

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

EFFECTIVE DATE: June 5, 2017

REVISION DATE: April 16, 2020

ISSUED TO:

**Advanced Fibermolding Inc.**

State Registration Number (SRN): N6515

LOCATED AT:

23095 14 Mile Road, Leroy, Osceola County, Michigan 49655

**RENEWABLE OPERATING PERMIT**

Permit Number: MI-ROP-N6515-2017a

Expiration Date: June 5, 2022

Administratively Complete ROP Renewal Application Due Between:  
January 5, 2021 and January 5, 2022

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

**SOURCE-WIDE PERMIT TO INSTALL**

Permit Number: MI-PTI-N6515-2017a

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Act 451. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environment, Great Lakes, and Energy



Shane Nixon, Cadillac District Supervisor

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## **AUTHORITY AND ENFORCEABILITY**

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions (SC) are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements are identified for each ROP term or condition. All terms and conditions that are included in a PTI are streamlined, subsumed and/or are state-only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

## A. GENERAL CONDITIONS

### Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**
- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**
- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

### General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**
2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**
3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**
4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities **(R 336.1213(1)(d))**:
  - a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
  - c. Inspect, at reasonable times, any of the following:
    - i. Any stationary source.
    - ii. Any emission unit.
    - iii. Any equipment, including monitoring and air pollution control equipment.
    - iv. Any work practices or operations regulated or required under the ROP.
  - d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.
5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq., and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**
7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**
8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

### Equipment & Design

9. Any 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).<sup>2</sup> **(R 336.1370)**
10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

### Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following:"<sup>2</sup> **(R 336.1301(1))**
  - a. A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
  - b. A limit specified by an applicable federal new source performance standard.

The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
  - a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.<sup>1</sup> **(R 336.1901(a))**
  - b. Unreasonable interference with the comfortable enjoyment of life and property.<sup>1</sup> **(R 336.1901(b))**

### Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1).<sup>2</sup> **(R 336.2001)**
14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**
15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

## Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate. **(R 336.1213(3)(b))**
  - a. The date, location, time, and method of sampling or measurements.
  - b. The dates the analyses of the samples were performed.
  - c. The company or entity that performed the analyses of the samples.
  - d. The analytical techniques or methods used.
  - e. The results of the analyses.
  - f. The related process operating conditions or parameters that existed at the time of sampling or measurement.
17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

## Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**
19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**
20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**
21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
  - a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
  - b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
  - c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.
22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following **(R 336.1213(3)(c))**:
  - a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

- b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that, "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete". The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.
23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**
  24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**
  25. 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 appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA.<sup>2</sup> **(R 336.1912)**

## Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance, if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
  - a. The applicable requirements are included and are specifically identified in the ROP.
  - b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
  - a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
  - b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
  - c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**
  - d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
- Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
  - Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
  - Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
  - Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
  - State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**
29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

### Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**
31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**
32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(10))**
33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

### Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
- If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
  - If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
  - If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
  - If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

### Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(8))**



## Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaiming, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F.
37. If the permittee is subject to 40 CFR Part 82, and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

## Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).
39. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall comply with the requirements of 40 CFR Part 68, no later than the latest of the following dates as provided in 40 CFR 68.10(a):
  - a. June 21, 1999,
  - b. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
  - c. The date on which a regulated substance is first present above a threshold quantity in a process.
40. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR Part 68.
41. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR Part 68)**

## Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

## Permit To Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule.<sup>2</sup> **(R 336.1201(1))**
44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA.<sup>2</sup> **(R 336.1201(8), Section 5510 of Act 451)**

45. The terms and conditions of a PTI 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 the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI 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. The written request shall be sent to the appropriate AQD District Supervisor, EGLE.<sup>2</sup> **(R 336.1219)**
46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, EGLE, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI.<sup>2</sup> **(R 336.1201(4))**

**Footnotes:**

<sup>1</sup>This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

## **B. SOURCE-WIDE CONDITIONS**

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

## SOURCE-WIDE CONDITIONS

### DESCRIPTION

Special Conditions (SC) applicable to the entire source.  
 (PTI 490-97)

### POLLUTION CONTROL EQUIPMENT

NA

### I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Acetone	21.8 pph <sup>1</sup>	Calendar month average	Source-wide	SC VI.2	R 336.1224, R 336.1225
2. Acetone	22.6 tpy <sup>1</sup>	12 month rolling time period as determined at the end of each calendar month	Source-wide	SC VI.2	R 336.1224, R 336.1225
3. VOC (including styrene)	58.9 pph <sup>2</sup>	Calendar month average	Source-wide	SC VI.1	R 336.1702(c)
4. VOC (including styrene)	79.6 tpy <sup>2</sup>	12 month rolling time period as determined at the end of each calendar month	Source-wide	SC VI.1	R 336.1702(c)

### II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

### III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

### IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

### V. TESTING/SAMPLING

NA

### VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

- The permittee shall calculate and record the VOC (including styrene) emissions in pounds per hour, based on a calendar month average; tons per month, and tons per year based on a 12 month rolling time period using the equations listed in Appendix 7.<sup>2</sup> (R 336.1702(c), R 336.1213(3)(b))

- The permittee shall calculate and record the acetone emissions in pounds per hour, based on a calendar month average; tons per month, and tons per year based on a 12 month rolling time period as determined at the end of each calendar month using the equations listed in Appendix 7.<sup>1</sup> (R 336.1224, R 336.1225, R 336.1213(3)(b))

See Appendix 7

**VII. REPORTING**

- Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))
- Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))
- Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

See Appendix 8

**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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

**IX. OTHER REQUIREMENT(S)**

- All waste resins, gelcoat, catalysts, glue and purge/cleanup solvents shall be captured and stored in closed containers and disposed of in an acceptable manner in compliance with applicable rules.<sup>2</sup> (R 336.1225, R 336.1702(c))

**Footnotes:**

<sup>1</sup>This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

### C. EMISSION UNIT CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

#### 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
EURTM	Resin Transfer Molding (RTM) closed mold process; RTM molds and RTM injection gun.	09-01-1998	FGMACT
EULAYUP1	One dry filter spray booth and the general area directly outside of the booth, spray lay-up applicators. (PTI No. 126-12)	09-01-1998	FGLAYUP FGMACT
EULAYUP2	One dry filter spray booth and the general area directly outside of the booth, spray lay-up applicators. (PTI No. 126-12)	09-01-1998	FGLAYUP FGMACT
EUROBOTLAYUP	One dry filter spray booth and the general area directly outside of the booth. The resin is applied robotically, handheld, or both simultaneously using non-atomized spray lay-up applicators.	NA	FGLAYUP FGMACT
EUGELCOAT1	One dry filter spray booth and the general area directly outside of the booth, spray gel coat applicators.	09-01-1998	FGGELCOAT FGMACT
EUROBOTGEL	One dry filter spray booth and the general area directly outside of the booth, handheld and robotic spray gelcoat applicators.	09-01-1998 / 09-19-2019	FGGELCOAT, FGMACT
EUTOOLING	One dry filter spray booth and the general area directly outside of the booth used for the manufacturing of fiberglass molds. Manual application of tooling resin. Tooling gelcoat applied using mechanical atomizing applicators.	05-01-2014	FGGELCOAT, FGMACT

**EURTM  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

RTM closed mold process; RTM molds and RTM injection gun.  
(PTI 490-97)

Flexible Group ID: FGMACT

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Styrene	5.1 pph <sup>1</sup>	Monthly average	EURTM	SC VI.3	R 336.1224, R 336.1225
2. Styrene	7.8 tpy <sup>1</sup>	12 month rolling time period as determined at the end of each calendar month	EURTM	SC VI.3	R 336.1224, R 336.1225

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

- The permittee shall record the hours of operation on a monthly basis.<sup>1</sup> (R 336.1224, R 336.1225, R 336.1213(3)(b))
- The permittee shall record the styrene content and monthly material usage rates of all resins.<sup>1</sup> (R 336.1224, R 336.1225, R 336.1213(3)(b))

- The permittee shall calculate and record the styrene emissions in pounds per hour based on a calendar month average; tons per month and tons per year based on a 12 month rolling time period as determined at the end of each calendar month using the equations listed in Appendix 7.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1213(3)(b))**

See Appendix 7

**VII. REPORTING**

- Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
- Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
- Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

**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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

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

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).



## D. FLEXIBLE GROUP CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

### FLEXIBLE GROUP SUMMARY TABLE

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

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGLAYUP	Spray lay-up operations consisting of handheld and robotic spray booths and associated application equipment. Resin application on parts too large to fit inside the booths is performed in the area directly outside of the booths (PTI 126-12B).	EULAYUP1, EULAYUP2, EUROBOTLAYUP
FGGELCOAT	All gel coat booths and associated application equipment. Gel coat application on parts too large to fit inside the booths is performed in the area directly between the two gel coat booths.	EUGELCOAT1, EUROBOTGEL EUTOOLING
FGMACT	All equipment at the stationary source including equipment covered by other permits, grandfathered equipment, and exempt equipment involved in reinforced plastic composites production that is identified as part of an existing affected source subject to 40 CFR, Part 63, Subpart WWWW, 40 CFR 63.5785 and 40 CFR 63.5790.	EURTM, EULAYUP1, EULAYUP2, EUROBOTLAYUP, EUGELCOAT1, EUROBOTGEL EUTOOLING

**FGLAYUP**  
**FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Spray lay-up operations consisting of handheld and robotic spray booths and associated application equipment. Resin application on parts too large to fit inside the booths is performed in the area directly outside of the booths. (PTI 126-12B, 126-12, 126-12B)

**Emission Units:** EULAYUP1, EULAYUP2, EUROBOTLAYUP

**POLLUTION CONTROL EQUIPMENT**

Fabric filters

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC (including styrene)	22.7 tpy <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	FGLAYUP	SC VI.3	R 336.1225, R 336.1702(a)

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Styrene content of tooling resin	45.0%, by weight <sup>2</sup>	Manual application	FGLAYUP	SC VI.3	R 336.1225, R 336.1702(a)
2. Styrene content of corrosion resistant resin	45.0%, by weight <sup>2</sup>	Mechanical non- atomized application	FGLAYUP	SC VI.3	R 336.1225, R 336.1702(a)
3. Styrene content of non-corrosion resistant resin	37.0%, by weight <sup>2</sup>	Mechanical non- atomized application	FGLAYUP	SC VI.3	R 336.1225, R 336.1702(a)

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall capture all waste cleanup solvent(s), catalyst(s), and resin(s) used in FGLAYUP and store them in closed containers. The permittee shall dispose of all waste cleanup solvent(s), catalyst(s), and resin(s) in an acceptable manner in compliance with all applicable state rules and federal regulations.<sup>2</sup> (R 336.1224, R 336.1702(a))
2. The permittee shall not operate any booth in FGLAYUP unless its respective exhaust filter is installed, maintained, and operated in a satisfactory manner.<sup>2</sup> (R 336.1301, R 336.1331)
3. The permittee shall not operate EULAYUP2 and EUROBOTLAYUP simultaneously and shall cease operation and remove from service EULAYUP2 upon commencement of trial operation of EUROBOTLAYUP. (R 336.1225, R 336.1702)

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall equip and maintain the spray booth(s) in FGLAYUP with mechanical non-atomized applicators or technology with equivalent or lower styrene emission rates.<sup>2</sup> **(R 336.1225, R 336.1702(a))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.<sup>2</sup> **(R 336.1225, R 336.1702)**
2. The permittee shall maintain a current listing from the manufacturer of the VOC (including styrene monomer) content for each resin and catalyst as received. The data may consist of MSDS, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.<sup>2</sup> **(R 336.1224, R 336.1225, R 336.1702(a))**
3. The permittee shall keep the following information for each calendar month for FGLAYUP.<sup>2</sup> **(R 336.1225, R 336.1702(a))**
  - a. The identity and amount (in pounds) of each resin and clean-up material used.
  - b. The styrene content and total VOC content (including styrene) of each resin clean-up material used.
  - c. The appropriate emission factor for each raw material used (The Unified Emission Factors (UEF) Table 1 for Open Molding of Composites from the American Composites Manufacturers Association (ACMA), October 2009 may be used, or an alternate factor approved by the AQD District Supervisor
  - d. VOC emission calculations determining the monthly emission rate in tons per calendar month, and the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.

See Appendix 7

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by PTI 126-12B, the permittee 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 EUROBOTLAYUP. **(R 336.1201(7)(a))**

5. Within 7 days of ceasing operation of EULAYUP2, the permittee shall notify the AQD District Supervisor, in writing, as to the date these activities were completed. **(R 336.1201(7)(a), R 336.1225, R336.1702)**

See Appendix 8

**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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVLAYUP1	24.0 <sup>2</sup>	60.0 <sup>2</sup>	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
2. SVLAYUP2	24.0 <sup>2</sup>	60.0 <sup>2</sup>	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
3. SVROBOTLAYUP	24.0 <sup>2</sup>	60.0 <sup>2</sup>	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

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

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**FGGELCOAT  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Two gelcoat booths, one tooling booth, and associated application equipment. Gelcoat, tooling gelcoat and tooling resin application on parts too large to fit inside the booths is performed in the area directly between the two gelcoat booths.

(PTI 5-05A, 5-05B, 126-12D)

**Emission Unit:** EUGELCOAT1, EUROBOTGEL, EUTOOLING

**POLLUTION CONTROL EQUIPMENT**

Fabric filters

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC (including styrene and MMA)	17.4 tpy <sup>2</sup>	12 month rolling time period as determined at the end of each calendar month	FGGELCOAT	SC VI.3	R 336.1225, R 336.1702(a)

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Styrene content of white/off-white gel coat	31.0%, by weight <sup>2</sup>	Non-atomized application	FGGELCOAT	SC VI.2	R 336.1225 R 336.1702(a)
2. VOC content of white/off-white gel coat	37.0%, by weight <sup>2</sup>	Non-atomized application	FGGELCOAT	SC VI.2	R 336.1225 R 336.1702(a)
3. Styrene content of pigmented gel coat	40.0%, by weight <sup>2</sup>	Non-atomized and atomized application	FGGELCOAT	SC VI.2	R 336.1225 R 336.1702(a)
4. VOC content of pigmented gel coat	45.0%, by weight <sup>2</sup>	Non-atomized and atomized application	FGGELCOAT	SC VI.2	R 336.1225 R 336.1702(a)
5. Styrene content of clear production gel coat	39.0%, by weight <sup>2</sup>	Non-atomized application	FGGELCOAT	SC VI.2	R 336.1225 R 336.1702(a)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
6. VOC content of clear production gel coat	49.0%, by weight <sup>2</sup>	Non-atomized application	FGGELCOAT	SC VI.2	R 336.1225 R 336.1702(a)
7. Styrene content of tooling gel coat	44.0%, by weight <sup>2</sup>	Non-atomized and atomized application	FGGELCOAT	SC VI.2	R 336.1225 R 336.1702(a)
8. VOC content of tooling gel coat	45.0%, by weight <sup>2</sup>	Non-atomized and atomized application	FGGELCOAT	SC VI.2	R 336.1702(a)

### III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall capture all waste cleanup solvent(s), catalyst(s), gelcoat(s) and resin(s) used in FGGELCOAT and store them in closed containers. The permittee shall dispose of all waste cleanup solvent(s), catalyst(s), gelcoat(s) and resin(s) in an acceptable manner in compliance with all applicable state rules and federal regulations.<sup>2</sup> (R 336.1224, R 336.1702(a))
2. The permittee shall dispose of spent filters in a manner which minimizes the introduction of air contaminants to the outer air.<sup>2</sup> (R 336.1224, R 336.1370)
3. The permittee shall handle all VOC and/or HAPs containing materials in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times except when operator access is necessary.<sup>2</sup> (R 336.1224, R 336.1225, R 336.1702(a))

### IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate any booth in FGGELCOAT unless its respective exhaust filter is installed, maintained, and operated in a satisfactory manner.<sup>2</sup> (R 336.1301, R 336.1331, R 336.1901)
2. The permittee shall equip and maintain EUGELCOAT1 and EUROBOTGEL with non-atomized applicators, atomized applicators, manual applicators, or technology with equivalent or lower styrene emission rates. The permittee shall equip and maintain EUTOOLING with atomized applicators, manual applicators, or technology with equivalent or lower styrene emission rates.<sup>2</sup> (R 336.1225, R 336.1702(a))

### V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

NA

### VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1225, R 336.1702)
2. The permittee shall maintain a current listing from the manufacturer of the VOC (including styrene monomer and MMA monomer) content for each gelcoat, tooling gelcoat, tooling resin, and catalyst as received. The data may consist of MSDS, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.<sup>2</sup> (R 336.1225, R 336.1702(a))

3. The permittee shall maintain the following information for each calendar month for FGELCOAT:<sup>2</sup>
  - a. The identity and amount (in pounds) of each gelcoat, tooling gelcoat, and tooling resin used.
  - b. The styrene content of each gelcoat, tooling gelcoat, and tooling resin used.
  - c. The MMA content of each gelcoat, tooling gelcoat, and tooling resin used.
  - d. The identity and amount (in pounds) of each catalyst used.
  - e. The VOC content of each gelcoat, tooling gelcoat, tooling resin, and catalyst used.
  - f. The appropriate emission factor for each raw material used.
  - g. VOC emission calculations (including styrene and MMA) determining the monthly emission rate, in tons per calendar month, and the annual emission rate in tons per 12 month rolling time period as determined at the end of each calendar month using emission factors from Unified Emission Factor for Open Molding of Composites (UEF) Table and equations located in Appendix 7.

The permittee shall keep the records using mass balance or an alternate method and format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.<sup>2</sup> (R 336.1225, R 336.1702(a))

See Appendix 7

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

See Appendix 8

**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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVGELCOAT1	24.0 <sup>2</sup>	60.0 <sup>2</sup>	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVROBOTGEL	24.0 <sup>2</sup>	60.0 <sup>2</sup>	R 336.1225, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).  
<sup>2</sup> This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**FGMACT  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

All parts of the facility engaged in open molding, closed molding, mixing, cleaning of equipment used in reinforced plastic composites manufacture, and repair on parts that the facility manufactures.

**Emission Unit:** EURTM, EULAYUP1, EULAYUP2, EUROBOTLAYUP, EUGELCOAT1, EUROBOTGEL, EUTOOLING

**POLLUTION CONTROL EQUIPMENT**

Fabric filters

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period/ Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring/ Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Organic HAP	88 pounds per ton of resin applied	12-month rolling average/Open molding - non-CR/HS; mechanical resin application	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
2. Organic HAP	87 pounds per ton of resin applied	12-month rolling average/Open molding - non-CR/HS; manual resin application	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
3. Organic HAP	254 pounds per ton of resin applied	12-month rolling average/Open molding - tooling; mechanical resin application	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
4. Organic HAP	157 pounds per ton of resin applied	12-month rolling average/Open molding - tooling; manual resin application	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
5. Organic HAP	497 pounds per ton of resin applied	12-month rolling average/Open molding - low flame spread/low smoke products; mechanical resin application	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
6. Organic HAP	238 pounds per ton of resin applied	12-month rolling average/Open molding - low flame spread/low smoke products; manual resin application	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
7. Organic HAP	440 pounds per ton of gel coat applied	12-month rolling average/Open molding - gel coat; tooling gel coating	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
8. Organic HAP	267 pounds per ton of gel coat applied	12-month rolling average/Open molding - gel coat; white/off white pigmented gel coating	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
9. Organic HAP	377 pounds per ton of gel coat applied	12-month rolling average/Open molding - gel coat; all other pigmented gel coating	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>
10. Organic HAP	605 pounds per ton of gel coat applied	12-month rolling average/Open molding - gel coat; CR/HS or high performance gel coating	FGMACT	SC VI.1	<b>40 CFR 63.5805(b), Table 3</b>



Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
11. Organic HAP	854 pounds per ton of gel coat applied	12-month rolling average/Open molding - gel coat; fire retardant gel coating	FGMACT	SC VI.1	40 CFR 63.5805(b), Table 3
12. Organic HAP	522 pounds per ton of gel coat applied	12-month rolling average/Open molding - gel coat; clear production gel coating	FGMACT	SC VI.1	40 CFR 63.5805(b), Table 3

## II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

- For closed molding operations using compression/injection molding, the permittee shall uncover, unwrap or expose only one charge per mold cycle per compression/injection machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. **(40 CFR 63.5805(b), Table 4)**
- The permittee shall not use cleaning solvents that contain HAP, except that styrene may be used as a cleaner in closed systems. **(40 CFR 63.5805(b), Table 4)**
- Organic HAP-containing cleaners may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin. **(40 CFR 63.5805(b), Table 4)**
- The permittee shall keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing materials storage tanks may be vented as necessary for safety. **(40 CFR 63.5805(b), Table 4)**
- The permittee shall use mixer covers with no visible gaps present in the mixer covers, except that gaps of up to one inch are permissible around mixer shafts and any required instrumentation. **(40 CFR 63.5805(b), Table 4)**
- The permittee shall close any mixer vents when actual mixing is occurring, except that venting is allowed during addition of materials, or as necessary prior to adding materials or opening the cover for safety. **(40 CFR 63.5805(b), Table 4)**
- The permittee shall keep the mixer covers closed while actual mixing is occurring except when adding materials or changing covers to the mixing vessels. **(40 CFR 63.5805(b), Table 4)**
- Containers of five gallons or less may be open when active mixing is taking place, or during periods when they are in process (i.e., they are actively being used to apply resin). **(40 CFR 63.5805(b), Table 4)**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

## V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall use any of the following methods to demonstrate compliance with emission limits listed in SC I.1-12. The permittee may switch between the listed compliance options. If changing to a compliance option based on a 12 month rolling average, the permittee shall base the average on the previous 12 months of data calculated using the option the permittee is changing to, unless the previous compliance option did not require records of resin and gel coat use. In this case, the permittee shall immediately begin collecting resin and gel coat usage data and demonstrate compliance 12 months after changing options. All calculations shall be completed within 30 days following the end of each month. **(40 CFR 63.5810, R 336.1213(3))**
  - a. Demonstrate that an individual resin or gel coat, as applied, meets the applicable emission limit by calculating the actual organic HAP emission factor for each different process stream within each operating type using Table 1 of Appendix 7;
  - b. Demonstrate that, on average, the individual organic HAP emission limits are met for each combination of operation type and resin application method or gel coat type using Table 1 and the equations in Appendix 7;
  - c. Demonstrate compliance with a weighted average emission limit each month using Table 1 and the equations in Appendix 7;
  - d. Meet the organic HAP emissions limit for one application method and use the same resin(s) for all application methods of that resin type. This option is limited to resins of the same type. The resin types for which this option may be used are non-corrosion resistant, corrosion-resistant, and/or high strength, and tooling.
2. The permittee shall record maintain records of resin and gel coat usage, organic HAP content, and operation where the resin is used. The organic HAP content records may consist of MSDS or on resin specifications provided by the resin supplier **(40 CFR 63.5895(c) and (d), R 336.1213(3)(b))<sup>2</sup>**
3. When using the compliance option listed in SC VI.1.a, the permittee shall maintain records of the resin and gel coat organic HAP content and the application methods.<sup>2</sup> **(40 CFR 63.5895(d), R 336.1213(3))**
4. The permittee shall maintain copies of each notification submitted pursuant to SC VII.4. **(40 CFR 63.5915(a)(1), R 336.1213(3))**
5. The permittee shall maintain records of all data, assumptions, and calculations used to determine organic HAP emission factors or average organic HAP contents for operations listed in SC I.1-12. **(40 CFR 63.5915(c), R 336.1213(3)(b))**
6. The permittee shall keep a certified statement indicating the permittee is in compliance with the work practice requirements listed in SC III.1-8. **(40 CFR 63.5915(d), R 336.1213(3))**

**See Appendix 7**

## **VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Semiannual reporting of compliance pursuant to 40 CFR 63.5910. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. The report shall contain the following: **(40 CFR 63.5910(a),(b),(c) and (d), R 336.1213(3))**
  - a. Company name and address;
  - b. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the report;
  - c. Date of the report and beginning and ending dates of the reporting period;
  - d. If there are no deviations from any organic HAP emission limitation or work practice standard, the report shall include a statement that there were no deviations from the organic HAP emission limits or work practice standards during the reporting period shall be included;
  - e. If there were deviations from any organic HAP emission limitations or work practice standards, the report shall include the total operating time of each affected source during the reporting period and information on the number, duration, and cause of deviations (including unknown causes, if applicable), and the corrective actions taken.
  
5. When using the compliance option listed in SC VI.1.a, the permittee shall include a list of resins and gel coats and identify their application methods in the report referenced in SC VII.4. The report shall also include a statement that the individual resins and gel coats, as applied, meet the appropriate organic HAP emission limits. **(40 CFR 63.5895(d), 40 CFR 63.5900(a)(2), R 336.1213(3))**

See Appendix 8

**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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

**IX. OTHER REQUIREMENT(S)**

1. The permittee shall be in compliance at all times with the work practice standards listed in SC III.1-8 as well as the organic HAP emission limits listed in SC I.1-12, as applicable. **(40 CFR 63.5835(a))**
2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart WWWW for Reinforced Plastic Composites Production, as they apply to the facility. **(40 CFR Part 63, Subpart WWWW)**

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).  
<sup>2</sup> This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

## **E. NON-APPLICABLE REQUIREMENTS**

At the time of the ROP issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii).

## APPENDICES

### Appendix 1. Acronyms and Abbreviations

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO <sub>2</sub> e	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environment, Great Lakes, and Energy	°F	Degrees Fahrenheit
EU	Emission Unit	gr	Grains
FG	Flexible Group	HAP	Hazardous Air Pollutant
GACS	Gallons of Applied Coating Solids	Hg	Mercury
GC	General Condition	hr	Hour
GHGs	Greenhouse Gases	HP	Horsepower
HVLP	High Volume Low Pressure*	H <sub>2</sub> S	Hydrogen Sulfide
ID	Identification	kW	Kilowatt
IRSL	Initial Risk Screening Level	lb	Pound
ITSL	Initial Threshold Screening Level	m	Meter
LAER	Lowest Achievable Emission Rate	mg	Milligram
MACT	Maximum Achievable Control Technology	mm	Millimeter
MAERS	Michigan Air Emissions Reporting System	MM	Million
MAP	Malfunction Abatement Plan	MW	Megawatts
EGLE	Michigan Department of Environment, Great Lakes, and Energy	NMOC	Non-methane Organic Compounds
MSDS	Material Safety Data Sheet	NO <sub>x</sub>	Oxides of Nitrogen
NA	Not Applicable	ng	Nanogram
NAAQS	National Ambient Air Quality Standards	PM	Particulate Matter
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM10	Particulate Matter equal to or less than 10 microns in diameter
NSPS	New Source Performance Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NSR	New Source Review	pph	Pounds per hour
PS	Performance Specification	ppm	Parts per million
PSD	Prevention of Significant Deterioration	ppmv	Parts per million by volume
PTE	Permanent Total Enclosure	ppmw	Parts per million by weight
PTI	Permit to Install	psia	Pounds per square inch absolute
RACT	Reasonable Available Control Technology	psig	Pounds per square inch gauge
ROP	Renewable Operating Permit	scf	Standard cubic feet
SC	Special Condition	sec	Seconds
SCR	Selective Catalytic Reduction	SO <sub>2</sub>	Sulfur Dioxide
SNCR	Selective Non-Catalytic Reduction	TAC	Toxic Air Contaminant
SRN	State Registration Number	Temp	Temperature
TEQ	Toxicity Equivalence Quotient	THC	Total Hydrocarbons
USEPA/EPA	United States Environmental Protection Agency	tpy	Tons per year
VE	Visible Emissions	µg	Microgram
		µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
		yr	Year

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

### Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

### Appendix 3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

### Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

### Appendix 5. Testing Procedures

There are no specific testing requirement plans or procedures for this ROP. Therefore, this appendix is not applicable.

### Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-B1477-2012. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (\*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-B1477-2012a is being reissued as Source-Wide PTI No. MI-PTI-B1477-2017.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
126-12B	NA, Off Permit	Revision of 126-12A to allow use of hand held spray applicators inside (and immediately outside) EUROBOTLAYUP spray booth.	FGLAYUP FGMACT

The following table lists the ROP amendments or modifications issued after the effective date of ROP No. MI-ROP-B1477-2017.

Permit to Install Number	ROP Revision Application Number - Issuance Date	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
126-12D	202000018 / April 16, 2020	A Minor Modification to incorporate PTI 126-12D into the ROP, which was to modify existing emission unit EUGELCOAT2, which is a manually operated gelcoat spray booth. EUGELCOAT2 was converted to EUROBOTGEL and the gelcoat application was changed to both manual application and robotic application. The robotic application of gelcoat does not change the maximum application rate of gelcoat from the spray booth, and uses the same current gelcoats as the manual gelcoat operations.  Existing emission units EUGELCOAT1 and EUTOOLING are carried forward without change.	EUROBOTGEL, EUTOOLING, FGGELCOAT, FGMACT

## Appendix 7. Emission Calculations

### A. The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in SOURCE-WIDE CONDITIONS.

1. The following equation shall be used to calculate acetone emissions in pounds per hour, based on a calendar month average.

$$A_D = \left( \frac{A_U - A_R}{T} \right)$$

Where:

$A_D$  = Acetone emissions (pounds per hour, based on a calendar month average);

$A_U$  = Amount of acetone used (pounds/month);

$A_R$  = Amount of acetone recovered (pounds/month);

$T$  = Hours of operation (hours/month).

2. The following equation shall be used to calculate the acetone emissions in tons per month.

$$A = (A_U - A_R) \times \frac{1 \text{ ton}}{2,000 \text{ pounds}}$$

Where:

$A$  = Acetone emissions (tons/month);

$A_U$  = Amount of acetone used (pounds/month);

$A_R$  = Amount of acetone recovered (pounds/month).

3. The following equation shall be used to calculate acetone emissions in tons per year, based on a 12 month rolling time period:

$$A_Y = \sum_{i=1}^{12} A_i$$

Where:

$A_Y$  = Acetone emissions (tons per year, based on a 12 month rolling time period);

$A_i$  = Acetone emissions for month  $i$  (tons/month)

4. The following equation shall be used to calculate VOC (including styrene) emissions in pounds per hour.

$$VOC_D = \left( \frac{VOC_L + VOC_G + VOC_{RTM}}{T} \right) \times \frac{2,000 \text{ pounds}}{1 \text{ ton}}$$

Where:

$VOC_D$  = VOC (including styrene) emissions (pounds per hour, based on a calendar month average);

$VOC_L$  = VOC (including styrene) emissions from layup operations (tons/month);

$VOC_G$  = VOC (including styrene) emissions from gel coat operations (tons/month);

$VOC_{RTM}$  = VOC (including styrene) emissions from RTM operations (tons/month).

$T$  = Hours of operation (hours/month).

5. The following equation shall be used to calculate VOC (including styrene) emissions in tons per month.

$$VOC = (VOC_L + VOC_G + VOC_{RTM})$$

Where:

$VOC$  = VOC (including styrene) emissions (tons/month);

$VOC_L$  = VOC (including styrene) emissions from layup operations (tons/month);

$VOC_G$  = VOC (including styrene) emissions from gel coat operations (tons/month);

$VOC_{RTM}$  = VOC (including styrene) emissions from RTM operations (tons/month).

6. The following equation shall be used to calculate VOC (including styrene) emissions in tons per year, based on a 12 month rolling time period.

$$VOC_Y = \sum_{i=1}^{12} VOC_i$$

Where:

$VOC_Y$  = VOC (including styrene) emissions (tons per year, based on a 12 month rolling time period);

$VOC_i$  = VOC (including styrene) emissions for month i (tons per month)

**B. The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EURTM.**

1. The following equation shall be used to calculate the styrene emissions in pounds per hour, based on a calendar month average.

$$\text{Styrene} = \left( \frac{\sum_{i=1}^n (0.01)(\%STY_i)(M_i)}{T} \right) \times \frac{2,000 \text{ pounds}}{1 \text{ ton}}$$

Where:

Styrene = Styrene emissions (pounds per hour, based on a calendar month average);

$\%STY_i$  = Percent styrene contained in material i, expressed as a decimal;

$M_i$  = Amount of material i, in tons, used per calendar month;

T = Hours of operation per calendar month;

n = Number of different materials.

2. The following equation shall be used to calculate the styrene emissions in tons per month:

$$\text{Styrene} = \sum_{i=1}^n (0.01)(\%STY_i)(M_i)$$

Where:

Styrene = Styrene emissions (tons/month)

$\%STY_i$  = Percent styrene contained in material i, expressed as a decimal;

$M_i$  = Amount of material i used per month;

n = Number of different materials.

3. The following equation shall be used to calculate the styrene emissions in tons per 12 month rolling time period:

$$E_{\text{STYRENE}} = \sum_{i=1}^{12} \text{Styrene}_i$$

Where:

$E_{\text{STYRENE}}$  = Styrene emissions (tons per 12 month rolling time period)

$\text{Styrene}_i$  = Styrene emissions for month i (tons/month)



**C. The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGLAYUP and FGELCOAT.**

1. The following equation shall be used to calculate monthly VOC emissions:

$$\text{Monthly VOC emissions} = \left( \left( \sum_{i=1}^n (\text{UEF}_i \times \text{Material}_i) + \sum_{i=1}^n (\text{VOC}_i \times \text{Catalyst}_i) \right) \times \frac{1 \text{ ton emissions}}{2,000 \text{ pounds emissions}} \right)$$

Where:

Monthly VOC emissions = VOC emissions emitted per month (tons/month);

UEF<sub>i</sub> = Emission factor derived from the Unified Emission Factor Table, dated July 23, 2001, or later version which has received prior approval from the AQD District Supervisor, for each resin or gel coat (pounds of emissions/tons of material);

Material<sub>i</sub> = Amount of resin or gel coat used in one month (tons/month);

VOC<sub>i</sub> = VOC content, by weight, contained in each catalyst which is based upon the maximum methyl ethyl ketone content provided by the supplier, expressed as a decimal (NOTE: the other ingredients in the catalyst are considered either totally consumed in the cross-linking reactions or non-volatile, including methyl ethyl ketone peroxides, dimethyl phthalate, hexylene glycol, 2,2,4-trimethyl-1,3-pentanediol diisobutyrate, or non-organic such as hydrogen peroxide and water);

Catalyst<sub>i</sub> = Amount of each catalyst used in one month (tons/month);

n = number of resins, gel coats, and catalysts.

2. The following equation shall be used to calculate VOC emissions based on a 12 month rolling time period:

$$\text{VOC emissions} = \sum_{i=1}^{12} \text{Monthly VOC emissions}_i$$

Where:

VOC emissions = VOC emissions emitted per 12 month rolling time period (tons/12 month rolling time period);

Monthly VOC emissions<sub>i</sub> = Monthly VOC emissions (tons/month)

**D. The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGMACT.**

1. The following equation shall be used for demonstrating that, on average, the permittee meets the individual organic HAP emission limits for each combination of operation type and resin application method or gel coat type:

$$\text{Average organic HAP Emissions Factor} = \frac{\sum_{i=1}^n (\text{Actual Process Stream EF}_i \times \text{Material}_i)}{\sum_{i=1}^n \text{Material}_i}$$

Where:

Actual Process Stream EF<sub>i</sub> = actual organic HAP emissions factor for process stream i (pounds/ton);

Material<sub>i</sub> = neat resin plus or neat gel coat plus used during the last 12 calendar months for process stream i (tons);

n = number of process streams where the permittee calculated an organic HAP emission factor.

The following equations shall be used for demonstrating compliance with a weighted average emission limit:

2. On a monthly basis, the weighted average organic HAP emission limit shall be calculated using the following equation:

$$\text{Weighted Average Emission Limit} = \frac{\sum_{i=1}^n (\text{EL}_i \times \text{Material}_i)}{\sum_{i=1}^n \text{Material}_i}$$

Where:

$\text{EL}_i$  = organic HAP emission limit for operation type  $i$  (pounds/ton) derived from Table 1;

$\text{Material}_i$  = neat resin plus or neat gel coat plus used during the last 12 month period for operation type  $i$  (tons);

$n$  = number of operations.

On a monthly basis, the weighted average organic HAP emissions factor for open molding operations shall be calculated using the following equation and compared to the weighted average emission limit:

$$\text{Actual Weighted Average Organic HAP Emission Factor} = \frac{\sum_{i=1}^n (\text{Actual Operation EF}_i \times \text{Material}_i)}{\sum_{i=1}^n \text{Material}_i}$$

Where:

Actual Operation  $\text{EF}_i$  = Actual organic HAP emission factor for operation type  $i$  (pounds/ton);

$\text{Material}_i$  = neat resin plus or neat gel coat plus used during the last 12 calendar months for operation type  $i$  (tons);

$n$  = number of operations.

Table 1– Equations to Calculate Organic HAP Emissions Factors for Specific Open Molding and Centrifugal Casting Process Streams<sup>1</sup>

As specified in 40 CFR 63.5810, use the equations in the following table to calculate organic HAP emissions factors for specific open molding and centrifugal casting process streams:

If your operation type is new or existing...	And you are...	With...	Use this organic HAP Emissions Factor (EF) Equation for materials with less than 33 percent organic HAP (19 percent organic HAP for nonatomized gel coat) <sup>234</sup> ...	Use this organic HAP Emissions Factor (EF) Equation for materials with 33 percent or more organic HAP (19 percent for nonatomized gel coat) <sup>234</sup> ...
1. Open molding operation	a. Manual resin application	i. Nonvapor-suppressed resin	$EF = 0.126 \times \%HAP \times 2000$	$EF = ((0.286 \times \%HAP) - 0.0529) \times 2000$
		ii. Vapor-suppressed resin	$EF = 0.126 \times \%HAP \times 2000 \times (1 - (0.5 \times VSE \text{ factor}))$	$EF = ((0.286 \times \%HAP) - 0.0529) \times 2000 \times (1 - (0.5 \times VSE \text{ factor}))$
		iii. Vacuum bagging/closed-mold curing with rollout	$EF = 0.126 \times \%HAP \times 2000 \times 0.8$	$EF = ((0.286 \times \%HAP) - 0.0529) \times 2000 \times 0.8$
		iv. Vacuum bagging/closed-mold curing without rollout	$EF = 0.126 \times \%HAP \times 2000 \times 0.5$	$EF = ((0.286 \times \%HAP) - 0.0529) \times 2000 \times 0.5$
	b. Atomized mechanical resin application	i. Nonvapor-suppressed resin	$EF = 0.169 \times \%HAP \times 2000$	$EF = ((0.714 \times \%HAP) - 0.18) \times 2000$
		ii. Vapor-suppressed resin	$EF = 0.169 \times \%HAP \times 2000 \times (1 - (0.45 \times VSE \text{ factor}))$	$EF = ((0.714 \times \%HAP) - 0.18) \times 2000 \times (1 - (0.45 \times VSE \text{ factor}))$
		iii. Vacuum bagging/closed-mold curing with rollout	$EF = 0.169 \times \%HAP \times 2000 \times 0.85$	$EF = ((0.714 \times \%HAP) - 0.18) \times 2000 \times 0.85$
		iv. Vacuum bagging/closed-mold curing without rollout	$EF = 0.169 \times \%HAP \times 2000 \times 0.55$	$EF = ((0.714 \times \%HAP) - 0.18) \times 2000 \times 0.85$
	c. Nonatomized mechanical resin application	i. Nonvapor-suppressed resin	$EF = 0.107 \times \%HAP \times 2000$	$EF = ((0.157 \times \%HAP) - 0.0165) \times 2000$
		ii. Vapor-suppressed resin	$EF = 0.107 \times \%HAP \times 2000 \times ((1 - (0.45 \times VSE \text{ factor}))$	$EF = ((0.157 \times \%HAP) - 0.0165) \times 2000 \times ((1 - (0.45 \times VSE \text{ factor}))$
		iii. Closed-mold curing with rollout	$EF = 0.107 \times \%HAP \times 2000 \times 0.85$	$EF = ((0.157 \times \%HAP) - 0.0165) \times 2000 \times 0.85$
		iv. Vacuum bagging/closed-mold curing without rollout	$EF = 0.107 \times \%HAP \times 2000 \times 0.55$	$EF = ((0.157 \times \%HAP) - 0.0165) \times 2000 \times 0.55$
	d. Atomized mechanical resin application with robotic or automated spray control <sup>5</sup>	i. Nonvapor-suppressed resin	$EF = 0.169 \times \%HAP \times 2000 \times 0.77$	$EF = 0.77 \times ((0.714 \times \%HAP) - 0.18) \times 2000$
	e. Filament application <sup>6</sup>	i. Nonvapor-suppressed resin	$EF = 0.184 \times \%HAP \times 2000$	$EF = ((0.2746 \times \%HAP) - 0.0298) \times 2000$
		ii. Vapor-suppressed resin	$EF = 0.12 \times \%HAP \times 2000$	$EF = ((0.2746 \times \%HAP) - 0.0298) \times 2000 \times 0.65$

	f. Atomized spray gel coat application	Non vapor-suppressed gel coat	$EF = 0.445 \times \%HAP \times 2000$	$EF = ((1.03646 \times \%HAP) - 0.195) \times 2000$
	g. Nonatomized spray gel coat application	Non vapor-suppressed gel coat	$EF = 0.185 \times \%HAP \times 2000$	$EF = ((0.4506 \times \%HAP) - 0.505) \times 2000$
	h. Atomized spray gel coat application using robotic or automated spray	Non vapor-suppressed gel coat	$EF = 0.445 \times \%HAP \times 2000 \times 0.73$	$EF = ((1.03646 \times \%HAP) - 0.195) \times 2000 \times 0.73$
2. Centrifugal casting operations <sup>78</sup>	a. Heated air blown through molds	Nonvapor-suppressed resin	$EF = 0.558 \times \%HAP \times 2000$	$EF = 0.558 \times \%HAP \times 2000$
	b. Vented molds, but air vented through the molds is not heated	Nonvapor-suppressed resin	$EF = 0.26 \times \%HAP \times 2000$	$EF = 0.26 \times \%HAP \times 2000$

<sup>1</sup> The equations in this table are intended for use in calculating emission factors to demonstrate compliance with the emission limits in 40 CFR, Part 63, Subpart WWWW. These equations may not be the most appropriate method to calculate emission estimates for other purposes. However, this does not preclude a facility from using the equations in this table to calculate emission factors for purposes other than rule compliance if these equations are the most accurate available.

<sup>2</sup> To obtain the organic HAP emission factor value for an operation with an add-on control device multiply the EF above by the add-on control factor calculated using Equation 1 of 40 CFR 63.5810. The organic HAP emission factors have units in lbs of organic HAP per ton of resin or gel coat applied.

<sup>3</sup> Percent HAP means total weight percent of organic HAP (styrene, methyl methacrylate, and any other organic HAP) in the resin or gel coat prior to the addition of fillers, catalyst, and promoters. Input the percent HAP as a decimal, i.e., 33 percent HAP should be input as 0.33, not 33.

<sup>4</sup> The VSE factor means the percent reduction in organic HAP emissions expressed as a decimal measured by the VSE test method of appendix A to this subpart.

<sup>5</sup> This equation is based on a organic HAP emissions factor equation developed for mechanical atomized controlled spray. It may only be used for automated or robotic spray systems with atomized spray. All spray operations using hand held spray guns must use the appropriate mechanical atomized or mechanical nonatomized organic HAP emissions factor equation. Automated or robotic spray systems using nonatomized spray should use the appropriate nonatomized mechanical resin application method.

<sup>6</sup> Applies only to filament application using an open resin bath. If resin is applied manually or with a spray gun, use the appropriate manual or mechanical application organic HAP emissions factor equation.

<sup>7</sup> These equations are for centrifugal casting operations where the mold is vented during spinning. Centrifugal casting operations where the mold is completely sealed after resin injection are considered to be closed molding operations.

<sup>8</sup> If a centrifugal casting operation uses mechanical or manual resin application techniques to apply resin to an open centrifugal casting mold, use the appropriate open molding equation with covered cure and no rollout to determine an emission factor for operations prior to the closing of the centrifugal casting mold. If the closed centrifugal casting mold is vented during spinning, use the appropriate centrifugal casting equation to calculate an emission factor for the portion of the process where spinning and cure occur. If a centrifugal casting operation used mechanical or manual resin application techniques to apply resin to an open centrifugal casting mold, and the mold is then closed and is not vented, treat the entire operation as open molding with covered cure and no rollout to determine emission factors.

## Appendix 8. Reporting

### A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use the EGLE, AQD, Report Certification form (EQP 5736) and EGLE, AQD, Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

### B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.