD model.

DRAFT PERMIT

Wes Moore
Governor

Serena McIlwain
Secretary

Air and Radiation Administration

1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

Construction Permit

Operating Permit

PERMIT NO.:

As listed on Page 2

DATE ISSUED:

TBD

PERMIT FEE:

\$5500.00

EXPIRATION DATE:

In accordance with COMAR 26.11.02.04B

LEGAL OWNER & ADDRESS

Herbert Malarkey Roofing
Company
10033 Governor Lane Blvd.
Williamsport, MD 21795
Attention: Ms. Chris Ashby,
Director of Environmental,
Health, and Safety

SITE

Herbert Malarkey Roofing
Company
10033 Governor Lane Blvd.
Williamsport, MD 21795
AI # 160478

SOURCE DESCRIPTION

This permit authorizes the installation of one (1) wet formed fiberglass mat line and two (2) fiberglass mat coating lines in a manufacturing facility.

This permit includes limitations on premises-wide emissions for VOC, aggregate HAP, and individual HAP in order that the Herbert Malarkey Roofing Company may be recognized as a synthetic minor source with respect to Title V of the Clean Air Act.

This source is subject to the conditions described on the attached pages.

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

INDEX

- Part A – General Provisions
- Part B – Applicable Regulations
- Part C – Construction Conditions
- Part D – Operating Conditions
- Part E – Notifications, Testing and Monitoring
- Part F – Record Keeping and Reporting
- Part G – Temporary Permit-To-Operate Conditions

This permit-to-construct incorporates requirements for the following registered installations:

MDE ARA Registration No.	Emissions Unit Number	Emissions Unit Name and Description	Date of Installation
<u>Material Handling Area</u>			
043-0583-9-0257	EU-001	One (1) limestone silo, 22,995 gallons, controlled by a MAC SB17 dust collector	Pre-2023
<u>Mat Line</u>			
043-0583-6-0768	EU-003	One (1) wet chop hopper, 1,002 gallons	2024
	EU-004	One (1) Glass Mix Tank, 9,800 gallons, open top	Pre-2023
	EU-005	One (1) T1 Tank, 13,000 gallons, open top	Pre-2023
	EU-006	One (1) T2 Tank, 13,000 gallons, open top	Pre-2023
	EU-007	One (1) Constant Head Tank, 9,400 gallons, open top	Pre-2023
	EU-008	One (1) White Water Tank, 9,400 gallons, open top	Pre-2023
	EU-009	One (1) Wastewater Tank, 5,000 gallons, open top	Pre-2023
	EU-010	One (1) Wire Pit, 37,000 gallons, open top	Pre-2023
	EU-011	One (1) Seal Pit, 7,800 gallons	Pre-2023
	EU-012	One (1) Couch Tank, 2,500 gallons, open top	Pre-2023
	EU-013	One (1) Viscosity Modifier Tank, 880 gallons, open top	2024
	EU-014	One (1) Made Down Viscosity Modifier Storage Tank, 5,000 gallons, open top	2024
	EU-015	One (1) Binder Storage Tank, 11,500 gallons, open top	Pre-2023

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

MDE ARA Registration No.	Emissions Unit Number	Emissions Unit Name and Description	Date of Installation
	EU-016	One (1) Binder Storage Tank, 18,600 gallons, open top	2024
	EU-017	Binder Mix Tank 1, 735 gallons, open top	Pre-2023
	EU-018	Binder Mix Tank 2, 735 gallons, open top	Pre-2023
	EU-019	Binder Mix Tank 3, 735 gallons, open top	Pre-2023
	EU-020	One (1) Binder Circulation Tank, 880 gallons, open top	Pre-2023
	EU-021	One (1) Binder Waste Tank, 8,500 gallons, open top	Pre-2023
	EU-022	Forming Belt	Pre-2023
	EU-023	Binder Belt	Pre-2023
	EU-024	One (1) Oven, with eight (8) 3.2 MMBtu/hr direct fired natural gas burners, controlled by a Durr Systems Inc Model Ecopure RL15 RTO with a 2.55 MMBtu/hr natural gas direct fired burner.	Pre-2023
	EU-045	Thickener Tank, 880 gallons, open top	Pre-2023
Coating Mix Room			
043-0583-6-0769	EU-025	Latex Tank 1, 5,600 gallons, inside a room that is controlled by a Kraemer B21 Dust Collector	Pre-2023
	EU-026	Latex Tank 2, 5,600 gallons, inside a room that is controlled by a Kraemer B21 Dust Collector	Pre-2023
	EU-027	Mix Tank 1, 1,050 gallons, open top, inside a room that is controlled by a Kraemer B21 Dust Collector	Pre-2023
	EU-028	Mix Tank 2, 1,050 gallons, open top, inside a room that is controlled by a Kraemer B21 Dust Collector	Pre-2023
	EU-029	Use Tank 1, 2,730 gallons, open top, inside a room that is controlled by a Kraemer B21 Dust Collector	Pre-2023
	EU-030	Use Tank 2, 2,730 gallons, open top, inside a room that is controlled by a Kraemer B21 Dust Collector	Pre-2023
	EU-031	One (1) Waste Water Tank, 5,600 gallons, inside of a room controlled by a Kraemer B21 Dust Collector	Pre-2023
	EU-034	One (1) Made Down Viscosity Modifier Storage Tank, 100 gallons, open top, inside	Pre-2023

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

MDE ARA Registration No.	Emissions Unit Number	Emissions Unit Name and Description	Date of Installation
		a room that is controlled by a Kraemer B21 Dust Collector	
Coating Line1			
043-0583-6-0770	EU-035	Coating Pan L1, 112 gallons	Pre-2023
	EU-036	Coating Line 1 Oven/Dryer, 4 natural gas indirect fired heaters, 1.1 MMBtu/hr each, fugitive process emissions are vented inside the building, combustion emissions are vented via five (5) stacks	Pre-2023
	EU-032	One (1) L1 Coating Tank, 200 gallons, open top, vented as fugitives inside the building	Pre-2023
Coating Line 2			
043-0583-6-0771	EU-037	Coating Pan L2, 112 gallons	Pre-2023
	EU-038	Coating Line 2 Oven/Dryer, 5 natural gas indirect fired heaters, 1.1 MMBtu/hr each, fugitive process emissions are vented inside the building, combustion emissions are vented via five (5) stacks	Pre-2023
	EU-033	One (1) L2 Coating Tank, 175 gallons, open top, vented as fugitives inside the building	Pre-2023
Cooling Tower			
043-05830-9-0258	EU-039	Cooling Tower	Pre-2023

Part A – General Provisions

- (1) The following Air and Radiation Administration (ARA) permit-to-construct applications and supplemental information are incorporated into this permit by reference:
- (a) Six (6) Applications for Processing or Manufacturing Equipment (Form 5), four (4) received February 8, 2023, two (2) received December 7, 2023.
 - (b) Three (3) Applications for Gas Cleaning or Emission Control Equipment (Form 6) received February 8, 2023.

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

- (c) Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration (Form 5T) received February 8, 2023.
- (d) Three (3) Emission Point Data Forms (Form 5EP) received February 8, 2023.
- (e) Supplemental Information including an Executive Summary, Facility Description, Regulatory Review, Environmental Justice Score Report, Proof of Zoning, a TAP compliance demonstration, emissions calculations, safety data sheets, and process flow diagrams, received February 8, 2023.

If there are any conflicts between representations in this permit and representations in the applications, the representations in the permit shall govern. Estimates of dimensions, volumes, emissions rates, operating rates, feed rates and hours of operation included in the applications do not constitute enforceable numeric limits beyond the extent necessary for compliance with applicable requirements.

- (2) Upon presentation of credentials, representatives of the Maryland Department of the Environment (“MDE” or the “Department”) and the Washington County Health Department shall at any reasonable time be granted, without delay and without prior notification, access to the Permittee’s property and permitted to:
 - (a) inspect any construction authorized by this permit;
 - (b) sample, as necessary to determine compliance with requirements of this permit, any materials stored or processed on-site, any waste materials, and any discharge into the environment;
 - (c) inspect any monitoring equipment required by this permit;
 - (d) review and copy any records, including all documents required to be maintained by this permit, relevant to a determination of compliance with requirements of this permit; and
 - (e) obtain any photographic documentation or evidence necessary to determine compliance with the requirements of this permit.
- (3) The Permittee shall notify the Department prior to increasing quantities and/or changing the types of any materials referenced in the application or limited by this permit. If the Department determines that such increases or changes

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

constitute a modification, the Permittee shall obtain a permit-to-construct prior to implementing the modification.

- (4) Nothing in this permit authorizes the violation of any rule or regulation or the creation of a nuisance or air pollution.
- (5) If any provision of this permit is declared by proper authority to be invalid, the remaining provisions of the permit shall remain in effect.
- (6) Subsequent to issuance of this permit, the Department may impose additional and modified requirements that are incorporated into a State permit-to-operate issued pursuant to COMAR 26.11.02.13.

Part B – Applicable Regulations

- (1) This source is subject to all applicable federal air pollution control requirements.
- (2) This source is subject to all applicable federally enforceable State air pollution control requirements including, but not limited to, the following regulations:
 - (a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.
 - (b) COMAR 26.11.02.04B, which states that a permit to construct or an approval expires if, as determined by the Department:
 - (i) Substantial construction or modification is not commenced within 18 months after the date of issuance of the permit or approval, unless the Department specifies a longer period in the permit or approval;
 - (ii) Construction or modification is substantially discontinued for a period of 18 months after the construction or modification has commenced; or
 - (iii) The source for which the permit or approval was issued is not completed within a reasonable period after the date of issuance of the permit or approval.
 - (c) COMAR 26.11.02.09A, which requires that the Permittee obtain a permit-to-construct if an installation is to be modified in a manner that

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

would cause changes in the quantity, nature, or characteristics of emissions from the installation as referenced in this permit.

- (d) COMAR 26.11.06.02C(1), which limits visible emissions other than uncombined water to not more than 20 percent opacity.
- (e) COMAR 26.11.06.03B(1), which limits the concentration of particulate matter in any exhaust gases to not more than 0.05 grains per standard cubic foot of dry exhaust gas.
- (f) COMAR 26.11.09.05A (1), which limits visible emissions other than uncombined water to not more than 20 percent opacity.

Note: This applies to the indirect fired Coating Line Oven/Dryers.

- (3) This source is subject to all applicable State-only enforceable air pollution control requirements including, but not limited to, the following regulations:
 - (a) COMAR 26.11.02.13A (52), which requires that the Permittee obtain from the Department, and maintain and renew as required, a valid State permit-to-operate.
 - (b) COMAR 26.11.02.14D, which requires that the Permittee submit to the Department not later than 60 days prior to initiating operation of the installation for which this permit is issued a completed application for a State permit-to-operate.
 - (c) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.
 - (d) COMAR 26.11.15.05, which requires that the Permittee implement "Best Available Control Technology for Toxics" (T – BACT) to control emissions of toxic air pollutants.
 - (e) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions would unreasonably endanger human health.

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

Part C – Construction Conditions

- (1) Except as otherwise provided in this part, all registered equipment and processes authorized by this permit shall be constructed in accordance with specifications included in the incorporated applications.
- (2) The limestone silo [EU-001] shall vent through the MAC SB17 dust collector before venting to atmosphere.
- (3) To preclude applicability of major source HAP requirements under 40 CFR Part 63 Subpart HHHH, and to demonstrate compliance with the ambient impact requirements of COMAR 26.11.15.06, exhaust gases from the Mat Line Oven [EU-024] shall vent through a Durr Systems Inc. Model Ecopure RL 15 Regenerative Thermal Oxidizer (RTO), prior to discharging to atmosphere.
- (4) The RTO shall be equipped with a temperature sensor and recorder to continuously measure and record the combustion zone temperature.
- (5) The emission units located inside the Coating Mix Room [EU-025 through EU-031 and EU-034] shall vent inside the Coating Mix Room. The Coating Mix Room shall vent through a Kraemer B21 Dust Collector before venting to atmosphere.
- (6) Dust collectors shall be designed and constructed in such a way to ensure compliance with applicable visible emissions and particulate matter limits.
- (7) The Permittee shall equip the Cooling Tower with drift eliminators designed to reduce drift loss to 0.005 percent or less of the circulating water flow, unless the Permittee can demonstrate compliance with the visible emissions and the particulate emissions limits of 26.11.06.02C (1) and .03B (1).

Part D – Operating Conditions

- (1) Except as otherwise provided in this part, all registered installations covered by this permit shall be operated in accordance with specifications included in the application and any operating procedures recommended by equipment vendors unless the Permittee obtains from the Department written authorization for alternative operating procedures.

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

- (2) The Permittee shall maintain and operate all installations and associated air pollution control equipment so as to assure full and continuous compliance with all applicable air pollution control regulations and permit conditions.
- (3) The capacity of the Mat Line is limited to 25,000 tons per year of uncoated fiberglass mat.
- (4) Coating Lines 1 and 2 shall only process uncoated fiberglass mat that has been manufactured at this facility.
- (5) The Permittee shall limit premises-wide emissions of VOC to less than 50 tons in any consecutive 12-month period.
- (6) The Permittee shall limit premises wide HAP emissions to less than 10 tons in any consecutive 12-month period for any individual HAP.
- (7) The Permittee shall limit premises wide HAP emissions to less than 25 tons in any consecutive 12-month period for the aggregate of all HAPs.
- (8) All emission sources shall meet a visible emission limit of 20% opacity.
[Reference COMAR 26.11.06.02 C (1) & COMAR 26.11.09.05A (1)]
- (9) All emission sources shall meet a particulate emission limit of 0.05 grains per standard cubic foot of dry exhaust gas. **[Reference COMAR 26.11.06.03B (1)]**
- (10) The limestone silo shall vent through the MAC SB17 dust collector before venting to atmosphere.
- (11) The Mat Line Oven shall vent through the RTO prior to discharging to atmosphere.
- (12) The Mat Line Oven shall not be operated unless the RTO is in service and is in proper working condition.
- (13) The Mat Line Oven shall not be operated unless the RTO temperature sensor and recorder are in service and continuously monitoring the combustion zone temperature. Continuously monitoring means that the Permittee shall record not less than four equally spaced temperature measurement data points per hour.
- (14) The combustion zone temperature of the RTO shall be maintained at or above the temperature at which the RTO operated during the most recent, Department

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

approved performance test that demonstrated compliance with all applicable VOC and HAP emission limits.

- (15) The Mat Line Oven, the RTO, the Coating Line 1 Oven/Dryer and the Coating Line 2 Oven/Dryer shall only combust natural gas, unless approved by the Department to burn an alternative fuel.
- (16) The RTO shall be operated and maintained per manufacturer's recommendations.
- (17) All registered equipment located in the Coating Mix Room shall vent inside the room, in turn the Coating Mix Room shall vent through a Kraemer B21 Dust Collector before venting to atmosphere.
- (18) All dust collectors shall be operated and maintained per manufacturer's recommendations or a written operations and maintenance plan consistent with industry best practices.
- (19) The Permittee shall not use VOC or HAP containing chemicals in the cooling tower.

Part E – Notifications, Testing and Monitoring

- (1) The Permittee shall submit written or electronic notification to the Department of the actual initial startup date of this facility within 10 calendar days after such date.
- (2) The Permittee shall conduct RTO performance tests using EPA Methods 18 and 323 to demonstrate compliance with emission limits and to develop emission factors. Performance testing shall be conducted every 5 years. The initial performance test shall be conducted within 180 days of the initial startup of the facility. The testing program shall include:
 - (a) The inlet and outlet VOC emissions of the RTO, in units of concentration, lb/hr and any other units deemed necessary by the Department;
 - (b) The VOC destruction efficiency of the RTO;

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

- (c) The inlet and outlet formaldehyde emissions of the RTO, in units of concentration, lb/hr, and any other units deemed necessary by the Department;
 - (d) The formaldehyde destruction efficiency of the RTO;
 - (e) Continuous recording of the combustion zone temperature; and
 - (f) Any other information deemed necessary by the Department.
- (3) Performance testing of the RTO shall be conducted in accordance with the testing specifications in the Department's Technical Memorandum 91-01, "Test Methods and Equipment Specifications for Stationary Sources" (January 1991), or other methods as approved by the Department.
- (4) To demonstrate compliance with visible emissions limitations, the Permittee shall conduct a Method 9 performance test for each source as it vents to atmosphere. The initial performance test shall be conducted within 180 days of initial startup of the facility. Testing shall be conducted every 6 months.
- (5) A test protocol shall be submitted to the Department 45 days prior to any performance test being conducted, for review and approval.
- (6) The emission source shall be operated within 90% of capacity during any performance test.
- (7) The temperature sensors of the RTO shall be calibrated every 6 months in accordance with manufacturer instructions.
- (8) The Permittee shall continuously monitor the combustion zone temperature of the RTO.
- (9) The Permittee shall sample and measure the total dissolved solids (TDS) concentration in the water circulated in the cooling tower at least once per calendar quarter. The Permittee may request Departmental approval of a reduction in the monitoring frequency of this requirement after four (4) successive quarterly measurements demonstrate that the TDS concentration measured does not create particulate matter emissions in excess of any applicable particulate matter standard or limit.

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

Part F – Record Keeping and Reporting

- (1) The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information:
- (a) All notifications submitted to the Department by the facility;
 - (b) Monthly records of uncoated mat production in units of tons;
 - (c) Monthly records of coated mat production in units of tons;
 - (d) Monthly records of natural gas usage for each listed Emission Unit, in MMBtu, or other units as deemed appropriate by the Department;
 - (e) Monthly hours of operation of each emission unit;
 - (f) Monthly records of the usage of all additives in pounds;
 - (g) Monthly records of VOC and HAP emissions by emission unit;
 - (h) Facility-wide records of VOC and HAP emissions for each calendar month and a rolling 12-month total in order to demonstrate compliance with the premises wide VOC and HAP emission limits;
 - (i) Records of the Safety Data Sheets for all additives used on site, including water treatment chemicals for the cooling tower;
 - (j) Temperature measurements from the combustion zone of the RTO, in degrees Fahrenheit, while the Mat Line is operating;
 - (k) Records of all TDS measurements from the cooling tower;
 - (l) RTO design criteria;
 - (m) Design criteria, or a written operations and maintenance plan if design criteria is not available, for all dust collectors;
 - (n) All required test protocols submitted to the Department;
 - (o) All required performance test reports submitted to the Department;
 - (p) Maintenance records for the RTO and dust collectors;

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

- (q) Records of RTO temperature sensor calibrations; and
 - (r) Records demonstrating that the Mat Line oven was not operating unless the RTO was operating properly, with the combustion chamber temperature meeting, at the minimum, the temperature that demonstrated compliance with all emission limits in the most recent performance test.
- (2) The Permittee shall maintain at the facility for at least five (5) years, and shall make available to the Department upon request, records necessary to support annual certifications of emissions and demonstrations of compliance for toxic air pollutants. Such records shall include, if applicable, the following:
- (a) mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each registered source of emissions;
 - (b) accounts of the methods and assumptions used to quantify emissions;
 - (c) all operating data, including operating schedules and production data, that were used in determinations of emissions;
 - (d) amounts, types, and analyses of all fuels used;
 - (e) any records, the maintenance of which is required by this permit or by State or federal regulations, that pertain to the operation and maintenance of continuous emissions monitors, including:
 - (i) all emissions data generated by such monitors;
 - (ii) all monitor calibration data;
 - (iii) information regarding the percentage of time each monitor was available for service; and
 - (iv) information concerning any equipment malfunctions.
 - (f) information concerning operation, maintenance, and performance of air pollution control equipment and compliance monitoring equipment, including:

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

- (i) identifications and descriptions of all such equipment;
 - (ii) operating schedules for each item of such equipment;
 - (iii) accounts of any significant maintenance performed;
 - (iv) accounts of all malfunctions and outages; and
 - (v) accounts of any episodes of reduced efficiency.
- (g) limitations on source operation or any work practice standards that significantly affect emissions; and
- (h) other relevant information as required by the Department.
- (3) Performance test reports shall be submitted to the Department within 45 days of completion of the test program.
- (4) Reporting for the RTO performance tests shall include:
- (a) The inlet and outlet VOC emissions of the RTO, in units of concentration, lb/hr and any other units deemed necessary by the Department;
 - (b) The VOC destruction efficiency of the RTO;
 - (c) The inlet and outlet formaldehyde emissions of the RTO, in units of concentration, lb/hr, and any other units deemed necessary by the Department;
 - (d) The formaldehyde destruction efficiency of the RTO;
 - (e) Combustion zone temperature data and a proposed minimum combustion temperature to ensure compliance with all regulations and permit conditions; and
 - (f) Any other information deemed necessary by the Department.
- (5) The Permittee shall submit to the Department by April 1 of each year a certification of emissions for the previous calendar year. The certifications shall be prepared in accordance with requirements, as applicable, adopted under COMAR 26.11.01.05 – 1 and COMAR 26.11.02.19D.

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

- (a) Certifications of emissions shall be submitted on forms obtained from the Department.
- (b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the facility's registered sources of emissions.
- (c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”
- (6) The Permittee shall submit to the Department by April 1 of each year a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. Such analysis shall include either:
 - (a) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or
 - (b) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.
- (7) The Permittee shall report, in accordance with requirements under COMAR 26.11.01.07, occurrences of excess emissions to the Compliance Program of the Air and Radiation Administration.

**HERBERT MALARKEY ROOFING COMPANY
10033 GOVERNOR LANE BOULEVARD
WILLIAMSPORT, MARYLAND 21795
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 043-0583**

Part G – Temporary Permit-to-Operate Conditions

- (1) This permit-to-construct shall also serve as a temporary permit-to-operate that confers upon the Permittee authorization to operate the wet formed fiberglass manufacturing facility for a period of up to 180 days after initiating operation.
- (2) The Permittee shall provide the Department with written or electronic notification of the date on which operation of the wet formed fiberglass manufacturing facility is initiated. Such notification shall be provided within 10 business days of the date to be reported.
- (3) During the effective period of the temporary permit-to-operate the Permittee shall operate the new installation as required by the applicable terms and conditions of this permit-to-construct, and in accordance with operating procedures and recommendations provided by equipment vendors.
- (4) The Permittee shall submit to the Department an application for a State permit-to-operate no later than 60 days prior to expiration of the effective period of the temporary permit-to-operate.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION

SUPPLEMENTAL INFORMATION REFERENCES

The Code of Maryland Regulations (COMAR) is searchable by COMAR citation at the following Division of State Documents website:

<http://www.dsd.state.md.us/COMAR/ComarHome.html>

The Code of Federal Regulations (CFR), including New Source Performance Standards (NSPS) at 40 CFR, Part 60 and National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR, Parts 61 and 63, is searchable by CFR citation at the following U.S. Government Publishing Office website:

<http://www.ecfr.gov>

Information on National Ambient Air Quality Standards (NAAQS) is located at the following U.S. Environmental Protection Agency (EPA) website:

<https://www.epa.gov/criteria-air-pollutants/naaqs-table>

Information on Maryland's Ambient Air Monitoring Program is located at the following Maryland Department of the Environment website:

<http://mde.maryland.gov/programs/Air/AirQualityMonitoring/Pages/index.aspx>

Information on the U.S. EPA's Screen3 computer model and other EPA-approved air dispersion models is located at the following U.S. EPA website:

http://www.epa.gov/scram001/dispersion_screening.htm

Information on the U.S. EPA TANKS Emission Estimation Software is located at the following U.S. EPA website:

<http://www.epa.gov/ttn/chief/software/tanks/index.html>

Information on the U.S. EPA Emission Factors and AP-42 is located at the following U.S. EPA website:

<https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors>

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd - Baltimore, Maryland 21230
(410) 537-3230 - 1-800-633-6101 - www.mde.state.md.us

Air and Radiation Management Administration Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct

Registration Update

Initial Registration

IA. OWNER OF EQUIPMENT/COMPANY NAME

Herbert Malarkey Roofing Company

Mailing Address

3131 North Columbia Boulevard

Street Address


Portland OR 97217

City State Zip

Telephone Number

(503) 283-1191

Signature



Jamey Walters, Plant Manager

Print Name and Title

Date

DO NOT WRITE IN THIS BLOCK

2. REGISTRATION NUMBER

County No.

1-2

Premises No.

3-6

Registration Class

7

Equipment No.

8-11

Date Year

12-13

Application Date

IB. EQUIPMENT LOCATION AND TELEPHONE NUMBER (IF DIFFERENT FROM ABOVE)

10033 Governor Lane Boulevard

Street Number and Street Name

Williamsport Maryland 21795 (503) 283-1191

City/Town State Zip Telephone Number

Williamsport Plant

Premises Name (if different from above)

3. STATUS (A=New, B=Modification to Existing Equipment, C=Existing Equipment)

STATUS	New Construction Begun	New Construction Completed	Existing Initial Operation
	MONTH/YEAR	MONTH/YEAR	MONTH/YEAR
<input checked="" type="checkbox"/> B	<input type="text"/>	<input type="text"/>	<input checked="" type="checkbox"/> Unknown*
15	16-19	20-23	20-23

* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.

4. DESCRIBE THIS EQUIPMENT: MAKE, MODEL, FEATURES, MANUFACTURER (INCLUDE MAXIMUM HOURLY INPUT RATE, ETC.)

Fiberglass mat coating line 1 including 4 identical heaters each with a maximum heat input of 1.1 MMBtu/hr and emissions from coating mixing tanks in the Coating Kitchen

5. WORKMEN'S COMPENSATION COVERAGE

WLR C50739922
Binder/Policy Number

10/1/2024
Expiration Date

Company Indemnity Insurance Company of North America

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. NUMBER OF PIECES OF IDENTICAL EQUIPMENT UNITS TO BE REGISTERED/PERMITTED AT THIS TIME

1

6B. NUMBER OF STACKS/EMISSION POINTS ASSOCIATED WITH THIS EQUIPMENT

4

Form Number: 5

Rev. 9/27/2002

TTY Users 1-800-735-2258

7. PERSON INSTALLING THIS EQUIPMENT (IF DIFFERENT FROM NUMBER 1 ON PAGE 1)

NAME Same as Number 1 on Page 1 TITLE _____

COMPANY _____

MAILING ADDRESS/STREET _____

CITY, TOWN _____ STATE _____ TELEPHONE () _____

8. MAJOR ACTIVITY, PRODUCT OR SERVICE OF COMPANY AT THIS LOCATION

Fiberglass mat manufacturing and coating

9. CONTROL DEVICES ASSOCIATED WITH THIS EQUIPMENT

None 24-0

SIMPLE/MULTIPLE CYCLONE 24-1

SPRAY/ADSORB TOWER 24-2

VENTURI SCRUBBER 24-3

CARBON ADSORBER 24-4

ELECTROSTATIC PRECIPITATOR 24-5

BAGHOUSE 24-6

THERMAL/CATALYTIC AFTERBURNER 24-7

DRY SCRUBBER 24-8

OTHER 24-9 DESCRIBE _____

10. ANNUAL FUEL CONSUMPTION FOR THIS EQUIPMENT

OIL - 1000 GALLONS* 26-31

SULFUR % 32-33

GRADE 34

NATURAL GAS - 1000 FT³* 3 7 , 7 8 8 35-41

LP GAS - 100 GALLONS 42-45

GRADE

COAL - TONS 46-52

SULFUR % 53-55

ASH % 56-58

WOOD - TONS 59-63

MOISTURE % 64-65

Other Fuels 66-1 (Specify Type)

Annual Amount Consumed (Specify Units of Measure)

Other Fuels 66-2 (Specify Type)

Annual Amount Consumed (Specify Units of Measure)

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE [for this equipment]

CONTINUOUS OPERATION 67-1

BATCH PROCESS 67-2

HOURS PER BATCH 68-69

BATCH PER WEEK 69-70

HOURS PER DAY 2 4 70-71

DAYS PER WEEK 7 72

DAYS PER YEAR 3 6 5 73-75

SEASONAL VARIATION IN OPERATION:

NO VARIATION 76

WINTER PERCENT 77-78

SPRING PERCENT 79-80

SUMMER PERCENT 81-82

FALL PERCENT 83-84 (TOTAL SEASONS=100%)

12. EQUIVALENT STACK INFORMATION - IS EXHAUST THROUGH DOORS, WINDOWS, ETC., ONLY?

(Y/N) Y
85

IF NOT, THEN →

HEIGHT ABOVE GROUND (FT)	INSIDE DIAMETER AT TOP (INCHES)	EXIT TEMPERATURE (°F)	EXIT VELOCITY (FT/SEC)
3 0	1 2	1 4 0	~ 1 3
86-88	89-91	92-95	96-98

NOTE: ATTACH A BLOCK DIAGRAM OF PROCESS/PROCESS LINE, INDICATING NEW EQUIPMENT AS REPORTED ON THIS FORM AND ALL EXISTING EQUIPMENT, INCLUDING CONTROL DEVICES AND EMISSION POINTS.

13. INPUT MATERIALS [for this equipment only]

IS ANY OF THIS DATA TO BE CONSIDERED CONFIDENTIAL? Y or N

* Inputs are combined for Coating Lines 1 and 2

INPUT RATE

NAME	CAS NUMBER (if applicable)	PER HOUR	UNITS	PER YEAR	UNITS
1. Uncoated Fiberglass Mat			Redacted		
2. Dispersant			Redacted		
3. Latex			Redacted		
4. Viscosity Modifier			Redacted		
5. Water			Redacted		
6. Limestone			Redacted		
7.					
8.					
9.					

TOTAL

14. OUTPUT MATERIALS [for this equipment]

* Outputs are combined for Coating Lines 1 and 2

OUTPUT RATE

NAME	CAS NUMBER (if applicable)	PER HOUR	UNITS	PER YEAR	UNITS
1. Coated Fiberglass Mat			Redacted		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

TOTAL

15. WASTE STREAMS - SOLID AND LIQUID

OUTPUT RATE

NAME	CAS NUMBER (if applicable)	PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

TOTAL

16. TOTAL STACK EMISSIONS (FOR THIS EQUIPMENT ONLY) IN POUNDS PER OPERATING DAY

PARTICULATE MATTER

 99-104

OXIDES OF SULFUR

 105-110

OXIDES OF NITROGEN

 111-116

CARBON MONOXIDE

 117-122

VOLATILE ORGANIC COMPOUNDS

 123-128

PM-10

 129-134

17. TOTAL FUGITIVE EMISSIONS (FOR THIS EQUIPMENT ONLY) IN POUNDS PER OPERATING DAY

Refer to Appendix C

PARTICULATE MATTER

 135-139

OXIDES OF SULFUR

 140-144

OXIDES OF NITROGEN

 145-149

CARBON MONOXIDE

 150-154

VOLATILE ORGANIC COMPOUNDS

 155-159

PM-10

 160-164

METHOD USED TO DETERMINE EMISSIONS

(1 = ESTIMATE 2 = EMISSION FACTOR 3 = STACK TEST 4 = OTHER)

TSP

 165

SOX

 166

NOX

 167

CO

 168

VOC

 169

PM10

 170

AIR MANAGEMENT USE ONLY

18. DATE REC'D. LOCAL

DATE REC'D. STATE

RETURN TO LOCAL JURISDICTION
 DATE _____ BY _____

REVIEWED BY LOCAL JURISDICTION
 DATE _____ BY _____

REVIEWED BY STATE
 DATE _____ BY _____

19. INVENTORY DATE
 MONTH YEAR

 171-174

EQUIPMENT CODE

 175-177

SCC CODE

 178-185

20. ANNUAL OPERATING RATE

 186-192

MAXIMUM DESIGN HOURLY RATE

 193-199

PERMIT TO OPERATE MONTH

 200-201

TRANSACTION DATE (MM/DD/YR)

 202-207

STAFF CODE

 208-210

VOC CODE

 211 212

SIP CODE

 213 214

REGULATION CODE

 215-218

CONFIDENTIALITY

 219

POINT DESCRIPTION

 220-238

ACTION
 A: ADD
 C: CHANGE
 239

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd - Baltimore, Maryland 21230
(410) 537-3230 - 1-800-633-6101 - www.mde.state.md.us

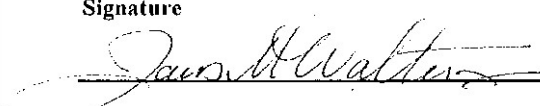
Air and Radiation Management Administration Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct

Registration Update

Initial Registration

<p>1A. OWNER OF EQUIPMENT/COMPANY NAME Herbert Malarkey Roofing Company</p> <hr/> <p>Mailing Address 3131 North Columbia Boulevard</p> <hr/> <p>Street Address Portland OR 97217</p> <hr/> <p>City State Zip</p> <p>Telephone Number (503) 283-1191</p> <hr/> <p>Signature </p> <hr/> <p>Jamey Walters, Plant Manager</p> <hr/> <p>Print Name and Title _____ Date _____</p>	<p align="center">DO NOT WRITE IN THIS BLOCK</p> <p align="center">2. REGISTRATION NUMBER</p> <table style="width:100%;"> <tr> <td style="width:50%;"> <p>County No. [][] 1-2</p> </td> <td style="width:50%;"> <p>Premises No. [][][][] 3-6</p> </td> </tr> <tr> <td> <p>Registration Class [] 7</p> </td> <td> <p>Equipment No. [][][][] 8-11</p> </td> </tr> <tr> <td> <p>Data Year [][] 12-13</p> </td> <td> <p>_____ Application Date</p> </td> </tr> </table>	<p>County No. [][] 1-2</p>	<p>Premises No. [][][][] 3-6</p>	<p>Registration Class [] 7</p>	<p>Equipment No. [][][][] 8-11</p>	<p>Data Year [][] 12-13</p>	<p>_____ Application Date</p>										
<p>County No. [][] 1-2</p>	<p>Premises No. [][][][] 3-6</p>																
<p>Registration Class [] 7</p>	<p>Equipment No. [][][][] 8-11</p>																
<p>Data Year [][] 12-13</p>	<p>_____ Application Date</p>																
<p>1B. EQUIPMENT LOCATION AND TELEPHONE NUMBER (IF DIFFERENT FROM ABOVE) 10033 Governor Lane Boulevard</p> <hr/> <p>Street Number and Street Name Williamsport Maryland 21795 (503) 283-1191</p> <hr/> <p>City/Town State Zip Telephone Number Williamsport Plant</p> <hr/> <p>Premises Name (if different from above)</p>																	
<p>3. STATUS (A=New, B=Modification to Existing Equipment, C=Existing Equipment)</p> <table style="width:100%; text-align: center;"> <tr> <td></td> <td>New Construction Begun</td> <td>New Construction Completed</td> <td>Existing Initial Operation</td> </tr> <tr> <td>STATUS</td> <td>MONTH/YEAR</td> <td>MONTH/YEAR</td> <td>MONTH/YEAR</td> </tr> <tr> <td>[B]</td> <td>[][] [][]</td> <td>[][] [][]</td> <td>[Unknown*]</td> </tr> <tr> <td>15</td> <td>16-19</td> <td>20-23</td> <td>20-23</td> </tr> </table> <p>* Malarkey has not operated the equipment and will not operate it until a permit to construct is received.</p>			New Construction Begun	New Construction Completed	Existing Initial Operation	STATUS	MONTH/YEAR	MONTH/YEAR	MONTH/YEAR	[B]	[][] [][]	[][] [][]	[Unknown*]	15	16-19	20-23	20-23
	New Construction Begun	New Construction Completed	Existing Initial Operation														
STATUS	MONTH/YEAR	MONTH/YEAR	MONTH/YEAR														
[B]	[][] [][]	[][] [][]	[Unknown*]														
15	16-19	20-23	20-23														
<p>4. DESCRIBE THIS EQUIPMENT: MAKE, MODEL, FEATURES, MANUFACTURER (INCLUDE MAXIMUM HOURLY INPUT RATE, ETC.)</p> <p>Fiberglass mat coating line 2 including 5 identical heaters each with a maximum heat input of 1.1 MMBtu/hr and emissions from coating mixing tanks in the Coating Kitchen</p>																	
<p>5. WORKMEN'S COMPENSATION COVERAGE</p> <table style="width:100%;"> <tr> <td style="width:50%;">WLR C50739922</td> <td style="width:50%;">10/1/2024</td> </tr> <tr> <td align="center">Binder/Policy Number</td> <td align="center">Expiration Date</td> </tr> </table> <p>Company Indemnity Insurance Company of North America</p> <p>NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.</p>		WLR C50739922	10/1/2024	Binder/Policy Number	Expiration Date												
WLR C50739922	10/1/2024																
Binder/Policy Number	Expiration Date																
<p>6A. NUMBER OF PIECES OF IDENTICAL EQUIPMENT UNITS TO BE REGISTERED/PERMITTED AT THIS TIME _____ 1 _____</p> <p>6B. NUMBER OF STACKS/EMISSION POINTS ASSOCIATED WITH THIS EQUIPMENT _____ 5 _____</p>																	

7. PERSON INSTALLING THIS EQUIPMENT (IF DIFFERENT FROM NUMBER 1 ON PAGE 1)

NAME Same as Number 1 on Page 1 TITLE _____

COMPANY _____

MAILING ADDRESS/STREET _____

CITY, TOWN _____ STATE _____ TELEPHONE () _____

8. MAJOR ACTIVITY, PRODUCT OR SERVICE OF COMPANY AT THIS LOCATION

Fiberglass mat manufacturing and coating

9. CONTROL DEVICES ASSOCIATED WITH THIS EQUIPMENT

None
 24-0

SIMPLE/MULTIPLE CYCLONE <input type="checkbox"/> 24-1	SPRAY/ADSORB TOWER <input type="checkbox"/> 24-2	VENTURI SCRUBBER <input type="checkbox"/> 24-3	CARBON ADSORBER <input type="checkbox"/> 24-4	ELECTROSTATIC PRECIPITATOR <input type="checkbox"/> 24-5	BAGHOUSE <input type="checkbox"/> 24-6	THERMAL/ CATALYTIC AFTERBURNER <input type="checkbox"/> 24-7	DRY SCRUBBER <input type="checkbox"/> 24-8
--	---	---	--	---	--	--	---

OTHER

24-9 DESCRIBE _____

10. ANNUAL FUEL CONSUMPTION FOR THIS EQUIPMENT

OIL - 1000 GALLONS* <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 26-31	SULFUR % <input type="text"/> <input type="text"/> 32-33	GRADE <input type="text"/> 34	NATURAL GAS - 1000 FT ³ * <input type="text"/> 4 <input type="text"/> 7, <input type="text"/> 2 <input type="text"/> 3 <input type="text"/> 5 35-41	LP GAS - 100 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 42-45	GRADE <input type="text"/> 64-65
COAL - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 46-52	SULFUR % <input type="text"/> <input type="text"/> <input type="text"/> 53-55	ASH % <input type="text"/> <input type="text"/> <input type="text"/> 56-58	WOOD - TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 59-63	MOISTURE % <input type="text"/> <input type="text"/> 64-65	
Other Fuels _____ (Specify Type)	Annual Amount Consumed <input type="text"/> 66-1	Other Fuels _____ (Specify Units of Measure)	Annual Amount Consumed <input type="text"/> 66-2	Other Fuels _____ (Specify Units of Measure)	Annual Amount Consumed <input type="text"/> 66-2

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE [for this equipment]

CONTINUOUS OPERATION <input checked="" type="checkbox"/> 67-1	BATCH PROCESS <input type="checkbox"/> 67-2	HOURS PER BATCH <input type="text"/> <input type="text"/> 68-69	BATCH PER WEEK <input type="text"/> 70-71	HOURS PER DAY <input type="text"/> 2 <input type="text"/> 4 70-71	DAYS PER WEEK <input type="text"/> 7 72	DAYS PER YEAR <input type="text"/> 3 <input type="text"/> 6 <input type="text"/> 5 73-75
--	--	--	--	--	--	---

SEASONAL VARIATION IN OPERATION:

NO VARIATION <input checked="" type="checkbox"/> 76	WINTER PERCENT <input type="text"/> <input type="text"/> 77-78	SPRING PERCENT <input type="text"/> <input type="text"/> 79-80	SUMMER PERCENT <input type="text"/> <input type="text"/> 81-82	FALL PERCENT <input type="text"/> <input type="text"/> 83-84	(TOTAL SEASONS=100%)
---	--	--	--	--	----------------------

12. EQUIVALENT STACK INFORMATION - IS EXHAUST THROUGH DOORS, WINDOWS, ETC., ONLY?

(Y/N) Y
85

IF NOT, THEN →

HEIGHT ABOVE GROUND (FT)	INSIDE DIAMETER AT TOP (INCHES)	EXIT TEMPERATURE (°F)	EXIT VELOCITY (FT/SEC)
86-88	89-91	92-95	96-98
3 0	1 2	1 4 0	~ 1 3

NOTE: ATTACH A BLOCK DIAGRAM OF PROCESS/PROCESS LINE, INDICATING NEW EQUIPMENT AS REPORTED ON THIS FORM AND ALL EXISTING EQUIPMENT, INCLUDING CONTROL DEVICES AND EMISSION POINTS.

13. INPUT MATERIALS [for this equipment only]

IS ANY OF THIS DATA TO BE CONSIDERED CONFIDENTIAL?

Y or N (all input material types and quantities)

* Inputs are combined for Coating Lines 1 and 2

INPUT RATE

NAME	CAS NUMBER (if applicable)	PER HOUR	UNITS	PER YEAR	UNITS
1. Uncoated Fiberglass Mat			Redacted		
2. Dispersant			Redacted		
3. Latex			Redacted		
4. Viscosity Modifier			Redacted		
5. Water			Redacted		
6. Limestone			Redacted		
7.					
8.					
9.					

TOTAL

14. OUTPUT MATERIALS [for this equipment]

* Outputs are combined for Coating Lines 1 and 2

OUTPUT RATE

NAME	CAS NUMBER (if applicable)	PER HOUR	UNITS	PER YEAR	UNITS
1. Coated Fiberglass Mat			Redacted		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

TOTAL

15. WASTE STREAMS - SOLID AND LIQUID

OUTPUT RATE

NAME	CAS NUMBER (if applicable)	PER HOUR	UNITS	PER YEAR	UNITS
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

TOTAL

16. TOTAL STACK EMISSIONS (FOR THIS EQUIPMENT ONLY) IN POUNDS PER OPERATING DAY

PARTICULATE MATTER

 99-104

OXIDES OF SULFUR

 105-110

OXIDES OF NITROGEN

 111-116

CARBON MONOXIDE

 117-122

VOLATILE ORGANIC COMPOUNDS

 123-128

PM-10

 129-134

17. TOTAL FUGITIVE EMISSIONS (FOR THIS EQUIPMENT ONLY) IN POUNDS PER OPERATING DAY

Refer to Appendix C

PARTICULATE MATTER

 135-139

OXIDES OF SULFUR

 140-144

OXIDES OF NITROGEN

 145-149

CARBON MONOXIDE

 150-154

VOLATILE ORGANIC COMPOUNDS

 155-159

PM-10

 160-164

METHOD USED TO DETERMINE EMISSIONS

(1 = ESTIMATE 2 = EMISSION FACTOR 3 = STACK TEST 4 = OTHER)

TSP

 165

SOX

 166

NOX

 167

CO

 168

VOC

 169

PM10

 170

AIR MANAGEMENT USE ONLY

18. DATE REC'D. LOCAL

DATE REC'D. STATE

RETURN TO LOCAL JURISDICTION

DATE _____

BY _____

REVIEWED BY LOCAL JURISDICTION

REVIEWED BY STATE

DATE _____

BY _____

DATE _____

BY _____

19. INVENTORY DATE

MONTH YEAR

 171-174

EQUIPMENT CODE

 175-177

SCC CODE

 178-185

20.

ANNUAL OPERATING RATE

 186-192

MAXIMUM DESIGN HOURLY RATE

 193-199

PERMIT TO OPERATE

MONTH

 200-201

TRANSACTION DATE

(MM/DD/YR)

 202-207

STAFF CODE

 208-210

VOC CODE

 211 212

SIP CODE

 213 214

REGULATION CODE

 215-218

CONFIDENTIALITY

 219

POINT DESCRIPTION

220-238

ACTION

239

A: ADD

C: CHANGE



Susan Nash -MDE- <susan.nash@maryland.gov>

Malarkey - Additional Information

2 messages

Susan Barnes <SBarnes@trinityconsultants.com>

Thu, Sep 21, 2023 at 5:32 PM

To: Susan Nash -MDE- <susan.nash@maryland.gov>

Cc: Tony Silva <tsilva@malarkeyroofing.com>, Jamey Walters <jwalters@malarkeyroofing.com>

Hello Susan,

As requested, here is the additional information on Malarkey's stacks, minus one number we're still trying to track down. In addition, attached are the SDS, updated PTE calculations, and updated TAPs screening for the addition of the biocide Tony mentioned in the equipment list. No changes to the modeling are required.

Stack	Limestone Silo DC	RTO	Kraemer B21 DC
Exit Diameter (inches)	6" x 12" rectangular	36	22
Stack Height (feet)	58.5	32	18.75
Exit Velocity (ft/min)	Working on this	2,122	3,720
Exit Temperature (deg F)	Ambient	410	Ambient

Susan

Susan Barnes

Managing Consultant

Office: 240.379.7490 | Direct: 240.379.6492

5320 Spectrum Dr. Suite A | Frederick, MD 21703


Email: sbarnes@trinityconsultants.com



3 attachments

 Malarkey Williamsport Updated TAPs Screening_2023-0921.pdf
73K

 sds Nalco 7320 DBNPA.pdf
234K

 Malarkey Williamsport Updated PTE_2023-0921.pdf
184K

Susan Barnes <SBarnes@trinityconsultants.com>
To: Susan Nash -MDE- <susan.nash@maryland.gov>
Cc: Tony Silva <tsilva@malarkeyroofing.com>, Jamey Walters <jwalters@malarkeyroofing.com>

Fri, Oct 6, 2023 at 1:23 PM

Hello Susan,

Here is the updated table. Please let us know if you need anything else.

Stack	Limestone Silo DC	RTO	Kraemer B21 DC
Exit Diameter (inches)	6" x 12" rectangular	36	22
Stack Height (feet)	58.5	32	18.75
Exit Velocity (ft/min)	2,010	2,122	3,720
Exit Temperature (deg F)	Ambient	410	Ambient

[Quoted text hidden]

Table C1. Malarkey Williamsport, MD Fiberglass Plant - Potential Emissions Summary

Source Group	Emissions (tpy)												
	NO _x	CO	SO ₂	VOC ¹	PM	PM ₁₀	PM _{2.5}	CO ₂	CH ₄	N ₂ O	CO ₂ e	CH ₂ O	HAPs
Limestone Silo and Handling	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00
Mat Line	11.9	10.0	0.1	3.7	7.2	7.2	7.2	14,200.3	0.3	0.0	14,214.9	1.66	1.88
Coating Line 1	1.9	1.6	0.0	11.9	0.1	0.1	0.1	2,254.4	0.0	0.0	2,256.7	0.00	0.04
Coating Line 2	2.4	2.0	0.0	12.0	0.2	0.2	0.2	2,818.0	0.1	0.0	2,820.9	0.00	0.04
TOTALS	16.2	13.6	0.1	27.6	9.5	9.5	9.5	19,272.6	0.4	0.0	19,292.5	1.67	1.96

Table C2. Malarkey Williamsport, MD Fiberglass Plant - Hazardous Air Pollutant Emissions Summary

Pollutant	Emissions (tpy)				Project Total
	Coating Line 1 Heater	Coating Line 2 Heater	Mat Line	RTO	
2-Methylnaphthalene	4.53E-07	5.67E-07	2.59E-06	2.63E-07	3.88E-06
3-Methylchloranthrene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
7,12-Dimethylbenz(a)anthracene	3.02E-07	3.78E-07	1.73E-06	1.75E-07	2.58E-06
Acenaphthene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Acenaphthylene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Anthracene	4.53E-08	5.67E-08	2.59E-07	2.63E-08	3.88E-07
Arsenic	3.78E-06	4.72E-06	2.16E-05	2.19E-06	3.23E-05
Benz(a)anthracene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Benzene	3.97E-05	4.96E-05	2.27E-04	2.30E-05	3.39E-04
Benzo(a)pyrene	2.27E-08	2.83E-08	1.30E-07	1.31E-08	1.94E-07
Benzo(b)fluoranthene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Benzo(g,h,i)perylene	2.27E-08	2.83E-08	1.30E-07	1.31E-08	1.94E-07
Benzo(k)fluoranthene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Beryllium	2.27E-07	2.83E-07	1.30E-06	1.31E-07	1.94E-06
Cadmium	2.08E-05	2.60E-05	1.19E-04	1.20E-05	1.78E-04
Chromium	2.65E-05	3.31E-05	1.51E-04	1.53E-05	2.26E-04
Chrysene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Cobalt	1.59E-06	1.98E-06	9.08E-06	9.20E-07	1.36E-05
Dibenzof(a,h)anthracene	2.27E-08	2.83E-08	1.30E-07	1.31E-08	1.94E-07
Dichlorobenzene	2.27E-05	2.83E-05	1.30E-04	1.31E-05	1.94E-04
Fluoranthene	5.67E-08	7.09E-08	3.24E-07	3.29E-08	4.85E-07
Fluorene	5.29E-08	6.61E-08	3.03E-07	3.07E-08	4.52E-07
Formaldehyde	1.42E-03	1.77E-03	3.24E-04	1.66E+00	1.67
Hexane	3.40E-02	4.25E-02	1.95E-01	1.97E-02	0.29
Indeno(1,2,3-cd)pyrene	3.40E-08	4.25E-08	1.95E-07	1.97E-08	2.91E-07
Lead	9.45E-05	1.18E-04	5.40E-04	5.48E-05	8.08E-04
Manganese	7.18E-06	8.97E-06	4.11E-05	4.16E-06	6.14E-05
Mercury	4.91E-06	6.14E-06	2.81E-05	2.85E-06	4.20E-05
Naphthalene	1.15E-05	1.44E-05	6.59E-05	6.68E-06	9.85E-05
Nickel	3.97E-05	4.96E-05	2.27E-04	2.30E-05	3.39E-04
Phenanathrene	3.21E-07	4.02E-07	1.84E-06	1.86E-07	2.75E-06
Pyrene	9.45E-08	1.18E-07	5.40E-07	5.48E-08	8.08E-07
Selenium	4.53E-07	5.67E-07	2.59E-06	2.63E-07	3.88E-06
Toluene	6.42E-05	8.03E-05	3.67E-04	3.72E-05	5.49E-04
TOTAL HAPS	0.04	0.04	0.20	1.68	1.96

Table C3. Malarkey Williamsport, MD Fiberglass Plant - Limestone Handling Potential to Emit Calculations

Description	Potential Throughput short tpy	Dust Collectors DC Control		Spray and Building Controls Control		Uncontrolled Emission Factor (lb/ton of throughput)				Controlled Emission Rates (tpy) ¹		
		Dust Collector ID	DC Control Efficiency	Type of Control	Efficiency	PM ₁₀	PM _{10-2.5}	PM _{2.5-0.45}	Reference	PM ₁₀	PM _{10-2.5}	PM _{2.5-0.45}
Pneumatic loading to the silo	65,000	Limestone Silo DC	90%	None	0%	6.10E-01	6.10E-01	6.10E-01	AP-42 Table 11.17-4 Product Loading, Enclosed Truck	1.983	1.983	1.983
From silo into coating kitchen tanks	65,000	Coating Kitchen DC	90%	Inside building	50%	3.00E-03	1.10E-03	1.10E-03	AP-42 Table 11.19.2-2, Conveyor Transfer Point	0.005	0.002	0.002
TOTAL:										1.99	1.98	1.98

Table C6. Malarkey Williamsport, MD Fiberglass Plant - White Water Process Potential to Emit Calculations

$$E = \frac{V}{(RT)^{3/2}} \times \sum_{i=1}^n (P_i)(NWC_i) \quad \text{(Eq. 11)} \quad \text{Source: 42 CFR 63.112(a)(5)(ii)}$$

Potential Calculations - Emissions per Year

Variable	Variable Definition	Value	Units
V	Volume of gas displaced from the vessel	406	m ³ /yr
R	Real gas law constant	10.73	psi-ft ³ /lbmol-R
T	Absolute temperature of the vessel vapor space	548.69	R
P	Partial pressure of the individual compound	0.3087	psi
MW	Molecular weight of the individual compound	136.20	g/g
E	Mass emitted	1.53E-01	lb/yr VOC
E	Mass emitted	1.31E-01	lb/yr VOC
E	Mass emitted	6.57E-01	tpy VOC

NOTE: Calculation assumes Resistor is 100% hydrocarbon (gas petroleum distillate) (NALCO 7163)

Potential Calculations - Emissions per Year

Variable	Variable Definition	Value	Units
V	Volume of gas displaced from the vessel	7.658	m ³ /yr
R	Real gas law constant	10.73	psi-ft ³ /lbmol-R
T	Absolute temperature of the vessel vapor space	548.69	R
P	Partial pressure of the individual compound	0.3054	psi
MW	Molecular weight of the individual compound	136.20	g/g
E	Mass emitted	5.41E-02	lb/yr VOC
E	Mass emitted	5.41E-02	lb/yr VOC
E	Mass emitted	2.81E-01	tpy VOC

NOTE: Calculation assumes Resistor is 100% DSO (NALCO 6993)

Potential Calculations - Emissions per Year

Variable	Variable Definition	Value	Units
V	Volume of gas displaced from the vessel	5.190	m ³ /yr
R	Real gas law constant	10.73	psi-ft ³ /lbmol-R
T	Absolute temperature of the vessel vapor space	548.69	R
P	Partial pressure of the individual compound	0.3009	psi
MW	Molecular weight of the individual compound	136.20	g/g
E	Mass emitted	1.78E-02	lb/yr VOC
E	Mass emitted	1.78E-02	lb/yr VOC
E	Mass emitted	7.93E-02	tpy VOC

NOTE: Calculation assumes Deframer is 100% heavy paraffinic distillate (NALCO PP3 1078)
Heavy paraffinic distillate properties conservatively assumed equal to light distillates

Potential Calculations - Emissions per Year

Variable	Variable Definition	Value	Units
V	Volume of gas displaced from the vessel	369	m ³ /yr
R	Real gas law constant	10.73	psi-ft ³ /lbmol-R
T	Absolute temperature of the vessel vapor space	548.69	R
P	Partial pressure of the individual compound	0.2921	psi
MW	Molecular weight of the individual compound	136.20	g/g
E	Mass emitted	1.44E-01	lb/yr VOC
E	Mass emitted	1.44E-01	lb/yr VOC
E	Mass emitted	5.49E-01	tpy VOC

NOTE: Calculation assumes polyethylene glycol is PE1030 (monomer) (NALCO 7323) and is 100% of grade

pH Resistor Calculations

Potential Calculations - Emissions per Year

Variable	Variable Definition	Value	Units
E	Actual charge	133	gal
E	W VOC	92	g
E	Mass emitted	9.72E-01	tpy VOC

NOTE: Calculation assumed pH Resistor is NALCO 8735. pH machines will only be used occasionally. Emitted actual charge based on conservative estimate

Potential Calculations

Potential Calculations - Emissions per Year

Variable	Variable Definition	Value	Units
E	Actual charge	181	gal
E	W VOC	95	g
E	Mass emitted	1.94E-01	tpy VOC

NOTE: Calculation assumed Soda is NALCO 7322 a 9.81% VOC based on SDS

Total Emissions

Variable	Variable Definition	Value	Units
E	Mass emitted	1.07E-01	lb/yr VOC
E	Mass emitted	2.54E-01	tpy VOC

PRODUCT	Density (lb./gal)
Pisciculture	8.33
Digester tank	8.38
Deframer	8.1
pH Resistor	11.7

Table C5. Malarkey Williamsport, MD Fiberglass Plant - RTO Potential to Emit Calculations

Operating Information

Parameter	Value	Units	Source/Basis
Maximum Heat Input Rating	2,500	scf/hr	
Maximum Heat Input Rating	2.55	MMBtu/hr	
Natural Gas Heating Value	1,020	Btu/scf	AP 42 Section 1.4.1
Potential Operating Hours	8,760	hr/yr	

Combustion Units

Pollutant	Emission Factor	Unit	Source/Basis	Total Potential Emissions		
				(lb/hr)	(lb/yr)	(tpy)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2	0.0	166.4	0.1
PM ₁₀	7.6	lb/MMscf	Assume all PM is PM10	0.0	166.4	0.1
PM _{2.5}	7.6	lb/MMscf	Assume all PM is PM2.5	0.0	166.4	0.1
VOC (uncontrolled)	2.6	lb/ton mat	Malarkey Portland Stack Test - Inlet Loading Total NMVOC	6.3	55,063.9	27.5
VOC (controlled)	0.10	lb/ton mat	40 CFR 63 Subpart IHHH VOC Destruction Limit	0.3	2,202.6	1.1
SO ₂	0.6	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	13.1	0.0
CO	84	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.2	1,839.6	0.9
NO _x	100	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.3	2,190.0	1.1

GHG Emissions Summary - Combustion

Pollutant	Emission Factor	Units	Source/Basis	Total Potential Emissions		
				(lb/hr)	(lb/yr)	(tpy)
CO ₂	53.06	kg/MMBtu	40 CFR 98 Table C-1	298.3	2,613,035.3	1,306.5
CH ₄	0.001	kg/MMBtu	40 CFR 98 Table C-2	0.0	49.2	0.0
N ₂ O	0.0001	kg/MMBtu	40 CFR 98 Table C-2	0.0	4.9	0.0
CO ₂ e	53.11	kg/MMBtu	GWPs from 40 CFR 98 Table A-1	298.6	2,615,734.0	1,307.9

Table C5. Malarkey Wilkamsport, MD Fiberglass Plant - RTO Potential to Emit Calculations
 Hazardous/Toxic Air Pollutants Emissions Summary - Combustion

Pollutant	CAS Number	Emission Factor	Units	Source/Basis	Total Potential Emissions		
					(lb/hr)	(lb/yr)	(tpy)
2-Methylnaphthalene	91-57-6	2.40E-05	lb/MMscf	AP-42 Table 1.4-3	6.0E-08	5.3E-04	2.6E-07
1-Methylchloranthrene	56-49-5	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
7,12-Dimethylbenz(a)anthracene		1.60E-05	lb/MMscf	AP-42 Table 1.4-3	4.0E-08	3.5E-04	1.8E-07
Acenaphthene	83-32-9	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.3E-09	3.9E-05	2.0E-08
Acenaphthylene	203-96-8	1.00E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Anthracene	120-12-7	2.40E-06	lb/MMscf	AP-42 Table 1.4-3	6.0E-09	5.3E-05	2.6E-08
Arsenic	7440-38-2	2.00E-04	lb/MMscf	AP-42 Table 1.4-4	5.0E-07	4.4E-03	2.2E-06
Benz(a)anthracene	56-55-3	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Benzene	71-43-2	2.10E-03	lb/MMscf	AP-42 Table 1.4-3	5.3E-06	4.6E-02	2.3E-05
Benzo(a)pyrene	50-32-8	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	3.0E-09	2.6E-05	1.3E-08
Benzo(b)fluoranthene	205-99-2	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Benzo(a,k)perylene	191-24-2	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	3.0E-09	2.6E-05	1.3E-08
Benzo(k)fluoranthene	207-08-9	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Beryllium	7440-41-7	1.20E-05	lb/MMscf	AP-42 Table 1.4-4	3.0E-08	2.6E-04	1.3E-07
Cadmium	7440-43-9	1.10E-03	lb/MMscf	AP-42 Table 1.4-4	2.8E-06	2.4E-02	1.2E-05
Chromium	7440-47-3	1.30E-03	lb/MMscf	AP-42 Table 1.4-4	3.5E-06	3.1E-02	1.5E-05
Chrysene	218-01-9	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Cobalt	7440-48-4	8.40E-05	lb/MMscf	AP-42 Table 1.4-4	2.1E-07	1.8E-03	9.2E-07
Dibenz(a,h)anthracene	53-70-3	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	3.0E-09	2.6E-05	1.3E-08
Dichlorobenzene	106-46-7	1.20E-03	lb/MMscf	AP-42 Table 1.4-3	3.0E-06	2.6E-02	1.3E-05
Fluoranthene	206-44-0	3.00E-06	lb/MMscf	AP-42 Table 1.4-3	7.5E-09	6.6E-05	3.3E-08
Fluorene	86-73-7	2.80E-06	lb/MMscf	AP-42 Table 1.4-3	7.0E-09	6.1E-05	3.1E-08
Formaldehyde	50-00-0	1.54E-01	lb/ton mat	Malarkey Sack Test, 95% Control from NESHAP Subpart 111HHH	3.8E-01	3.3E+03	1.7E+00
Hexane	110-54-3	1.80E-00	lb/MMscf	AP-42 Table 1.4-3	4.5E-03	3.9E+01	2.0E-02
Indeno(1,2,3-cd)pyrene	192-39-5	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	4.5E-09	3.9E-05	2.0E-08
Lead	PBC	3.00E-03	lb/MMscf	AP-42 Table 1.4-2	1.3E-05	1.1E-01	5.5E-05
Manganese	7439-96-5	3.80E-04	lb/MMscf	AP-42 Table 1.4-4	9.5E-07	8.3E-03	4.2E-06
Mercury	7439-97-6	2.60E-04	lb/MMscf	AP-42 Table 1.4-4	6.5E-07	5.7E-03	2.8E-06
Naphthalene	91-20-3	6.10E-04	lb/MMscf	AP-42 Table 1.4-3	1.5E-06	1.3E-02	6.7E-06
Nickel	7400-02-0	2.10E-03	lb/MMscf	AP-42 Table 1.4-4	5.3E-06	4.6E-02	2.3E-05
Phenanthrene	85-01-8	1.70E-05	lb/MMscf	AP-42 Table 1.4-3	4.3E-08	3.7E-04	1.9E-07
Pyrene	129-00-0	5.00E-06	lb/MMscf	AP-42 Table 1.4-3	1.3E-08	1.1E-04	5.5E-08
Selenium	7782-49-2	2.40E-05	lb/MMscf	AP-42 Table 1.4-3	6.0E-08	5.3E-04	2.6E-07
Toluene	108-88-3	3.40E-03	lb/MMscf	AP-42 Table 1.4-3	8.5E-06	7.4E-02	3.7E-05
Total					3.8E-01	3.4E+03	1.7E+00

Table C6. Malarkey Williamsport, MD Fiberglass Plant - Mat Line Heaters Potential to Emit Calculations

Operating Information

Parameter	Value	Units	Source/Basis
Maximum Heat Input Rating	3,084	SCFH	R5 70/M spec sheet
	0.003	MMscf/hr	Conversion
Fuel High Heat Value	1,020	Btu/scf	AP-42 Section 1.4.1
Hours of Operation	8,760	hr/yr	
Number of Units	8		

Potential Emissions of Gaseous Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
NO _x	100	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.3	1.1	2.5	10.8
CO	84	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.3	1.1	2.1	9.1
SO ₂	0.6	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.1
VOC - Controlled	0.2	lb/MMscf	AP-42 Section 1.4 Table 1.4-2, 96% Control from 40 CFR 63 Subpart HHHH	0.0	0.0	0.0	0.0
CO ₂	53	kg/MMBtu	40 CFR 98 Table C-1	368.0	1,611.7	2,943.8	12,893.8
CH ₄	0.0	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.1	0.2
N ₂ O	0.0	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.0
CO ₂ e			GWPs from 40 CFR 98 Table A-1	368.4	1,613.4	2,946.8	12,907.1

Potential Emissions of Particulate Matter

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2	0.0	0.1	0.2	0.8
PM ₁₀	7.6	lb/MMscf	Assume all PM is PM10	0.0	0.1	0.2	0.8
PM _{2.5}	7.6	lb/MMscf	Assume all PM is PM2.5	0.0	0.1	0.2	0.8

Table C6. Malarkey Williamsport, MD Fiberglass Plant - Mat Line Heaters Potential to Emit Calculations
 Potential Emissions of Hazardous Air Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
2-Methylnaphthalene	2.40E-05 lb/MMscf		AP-42 Table 1.4-3	7.40E-08	3.24E-07	5.92E-07	2.59E-06
3-Methylchloranthrene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05 lb/MMscf		AP-42 Table 1.4-3	4.93E-08	2.16E-07	3.95E-07	1.73E-06
Acenaphthene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Acenaphthylene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Anthracene	2.40E-06 lb/MMscf		AP-42 Table 1.4-3	7.40E-09	3.24E-08	5.92E-08	2.59E-07
Arsenic	2.00E-04 lb/MMscf		AP-42 Table 1.4-4	6.17E-07	2.70E-06	4.93E-06	2.16E-05
Benzo(a)anthracene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Benzene	2.10E-03 lb/MMscf		AP-42 Table 1.4-3	6.48E-06	2.84E-05	5.18E-05	2.27E-04
Benzo(a)pyrene	1.20E-06 lb/MMscf		AP-42 Table 1.4-3	3.70E-09	1.62E-08	2.96E-08	1.30E-07
Benzo(b)fluoranthene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Benzo(g,h,i)perylene	1.20E-06 lb/MMscf		AP-42 Table 1.4-3	3.70E-09	1.62E-08	2.96E-08	1.30E-07
Benzo(k)fluoranthene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Beryllium	1.20E-05 lb/MMscf		AP-42 Table 1.4-4	3.70E-08	1.62E-07	2.96E-07	1.30E-06
Cadmium	1.10E-03 lb/MMscf		AP-42 Table 1.4-4	3.39E-06	1.49E-05	2.71E-05	1.19E-04
Chromium	1.40E-03 lb/MMscf		AP-42 Table 1.4-4	4.32E-06	1.89E-05	3.45E-05	1.51E-04
Chrysene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Cobalt	8.40E-05 lb/MMscf		AP-42 Table 1.4-4	2.59E-07	1.13E-06	2.07E-06	9.08E-06
Dibenz(a,h)anthracene	1.20E-06 lb/MMscf		AP-42 Table 1.4-3	3.70E-09	1.62E-08	2.96E-08	1.30E-07
Dichlorobenzene	1.20E-03 lb/MMscf		AP-42 Table 1.4-3	3.70E-06	1.62E-05	2.96E-05	1.30E-04
Fluoranthene	3.00E-06 lb/MMscf		AP-42 Table 1.4-3	9.25E-09	4.05E-08	7.40E-08	3.24E-07
Fluorene	2.80E-06 lb/MMscf		AP-42 Table 1.4-3	8.64E-09	3.78E-08	6.91E-08	3.03E-07
Formaldehyde - Controlled	3.00E-03 lb/MMscf		63 Subpart HHHH, 95% Control from 40 CFR	9.25E-06	4.05E-05	7.40E-05	3.24E-04
Hexane	1.80E+00 lb/MMscf		AP-42 Table 1.4-3	5.55E-03	2.43E-02	4.44E-02	1.95E-01
Indeno(1,2,3-cd)pyrene	1.80E-06 lb/MMscf		AP-42 Table 1.4-3	5.55E-09	2.43E-08	4.44E-08	1.95E-07
Lead	5.00E-03 lb/MMscf		AP-42 Table 1.4-2	1.54E-05	6.75E-05	1.23E-04	5.40E-04
Manganese	3.80E-04 lb/MMscf		AP-42 Table 1.4-4	1.17E-06	5.13E-06	9.38E-06	4.11E-05
Mercury	2.60E-04 lb/MMscf		AP-42 Table 1.4-4	8.02E-07	3.51E-06	6.41E-06	2.81E-05
Naphthalene	6.10E-04 lb/MMscf		AP-42 Table 1.4-3	1.88E-06	8.24E-06	1.50E-05	6.59E-05
Nickel	2.10E-03 lb/MMscf		AP-42 Table 1.4-4	6.48E-06	2.84E-05	5.18E-05	2.27E-04
Phenanthrene	1.70E-05 lb/MMscf		AP-42 Table 1.4-3	5.24E-08	2.30E-07	4.19E-07	1.81E-06
Pyrene	5.00E-06 lb/MMscf		AP-42 Table 1.4-3	1.54E-08	6.75E-08	1.23E-07	5.40E-07
Selenium	2.40E-05 lb/MMscf		AP-42 Table 1.4-4	7.40E-08	3.24E-07	5.92E-07	2.59E-06
Toluene	3.10E-03 lb/MMscf		AP-42 Table 1.4-3	1.05E-05	4.59E-05	8.39E-05	3.67E-04
TOTAL HAPs				0.0	0.0	0.0	0.2

Table C7. Malarkey Williamsport, MD Fiberglass Plant - Mat Line Drying/Curing PM Potential to Emit Calculations

Description	Hours	lb PM/hr	Uncontrolled Emissions (tpy)			Controlled Emission Rates (tpy)		
			PM _{fit}	PM _{10-fit}	PM _{2.5-fit}	PM _{fit}	PM _{10-fit}	PM _{2.5-fit}
Drying and Curing	8,760	1.4	6.26	6.26	6.26	6.26	6.26	6.26

¹ Particulate emission rates are based on the particulate matter emission limit in Title V Permit No. 0747-AOP-R6 for the Line 2 drying process at the Owens Corning fiberglass mat manufacturing facility in Ft. Smith, Arkansas. Permit is available online at: <https://www.adeg.state.ar.us/home/pdssql/pds.aspx>. The PM emission rate is scaled based on production rate of the two processes.

Owens-Corning Emission Limit	7.6	lb PM/hr
Owens-Corning Production Rate	30,365	lb mat/hr
Malarkey Williamsport Plant Production Rate	5,708	lb mat/hr
Malarkey Williamsport Plant Emission Limit	1.4	lb PM/hr

Table C8. Malarkey Williamsport, MD Fiberglass Plant - Coating Line Materials Potential to Emit Calculations

Materials	Usage (lbs/yr)	Annual Usage (gal/yr)	Density (lb/gal)	VOC Content (lb/gal)	HAP Content (lb/gal)	Annual Emissions	
						VOC (tpy)	HAP (tpy)
Latex	27,000,000	2,941,194	9.18	0.016	0.00	2.35E+01	0.00E+00
Dispersant	1,200,000	130,720	9.18	0.002	0.00	1.31E-01	0.00E+00
Viscosity Modifier	280,000	30,501	9.18	0.00	0.00	0.00E+00	0.00E+00
Bulk Limestone	130,000,000	5,751,856	22.60	0.00	0.00	0.00E+00	0.00E+00
Total						2.37E+01	0.00E+00

Table C9. Malarkey Williamsport, MD Fiberglass Plant - Coating Line 1 Heaters Potential to Emit Calculations

Operating Information

Parameter	Value	Units	Source/Basis
Maximum Heat Input Rating	0.0011	MMscf/hr	
	1.1	MMBtu/hr	Carlin Burner Specifications
Fuel High Heat Value	1,020	Btu/scf	AP-42 Section 1.4.1
Hours of Operation	8,760	hr/yr	
Number of Units	4		

Potential Emissions of Gaseous Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
NO _x	100	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.1	0.5	0.4	1.9
CO	84	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.1	0.4	0.4	1.6
SO ₂	0.6	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.0
VOC	5.5	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.1
CO ₂	53.06	kg/MMBtu	40 CFR 98 Table C-1	128.7	563.6	514.7	2,254.4
CH ₄	0.0010	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.0
N ₂ O	0.0001	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.0
CO _{2e}	53.11	kg/MMBtu	GWPs from 40 CFR 98 Table A-1	128.8	564.2	515.2	2,256.7

Potential Emissions of Particulate Matter

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2	0.0	0.0	0.0	0.1
PM ₁₀	7.6	lb/MMscf	Assume all PM is PM ₁₀	0.0	0.0	0.0	0.1
PM _{2.5}	7.6	lb/MMscf	Assume all PM is PM _{2.5}	0.0	0.0	0.0	0.1

Table C9. Malarkey Williamsport, MD Fiberglass Plant - Coating Line 1 Heaters Potential to Emit Calculations
Potential Emissions of Hazardous Air Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
2-Methylnaphthalene	2.40E-05	lb/MMscf	AP-42 Table 1.4-3	2.59E-08	1.13E-07	1.04E-07	4.53E-07
3-Methylchloranthrene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/MMscf	AP-42 Table 1.4-3	1.73E-08	7.56E-08	6.90E-08	3.02E-07
Acenaphthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Acenaphthylene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Anthracene	2.40E-06	lb/MMscf	AP-42 Table 1.4-3	2.59E-09	1.13E-08	1.04E-08	4.53E-08
Arsenic	2.00E-04	lb/MMscf	AP-42 Table 1.4-4	2.16E-07	9.45E-07	8.63E-07	3.78E-06
Benzo(a)anthracene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Benzene	2.10E-03	lb/MMscf	AP-42 Table 1.4-3	2.26E-06	9.92E-06	9.06E-06	3.97E-05
Benzo(a)pyrene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	5.18E-09	2.27E-08
Benzo(b)fluoranthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Benzo(g,h,i)perylene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	5.18E-09	2.27E-08
Benzo(k)fluoranthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Beryllium	1.20E-05	lb/MMscf	AP-42 Table 1.4-4	1.29E-08	5.67E-08	5.18E-08	2.27E-07
Cadmium	1.10E-03	lb/MMscf	AP-42 Table 1.4-4	1.19E-06	5.20E-06	4.75E-06	2.08E-05
Chromium	1.40E-03	lb/MMscf	AP-42 Table 1.4-4	1.51E-06	6.61E-06	6.04E-06	2.65E-05
Chrysene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Cobalt	8.40E-05	lb/MMscf	AP-42 Table 1.4-4	9.06E-08	3.97E-07	3.62E-07	1.59E-06
Dibenzo(a,h)anthracene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	5.18E-09	2.27E-08
Dichlorobenzene	1.20E-03	lb/MMscf	AP-42 Table 1.4-3	1.29E-06	5.67E-06	5.18E-06	2.27E-05
Fluoranthene	3.00E-06	lb/MMscf	AP-42 Table 1.4-3	3.24E-09	1.42E-08	1.29E-08	5.67E-08
Fluorene	2.80E-06	lb/MMscf	AP-42 Table 1.4-3	3.02E-09	1.32E-08	1.21E-08	5.29E-08
Formaldehyde	7.50E-02	lb/MMscf	AP-42 Table 1.4-3	8.09E-05	3.54E-04	3.24E-04	1.42E-03
Hexane	1.80E+00	lb/MMscf	AP-42 Table 1.4-3	1.94E-03	8.50E-03	7.76E-03	3.40E-02
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	7.76E-09	3.40E-08
Lead	0.005	lb/MMscf	AP-42 Table 1.4-2	5.39E-06	2.36E-05	2.16E-05	9.45E-05
Manganese	3.80E-04	lb/MMscf	AP-42 Table 1.4-4	4.10E-07	1.79E-06	1.64E-06	7.18E-06
Mercury	2.60E-04	lb/MMscf	AP-42 Table 1.4-4	2.80E-07	1.23E-06	1.12E-06	4.91E-06
Naphthalene	6.10E-04	lb/MMscf	AP-42 Table 1.4-3	6.58E-07	2.88E-06	2.63E-06	1.15E-05
Nickel	2.10E-03	lb/MMscf	AP-42 Table 1.4-4	2.26E-06	9.92E-06	9.06E-06	3.97E-05
Phenanthrene	1.70E-05	lb/MMscf	AP-42 Table 1.4-3	1.83E-08	8.03E-08	7.33E-08	3.21E-07
Pyrene	5.00E-06	lb/MMscf	AP-42 Table 1.4-3	5.39E-09	2.36E-08	2.16E-08	9.45E-08
Selenium	2.40E-05	lb/MMscf	AP-42 Table 1.4-4	2.59E-08	1.13E-07	1.04E-07	4.53E-07
Toluene	3.40E-03	lb/MMscf	AP-42 Table 1.4-3	3.67E-06	1.61E-05	1.47E-05	6.42E-05
TOTAL HAPs				0.00	0.01	0.01	0.04

Table C10. Malarkey Williamsport, MD Fiberglass Plant - Coating Line 2 Heaters Potential to Emit Calculations

Operating Information

Parameter	Value	Units	Source/Basis
Maximum Heat Input Rating	0.0011	MMscf/hr	
	1.1	MMBtu/hr	Carlin Burner Specifications
Fuel High Heat Value	1,020	Btu/scf	AP-42 Section 1.4.1
Hours of Operation	8,760	hr/yr	
Number of Units	5	--	

Potential Emissions of Gaseous Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
NO _x	100	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.1	0.5	0.5	2.4
CO	84	lb/MMscf	AP-42 Section 1.4 Table 1.4-1	0.1	0.4	0.5	2.0
SO ₂	0.6	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.0
VOC	5.5	lb/MMscf	AP-42 Section 1.4 Table 1.4-2	0.0	0.0	0.0	0.1
CO ₂	53.06	kg/MMBtu	40 CFR 98 Table C-1	128.7	563.6	643.4	2,818.0
CH ₄	0.0010	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.1
N ₂ O	0.0001	kg/MMBtu	40 CFR 98 Table C-2	0.0	0.0	0.0	0.0
CO ₂ e	53.115	kg/MMBtu	GWPs from 40 CFR 98 Table A-1	128.8	564.2	644.0	2,820.9

Potential Emissions of Particulate Matter

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit		Combined Emissions	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2	0.0	0.0	0.0	0.2
PM ₁₀	7.6	lb/MMscf	Assume all PM is PM10	0.0	0.0	0.0	0.2
PM _{2.5}	7.6	lb/MMscf	Assume all PM is PM2.5	0.0	0.0	0.0	0.2

Table C10. Malarkey Williamsport, MD Fiberglass Plant - Coating Line 2 Heaters Potential to Emit Calculations
Potential Emissions of Hazardous Air Pollutants

Pollutant	Emission Factor	Units	Source/Basis	Emissions per Unit (lb/hr) (tpy)		Combined Emissions (lb/hr) (tpy)	
2-Methylnaphthalene	2.40E-05	lb/MMscf	AP-42 Table 1.4-3	2.59E-08	1.13E-07	1.29E-07	5.67E-07
3-Methylchloranthrene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/MMscf	AP-42 Table 1.4-3	1.73E-08	7.56E-08	8.63E-08	3.78E-07
Acenaphthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Acenaphthylene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Anthracene	2.40E-06	lb/MMscf	AP-42 Table 1.4-3	2.59E-09	1.13E-08	1.29E-08	5.67E-08
Arsenic	2.00E-04	lb/MMscf	AP-42 Table 1.4-4	2.16E-07	9.45E-07	1.08E-06	4.72E-06
Benz(a)anthracene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Benzene	2.10E-03	lb/MMscf	AP-42 Table 1.4-3	2.26E-06	9.92E-06	1.13E-05	4.96E-05
Benzo(a)pyrene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	6.47E-09	2.83E-08
Benzo(b)fluoranthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Benzo(g,h,i)perylene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	6.47E-09	2.83E-08
Benzo(k)fluoranthene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Beryllium	1.20E-05	lb/MMscf	AP-42 Table 1.4-1	1.29E-08	5.67E-08	6.47E-08	2.83E-07
Cadmium	1.10E-03	lb/MMscf	AP-42 Table 1.4-4	1.19E-06	5.20E-06	5.93E-06	2.60E-05
Chromium	1.40E-03	lb/MMscf	AP-42 Table 1.4-4	1.51E-06	6.61E-06	7.55E-06	3.31E-05
Chrysene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Cobalt	8.40E-05	lb/MMscf	AP-42 Table 1.4-4	9.06E-08	3.97E-07	4.53E-07	1.98E-06
Dibenzo(a,h)anthracene	1.20E-06	lb/MMscf	AP-42 Table 1.4-3	1.29E-09	5.67E-09	6.47E-09	2.83E-08
Dichlorobenzene	1.20E-03	lb/MMscf	AP-42 Table 1.4-3	1.29E-06	5.67E-06	6.47E-06	2.83E-05
Fluoranthene	3.00E-06	lb/MMscf	AP-42 Table 1.4-3	3.24E-09	1.42E-08	1.62E-08	7.09E-08
Fluorene	2.80E-06	lb/MMscf	AP-42 Table 1.4-3	3.02E-09	1.32E-08	1.51E-08	6.61E-08
Formaldehyde	7.50E-02	lb/MMscf	AP-42 Table 1.4-3	8.09E-05	3.54E-04	4.04E-04	1.77E-03
Hexane	1.80E+00	lb/MMscf	AP-42 Table 1.4-3	1.94E-03	8.50E-03	9.71E-03	4.25E-02
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/MMscf	AP-42 Table 1.4-3	1.94E-09	8.50E-09	9.71E-09	4.25E-08
Lead	5.00E-03	lb/MMscf	AP-42 Table 1.4-2	5.39E-06	2.36E-05	2.70E-05	1.18E-04
Manganese	3.80E-04	lb/MMscf	AP-42 Table 1.4-4	4.10E-07	1.79E-06	2.05E-06	8.97E-06
Mercury	2.60E-04	lb/MMscf	AP-42 Table 1.4-4	2.80E-07	1.23E-06	1.40E-06	6.14E-06
Naphthalene	6.10E-04	lb/MMscf	AP-42 Table 1.4-3	6.58E-07	2.88E-06	3.29E-06	1.44E-05
Nickel	2.10E-03	lb/MMscf	AP-42 Table 1.4-4	2.26E-06	9.92E-06	1.13E-05	4.96E-05
Phenanthrene	1.70E-05	lb/MMscf	AP-42 Table 1.4-3	1.83E-08	8.03E-08	9.17E-08	4.02E-07
Pyrene	5.00E-06	lb/MMscf	AP-42 Table 1.4-3	5.39E-09	2.36E-08	2.70E-08	1.18E-07
Selenium	2.40E-05	lb/MMscf	AP-42 Table 1.4-4	2.59E-08	1.13E-07	1.29E-07	5.67E-07
Toluene	3.40E-03	lb/MMscf	AP-42 Table 1.4-3	3.67E-06	1.61E-05	1.83E-05	8.03E-05
TOTAL HAPs				0.00	0.01	0.01	0.04

Facility-Wide TAP Compliance Demonstration

Pollutant	CAS Number	Class I/II	Screening Level			Emissions			Allowable Emission Rate			Below AER?		
			1-hr (ug/m3)	8-hr (ug/m3)	Annual (ug/m3)	1-hr (lb/hr)	8-hour (lb/hr)	Annual (tpy)	1-hr (lb/hr)	8-hr (lb/hr)	Annual (tpy)	1-hr	8-hr	Annual
Formaldehyde	50000	I		2.03E+01	8.00E-02	3.80E-01	3.80E-01	1.66E+00		0.073	0.015		No	No
Benzo(a)pyrene	50328	I				3.26E-08	3.26E-08	1.43E-07						
Benzo(a)anthracene	56553	I				4.89E-08	4.89E-08	2.14E-07						
7,12-Dimethylbenz(a)anthracene	57976	II		4.76E+00		4.35E-07	4.35E-07	1.90E-06		1.71E-02			Yes	
Benzene	71432	I	7.99E+01	1.60E+01	1.30E-01	5.71E-05	5.71E-05	2.50E-04	2.86E-01	5.73E-02	2.37E-02	Yes	Yes	Yes
Acenaphthene	83329	II		2.00E+01		4.89E-08	4.89E-08	2.14E-07					Yes	
Ammonia ¹	7664417	II	2.41E+02	1.74E+02		5.24E-01	5.24E-01	2.30E+00	8.74E-01	6.24E-01		Yes	Yes	
Fluorene	86737	II		2.00E+01		7.61E-08	7.61E-08	3.33E-07		7.17E-02			Yes	
Toluene	108883	II		7.54E+02		9.24E-05	9.24E-05	4.05E-04		2.70E+00			Yes	
Anthracene	120127	II		2.00E+01		6.52E-08	6.52E-08	2.86E-07		7.17E-02			Yes	
Pyrene	129000	II		2.00E+01		1.36E-07	1.36E-07	5.95E-07		7.17E-02			Yes	
Benzo(g,h,i)perylene	191242	II		2.00E+01		3.26E-08	3.26E-08	1.43E-07		7.17E-02			Yes	
Indeno(1,2,3-cd)pyrene	193395	I				4.89E-08	4.89E-08	2.14E-07						
Benzo(b)fluoranthene	204992	I				4.89E-08	4.89E-08	2.14E-07						
Benzo(k)fluoranthene	205089	I				4.89E-08	4.89E-08	2.14E-07						
Acenaphthylene	208968	II		2.46E+01		4.89E-08	4.89E-08	2.14E-07		8.83E-02			Yes	
Chrysene	218019	II				4.89E-08	4.89E-08	2.14E-07						
Lead	7439921	II		5.00E-01		1.36E-04	1.36E-04	5.95E-04		1.79E-03			Yes	
Manganese	7439965	II		2.00E+00		1.03E-05	1.03E-05	4.52E-05		7.17E-03			Yes	
Mercury	7439976	II	3.00E-01	1.00E-01		7.06E-06	7.06E-06	3.09E-05	1.08E-03	3.58E-04		Yes	Yes	
Arsenic	7440382	I		1.00E-01	2.00E-04	5.43E-06	5.43E-06	2.38E-05		3.58E-04	3.65E-05		Yes	Yes
Beryllium	7440417	I		5.00E-04	4.00E-04	3.26E-07	3.26E-07	1.43E-06		1.79E-06	7.30E-05		Yes	Yes
Cadmium	7440439	I		2.00E-02	6.00E-04	2.99E-05	2.99E-05	1.31E-04		7.17E-05	1.09E-04		Yes	No
Chromium	7440473	II		5.00E+00		3.80E-05	3.80E-05	1.67E-04		1.79E-02			Yes	
Selenium	7782492	II		2.00E+00		6.52E-07	6.52E-07	2.86E-06		7.17E-03			Yes	
Dibenzo(a,h)anthracene	53703	I				3.26E-08	3.26E-08	1.43E-07						
Dichlorobenzene	25321226	I				3.26E-05	3.26E-05	1.43E-04						
Nickel	7440020	I		1.00E+00		5.71E-05	5.71E-05	2.50E-04		3.58E-03			Yes	
Cobalt	7440484	II		2.00E-01		2.28E-06	2.28E-06	1.00E-05		7.17E-04			Yes	
Polyethylene Glycol	25322683	II		3.16E+02		2.02E-01	2.02E-01	8.83E-01		1.24E+00			Yes	
Sodium Bromide	7647156	II		9.80E+01		1.34E-02	1.34E-02	5.89E-02		3.51E-01			Yes	
Dibromoacetonitrile	3252435	II		4.05E+00		2.46E-03	2.46E-03	1.08E-02		1.45E-02			Yes	

1. The SDS for RHOPLEX AC-1034 only contains a concentration of aqua ammonia (CAS No. 1336216). Malarkey contacted the manufacturer for further information on Ammonia and this information is not available. Per NIOSH (<https://www.cdc.gov/niosh/npg/npgd0028.html>), Ammonia has a solubility of 34% and safety data sheets for aqua ammonia are typically 30% ammonia or less. As such, Malarkey has estimated ammonia emissions as 34% of aqua ammonia.

SAFETY DATA SHEET

NALCO® 7320

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® 7320

Other means of identification : Not applicable.

Recommended use : MICROORGANISM CONTROL CHEMICAL

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 07/16/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 3
Acute toxicity (Inhalation) : Category 3
Skin irritation (Dermal) : Category 2
Serious eye damage : Category 1
Skin sensitization : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes serious eye damage.
May cause an allergic skin reaction.
Causes skin irritation.
Toxic if swallowed or if inhaled.

Precautionary Statements : **Prevention:**
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair):

SAFETY DATA SHEET

NALCO® 7320

Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. If skin irritation or rash occurs: Get medical advice/ attention. Wash contaminated clothing before reuse.

Storage:

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Polyethylene Glycol	25322-68-3	30 - 60
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	10 - 30
Sodium Bromide	7647-15-6	1 - 5
Dibromoacetonitrile	3252-43-5	0.1 - 1

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention immediately.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SAFETY DATA SHEET

NALCO® 7320

- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) metal oxides
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: PVC, Polypropylene, PTFE, Polyvinylidene difluoride, CPVC (rigid), HDPE (high density polyethylene), Nylon, Perfluoroelastomer, Plasite 4300
The following compatibility data is suggested based on similar product data and/or industry experience: PVC, Polypropylene, Polyethylene, Hastelloy C-276, HDPE (high density polyethylene), PTFE, Fluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Brass, Mild steel, Neoprene, Stainless Steel 304, Stainless Steel 316L, Plexiglass, EPDM, Fluoroelastomer, Nitrile, Plasite 7122
The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Brass, Aluminum, Mild steel, Buna-N, Ethylene propylene, Neoprene, Polyurethane, Stainless Steel 304, Stainless Steel 316L, Carbon steel, Chlorosulfonated polyethylene rubber

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Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Polyethylene Glycol	25322-68-3	TWA (Aerosol.)	10 mg/m ³	AIHA WEEL

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Butyl rubber
Viton® gloves
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Combined particulates and organic vapour type

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless to amber

Odour : Mild

Flash point : 196 °C, Method: ASTM D 92, Cleveland open cup

pH : 1.5 - 5.0, (100 %), Method: ASTM E 70

Odour Threshold : no data available

Melting point/freezing point : POUR POINT: -45 °C, ASTM D-97
Freezing Point: -50 °C

Initial boiling point and boiling : > 70 °C, Decomposes on heating.

SAFETY DATA SHEET

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range

Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: < 0.1 mm Hg, (21 °C),
Relative vapour density	: no data available
Relative density	: 1.20 - 1.30, (23 °C), ASTM D-1298
Density	: 10.0 - 10.8 lb/gal
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: 138 mPa.s (20 °C)
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: 9.85 %, 125.82 g/l, EPA Method 24

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Heat Extremes of temperature
Incompatible materials	: Contact with strong alkalies (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors. Oxidizing agents Aluminum
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx) metal oxides

Section: 11. TOXICOLOGICAL INFORMATION

SAFETY DATA SHEET

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Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.
Skin : Causes skin irritation. May cause allergic skin reaction.
Ingestion : Toxic if swallowed.
Inhalation : Toxic if inhaled.
Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion
Skin contact : Redness, Irritation, Allergic reactions
Ingestion : No information available.
Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : LD50 rat: 178 - 235 mg/kg
Test substance: Active Substance
LD50 guinea pig: 118 mg/kg
Test substance: Active Substance
rabbit: 118 mg/kg
Test substance: Active Substance

Acute inhalation toxicity : LC50 rat: 1.4 mg/l
Exposure time: 4 hrs
Test atmosphere: vapour
Test substance: Product
rat: 1.25 mg/l
Exposure time: 4 hrs
Test atmosphere: vapour
Test substance: Product

Acute dermal toxicity : no data available
Skin corrosion/irritation : no data available
Serious eye damage/eye irritation : no data available
Respiratory or skin sensitization : no data available
Carcinogenicity

IARC

Group 2B: Possibly carcinogenic to humans Active ingredient did not cause

SAFETY DATA SHEET

NALCO® 7320

cancer in laboratory animals. There is evidence that dibromoacetonitrile (DBAN), a possible by-product of 2,2-dibromo-3-nitropropionamide (DBNPA), can produce cancer in laboratory animals. However, the relevance of this to humans is unknown.

Dibromoacetonitrile 3252-43-5

Group 2B: Possibly carcinogenic to humans

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Components

Acute dermal toxicity : Polyethylene Glycol
LD50 rabbit: 20,000 mg/kg

Sodium Bromide
LD50 rabbit: > 2,000 mg/kg

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Toxic to aquatic life.

Product

Toxicity to fish : LC50 *Lepomis macrochirus* (Bluegill sunfish): 8.9 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 *Oncorhynchus mykiss* (rainbow trout): 3.6 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 *Cyprinodon variegatus* (sheepshead minnow): 7.5 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 *Leuciscus idus* (Golden orfe): 4.7 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC *Lepomis macrochirus* (Bluegill sunfish): 6.5 mg/l

SAFETY DATA SHEET

NALCO® 7320

Exposure time: 96 hrs
Test substance: Product

NOEC *Oncorhynchus mykiss* (rainbow trout): 2.8 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC *Cyprinodon variegatus* (sheepshead minnow): 3.2 mg/l
Exposure time: 96 hrs
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : LC50 *Mysid Shrimp (Mysidopsis bahia)*: 4.2 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 *Daphnia magna* (Water flea): 4.3 mg/l
Exposure time: 48 hrs
Test substance: Product

LC50 *Acartia tonsa*: 1.78 mg/l
Exposure time: 48 hrs
Test substance: Product

LC50 *Ceriodaphnia dubia*: 6.67 mg/l
Exposure time: 48 hrs
Test substance: Product

EC50 *Mysid Shrimp (Mysidopsis bahia)*: 3.2 mg/l
Exposure time: 96 hrs
Test substance: Product

EC50 *Daphnia magna* (Water flea): 2.5 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC *Daphnia magna* (Water flea): 3.6 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC *Ceriodaphnia dubia*: 5.0 mg/l
Exposure time: 48 hrs
Test substance: Product

Toxicity to algae : LC50 Marine Algae (*Skeletonema costatum*): 1.5 mg/l
Exposure time: 72 hrs
Test substance: Product

Toxicity to bacteria : LC50 *Pseudomonas putida*: > 2.0 mg/l
Test substance: Product

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 2,2-Dibromo-3-nitrilopropionamide
NOEC: 0.25 mg/l
Exposure time: 21 d
Species: *Daphnia magna* (Water flea)

SAFETY DATA SHEET

NALCO® 7320

Persistence and degradability

Total Organic Carbon (TOC) : 280,000 mg/l

Chemical Oxygen Demand (COD): 1,110,000 mg/l

Biochemical Oxygen Demand (BOD):

Incubation Period	Value	Test Descriptor
5 d	1,100 mg/l	Product

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	: <5%
Water	: 10 - 30%
Soil	: 70 - 90%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: : D002

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

SAFETY DATA SHEET

NALCO® 7320

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name(s) : 2,2-DIBROMO-3-NITRILOPROPIONAMIDE
UN/ID No. : UN 3265
Transport hazard class(es) : 8
Packing group : III

Air transport (IATA)

Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name(s) : 2,2-DIBROMO-3-NITRILOPROPIONAMIDE
UN/ID No. : UN 3265
Transport hazard class(es) : 8
Packing group : III

Sea transport (IMDG/IMO)

Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Technical name(s) : 2,2-DIBROMO-3-NITRILOPROPIONAMIDE
UN/ID No. : UN 3265
Transport hazard class(es) : 8
Packing group : III

Section: 15. REGULATORY INFORMATION

TSCA list : Not relevant

EPA Reg. No. : 1706-138

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This product does not contain a RQ substance, or this product contains a substance with a RQ, however the calculated RQ exceeds the reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Skin corrosion or irritation

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

SAFETY DATA SHEET


NALCO® 7320

2,2-Dibromo-3-
nitrilopropionamide

10222-01-2

20 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Dibromoacetonitrile

3252-43-5

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

This product is exempted under TSCA and regulated under FIFRA. The inerts are on the Inventory List.

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

Substances regulated under the Pest Control Products Act are exempt from CEPA New Substance Notification requirements.

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory

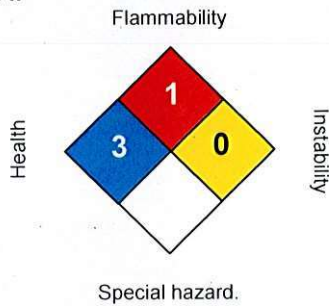
All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

NALCO® 7320

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 07/16/2020
Version Number : 2.3
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

TAPS AIR DISPERSION MODELING REPORT

Herbert Malarkey Roofing Company / Williamsport Plant

Prepared By:

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TABLE OF CONTENTS

1. INTRODUCTION	1-1
1.1 Background.....	1-1
1.2 Facility Description	1-1
2. AIR DISPERSION MODELING METHODOLOGY	2-1
2.1 TAPs Emission Calculations.....	2-1
2.2 TAPs Screening Evaluation.....	2-1
2.2.1 Small Emitter Exemption.....	2-1
2.2.2 Allowable Emission Rate (AER).....	2-1
2.3 AERMOD Modeling	2-2
2.3.1 Air Dispersion Model Selection.....	2-2
2.3.2 Building Downwash.....	2-2
2.3.3 Treatment of Terrain.....	2-3
2.3.4 Urban/Rural Option.....	2-3
2.3.5 Meteorological Data.....	2-4
2.3.6 Coordinate System.....	2-6
2.3.7 Receptor Grids.....	2-6
2.3.8 Source Types and Stack Parameters	2-7
3. MODELING RESULTS	3-1
APPENDIX A. FACILITY SITE LAYOUT & BUILDING DIMENSIONS	
APPENDIX B. SOURCE PARAMETERS	
APPENDIX C. TAPS EMISSIONS AND SCREENING	

LIST OF FIGURES

Figure 2-1. Location of HGR and IAD Airports in Relation to the Williamsport Facility	2-5
Figure 2-2. Cartesian Receptor Grid	2-7
Figure 3-1. Over-Threshold Receptors for Annual Formaldehyde	3-2

LIST OF TABLES

Table 2-1. Small Emitter Exemption TAPs	2-1
Table 2-2. Land Use Procedure for Rural / Urban Selection in Air Quality Models	2-4
Table 3-1. Annual Average Cadmium Modeling Results	3-1
Table 3-2. Annual Average Formaldehyde Modeling Results	3-1
Table 3-3. 8-hour Average Formaldehyde Modeling Results	3-2

1. INTRODUCTION

Herbert Malarkey Roofing Company (Malarkey) submitted a Permit to Construct application to the Maryland Department of the Environment (MDE) for the air emission sources at the Williamsport Plant, which includes a Toxic Air Pollutants (TAPs) compliance demonstration utilizing air dispersion modeling. As described in the following sections, the Williamsport Plant complies with the Code of Maryland Regulations (COMAR) regarding TAPs at the listed worst-case throughputs described in this report.

1.1 Background

Malarkey owns the Williamsport Plant, which is a wet formed fiberglass mat manufacturing and coating facility located in Williamsport, Maryland. Malarkey recently acquired the facility, which was not operational at the time of purchase.

Malarkey conducted a TAPs analysis to demonstrate that the Williamsport Plant complies with COMAR 26.11.15 and 16 requirements. These regulations require a facility to quantify its TAP emissions, apply best available control technology for toxics (T-BACT) for new sources, and verify no adverse ambient impacts of TAPs based upon an examination of emission rates and/or dispersion modeling.

This analysis, as described in the following sections, was based on potential emissions. This methodology ensures that Malarkey can expect continued compliance with the TAPs program by simply verifying usage rates are below those utilized in this analysis.

The air dispersion modeling was conducted in a manner that conforms to the applicable rules, guidance, and requirements in the following documents:

- ▶ The United States Environmental Protection Agency's (U.S. EPA's) user's guides for the EPA Regulatory AERMOD Modeling System available from U.S. EPA's Support Center for Regulatory Atmospheric Modeling (SCRAM) website,¹ and
- ▶ U.S. EPA's Guideline on Air Quality Models, 40 Code of Federal Regulations (CFR) Part 51 - Appendix W (latest rule update, effective February 2017).

In addition, the modeling was conducted following the modeling protocol submitted to MDE and subsequent comments and approval from MDE.

1.2 Facility Description

The Williamsport Facility is located at 10033 Governor Lane Boulevard, Williamsport, Maryland. **Appendix A** presents an aerial map of the facility.

¹ SCRAM website: <https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models#aermod>

2. AIR DISPERSION MODELING METHODOLOGY

This section of the modeling report presents the procedures that were utilized in the air dispersion modeling analysis. The techniques in this air dispersion modeling analysis are consistent with the current U.S. EPA guidance.

2.1 TAPs Emission Calculations

Per COMAR 26.11.15.03B(2)(a), fuel-burning equipment is exempt from the TAPs regulations. Accordingly, only direct-fired combustion units are included in this analysis. The eight mat line heaters and the regenerative thermal oxidizer (RTO) are direct fired and included in this analysis. The nine coating line heaters are indirect-fired combustion units and are exempt from this analysis per COMAR 6.11.15.03B(2)(a). In addition, process TAPs emissions from the facility were evaluated. TAPs emissions and screening are shown in **Appendix C**.

2.2 TAPs Screening Evaluation

As described in COMAR 26.11.15, demonstrating compliance with TAPs regulations is a multi-step process in which TAPs emission rates must be compared to certain thresholds. If a TAP falls below a particular threshold, it is no longer considered for evaluation.

2.2.1 Small Emitter Exemption

As described in COMAR 26.11.15.03B(3), a small emitter exemption is available to a Maryland Class II pollutant that has an emission rate less than 0.5 pounds per hour (lb/hr) and has all screening levels greater than 200 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). For those pollutants that meet these criteria, no further evaluation is required. The TAPs in **Table 2-1** below met the small emitter exemption. No further evaluation of these TAPs is needed.

Table 2-1. Small Emitter Exemption TAPs

TAP	Screening Levels ($\mu\text{g}/\text{m}^3$)			Facility-Wide Emissions (lb/hr)
	1-hour	8-hour	Annual	
Toluene		7.54E+02		1.25E-04

2.2.2 Allowable Emission Rate (AER)

For each pollutant that does not qualify for the small emitter exemption, pollutant emission rates must next be compared to their respective AER. These AERs are developed by examining the screening levels that have been established for each pollutant (1-hour, 8-hour, and/or annual averaging periods) and dividing it by a conversion factor that is dependent upon whether the exhaust stack is sufficiently tall to meet Good Engineering Practice (GEP) stack height.

The stacks at the facility are not sufficiently tall or sufficiently far enough away from associated buildings on site, therefore emissions are assumed to be from a shorter stack, possible downwash, or fugitive scenario; AERs have been developed to reflect that status.

No further evaluation is required for those pollutants whose emission rates are below their respective AERs. As shown in **Appendix C**, the following pollutants exceed their AERs for the listed averaging periods:

- ▶ Cadmium – annual
- ▶ Formaldehyde – 8-hour and annual

All other TAPs are below the AERs and no further evaluation is needed. For pollutants that exceed the AERs, it is necessary to conduct air dispersion modeling to estimate the maximum expected ambient pollutant concentrations and to determine if their impact falls below allowable ambient levels (AALs).

2.3 AERMOD Modeling

As a next step, an air dispersion modeling analysis was performed using U.S. EPA’s AERMOD for these two pollutants. The model input and output files as well as associated files (e.g., meteorology, etc.) are provided on an enclosed flash drive.

2.3.1 Air Dispersion Model Selection

Dispersion models predict ambient pollutant concentrations by simulating the evolution of the pollutant plume over time and space given data inputs including the quantity of emissions, stack exhaust parameters (e.g., velocity, flowrate, and temperature) and weather data. Building structures that obstruct wind flow near emission points may cause stack discharges to become caught in the turbulent wakes of these structures leading to downwash of the plumes. Wind blowing around a building creates zones of turbulence that are greater than if the building were absent. These effects generally cause higher ground-level pollutant concentrations since building downwash inhibits dispersion from elevated stack discharges. For this reason, building downwash algorithms are considered an integral component of the selected air dispersion model.

The latest version (version 22112) of the AERMOD model was used to estimate maximum ground-level concentrations in the air dispersion analysis. AERMOD is a refined, steady-state, multiple source, air dispersion model to be used for industrial sources.² The AERMOD modeling was performed using regulatory default options except otherwise noted in this report.

2.3.2 Building Downwash

Building structures that obstruct wind flow near emission points may cause discharges to become caught in the turbulent wakes of these structures leading to downwash of the plumes. Wind blowing around a building creates zones of turbulence that are greater than if the building did not exist. These effects generally cause higher ground-level pollutant concentrations since building downwash inhibits dispersion from elevated stack discharges. For this reason, building downwash algorithms are considered an integral component of the selected air dispersion model.

The AERMOD model has the Plume Rise Modeling Enhancements (PRIME) algorithm incorporated in the regulatory version, and building downwash dimensions were determined by the Building Profile Input Program (BPIP PRIME), version 04274.³ BPIP PRIME is designed to incorporate the concepts and procedures expressed in the Good Engineering Practices (GEP) Technical Support Document, the Building Downwash

² 40 CFR 51, Appendix W–*Guideline on Air Quality Models*, Appendix A.1– AMS/EPA Regulatory Model (AERMOD).

³ Earth Tech, Inc., Addendum to the ISC3 User’s Guide, The PRIME Plume Rise and Building Downwash Model, Concord, MA.

Guidance document, and other related documents,⁴ while incorporating the PRIME enhancements to improve prediction of ambient impacts in building cavities and wake regions.

The building parameters are listed in **Table A-1** of **Appendix A**. There are no other structures or nearby buildings that are expected to impact building downwash. BPIP PRIME was run as a part of this modeling analysis.

2.3.3 Treatment of Terrain

Through the use of the AERMOD terrain preprocessor (AERMAP, version 18081), AERMOD incorporates not only the receptor heights, but also an effective height (hill height scale) that represents the significant terrain features surrounding a given receptor.⁵

Receptor, building, and emission source terrain elevations input to the model were those interpolated from 1/3 arc-second National Elevation Dataset (NED) data obtained from the U.S. Geological Survey (USGS) from datum year 1983. The array elevations were interpolated using AERMAP.

2.3.4 Urban/Rural Option

The default rural dispersion coefficients were utilized within AERMOD based on a review of aerial imagery and an AERSURFACE run executed with a 1-kilometer radius. The results of the AERSURFACE run are included in **Table 2-2** below and indicate an urban percentage less than 50%.

⁴ U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Guidelines for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations) (Revised), Research Triangle Park, North Carolina, EPA 450/4-80-023R, June 1985.

⁵ EPA, Users Guide for the AERMOD Terrain Preprocessor (AERMAP), EPA-454/B-18-004, Research Triangle Park, NC.

Table 2-2. Land Use Procedure for Rural / Urban Selection in Air Quality Models

Code	Description	Code Count
0	Missing, Out-of-Bounds, or Undefined	0
11	Open Water	2,871
12	Perennial Ice/Snow	0
21	Developed, Open Space	10,610
22	Developed, Low Intensity	17,218
23	Developed, Medium Intensity	8,612
24	Developed, High Intensity	4,560
31	Barren Land (Rock/Sand/Clay)	104
32	Unconsolidated Shore	0
41	Deciduous Forest	13,867
42	Evergreen Forest	528
43	Mixed Forest	10,374
51	Dwarf Scrub	0
52	Shrub/Scrub	35
71	Grasslands/Herbaceous	340
72	Sedge/Herbaceous	0
73	Lichens	0
74	Moss	0
81	Pasture/Hay	24,331
82	Cultivated Crops	17,856
90	Woody Wetlands	1,440
91	Palustrine Forested Wetland	0
92	Palustrine Scrub/Shrub Wetland	0
93	Estuarine Forested Wetland	0
94	Estuarine Scrub/Shrub Wetland	0
95	Emergent Herbaceous Wetland	823
96	Palustrine Emergent Wetland	0
97	Estuarine Emergent Wetland	0
98	Palustrine Aquatic Bed	0
99	Estuarine Aquatic Bed	0
Total		113,569
Total Urban (Category 23 and 24)		13,172
Percent (%) Urban		11.6%

2.3.5 Meteorological Data

Site-specific dispersion models require a sequential hourly record of dispersion meteorology representative of the region within which the source is located. In the absence of site-specific measurements, the U.S. EPA guidelines recommend the use of readily available data from the closest and most representative National Weather Service (NWS) station.

Regulatory air dispersion modeling using AERMOD requires five years of quality-assured meteorological data that includes hourly records of the following parameters:

- ▶ Wind speed;
- ▶ Wind direction;
- ▶ Air temperature;
- ▶ Micrometeorological Parameters (e.g., friction velocity, Monin-Obukhov length);
- ▶ Mechanical mixing height; and
- ▶ Convective mixing height.

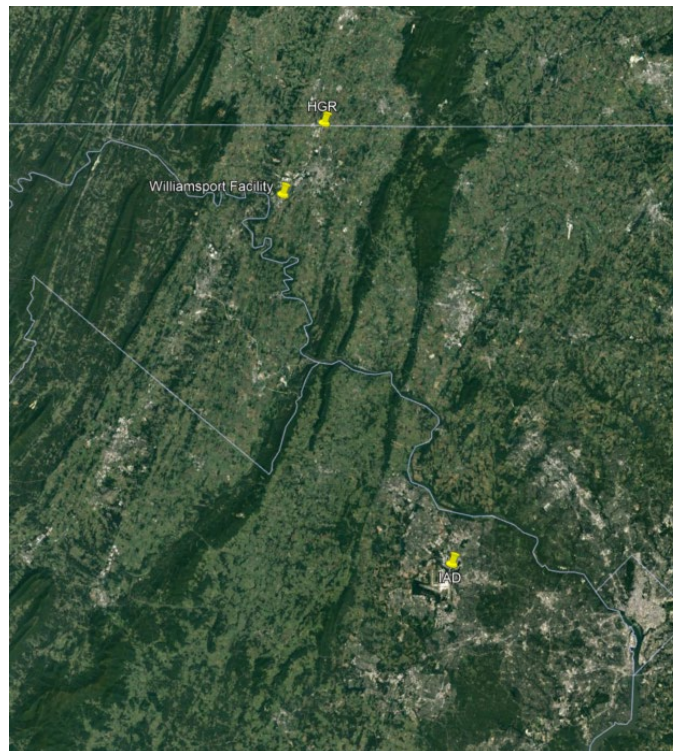
The first three of these parameters are directly measured by monitoring equipment located at typical surface observation stations. The friction velocity, Monin-Obukhov length, and mixing heights are derived from characteristic micrometeorological parameters and from observed and correlated values of cloud cover, solar insulation, time of day and year, and latitude of the surface observation station.

Surface observation stations form a relatively dense network, are almost always found at airports, and are typically operated by the NWS. Upper air stations are fewer in number than surface observing points since the upper atmosphere is less vulnerable to local effects caused by terrain or other land influences and is therefore less variable. The NWS operates virtually all available upper air measurement stations in the United States.

Meteorological data for 2018 through 2022 for Hagerstown Regional Airport (HGR) with upper air data from Dulles International Airport (IAD) was utilized in this analysis, as this is considered the most representative source of meteorological data for the Williamsport Plant for surface data and upper air data, respectively.

Figure 2-1 illustrates the locations of the facility and airports for reference.

Figure 2-1. Location of HGR and IAD Airports in Relation to the Williamsport Facility



AERMOD modeling requires meteorological data incorporating surface and upper air observations, and land use data. Required surface data includes wind speed, wind direction, temperature, and atmospheric stability (usually in the form of cloud cover) data. Upper air data is usually taken from radiosonde observations near sunrise time and is used to determine mixing heights. Land use data must be in the form of surface roughness, Bowen ratio, and albedo estimates for the surface observation site.

Trinity used 2018-2022 meteorological data from the HGR and IAD airport stations, located roughly 15 kilometers northeast and 80 kilometers south of the Williamsport Plant, respectively. The surface characteristics surrounding the Williamsport Plant and HGR are very similar, indicating that this data was representative of meteorology at the Williamsport Plant.

Meteorological data was processed using the latest version of AERMET (v22112) and the adjusted U star option.

2.3.6 Coordinate System

In all modeling analysis data files, the location of the emission source, structures, and receptors were represented in the Universal Transverse Mercator (UTM) coordinate system. The UTM grid divides the world into coordinates that are measured in north meters (measured from the equator) and east meters (measured from the central meridian of a particular zone, which is set at 500 kilometers).

The datum for this modeling analysis is based on North American Datum 1983 (NAD 83). UTM coordinates for this analysis all reside within UTM Zone 18.

2.3.7 Receptor Grids

For this air dispersion modeling analysis, ground-level concentrations were calculated along the facility fence line and within a variable density square receptor grid. As mentioned in Section 2.3.3, receptor elevations and hill height scales required by AERMOD were determined using the AERMAP terrain preprocessor.

2.3.7.1 Cartesian Receptor Grid

- ▶ 50-meter (m) spaced receptors covering a region that extends to 2.5 kilometers (km) from the property center point,
- ▶ 100-m spaced receptors covering a region from 2.5 km to 5 km from the property center point, and
- ▶ 500-m spaced receptors covering a region from 5 km to 10 km from the property center point.

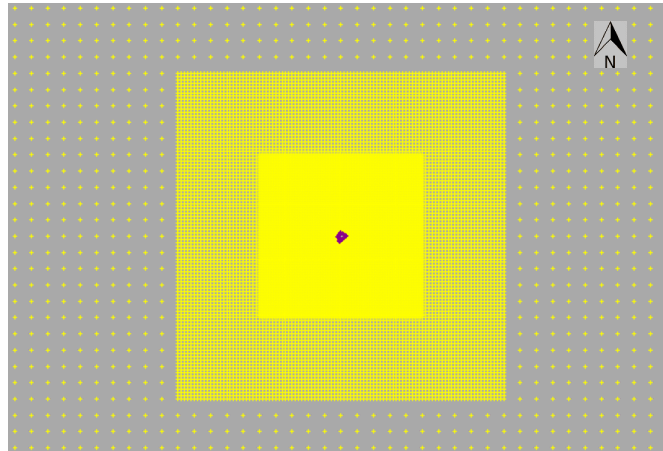
The receptor grid is shown in **Figure 2-2** below.

2.3.7.2 Fence Line Receptors

Receptors were placed along the length of the fence line spaced at 50-m intervals. The fence line is defined as the purple line in the site layout provided in **Appendix A**. Note that there is a cell phone tower with an easement at the south end of the property. Access to this area is restricted and typically the area is unoccupied. Since modeling includes 8-hour and annual AALs only, this area is included within the fence line for this modeling analysis.

Figure 2-2. Cartesian Receptor Grid

Discrete Receptor: + Boundary Receptor: +



2.3.8 Source Types and Stack Parameters

The AERMOD dispersion model allows for emissions units to be represented as point, area, or volume sources. Process emissions from the two coating lines are vented indoors and as such are fugitive emissions. These sources were modeled as volume sources. The mat line heaters and mat line process emissions are routed to an RTO which vents to a vertical stack outside of the buildings. This source was modeled as a vertical point source.

The site layout in **Appendix A** depicts the approximate location of the sources that were modeled. The location, elevation, and modeled source parameters are included in **Appendix B**.

3. MODELING RESULTS

The AERMOD model was used to determine potential ground-level pollutant concentrations throughout the receptor grid for each of the five meteorological data years modeled. **Table 3-1** through **Table 3-3** show the modeled concentration compared to the respective AALs. The annual average formaldehyde results exclude 9 receptors.

Table 3-1. Annual Average Cadmium Modeling Results

Model Year	Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$)	AAL ($\mu\text{g}/\text{m}^3$)	Below AAL?
2018	0.00010	0.0006	Yes
2019	0.00009		Yes
2020	0.00010		Yes
2021	0.00010		Yes
2022	0.00011		Yes

Table 3-2. Annual Average Formaldehyde Modeling Results

Model Year	Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$) ^a	AAL ($\mu\text{g}/\text{m}^3$)	Below AAL?
2018	0.4761	0.48	Yes
2019	0.4667		Yes
2020	0.4563		Yes
2021	0.4545		Yes
2022	0.4657		Yes

a. Excluding 9 receptors as discussed below.

Table 3-3. 8-hour Average Formaldehyde Modeling Results

Model Year	Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$)	AAL ($\mu\text{g}/\text{m}^3$)	Below AAL?
2018	10.28	20.30	Yes
2019	9.88		Yes
2020	10.16		Yes
2021	11.05		Yes
2022	10.11		Yes

There were nine receptors that returned an annual average formaldehyde concentration above the AAL. There were no receptors that returned an 8-hour formaldehyde or annual cadmium concentration above the AAL.

Figure 3-1 shows the nine elevated receptor locations for formaldehyde (each receptor is marked with a yellow "+").

Figure 3-1. Over-Threshold Receptors for Annual Formaldehyde



As seen in **Figure 3-1**, there are nine total receptors with an annual average concentration for formaldehyde over the AAL for one or more years which are all directly on or within approximately 45 meters of the Williamsport Facility fence line. All nine receptors are located in undeveloped areas on the northeast end of the property, on the road, or on a railroad. Further, it is reasonable to assume that no

person would remain in any of the locations for more than 8 hours (typically much less) and as shown in **Table 3-3**, modeled concentrations are below the 8-hour AAL.

The AALs are conservatively calculated as a fraction of published health and safety thresholds. There are no other known sources of formaldehyde near these locations that would be expected to have a significant impact and Malarkey's impact at these locations is 203% (or less) above the AAL. As such, it is expected that actual annual average formaldehyde concentrations are well below established health and safety thresholds.

Accordingly, the emissions from the Williamsport facility do not adversely impact public health beyond the fence line and Malarkey has demonstrated compliance with the TAPs ambient air requirements.

As shown in **Table 3-1** through **Table 3-3**, the modeled results are below the AALs. Therefore, this air dispersion modeling analysis demonstrates that the emissions from the Williamsport facility are not expected to adversely impact public health, and therefore meet the requirements of COMAR 26.11.15.06.

APPENDIX A. FACILITY SITE LAYOUT & BUILDING DIMENSIONS

Figure A-1. Facility Site Layout

BPIP Structure: □ Point Source: ● Area Source: - Volume Source: ◻ Boundary Receptor: +



Table A-1. Building Dimensions

AERMOD ID	X Coordinate	Y Coordinate	Elevation	Height
	(m)	(m)	(m)	(ft)
BLDG1	258817.6	4385895.9	136.49	18.5
BLDG2	258854.9	4385899.0	136.88	19.6
BLDG3	258895.9	4385926.8	136.91	19.6
BLDG4	258944.8	4385924.0	136.55	25
BLDG5	258922.9	4385880.3	136.43	32

APPENDIX B. SOURCE PARAMETERS

Table B-1. Point Source Parameters

Source ID	X-Coordinate (meters)	Y-Coordinate (meters)	Elevation (meters)	Stack Height (ft)	Stack Temperature (°F)	Stack Velocity (ft/s)	Stack Diameter (ft)
RTO	258980	4385912.1	136.32	32	410	35.37	3

Table B-2. Volume Source Parameters

Source ID	X-Coordinate (meters)	Y-Coordinate (meters)	Elevation (m)	Release Height (ft) ^a	Initial Lateral Dimension (ft) ^b	Initial Vertical Dimension (ft) ^c
COAT1	258942.9	4385935.7	136.55	12.5	4.21	8.42
COAT2	258952.5	4385950.9	136.55	12.5	4.21	8.42
COAT3	258962.1	4385966.1	136.55	12.5	4.21	8.42
COAT4	258971.7	4385981.4	136.55	12.5	4.21	8.42
COAT5	258928.8	4385945.9	136.55	12.5	4.21	8.42
COAT6	258938.4	4385961.1	136.55	12.5	4.21	8.42
COAT7	258948.0	4385976.3	136.55	12.5	4.21	8.42
COAT8	258957.6	4385991.6	136.55	12.5	4.21	8.42

- a. The release height of each volume source is half the height of the building.
- b. The initial lateral dimension of a volume source is equal to the length of the source divided by 4.3. For this modeling analysis, each volume source represents a square area of the process area, The initial lateral dimension is the length of this square divided by 4.3.
- c. The initial vertical dimension of a volume source is equal to the height of the sources divided by 6.15. In this analysis, the initial vertical dimension is the building height divided by 2.15.

Table B-3. Modeled Emission Rates

Source ID	Emission Rate (lb/hr)	
	Cadmium	Formaldehyde
RTO	2.99E-05	3.80E-01
COAT1	0	0
COAT2	0	0
COAT3	0	0
COAT4	0	0
COAT5	0	0
COAT6	0	0
COAT7	0	0
COAT8	0	0

APPENDIX C. TAPS EMISSIONS AND SCREENING

Facility-Wide TAP Compliance Demonstration

Pollutant	CAS Number	Class I/II	Screening Level			Emissions			Allowable Emission Rate			Below AER?			
			1-hr (ug/m3)	8-hr (ug/m3)	Annual (ug/m3)	1-hr (lb/hr)	8-hour (lb/hr)	Annual (tpy)	1-hr (lb/hr)	8-hr (lb/hr)	Annual (tpy)	1-hr	8-hr	Annual	
Formaldehyde	50000	I		2.03E+01	8.00E-02	3.80E-01	3.80E-01	1.66E+00		0.073	0.015			No	No
Benzo(a)pyrene	50328	I				3.26E-08	3.26E-08	1.43E-07			-				
Benz(a)anthracene	56553	I				4.89E-08	4.89E-08	2.14E-07			-				
7,12-Dimethylbenz(a)anthracene	57976	II		4.76E+00		4.35E-07	4.35E-07	1.90E-06		1.71E-02	-		Yes		
Benzene	71432	I	7.99E+01	1.60E+01	1.30E-01	5.71E-05	5.71E-05	2.50E-04	2.86E-01	5.73E-02	2.37E-02	Yes	Yes	Yes	
Acenaphthene	83329	II		2.00E+01		4.89E-08	4.89E-08	2.14E-07		7.17E-02			Yes		
Ammonia ¹	7664417	II	2.44E+02	1.74E+02		5.24E-01	5.24E-01	2.30E+00	8.74E-01	6.24E-01		Yes	Yes		
Fluorene	86737	II		2.00E+01		7.61E-08	7.61E-08	3.33E-07		7.17E-02			Yes		
Toluene	108883	II		7.54E+02		9.24E-05	9.24E-05	4.05E-04		2.70E+00			Yes		
Anthracene	120127	II		2.00E+01		6.52E-08	6.52E-08	2.86E-07		7.17E-02			Yes		
Pyrene	129000	II		2.00E+01		1.36E-07	1.36E-07	5.95E-07		7.17E-02			Yes		
Benzo(g,h,i)perylene	191242	II		2.00E+01		3.26E-08	3.26E-08	1.43E-07		7.17E-02			Yes		
Indeno(1,2,3-cd)pyrene	193395	I				4.89E-08	4.89E-08	2.14E-07							
Benzo(b)fluoranthene	204992	I				4.89E-08	4.89E-08	2.14E-07							
Benzo(k)fluoranthene	205089	I				4.89E-08	4.89E-08	2.14E-07							
Acenaphthylene	208968	II		2.46E+01		4.89E-08	4.89E-08	2.14E-07		8.83E-02			Yes		
Chrysene	218019	II				4.89E-08	4.89E-08	2.14E-07							
Lead	7439921	II		5.00E-01		1.36E-04	1.36E-04	5.95E-04		1.79E-03			Yes		
Manganese	7439965	II		2.00E+00		1.03E-05	1.03E-05	4.52E-05		7.17E-03			Yes		
Mercury	7439976	II	3.00E-01	1.00E-01		7.06E-06	7.06E-06	3.09E-05	1.08E-03	3.58E-04		Yes	Yes		
Arsenic	7440382	I		1.00E-01	2.00E-04	5.43E-06	5.43E-06	2.38E-05		3.58E-04	3.65E-05		Yes	Yes	
Beryllium	7440417	I		5.00E-04	4.00E-04	3.26E-07	3.26E-07	1.43E-06		1.79E-06	7.30E-05		Yes	Yes	
Cadmium	7440439	I		2.00E-02	6.00E-04	2.99E-05	2.99E-05	1.31E-04		7.17E-05	1.09E-04		Yes	No	
Chromium	7440473	II		5.00E+00		3.80E-05	3.80E-05	1.67E-04		1.79E-02			Yes		
Selenium	7782492	II		2.00E+00		6.52E-07	6.52E-07	2.86E-06		7.17E-03			Yes		
Dibenzo(a,h)anthracene	53703	I				3.26E-08	3.26E-08	1.43E-07							
Dichlorobenzene	25321226	I				3.26E-05	3.26E-05	1.43E-04							
Nickel	7440020	I		1.00E+00		5.71E-05	5.71E-05	2.50E-04		3.58E-03			Yes		
Cobalt	7440484	II		2.00E-01		2.28E-06	2.28E-06	1.00E-05		7.17E-04			Yes		

1. The SDS for RHOPLEX AC-1034 only contains a concentration of aqua ammonia (CAS No. 1336216). Malarkey contacted the manufacturer for further information on Ammonia and this information is not available. Per NIOSH (<https://www.cdc.gov/niosh/npg/npgd0028.html>), Ammonia has a solubility of 34% and safety data sheets for aqua ammonia are typically 30% ammonia or less. As such, Malarkey has estimated ammonia emissions as 34% of aqua ammonia.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION

PRIVILEGE LOG

The following items are considered confidential business information and are not included in the permit to construct docket (Docket #06-23) for public review:

Information on the Form 5s, in particular block 13 Input Materials and block 14 Output Materials; the usage of latex, dispersant, viscosity modifier and limestone in lb/year and gallons/year as used in the basis for emissions calculations.