

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION**

MARCH 9, 2021

**PERMIT TO INSTALL
78-19A**

**ISSUED TO
HAVILAND PRODUCTS COMPANY**

**LOCATED AT
2722 NORTH BURDICK STREET
KALAMAZOO, MICHIGAN 49004**

**IN THE COUNTY OF
KALAMAZOO**

**STATE REGISTRATION NUMBER
P1029**

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

| | |
|---|------------|
| DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: January 12, 2021 | |
| DATE PERMIT TO INSTALL APPROVED: March 9, 2021 | SIGNATURE: |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

PERMIT TO INSTALL

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COMMON ACRONYMS

| | |
|----------------------------|---|
| AQD | Air Quality Division |
| BACT | Best Available Control Technology |
| CAA | Clean Air Act |
| CAM | Compliance Assurance Monitoring |
| CEMS | Continuous Emission Monitoring System |
| CFR | Code of Federal Regulations |
| COMS | Continuous Opacity Monitoring System |
| Department/department/EGLE | Michigan Department of Environment, Great Lakes, and Energy |
| EU | Emission Unit |
| FG | Flexible Group |
| GACS | Gallons of Applied Coating Solids |
| GC | General Condition |
| GHGs | Greenhouse Gases |
| HVLP | High Volume Low Pressure* |
| ID | Identification |
| IRSL | Initial Risk Screening Level |
| ITSL | Initial Threshold Screening Level |
| LAER | Lowest Achievable Emission Rate |
| MACT | Maximum Achievable Control Technology |
| MAERS | Michigan Air Emissions Reporting System |
| MAP | Malfunction Abatement Plan |
| MSDS | Material Safety Data Sheet |
| NA | Not Applicable |
| NAAQS | National Ambient Air Quality Standards |
| NESHAP | National Emission Standard for Hazardous Air Pollutants |
| NSPS | New Source Performance Standards |
| NSR | New Source Review |
| PS | Performance Specification |
| PSD | Prevention of Significant Deterioration |
| PTE | Permanent Total Enclosure |
| PTI | Permit to Install |
| RACT | Reasonable Available Control Technology |
| ROP | Renewable Operating Permit |
| SC | Special Condition |
| SCR | Selective Catalytic Reduction |
| SNCR | Selective Non-Catalytic Reduction |
| SRN | State Registration Number |
| TBD | To Be Determined |
| TEQ | Toxicity Equivalence Quotient |
| USEPA/EPA | United States Environmental Protection Agency |
| VE | Visible Emissions |

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

| | |
|-------------------|--|
| acfm | Actual cubic feet per minute |
| BTU | British Thermal Unit |
| °C | Degrees Celsius |
| CO | Carbon Monoxide |
| CO ₂ e | Carbon Dioxide Equivalent |
| dscf | Dry standard cubic foot |
| dscm | Dry standard cubic meter |
| °F | Degrees Fahrenheit |
| gr | Grains |
| HAP | Hazardous Air Pollutant |
| Hg | Mercury |
| hr | Hour |
| HP | Horsepower |
| H ₂ S | Hydrogen Sulfide |
| kW | Kilowatt |
| lb | Pound |
| m | Meter |
| mg | Milligram |
| mm | Millimeter |
| MM | Million |
| MW | Megawatts |
| NMOC | Non-Methane Organic Compounds |
| NO _x | Oxides of Nitrogen |
| ng | Nanogram |
| PM | Particulate Matter |
| PM10 | Particulate Matter equal to or less than 10 microns in diameter |
| PM2.5 | Particulate Matter equal to or less than 2.5 microns in diameter |
| pph | Pounds per hour |
| ppm | Parts per million |
| ppmv | Parts per million by volume |
| ppmw | Parts per million by weight |
| psia | Pounds per square inch absolute |
| psig | Pounds per square inch gauge |
| scf | Standard cubic feet |
| sec | Seconds |
| SO ₂ | Sulfur Dioxide |
| TAC | Toxic Air Contaminant |
| Temp | Temperature |
| THC | Total Hydrocarbons |
| tpy | Tons per year |
| µg | Microgram |
| µm | Micrometer or Micron |
| VOC | Volatile Organic Compounds |
| yr | Year |

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date / Modification Date | Flexible Group ID |
|-------------------------|---|--|------------------------------|
| EUSOLVENTPACK | Solvent packaging area consisting of chemical repackaging and solvent packaging into totes, drums, or smaller containers, located in the southeastern portion of the property in the solvent packaging room. | 2006 January 3, 2020 | NA |
| EUHYDRAZINESCRUB | Hydrazine processing including hydrazine holding tank T-6; hydrazine blend tank T-8; packaging into totes, drums, or smaller containers in the Solvent Blending Room; and hydrazine isotainer/tanker truck loading and off-loading. Emissions are controlled by the hydrazine scrubber. | TBD | NA |

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**EUSOLVENTPACK
 EMISSION UNIT CONDITIONS**

DESCRIPTION

Solvent packaging area consisting of chemical repackaging and solvent packaging into totes, drums, or smaller containers, located in the southeastern portion of the property in the solvent packaging room.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|------------------------|--|---|------------------|------------------------------------|---|
| 1. Formaldehyde | 2.8 x 10 ⁻² pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 2. Formaldehyde | 47.5 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | VI.4 | R 336.1225 |
| 3. Acetone | 47.5 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1224 R 336.1225 |
| 4. Acetone | 167 lb/8-hour period ¹ | 8-hour time period | EUSOLVENTPACK | SC VI.3 | R 336.1224 R 336.1225 |
| 5. Benzene | 2.60 x 10 ⁻² pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 6. Benzene | 59.3 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1225 |
| 7. Ethylene oxide | 2.96 x 10 ⁻⁶ pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 8. Naphthalene | 1.58 x 10 ⁻² pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 9. Naphthalene | 47.4 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1225 |
| 10. Cumene | 4.46 x 10 ⁻² pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 11. Cumene | 59.3 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1225 |
| 12. Ethylbenzene | 0.2015 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 13. Ethylbenzene | 237 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1225 |
| 14. 1,2-Dichloroethane | 7.92 x 10 ⁻³ pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|--|---|------------------|------------------------------------|---|
| 15. 1,2-Dichloroethane | 23.7 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1225 |
| 16. Methyl isobutyl ketone | 6.7 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 17. Methyl isobutyl ketone | 23.3 lb/8-hour period ¹ | 8-hour time period | EUSOLVENTPACK | SC VI.3 | R 336.1225 |
| 18. Isopropyl acetate | 21.6 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 19. Isopropyl acetate | 119 lb/8-hour period ¹ | 8-hour time period | EUSOLVENTPACK | SC VI.3 | R 336.1225 |
| 20. Isobutyl acetate | 7.09 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 21. Isobutyl acetate | 68.1 lb/8-hour period ¹ | 8-hour time period | EUSOLVENTPACK | SC VI.3 | R 336.1225 |
| 22. bis-2-chloroethylether | 1.99 x 10 ⁻³ pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 23. bis-2-chloroethylether | 1.78 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1225 |
| 24. Triethylamine | 0.264 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 25. Triethylamine | 0.596 lb/8-hour period ¹ | 8-hour time period | EUSOLVENTPACK | SC VI.3 | R 336.1225 |
| 26. Hydrotreated light distillate (CAS 64742-47-8) | 4.54 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 27. Hydrotreated light distillate (CAS 64742-47-8) | 14,238 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1225 |
| 28. Hydrotreated light naphthenic distillate (CAS 64742-53-6) | 1.31 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 29. Hydrotreated light naphthenic distillate (CAS 64742-53-6) | 1.42 lb/8-hour period ¹ | 8-hour time period | EUSOLVENTPACK | SC VI.3 | R 336.1225 |
| 30. c11-c14 isoalcohols, c14 rich, ethoxylated alcohol (CAS 78330-21-9) | 0.42 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 31. Formic acid | 1.0 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 32. Formic acid | 1,186 lb/year ¹ | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1225 |

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|--|------------------------------------|---|---------------|-----------------------------|------------------------------------|
| 33. Total butyl acetate isomers ^a | 11.7 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 34. Total butyl acetate isomers ^a | 68.2 lb/8-hour period ¹ | 8-hour time period | EUSOLVENTPACK | SC VI.3 | R 336.1225 |
| 35. Total petroleum hydrocarbon materials ^b | 10.3 pph ¹ | Hourly | EUSOLVENTPACK | SC V.1, VI.2 | R 336.1225 |
| 36. VOC | 7.3 tpy | 12-month rolling time period, as determined at the end of each calendar month | EUSOLVENTPACK | SC VI.4 | R 336.1702 |

a. This limit applies to the combined emissions of all butyl acetate monomers.
 b. This limit applies to the combined emissions of all petroleum hydrocarbon materials with Note #1 in the AQD Initial Threshold Screening Level (ITSL) / Initial Risk Screening Level (IRSL) database.

II. MATERIAL LIMIT(S)

- The permittee shall not blend or package trichloroethylene in EUSOLVENTPACK.¹ (R 336.1225)

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

- Upon request from the AQD District Supervisor, the permittee may be required to verify the emission rates of any TAC listed in SC I.1 through I.35 and/or VOC emission rates from EUSOLVENTPACK by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

| Pollutant | Test Method Reference |
|------------------------|--|
| VOCs | 40 CFR Part 60, Appendix A |
| Toxic air contaminants | 40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A |

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. (R 336.1224, R 336.1225, R 336.2001, R 336.2003, R 336.2004)

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1224, R 336.1225, R 336.1702)**
2. The permittee shall keep, in a satisfactory manner, production records and other records necessary to calculate the hourly emission rates of the pollutants listed in the following table from EUSOLVENTPACK and shall calculate the emission rates using a method acceptable to the AQD District Supervisor.

| | | |
|---|--|---|
| Formaldehyde | Acetone | Benzene |
| Ethylene Oxide | Naphthalene | Cumene |
| Ethylbenzene | 1,2-Dichloroethane | Methyl isobutyl ketone |
| Isopropyl acetate | Isobutyl acetate | Bis-2-chloroethylether |
| Triethylamine | Hydrotreated light distillate (CAS 64742-47-8) | Hydrotreated light naphthenic distillate (CAS 64742-53-6) |
| c11-c14 isoalcohols, c14 rich, ethoxylated alcohol (CAS 78330-21-9) | Formic acid | Total butyl acetate isomers ^a |
| Total petroleum hydrocarbon materials ^b | | |
| a. This limit applies to the combined emissions of all butyl acetate monomers. | | |
| b. This limit applies to the combined emissions of all petroleum hydrocarbon materials with Note #1 in the AQD Initial Threshold Screening Level (ITSL) / Initial Risk Screening Level (IRSL) database. | | |

The permittee shall keep all records, including the emission rate calculations, on file at the facility and make them available to the Department upon request.¹ **(R 336.1224, R 336.1225)**

3. The permittee shall keep, in a satisfactory manner, production records and other records necessary to calculate the 8-hour period emission rate of the pollutants listed in the following table from EUSOLVENTPACK and shall calculate the emission rate using a method acceptable to the AQD District Supervisor.

| | | |
|--|------------------------|---|
| Acetone | Methyl isobutyl ketone | Isopropyl acetate |
| Isobutyl acetate | Triethylamine | Hydrotreated light naphthenic distillate (CAS 64742-53-6) |
| Total butyl acetate isomers ^a | | |
| a. This limit applies to the combined emissions of all butyl acetate monomers. | | |

The permittee shall keep all records, including the emission rate calculations, on file at the facility and make them available to the Department upon request.¹ **(R 336.1224, R 336.1225)**

4. The permittee shall keep, in a satisfactory manner, production records and other records necessary to calculate the monthly and 12-month rolling time period, as determined at the end of each calendar month, emission rates of the pollutants listed in the following table from EUSOLVENTPACK and shall calculate the emission rates using a method acceptable to the AQD District Supervisor.

| | | |
|------------------------|--|--------------------|
| Formaldehyde | Benzene | Naphthalene |
| Cumene | Ethylbenzene | 1,2-Dichloroethane |
| Bis-2-chloroethylether | Hydrotreated light distillate (CAS 64742-47-8) | Formic acid |
| VOC | | |

The permittee shall keep all records, including the emission rate calculations, on file at the facility and make them available to the Department upon request. **(R 336.1225, R 336.1702)**

5. The permittee shall maintain a list of the materials emitted from EUSOLVENTPACK that were determined to be exempt from the health-based screening level requirement of Rule 225 pursuant to Rule 226(a) for the PTI 78-19A application review. The list shall include the compound name and CAS number and a calculation demonstrating the emission rate of each material. The permittee shall keep all records on file at the facility and make them available to the Department upon request.¹ **(R 336.1225)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter / Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|----------------------------|---|---|---|
| 1. SV-SOLVENTPACK | 24 | 14 | R 336.1225, 40 CFR 52.21 (c) & (d) |

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EUHYDRAZINESCRUB
 EMISSION UNIT CONDITIONS**

DESCRIPTION

Hydrazine processing including hydrazine holding tank T-6; hydrazine blend tank T-8; packaging into totes, drums, or smaller containers in the Solvent Blending Room; and hydrazine isotainer/tanker truck loading and off-loading.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Hydrazine scrubber

I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|------------------|---------------------------|--|------------------|------------------------------------|---|
| 1. Hydrazine | 0.00128 pph ¹ | Hourly | EUHYDRAZINESCRUB | SV V.1, VI.4 | R 336.1224 R 336.1225 |
| 2. Hydrazine | 1.77 lb/year ¹ | 12-month rolling time period as determined at the end of each calendar month | EUHYDRAZINESCRUB | SC V.1, VI.5 | R 336.1224 R 336.1225 |

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUHYDRAZINESCRUB unless a malfunction abatement plan (MAP) as described in Rule 911(2), for EUHYDRAZINESCRUB, has been submitted within 30 days of permit issuance, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
 - a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
 - b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
 - c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If, at any time, the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1224, R 336.1225, R 336.1910, R 336.1911)

2. The permittee shall not operate any hydrazine emitting equipment in EUHYDRAZINESCRUB unless the inlet pressure and the liquid pH of the hydrazine scrubber are maintained as specified in the MAP. **(R 336.1224, R 336.1225, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate any hydrazine emitting equipment in EUHYDRAZINESCRUB unless the hydrazine scrubber is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining the hydrazine scrubber as described in the MAP. **(R 336.1224, R 336.1225, R 336.1910)**
2. The permittee shall equip and maintain the hydrazine scrubber with an inlet pressure measuring device. **(R 336.1224, R 336.1225, R 336.1910)**
3. The permittee shall equip and maintain the hydrazine scrubber with a liquid pH measuring device. **(R 336.1224, R 336.1225, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request of the AQD District Supervisor, the permittee shall verify the hydrazine emission rate from EUHYDRAZINESCRUB and/or the hydrazine emissions rate into the EUHYDRAZINESCRUB hydrazine scrubber by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in 40 CFR Part 63, Appendix A. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1224, R 336.1225, R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.¹ **(R 336.1224, R 336.1225)**
2. The permittee shall monitor, in a satisfactory manner, the hydrazine scrubber inlet pressure and liquid pH on a continuous basis as defined in the MAP. **(R 336.1224, R 336.1225, R 336.1910)**
3. The permittee shall keep, in a satisfactory manner, daily records of the hydrazine scrubber inlet pressure and liquid pH while EUHYDRAZINESCRUB is operating. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1910)**
4. The permittee shall keep, in a satisfactory manner, production records and other records necessary to calculate the hourly hydrazine emission rate from EUHYDRAZINESCRUB and shall calculate the emission rates using a method acceptable to the AQD District Supervisor. The permittee shall keep all records, including the emission rate calculations, on file at the facility and make them available to the Department upon request.¹ **(R 336.1224, R 336.1225)**
5. The permittee shall keep, in a satisfactory manner, production records and other records necessary to calculate the monthly and 12-month rolling time period, as determined at the end of each calendar month, hydrazine emission rate from EUHYDRAZINESCRUB and shall calculate the emission rates using a method acceptable to the AQD District Supervisor. The permittee shall keep all records, including the emission rate calculations, on file at the facility and make them available to the Department upon request.¹ **(R 336.1224, R 336.1225)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUHYDRAZINESCRUB. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter / Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|----------------------------|---|---|---|
| 1. SV-HYDRAZINESCRUB | 10.5 | 15 | R 336.1225, 40 CFR 52.21 (c) & (d) |

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and VVVVVV, as they apply to the facility, upon initial startup. **(40 CFR Part 63 Subparts A & VVVVVV)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).