☒ **Synthetic Minor Determination and/or** ☐ **Netting Determination**

Permit To Install: **08-04853**

A. Source Description

TPI Composites, LLC (TPI) is a reinforced fiberglass composites manufacturing facility located in Springfield, Ohio, Clark County which is nonattainment for ozone and and PM2.5.

B. Facility Emissions and Attainment Status

This is a modification to a synthetic minor issued before. The synthetic minor limit of 86.3 tons of VOC per rolling 12 months for emissions units P001, P002, P003, P004, P005, R001 and R002 has not changed, even though the individual and combined annual emissions limits for P001-P003 have increased. The wording of the operational restriction is the premise for the synthetic minor restriction has been changed to address TPI's concern that they will the resins they will use will actually contain far more than 86.3 tons per year of volatile organic material (styrene), however, all but 0.5 weight percent of the styrene content is consumed in the manufacturing process and is not released to the air.

C. Source Emissions

The source emissions have increase and those increases are contained in the terms of this permit action; however, have no bearing on the federally enforceable limits. See Facility Emissions above.

D. Conclusion

The limits in this permit continue to make TPI a synthetic minor.

State of Ohio Environmental Protection Agency

Street Address:
Lazarus Gov. Center
50 West Town Street, Suite 700
Columbus, OH 43215

TELE: (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

CERTIFIED MAIL

RE: DRAFT PERMIT TO INSTALL
CLARK COUNTY
Application No: 08-04853
Fac ID: 0812760583

	TOXIC REVIEW
	PSD
Y	**SYNTHETIC MINOR**
	CEMS
WWWWW and PPPP	**MACT**
	NSPS
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

DATE: 9/11/2007

TPI Composites Inc.
Kevin L. Weldi
2145 Airpark Dr.
Springfield, OH 02885-2636

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43216-1049.

A Permit to Install may be issued in proposed of final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **$800** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: **USEPA** **RAPCA** **Miami Valley Regional Planning Commission** **IN**
CLARK COUNTY

PUBLIC NOTICE
ISSUANCE OF DRAFT PERMIT TO INSTALL **08-04853** FOR AN AIR CONTAMINANT SOURCE
FOR **TPI Composites Inc.**

On 9/11/2007 the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **TPI Composites Inc.**, located at **2145 Airpark Dr., Springfield**, Ohio.

Installation of the air contaminant source identified below may proceed upon final issuance of Permit To Install 08-04853:

chapter 31 modification replacing PTI 08-04750 issued 12/1/06 to allow VOC and PRM clean up material use.

Comments concerning this draft action, or a request for a public meeting, must be sent in writing to the address identified below no later than thirty (30) days from the date this notice is published. All inquiries concerning this draft action may be directed to the contact identified below.

John Paul, Regional Air Pollution Control Agency, 117 South Main, Dayton, OH 45422-1280
[(937)225-4435]

DRAFT PERMIT TO INSTALL 08-04853

Application Number: 08-04853

Facility ID: 0812760583

Permit Fee: **To be entered upon final issuance**

Name of Facility: TPI Composites Inc.

Person to Contact: Kevin L. Weldi

Address: 2145 Airpark Dr.
Springfield, OH 02885-2636

Location of proposed air contaminant source(s) [emissions unit(s)]:
2145 Airpark Dr.
Springfield, Ohio

Description of proposed emissions unit(s):
Chapter 31 modification replacing PTI 08-04750 issued 12/1/06 to allow VOC and PRM clean up material use.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

_____

Chris Korleski
Director

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit-To-Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

i. The date, place (as defined in the permit), and time of sampling or measurements.

ii. The date(s) analyses were performed.

iii. The company or entity that performed the analyses.

iv. The analytical techniques or methods used.

v. The results of such analyses.

vi. The operating conditions existing at the time of sampling or measurement.

b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:

i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written

reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.

iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

2. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06**.**

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification

b. 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 federally enforceable terms and conditions of this permit.

c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d. This permit does not convey any property rights of any sort, or any exclusive privilege.

e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable

permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.

ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

10. Permit-To-Operate Application

a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

12. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

13. Permit-To-Install

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to “installation” of “any air contaminant source” as defined in OAC rule 3745-31-01, or “modification”, as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

B. State Only Enforceable Permit-To-Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. Authorization To Install or Modify

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

5. Construction of New Sources(s)

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

6. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

7. Applicability

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

8. Construction Compliance Certification

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) that the facility has been constructed in accordance with the permit-to-install application and the terms and conditions of the permit-to-install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

9. Additional Reporting Requirements When There Are No Deviations of <u>Federally Enforceable</u> Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

C. Permit-To-Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons Per Year
VOC	86.34
particulate	0.65

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P001) - Closed Molding Operation No. 1

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The organic compound (OC) emissions from this emissions unit shall not exceed 8 pounds per hour (lbs/hr) and 40 lbs/day including cleanup. The OC emissions from this emissions unit shall not exceed 7.3 tons per rolling, 12-month summation; with the combined OC emissions rates for emissions units P001, P002, and P003 not to exceed 7.3 tons per rolling, 12-month summation including cleanup. The requirements of this rule also includes compliance with the requirements of OAC rule 3745-21-07(G)(2) and 3745-31-05(C).
OAC rule 3745-21-07(G)(2)	The emissions limitations established by this rule are equivalent to the emissions limitations established according to OAC rule 3745-31-05(A)(3).
OAC rule 3745-31-05(C) (synthetic minor to avoid non attainment NSR)	The combined volatile organic compound (VOC) emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per rolling, 12- month summation.

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

1. The maximum annual volatile organic material usage rate for emission units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per year, based upon a rolling, 12-month summation of the monthly volatile organic material usage calculations. The volatile organic material usage rate in this term equates to the annual VOC emissions rate in term A.1 and is the fraction of the VOC content that is not consumed in the molding and coating processes and released without control to the

ambient air from resin, promoter, catalyst and coating use in the emissions units listed. This correlation is based upon the premise that all the record keeping and reporting requirements of this permit for the VOC emissions will be sufficient to verify the annual organic material usage rate of this term.

To ensure enforceability during the first twelve calendar months of operation following the issuance of this permit, the actual volatile organic material usage records shall not exceed the volatile organic material usage levels specified in the following table:

Month	Maximum Allowable Cumulative Usage (tons/month)
1	14.39
1-2	28.78
1-3	43.17
1-4	57.56
1-5	71.95
1-6	86.34
1-7	86.34
1-8	86.34
1-9	86.34
1-10	86.34
1-11	86.34
1-12	86.34

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information for each day for the coating operation:

   a. The company identification for each resin, promoter, catalyst and photochemically reactive cleanup material employed.

   b. The number of gallons of each resin, promoter, catalyst and photochemically reactive cleanup material employed.

   c. The organic compound content of each resin, promoter, catalyst and photochemically reactive cleanup material, in percent by weight.

   d. The total organic compound emission rate for all resin, promoter, catalyst and photochemically reactive cleanup materials, in pounds per day [the summation of (b) x (c/100) x (the appropriate emission factor for each individual VOC)*].

   * (i) A 0.5% evaporation loss of styrene from the resin employed is the worst case emission factor for closed molding, based on facility specific testing of the SCRIMP process.
   (ii) A 100% evaporation loss of all OCs from the promoter employed is the assumed worst case emission factor.
   (iii) A 0.04% evaporation loss of dimethyl phthalate and 100% evaporation loss of all other OCs except for peroxides from the catalyst employed are

the worst case emissions factors, based on a 1999 study conducted on "Emission Factors for Liquid Organic Peroxide Catalysts".

e. The total number of hours the emissions unit was in operation.

f. The average hourly organic compound emission rate for all resin, promoter, catalyst and photochemically reactive cleanup materials, i.e., (d)/(e), in pounds per hour (average).

2. The permittee shall collect and record the following information for each month for this emissions unit:

a. The name and identification of each material employed.

b. The volume, in pounds, of each material employed.

c. The individual VOC content for each VOC in each material employed, in percent by weight.

d. The total individual VOC emissions rate from each material employed, in lbs/month [the summation of (b) x (c/100) x (the appropriate emission factor for each individual VOC)*].

e. The total combined VOC emissions rate from all VOCs employed, in lbs/month.

f. The rolling, 12-month summation of the volatile organic material usage, in pounds.

g. The rolling, 12-month summation of the VOC emissions from this emissions unit, in tons, i.e., the summation of (e) for the previous 12-month period divided by 2000 lbs/ton.

* (i) A 0.5% evaporation loss of styrene from the resin employed is the worst case emission factor for closed molding, based on facility specific testing of the SCRIMP process.
(ii) A 100% evaporation loss of all VOCs from the promoter employed is the assumed worst case emission factor.
(iii) A 0.04% evaporation loss of dimethyl phthalate and 100% evaporation loss of all other VOCs except for peroxides from the catalyst employed are the worst case emissions factors, based on a 1999 study conducted on "Emission Factors for Liquid Organic Peroxide Catalysts".

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which include the following information:

a. An identification of each day during which the average hourly organic compound emissions from the coatings and photochemically reactive cleanup materials exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day.

b. An identification of each day during which the organic compound emissions from the coatings and photochemically reactive cleanup materials exceeded 40 pounds per day, and the actual organic compound emissions for each such day.

The notification shall include a copy of such record and shall be sent to the Regional Air Pollution Control Agency within 45 days after the exceedance occurs.

2. The permittee shall submit annual reports which specify the VOC emissions rate, in tons, from this emissions unit, as well as, the total VOC emissions rate, in tons, from P001, P002, P003, P004, P005, R001, and R002. These reports shall be submitted by April 15 of each year and shall cover the previous calendar year.

   This reporting requirement may be satisfied by including and identifying the specfic emissions data from P001, P002, P003, P004, P005, R001, and R002 in the annual fee emissions report.

3. The permittee shall submit quarterly deviation (excursion) reports that identify each month during which the rolling, 12-month volatile organic material usage and/or VOC emissions from P001, P002, P003, P004, P005, R001, and R002 exceeded the 86.34 TPY rolling, 12-month volatile organic material usage and/or VOC emission limitations, and the actual rolling, 12-month volatile organic material usage and/or VOC emission rates for each such month.

   These quarterly deviation reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarter.

V. Testing Requirements

1. Compliance with the emission limitations specified in Sections A.I.1 shall be determined by the following methods:

   a. Emission Limitations:
   The OC emissions from this emissions unit shall not exceed 8 pounds per hour.

   Applicable Compliance Method:
   Compliance shall be determined according to the record keeping requirements of Section A.III.1 of this permit.

   b. Emission Limitation
   The OC emissions from this emissions unit shall not exceed 40 lbs/day.

   Applicable Compliance Method:

Compliance shall be determined according to the record keeping requirements of Section A.III.1 of this permit.

c. Emission Limitation
The OC emissions from this emissions unit shall not exceed 7.3 tons per rolling, 12-month summation; with the combined emissions rates for emissions units P001, P002, and P003 not to exceed 7.3 tons per rolling, 12-month summation.

Applicable Compliance Method -
Compliance with this limitation shall be based upon the record keeping in Section A.III.1 of this permit and the sum of the daily OC emissions rates for each month and the sum of the monthly OC emission rates for the previous 12 months.

d. Emission Limitation -
The Combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons VOC per rolling 12-month summation.

Applicable Compliance Method -
Compliance shall be based upon the record keeping requirements specified in Section A.III.2. of this permit.

VI. Miscellaneous Requirements

1. The following terms and conditions are federally enforceable: Sections A.1 (only the requirements associated with OAC 3745-31-05(C)), A.II.3., A.III.2.g., A.IV.3., and A.V.1.d.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(P001) - Closed Molding Operation No. 1

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(P002) - Closed Molding Operation No. 2

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The organic compound (OC) emissions from this emissions unit shall not exceed 8 pounds per hour (lbs/hr) and 40 lbs/day including cleanup. The OC emissions from this emissions unit shall not exceed 7.3 tons per rolling, 12-month summation; with the combined OC emissions rates for emissions units P001, P002, and P003 not to exceed 7.3 tons per rolling, 12-month summation including cleanup. The requirements of this rule also includes compliance with the requirements of OAC rule 3745-21-07(G)(2) and 3745-31-05(C).
OAC rule 3745-21-07(G)(2)	The emissions limitations established by this rule are equivalent to the emissions limitations established according to OAC rule 3745-31-05(A)(3).
OAC rule 3745-31-05(C) (synthetic minor to avoid non attainment NSR)	The combined volatile organic compound (VOC) emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per rolling, 12- month summation.

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

1. The maximum annual volatile organic material usage rate for emission units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per year, based upon a rolling, 12-month summation of the monthly volatile organic material usage calculations. The volatile organic material usage rate in this term equates to the annual VOC emissions rate in term A.1 and is the fraction of the VOC content that is not consumed in the molding and coating processes and released without control to the

ambient air from resin, promoter, catalyst and coating use in the emissions units listed. This correlation is based upon the premise that all the record keeping and reporting requirements of this permit for the VOC emissions will be sufficient to verify the annual organic material usage rate of this term.

To ensure enforceability during the first twelve calendar months of operation following the issuance of this permit, the actual volatile organic material usage records shall not exceed the volatile organic material usage levels specified in the following table:

Month	Maximum Allowable Cumulative Usage (tons/month)
1	14.39
1-2	28.78
1-3	43.17
1-4	57.56
1-5	71.95
1-6	86.34
1-7	86.34
1-8	86.34
1-9	86.34
1-10	86.34
1-11	86.34
1-12	86.34

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information for each day for the coating operation:

   a. The company identification for each resin, promoter, catalyst and photochemically reactive cleanup material employed.

   b. The number of gallons of each resin, promoter, catalyst and photochemically reactive cleanup material employed.

   c. The organic compound content of each resin, promoter, catalyst and photochemically reactive cleanup material, in percent by weight.

   d. The total organic compound emission rate for all resin, promoter, catalyst and photochemically reactive cleanup materials, in pounds per day [the summation of (b) x (c/100) x (the appropriate emission factor for each individual VOC)*].

   * (i) A 0.5% evaporation loss of styrene from the resin employed is the worst case emission factor for closed molding, based on facility specific testing of the SCRIMP process.
   (ii) A 100% evaporation loss of all OCs from the promoter employed is the assumed worst case emission factor.
   (iii) A 0.04% evaporation loss of dimethyl phthalate and 100% evaporation loss of all other OCs except for peroxides from the catalyst employed are

the worst case emissions factors, based on a 1999 study conducted on "Emission Factors for Liquid Organic Peroxide Catalysts".

e. The total number of hours the emissions unit was in operation.

f. The average hourly organic compound emission rate for all resin, promoter, catalyst and photochemically reactive cleanup materials, i.e., (d)/(e), in pounds per hour (average).

2. The permittee shall collect and record the following information for each month for this emissions unit:

a. The name and identification of each material employed.

b. The volume, in pounds, of each material employed.

c. The individual VOC content for each VOC in each material employed, in percent by weight.

d. The total individual VOC emissions rate from each material employed, in lbs/month [the summation of (b) x (c/100) x (the appropriate emission factor for each individual VOC)*].

e. The total combined VOC emissions rate from all VOCs employed, in lbs/month.

f. The rolling, 12-month summation of the volatile organic material usage, in pounds.

g. The rolling, 12-month summation of the VOC emissions from this emissions unit, in tons, i.e., the summation of (e) for the previous 12-month period divided by 2000 lbs/ton.

* (i) A 0.5% evaporation loss of styrene from the resin employed is the worst case emission factor for closed molding, based on facility specific testing of the SCRIMP process.
(ii) A 100% evaporation loss of all VOCs from the promoter employed is the assumed worst case emission factor.
(iii) A 0.04% evaporation loss of dimethyl phthalate and 100% evaporation loss of all other VOCs except for peroxides from the catalyst employed are the worst case emissions factors, based on a 1999 study conducted on "Emission Factors for Liquid Organic Peroxide Catalysts".

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which include the following information:

a. An identification of each day during which the average hourly organic compound emissions from the coatings and photochemically reactive cleanup materials exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day.

b. An identification of each day during which the organic compound emissions from the coatings and photochemically reactive cleanup materials exceeded 40 pounds per day, and the actual organic compound emissions for each such day.

The notification shall include a copy of such record and shall be sent to the Regional Air Pollution Control Agency within 45 days after the exceedance occurs.

2. The permittee shall submit annual reports which specify the VOC emissions rate, in tons, from this emissions unit, as well as, the total VOC emissions rate, in tons, from P001, P002, P003, P004, P005, R001, and R002. These reports shall be submitted by April 15 of each year and shall cover the previous calendar year.

   This reporting requirement may be satisfied by including and identifying the specfic emissions data from P001, P002, P003, P004, P005, R001, and R002 in the annual fee emissions report.

3. The permittee shall submit quarterly deviation (excursion) reports that identify each month during which the rolling, 12-month volatile organic material usage and/or VOC emissions from P001, P002, P003, P004, P005, R001, and R002 exceeded the 86.34 TPY rolling, 12-month volatile organic material usage and/or VOC emission limitations, and the actual rolling, 12-month volatile organic material usage and/or VOC emission rates for each such month.

   These quarterly deviation reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarter.

V. Testing Requirements

1. Compliance with the emission limitations specified in Sections A.I.1 shall be determined by the following methods:

   a. Emission Limitations:
   The OC emissions from this emissions unit shall not exceed 8 pounds per hour.

   Applicable Compliance Method:
   Compliance shall be determined according to the record keeping requirements of Section A.III.1 of this permit.

   b. Emission Limitation
   The OC emissions from this emissions unit shall not exceed 40 lbs/day.

   Applicable Compliance Method:

Compliance shall be determined according to the record keeping requirements of Section A.III.1 of this permit.

c. Emission Limitation
The OC emissions from this emissions unit shall not exceed 7.3 tons per rolling, 12-month summation; with the combined emissions rates for emissions units P001, P002, and P003 not to exceed 7.3 tons per rolling, 12-month summation.

Applicable Compliance Method -
Compliance with this limitation shall be based upon the record keeping in Section A.III.1 of this permit and the sum of the daily OC emissions rates for each month and the sum of the monthly OC emission rates for the previous 12 months.

d. Emission Limitation -
The Combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons VOC per rolling 12-month summation.

Applicable Compliance Method -
Compliance shall be based upon the record keeping requirements specified in Section A.III.2. of this permit.

VI. Miscellaneous Requirements

1. The following terms and conditions are federally enforceable: Sections A.1 (only the requirements associated with OAC 3745-31-05(C)), A.II.3., A.III.2.g., A.IV.3., and A.V.1.d.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P002) - Closed Molding Operation No. 2

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P003) - Closed Molding Operation No. 3

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The organic compound (OC) emissions from this emissions unit shall not exceed 8 pounds per hour (lbs/hr) and 40 lbs/day including cleanup. The OC emissions from this emissions unit shall not exceed 7.3 tons per rolling, 12-month summation; with the combined OC emissions rates for emissions units P001, P002, and P003 not to exceed 7.3 tons per rolling, 12-month summation including cleanup. The requirements of this rule also includes compliance with the requirements of OAC rule 3745-21-07(G)(2) and 3745-31-05(C).
OAC rule 3745-21-07(G)(2)	The emissions limitations established by this rule are equivalent to the emissions limitations established according to OAC rule 3745-31-05(A)(3).
OAC rule 3745-31-05(C) (synthetic minor to avoid non attainment NSR)	The combined volatile organic compound (VOC) emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per rolling, 12- month summation.

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

1. The maximum annual volatile organic material usage rate for emission units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per year, based upon a rolling, 12-month summation of the monthly volatile organic material usage calculations. The volatile organic material usage rate in this term equates to the annual VOC emissions rate in term A.1 and is the fraction of the VOC content that is not consumed in the molding and coating processes and released without control to the

ambient air from resin, promoter, catalyst and coating use in the emissions units listed. This correlation is based upon the premise that all the record keeping and reporting requirements of this permit for the VOC emissions will be sufficient to verify the annual organic material usage rate of this term.

To ensure enforceability during the first twelve calendar months of operation following the issuance of this permit, the actual volatile organic material usage records shall not exceed the volatile organic material usage levels specified in the following table:

Month	Maximum Allowable Cumulative Usage (tons/month)
1	14.39
1-2	28.78
1-3	43.17
1-4	57.56
1-5	71.95
1-6	86.34
1-7	86.34
1-8	86.34
1-9	86.34
1-10	86.34
1-11	86.34
1-12	86.34

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information for each day for the coating operation:

   a. The company identification for each resin, promoter, catalyst and photochemically reactive cleanup material employed.

   b. The number of gallons of each resin, promoter, catalyst and photochemically reactive cleanup material employed.

   c. The organic compound content of each resin, promoter, catalyst and photochemically reactive cleanup material, in percent by weight.

   d. The total organic compound emission rate for all resin, promoter, catalyst and photochemically reactive cleanup materials, in pounds per day [the summation of (b) x (c/100) x (the appropriate emission factor for each individual VOC)*].

   * (i) A 0.5% evaporation loss of styrene from the resin employed is the worst case emission factor for closed molding, based on facility specific testing of the SCRIMP process.
   (ii) A 100% evaporation loss of all OCs from the promoter employed is the assumed worst case emission factor.
   (iii) A 0.04% evaporation loss of dimethyl phthalate and 100% evaporation loss of all other OCs except for peroxides from the catalyst employed are

the worst case emissions factors, based on a 1999 study conducted on "Emission Factors for Liquid Organic Peroxide Catalysts".

e. The total number of hours the emissions unit was in operation.

f. The average hourly organic compound emission rate for all resin, promoter, catalyst and photochemically reactive cleanup materials, i.e., (d)/(e), in pounds per hour (average).

2. The permittee shall collect and record the following information for each month for this emissions unit:

a. The name and identification of each material employed.

b. The volume, in pounds, of each material employed.

c. The individual VOC content for each VOC in each material employed, in percent by weight.

d. The total individual VOC emissions rate from each material employed, in lbs/month [the summation of (b) x (c/100) x (the appropriate emission factor for each individual VOC)*].

e. The total combined VOC emissions rate from all VOCs employed, in lbs/month.

f. The rolling, 12-month summation of the volatile organic material usage, in pounds.

g. The rolling, 12-month summation of the VOC emissions from this emissions unit, in tons, i.e., the summation of (e) for the previous 12-month period divided by 2000 lbs/ton.

* (i) A 0.5% evaporation loss of styrene from the resin employed is the worst case emission factor for closed molding, based on facility specific testing of the SCRIMP process.
(ii) A 100% evaporation loss of all VOCs from the promoter employed is the assumed worst case emission factor.
(iii) A 0.04% evaporation loss of dimethyl phthalate and 100% evaporation loss of all other VOCs except for peroxides from the catalyst employed are the worst case emissions factors, based on a 1999 study conducted on "Emission Factors for Liquid Organic Peroxide Catalysts".

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which include the following information:

a. An identification of each day during which the average hourly organic compound emissions from the coatings and photochemically reactive cleanup materials exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day.

b. An identification of each day during which the organic compound emissions from the coatings and photochemically reactive cleanup materials exceeded 40 pounds per day, and the actual organic compound emissions for each such day.

The notification shall include a copy of such record and shall be sent to the Regional Air Pollution Control Agency within 45 days after the exceedance occurs.

2. The permittee shall submit annual reports which specify the VOC emissions rate, in tons, from this emissions unit, as well as, the total VOC emissions rate, in tons, from P001, P002, P003, P004, P005, R001, and R002. These reports shall be submitted by April 15 of each year and shall cover the previous calendar year.

   This reporting requirement may be satisfied by including and identifying the specfic emissions data from P001, P002, P003, P004, P005, R001, and R002 in the annual fee emissions report.

3. The permittee shall submit quarterly deviation (excursion) reports that identify each month during which the rolling, 12-month volatile organic material usage and/or VOC emissions from P001, P002, P003, P004, P005, R001, and R002 exceeded the 86.34 TPY rolling, 12-month volatile organic material usage and/or VOC emission limitations, and the actual rolling, 12-month volatile organic material usage and/or VOC emission rates for each such month.

   These quarterly deviation reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarter.

V. Testing Requirements

1. Compliance with the emission limitations specified in Sections A.I.1 shall be determined by the following methods:

   a. Emission Limitations:
   The OC emissions from this emissions unit shall not exceed 8 pounds per hour.

   Applicable Compliance Method:
   Compliance shall be determined according to the record keeping requirements of Section A.III.1 of this permit.

   b. Emission Limitation
   The OC emissions from this emissions unit shall not exceed 40 lbs/day.

   Applicable Compliance Method:

Compliance shall be determined according to the record keeping requirements of Section A.III.1 of this permit.

c. Emission Limitation
The OC emissions from this emissions unit shall not exceed 7.3 tons per rolling, 12-month summation; with the combined emissions rates for emissions units P001, P002, and P003 not to exceed 7.3 tons per rolling, 12-month summation.

Applicable Compliance Method -
Compliance with this limitation shall be based upon the record keeping in Section A.III.1 of this permit and the sum of the daily OC emissions rates for each month and the sum of the monthly OC emission rates for the previous 12 months.

d. Emission Limitation -
The Combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons VOC per rolling 12-month summation.

Applicable Compliance Method -
Compliance shall be based upon the record keeping requirements specified in Section A.III.2. of this permit.

VI. Miscellaneous Requirements

1. The following terms and conditions are federally enforceable: Sections A.1 (only the requirements associated with OAC 3745-31-05(C)), A.II.3., A.III.2.g., A.IV.3., and A.V.1.d.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P003) - Closed Molding Operation No. 3

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P004) - Open Molding Operation No. 1 (manual application of high strength resin, nonatomized, nonvapor supressed, promoter, catalyst use, including clean up)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The volatile organic compound (VOC) emissions from this emissions unit shall not exceed 5.07 pounds per hour (lbs/hr) including mold release and mold clean up. The VOC emissions from this emissions unit shall not exceed 15.35 tons per year (TPY). The requirements of this rule also includes compliance with the requirements of OAC rule 3745-21-07, 3745-31-05(C), and 40 CFR Part 63, Subpart A and WWWW.
OAC rule 3745-31-05(C) (synthetic minor to avoid non attainment NSR)	The combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per rolling, 12-month summation.
OAC rule 3745-21-07(G)(9)(g)	In accordance with OAC rule 3745-21-07(G)(9)(g), Best Available Technology (BAT) for this emissions unit, as established pursuant to OAC rule 3745-31-05, has been determined to be less stringent than, or inconsistent with, the requirements of OAC rule 3745-21-07(G)(2).
40 CFR Part 63, Subpart A General Provisions	See the Specific Facility Terms and Conditions - Part II sections A.1 through A
40 CFR Part 63, Subpart WWWW Reinforced Plastic Composites Production	See the Specific Facility Terms and Conditions - Part II sections A.17 through A.44 and Attachment 1.

2. Additional Terms and Conditions

2.a The maximum weight percent of organic HAP, as applied, for each resin employed in this emissions unit (prior to the addition of fillers, catalyst, and promoters), shall not exceed forty percent (40%).

2.b The maximum pounds of HAP per ton of resin for this emissions unit shall not exceed 123 lbs/ton.

II. Operational Restrictions

1. The maximum annual volatile organic material usage rate for emission units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per year, based upon a rolling, 12-month summation of the monthly volatile organic material usage calculations. The volatile organic material usage rate in this term equates to the annual VOC emissions rate in term A.1 and is the fraction of the VOC content that is not consumed in the molding and coating processes and released without control to the ambient air from resin, promoter, catalyst and coating use in the emissions units listed. This correlation is based upon the premise that all the record keeping and reporting requirements of this permit for the VOC emissions will be sufficient to verify the annual organic material usage rate of this term.

   To ensure enforceability during the first twelve calendar months of operation following the issuance of this permit, the actual volatile organic material usage records shall not exceed the volatile organic material usage levels specified in the following table:

Month	Maximum Allowable Cumulative Usage (tons/month)
1	14.39
1-2	28.78
1-3	43.17
1-4	57.56
1-5	71.95
1-6	86.34
1-7	86.34
1-8	86.34
1-9	86.34
1-10	86.34
1-11	86.34
1-12	86.34

2. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.28 through A.29 and Attachment 1 for additional requirements.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information for each day for the coating operation:

a. The company identification for each resin, promoter, catalyst and photochemically reactive cleanup material employed.

b. The number of gallons of each resin, promoter, catalyst and photochemically reactive cleanup material employed.

c. The organic compound content of each resin, promoter, catalyst and photochemically reactive cleanup material, in percent by weight.

d. The total organic compound emission rate for all resin, promoter, catalyst and photochemically reactive cleanup materials, in pounds per day [the summation of (b) x (c/100) x (the appropriate emission factor for each individual VOC)*].

* (i) A 0.5% evaporation loss of styrene from the resin employed is the worst case emission factor for closed molding, based on facility specific testing of the SCRIMP process.
(ii) A 100% evaporation loss of all OCs from the promoter employed is the assumed worst case emission factor.
(iii) A 0.04% evaporation loss of dimethyl phthalate and 100% evaporation loss of all other OCs except for peroxides from the catalyst employed are the worst case emissions factors, based on a 1999 study conducted on "Emission Factors for Liquid Organic Peroxide Catalysts".

e. The total number of hours the emissions unit was in operation.

f. The average hourly organic compound emission rate for all resin, promoter, catalyst and photochemically reactive cleanup materials, i.e., (d)/(e), in pounds per hour (average).

2. The permittee shall collect and record the following information for each month for this emissions unit:

a. The name and identification of each material employed.

b. The volume, in pounds, of each material employed.

c. The individual VOC content for each VOC in each material employed, in percent by weight.

d. The total individual VOC emissions rate from each material employed, in lbs/month [the summation of (b) x (c/100) x (the appropriate emission factor for each individual VOC)*].

e. The total combined VOC emissions rate from all VOCs employed, in lbs/month.

f. The rolling, 12-month summation of the volatile organic material usage, in pounds.

g. The rolling, 12-month summation of the VOC emissions from this emissions unit, in tons, i.e., the summation of (e) for the previous 12-month period divided by 2000 lbs/ton.

* (i) A 0.5% evaporation loss of styrene from the resin employed is the worst case emission factor for closed molding, based on facility specific testing of the SCRIMP process.
(ii) A 100% evaporation loss of all VOCs from the promoter employed is the assumed worst case emission factor.
(iii) A 0.04% evaporation loss of dimethyl phthalate and 100% evaporation loss of all other VOCs except for peroxides from the catalyst employed are the worst case emissions factors, based on a 1999 study conducted on "Emission Factors for Liquid Organic Peroxide Catalysts".

3. The permittee shall collect and record the following information for each month for this emissions unit:

a. The name and identification of each material employed.

b. The organic HAP for each material employed, in percent by weight.

c. The organic HAP for each material employed, in lb of HAP per ton of gelcoat employed. [i.e., using equation 1.a. from table 1 to subpart WWWW where lb HAP / ton gelcoat equals (((0.286 X (b)) - 0.0.0529) x 2000].

4. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.35, 36, 39, 40, and Attachment 1 for additional requirements.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which include the following information:

a. An identification of each day during which the average hourly organic compound emissions from the coatings and photochemically reactive cleanup materials exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day.

b. An identification of each day during which the organic compound emissions from the coatings and photochemically reactive cleanup materials exceeded 40 pounds per day, and the actual organic compound emissions for each such day.

The notification shall include a copy of such record and shall be sent to the Regional Air Pollution Control Agency within 45 days after the exceedance occurs.

2. The permittee shall submit annual reports which specify the VOC emissions rate, in tons, from this emissions unit, as well as, the total VOC emissions rate, in tons, from

P001, P002, P003, P004, P005, R001, and R002. These reports shall be submitted by April 15 of each year and shall cover the previous calendar year.

This reporting requirement may be satisfied by including and identifying the specfic emissions data from P001, P002, P003, P004, P005, R001, and R002 in the annual fee emissions report.

3. The permittee shall submit quarterly deviation (excursion) reports that identify each month during which the rolling, 12-month volatile organic material usage and/or VOC emissions from P001, P002, P003, P004, P005, R001, and R002 exceeded the 86.34 TPY rolling, 12-month volatile organic material usage and/or VOC emission limitations, and the actual rolling, 12-month volatile organic material usage and/or VOC emission rates for each such month.

   These quarterly deviation reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall cover the previous calendar quarter.

4. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.37, 38, and Attachment 1 for additional requirements.

V. Testing Requirements

1. Compliance with the emission limitations specified in Sections A.I.1 shall be determined by the following methods:

   a. Emission Limitations:
      The OC emissions from this emissions unit shall not exceed 8 pounds per hour.

      Applicable Compliance Method:
      Compliance shall be determined according to the record keeping requirements of Section A.III.1 of this permit.

   b. Emission Limitation
      The OC emissions from this emissions unit shall not exceed 40 lbs/day.

      Applicable Compliance Method:
      Compliance shall be determined according to the record keeping requirements of Section A.III.1 of this permit.

   c. Emission Limitation
      The VOC emissions from this emissions unit shall not exceed 15.35 TPY.

      Applicable Compliance Method -
      Compliance with the annual limitation shall be based upon the record keeping in Section A.III.2 of this permit and shall be the summation of the 12 monthly VOC emission rates for the calendar year.

d. Emission Limitation -
The VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons VOC per rolling 12-month summation.

Applicable Compliance Method -
Compliance shall be based upon the record keeping requirements specified in Section A.III.2. of this permit.

VI. Miscellaneous Requirements

1. The following terms and conditions are federally enforceable: Sections A.1 (only the requirements associated with OAC 3745-31-05(C)), A.II.1., A.III.2.g., A.IV.3., and A.V.1.d.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(P004) - Open Molding Operation No. 1 (manual application of high strength resin, nonatomized, nonvapor supressed, promoter, catalyst use, including clean up)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(P005) - Body Filler Repair

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The volatile organic compound (VOC) emissions from this emissions unit shall not exceed 1.22 pounds per hour (lbs/hr); 29.3 pounds per day (lbs/day) and 4.67 tons per year (TPY) excluding cleanup. Compliance with this rule also includes compliance with OAC rules 3745-21-07, and 3745-31-05(C).
OAC rule 3745-21-07(G)(2)	See Section A.ll.1. below. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-31-05(C) (synthetic minor to avoid nonattainment NSR)	The combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per rolling, 12-month summation.

2. Additional Terms and Conditions

2.a The 1.22 lbs/hr and 29.28 lbs/day VOC emissions limits were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.

II. Operational Restrictions

1. The permittee shall not employ any cleanup material in this emissions unit that contains a volatile organic compound (VOC) as defined in OAC rule 3745-21-01(B)(6).

2. The maximum annual volatile organic material usage rate for emission units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per year, based upon a rolling, 12-month summation of the monthly volatile organic material usage

calculations. The volatile organic material usage rate in this term equates to the annual VOC emissions rate in term A.1 and is the fraction of the VOC content that is not consumed in the molding and coating processes and released without control to the ambient air from resin, promoter, catalyst and coating use in the emissions units listed. This correlation is based upon the premise that all the record keeping and reporting requirements of this permit for the VOC emissions will be sufficient to verify the annual organic material usage rate of this term.

To ensure enforceability during the first twelve calendar months of operation following the issuance of this permit, the actual volatile organic material usage records shall not exceed the volatile organic material usage levels specified in the following table:

Month	Maximum Allowable Cumulative Usage (tons/month)
1	14.39
1-2	28.78
1-3	43.17
1-4	57.56
1-5	71.95
1-6	86.34
1-7	86.34
1-8	86.34
1-9	86.34
1-10	86.34
1-11	86.34
1-12	86.34

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information for each month for this emissions unit:

   a. The name and identification of each material employed.

   b. The volume, in pounds, of each material employed.

   c. The VOC content for each material employed, in percent by weight.

   d. The total VOC emissions rate from each material employed, in lbs/month [the summation of (b) x (c)].

   e. The total combined VOC emissions rate from all materials employed, in lbs/month (the sum of (d) for all materials employed).

   f. The rolling, 12-month summation of the VOC emissions from this emissions unit, in tons (the summation of (e) for the previous 12-month period divided by 2,000 lbs/ton)

IV. Reporting Requirements

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing identifying each day during which any cleanup material other than acetone was employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after the exceedance occurs.

2. The permittee shall submit annual reports which specify the VOC emissions rate, in tons, from this emissions unit, as well as, the total VOC emissions rate, in tons, from the facility. These reports shall be submitted by April 15 of each year and shall cover the previous calendar year.

   This reporting requirement may be satisfied by including and identifying the specific emissions data from P001, P002, P003, P004, P005, R001, and R002 in the annual fee emissions report.

3. The permittee shall submit quarterly deviation (excursion) reports that identify each month during which the rolling, 12-month volatile organic material usage and/or VOC emissions from P001, P002, P003, P004, P005, R001, and R002 exceeded the 86.34 TPY rolling, 12-month volatile organic material usage and/or VOC emissions limitations, and the actual rolling, 12-month volatile organic material usage and/or VOC emissions rates for each such months.

   The quarterly deviation report shall be submitted by January 15, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarter.

V. Testing Requirements

Compliance with the emissions limitations in section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:
   The VOC emissions from this emissions unit shall not exceed 1.22 pounds per hour.

   Applicable Compliance Method:
   Compliance with the hourly VOC emission limitation shall be determined by multiplying the maximum hourly usage rate of VOC containing materials by the maximum VOC content.

b. Emission Limitation:
   The VOC emissions from this emissions unit shall not exceed 29.28 pounds per day.

   Applicable Compliance Method:
   Compliance with the daily VOC emissions limitation shall be determined by multiplying the hourly emissions limitation by 24 hours per day.

c. Emission Limitation:
The VOC emissions from this emissions unit shall not exceed 4.67 TPY.

Applicable Compliance Method:
Compliance with the annual limitation shall be based upon the record keeping in section A.III.1. of this permit and shall be the summation of the 12-monthly VOC emissions rates for the calendar year.

d. Emission Limitation:
The Combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons VOC per rolling, 12-month summation.

Applicable Compliance Method:
Compliance shall be based upon the record keeping requirements specified in Section A.III.1. of this permit.

VI. Miscellaneous Requirements

1. The following terms and conditions are federally enforceable: Section A.I. (only the requirements associated with OAC rule 3745-31-05(C)), A.II.2., A.III.1.f., A.IV.3., and A.V.1.d.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P005) - Body Filler Repair

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(R001) - Gelcoat Application

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The volatile organic compound (VOC) emissions from this emissions unit shall not exceed 6.18 pounds per hour (lbs/hr) and 24.85 tons per year (TPY) excluding cleanup. The particulate emissions (PE) from this emissions unit shall not exceed 0.07 pound per hour (lb/hr) and 0.26 ton per year (TPY) Compliance with this rule also includes compliance with OAC rules 3745-21-07, 3745-17-07(A), 3745-17-11(B),3745-31-05(C), and 40 CFR Part 63, Subpart A and WWWW. The requirements specified by these rules are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A).
OAC rule 3745-17-07(A)(1)	In accordance with OAC rule 3745-21-07(G)(9)(g), Best Available Technology (BAT) for this emissions unit, as established pursuant to OAC rule 3745-31-05, has been determined to be less stringent than, or inconsistent with, the requirements of OAC rule 3745-21-07(G)(2).
OAC rule 3745-17-11(B)	Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
OAC rule 3745-31-05(C) (synthetic minor to avoid nonattainment NSR)	The combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per rolling, 12-month summation.
40 CFR Part 63, Subpart A General Provisions	See the Specific Facility Terms and Conditions - Part II sections A.1 through A.16.
40 CFR Part 63, Subpart WWWW Reinforced Plastic Composites Production	See the Specific Facility Terms and Conditions - Part II sections A.17 through A.44 and Attachment 1.

2. Additional Terms and Conditions

2.a The 6.18 lbs/hr VOC was established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.

2.b The 0.07 lbs/hr and 0.26 TPY PE were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.

2.c The maximum weight percent of organic HAP, as applied, for each gel coat employed in this emissions unit shall not exceed thirty-seven percent (37%).

2.d The maximum pounds of HAP per ton of resin for this emissions unit shall not exceed 377 lbs/ton.

II. Operational Restrictions

1. The permittee shall not employ any cleanup material in this emissions unit that contains a volatile organic compound (VOC) as defined in OAC rule 3745-21-01(B)(6).

2. The permittee shall operate and maintain a dry filtration system to control PE from this emissions unit.

3. The maximum annual volatile organic material usage for emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 TPY, based upon a rolling, 12-month summation of the monthly volatile organic material usage figures. The annual volatile organic material usage in this term equates to the annual VOC emissions rate in term A.1. based upon the premise that all the record keeping and reporting requirements of this permit for the VOC emissions will be sufficient to verity the annual volatile organic material usage rate of this term.

   To ensure enforceability during the first twelve calendar months of operation following the issuance of this permit, the actual volatile organic material usage records shall not exceed the volatile organic material usage levels specified in the following table:

Month	Maximum Allowable Cumulative Usage (tons/month)
1	14.39
1-2	28.78
1-3	43.17
1-4	57.56
1-5	71.95
1-6	86.34
1-7	86.34
1-8	86.34
1-9	86.34
1-10	86.34

1-11	86.34
1-12	86.34

4. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.28 through A.29 and Attachment 1 for additional requirements.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information for each month for this emissions unit:

   a. The name and identification of each material employed.

   b. The volume, in pounds, of each material employed.

   c. The VOC* content for each material employed, in percent by weight.

   d. The total VOC emissions rate from each material employed, in lbs/month [the summation of (b) x the emission factor equation from Table 1 to Subpart WWWW (1.03643 x ((c)/100) - 0.195)].

   e. The total combined VOC emissions rate from all VOCs employed, in lbs/month (the sum of (d) for all materials employed).

   f. The rolling, 12-month summation of the volatile organic material usage, in pounds (the summation of (e) for the previous 12-month period).

   g. The rolling, 12-month summation of the VOC emissions from this emissions unit, in tons ((f) divided by 2,000 lbs/ton].

   *For the materials employed, the total VOC content equals the total organic HAP content.

2. The permittee shall collect and record the following information for each month for this emissions unit:

   a. The name and identification of each material employed.

   b. The organic HAP for each material employed, in percent by weight.

   c. The organic HAP for each material employed, in lb of HAP per ton of gelcoat employed. [i.e., using equation 1.f. from table 1 to subpart WWWW where lb HAP / ton gelcoat equals (((1.03646 X (b)) - 0.195) x 2000].

3. The permittee shall maintain daily records that document any time periods when the dry filtration system was not in service when the emissions unit was in operation.

4. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.35, 36, 39, 40, and Attachment 1 for additional requirements.

IV. Reporting Requirements

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing identifying each day during which any cleanup material other than acetone was employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after the exceedance occurs.

2. The permittee shall submit annual reports which specify the VOC emissions rate, in tons, from this emissions unit, as well as, the total VOC emissions rate, in tons, from emissions units P001, P002, P003, P004, P005, R001, and R002. These reports shall be submitted by April 15 of each year and shall cover the previous calendar year.

   This reporting requirement may be satisfied by including and identifying the specific emissions data from P001, P002, P003, P004, P005, R001, and R002 in the annual fee emissions report.

3. The permittee shall submit quarterly deviation (excursion) reports that include the following:

   a. An identification of each month during which the rolling, 12-month volatile organic material usage and/or VOC emissions exceeded the 86.34 TPY rolling, 12-month facility volatile organic material usage and/or VOC emissions limitations, and the actual rolling, 12-month volatile organic material usage and/or VOC emissions rates for each such months.

   b. An identification of each noncomplying coating employed in this emissions unit and the actual weight percent of organic HAP, as applied, and the actual pounds of HAP per ton of resin for this emissions unit.

   The quarterly deviation reports shall be submitted by January 15, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarter.

4. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing that the dry filtration system was not in service when the emissions unit was in operation. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the event.

5. The permittee shall submit a notification of the actual date of startup of the emissions unit to the Director (the appropriate Ohio EPA District Office or local air agency) within 15 days following the startup date of the affected source.

6. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.37, 38, and Attachment 1 for additional requirements.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I. of these terms and conditions shall be determined in accordance with the following methods:

   a. Emission Limitation:
   The VOC emissions from this emissions unit shall not exceed 6.18 pounds per hour.

   Applicable Compliance Method:
   Compliance with the hourly VOC emission limitation shall be determined by multiplying the maximum hourly usage rate of VOC containing materials by the emission factor equation in Table 1 to Subpart WWWW for the highest organic HAP content of 37% by weight (for the materials employed, the total organic HAP content equals the total VOC).

   b. Emission Limitation:
   The VOC emissions from this emissions unit shall not exceed 24.85 TPY.

   Applicable Compliance Method:
   Compliance with the annual limitation shall be based upon the record keeping in section A.III.1. of this permit and shall be the summation of the 12 monthly VOC emission rates for the calendar year.

   c. Emission Limitation:
   The Combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons VOC per rolling, 12-month summation.

   Applicable Compliance Method:
   Compliance shall be based upon the record keeping requirements specified in Section A.III.1. of this permit.

   d. Emission Limitation:
   The PE from this emissions unit shall not exceed 0.07 lb/hr and 0.26 TPY.

   Applicable Compliance Method:
   If required, compliance shall be demonstrated through emission test performed in accordance with the methods and procedures specified in OAC rule 3745-17-03(B)(10).

   e. Emission Limitation:
   Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

   Applicable Compliance Method:

If required, compliance shall be demonstrated through visible emission observations performed in accordance with the method and procedures specified in OAC rule 3745-17-03(B)(1).

f. Emission Limitation:
The maximum weight percent of organic HAP, as applied, for the materials employed in this emissions unit shall not exceed thirty-seven percent (37%).

Applicable Compliance Method:
The percent organic HAP content shall be determined in accordance with 40 CFR 63.5797. Compliance shall be achieved based on the monitoring and record keeping of material usage as specified in section A.III.2.

g. Emission Limitation:
The maximum pounds of HAP per ton of resin for this emissions unit shall not exceed 377 lbs/ton.

Applicable Compliance:
Compliance shall be based upon the record keeping requirements specified in section A.III.2.c. of this permit.

VI. Miscellaneous Requirements

1. The following terms and conditions are federally enforceable: Section A.I. (only the requirements associated with OAC rule 3745-31-05(C), 40 CFR Part 63, subpart A and WWWW), A.I.2.c and d, A.II.3., A.III.1.g., A.III.2., A.IV.3., and A.V.1.c., f., and g.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(R001) - Gelcoat Application

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(R002) - Cleaner, Promoter, Primer (including catalyst and reducer) and Paint Application

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The volatile organic compound (VOC) emissions from this emissions unit shall not exceed 9.62 pounds per hour (lbs/hr) and 38.70 tons per year (TPY). The particulate emissions (PE) from this emissions unit shall not exceed 0.09 lb/hr and 0.39 TPY. Compliance with this rule also includes compliance with OAC rules 3745-21-07, 3745-17-07(A)(1), 3745-17-11(B), 3745-31-05(C), and 40 CFR Part 63, Subpart A and PPPP.
OAC rule 3745-21-07(G)(9)(g)	In accordance with OAC rule 3745-21-07(G)(9)(g), Best Available Technology (BAT) for this emissions unit, as established pursuant to OAC rule 3745-31-05, has been determined to be less stringent than, or inconsistent with, the requirements of OAC rule 3745-21-07(G)(2).
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
OAC rule 3745-17-11(B)	The requirements specified by these rules are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A).
OAC rule 3745-31-05(C) (Synthetic Minor to avoid nonattainment NSR)	The combined VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons per rolling, 12-month summation.
40 CFR Part 63, Subpart A General Provisions	See the Specific Facility Terms and Conditions - Part II sections A.1 through A.16.

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
40 CFR Part 63, Subpart PPPP Surface Coating of Plastic Parts and Products	See the Specific Facility Terms and Conditions - Part II sections A.44 through A.63 and Attachment 2.

2. Additional Terms and Conditions

2.a The 9.62 lbs/hr VOC was established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.

2.b The 0.09 lb/hr and 0.39 TPY PE were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.

2.c. The maximum organic HAP emissions, as applied, for each coating employed in this emissions unit shall not exceed 0.16 lb organic HAP emitted per lb coating solids per rolling, 12-month.

II. Operational Restrictions

1. The permittee shall not employ any cleanup material in this emissions unit that contains a volatile organic compound (VOC) as defined in OAC rule 3745-21-01(B)(6).

2. The permittee shall operate and maintain a dry filtration system to control PE from this emissions unit.

3. The maximum annual volatile organic material usage for emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 TPY, based upon a rolling, 12-month summation of the monthly volatile organic material usage figures. The annual volatile organic material usage in this term equates to the annual VOC emission rate in term A.1. based upon the premise that all the record keeping and reporting requirements of this permit for the VOC emissions will be sufficient to verify the annual volatile organic material usage rate of this term.

   To ensure enforceability during the first twelve calendar months of operation following the issuance of this permit, the actual volatile organic material usage records shall not exceed the volatile organic material usage levels specified in the following table:

Month	Maximum Allowable Cumulative Usage (tons/month)
1	14.39
1-2	28.78
1-3	43.17
1-4	57.56
1-5	71.95
1-6	86.34

1-7	86.34
1-8	86.34
1-9	86.34
1-10	86.34
1-11	86.34
1-12	86.34

4. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.49, 51, 53, and Attachment 2 for additional requirements.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information for each month for this emissions unit:

   a. The name and identification of each material employed.

   b. The weight, in pounds, of each material employed, as applied.

   c. The VOC content for each material employed, as applied, in percent by weight.

   d. The HAP content for each material employed, as applied, in percent by weight.

   e. The solids content for each material employed, as applied, in percent by weight,.

   f. The VOC emission rate from all materials employed, in pounds [(b) x (c)].

   g. The rolling, 12-month summation of the VOC emissions rate, in pounds (the summation of (f) for the previous 12-month period).

   h. The rolling, 12-month summation of the VOC emissions rate, in tons ((g) divided by 2,000 lbs/ton).

   i. The HAP emissions rate from all materials employed, in pounds [(b) x (d)].

   j. The rolling, 12-month summation of the HAP emissions rate, in pounds (the summation of (i) for the previous 12-month period).

   k. The mass of coating solids employed, in pounds [(b) x (e)].

   l. The rolling, 12-month summation of the mass of coating solids employed, in pounds (the summation of (k) for the previous 12-month period).

   m. The rolling, 12-month pound of HAP per pound of coating solids [(j) x (l)].

2. The permittee shall maintain daily records that document any time periods when the dry filtration system was not in service when the emissions unit was in operation.

3. The permittee shall also maintain the following records for the plastic parts coating line:

   a. a copy of each notification, report, and supporting documentation submitted to comply with the NESHAP;

   b. if using the predominant activity alternative under 40 CFR 63.4490(c)(1), records of the data and calculations used to determine the predominant activity; and

   c. if using the facility specific emission limit alternative under 40 CFR 63.4490(c)(2), data used to calculate the facility- specific emission limit alternative.

   A listing of the HAPs can be found in Section 112(b) of the Clean Air Act, or one can be obtained by contacting your Ohio EPA District Office or local air agency contact. Material Safety Data Sheets or VOC data sheets typically include a listing of the solids and solvents contained in the materials.

4. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.57, 58, 61, and Attachment 2 for additional requirements.

IV. Reporting Requirements

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing identifying each day during which any cleanup material other than acetone was employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after the exceedance occurs.

2. The permittee shall submit annual reports which specify the VOC emissions rate, in tons, from this emissions unit, as well as, the total VOC emissions rate, in tons, from emissions units P001, P002, P003, P004, P005, R001, and R002. These reports shall be submitted by April 15 of each year and shall cover the previous calendar year.

   This reporting requirement may be satisfied by including and identifying the specific emissions data from P001, P002, P003, P004, P005, R001, and R002 in the annual fee emissions report.

3. The permittee shall submit quarterly deviation (excursion) reports include the following:

   a. An identification of each month during which the rolling, 12-month volatile organic material usage and/or VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 exceeded the 86.34 TPY rolling, 12-month volatile organic material usage and/or VOC emissions limitations, and the actual rolling, 12-month volatile organic material usage and/or VOC emissions rates for each such months.

   b. An identification of each month during which the rolling, 12-month organic HAP emissions from emissions unit R002 exceeded 0.16 lb organic HAP per lb coating solids.

The quarterly deviation reports shall be submitted by January 15, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarter.

4. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing that the dry filtration system was not in service when the emissions unit was in operation. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the event.

5. The permittee shall submit semiannual written reports that (a) identify all days during which visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-months period.

6. The permittee shall reference the Specific Facility Terms and Conditions in Part II sections A.55, 56, and Attachment 2 for additional requirements.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

   a. Emission Limitation:
   The VOC emissions from this emissions unit shall not exceed 9.62 pounds per hour.

   Applicable Compliance Method:
   The hourly emissions limitation represents the potential to emit for this emissions unit. Compliance shall be determined by multiplying the maximum hourly usage rate of VOC containing materials by the maximum VOC content.

   b. Emission Limitation:
   The VOC emissions from this emissions unit shall not exceed 38.70 TPY.

   Applicable Compliance Method:
   Compliance with the annual limitation shall be demonstrated by the monitoring and record keeping found in section A.III.1. of this permit and shall be the summation of the 12 monthly VOC emissions rates for the calendar year.

   c. Emission Limitation:
   The VOC emissions from emissions units P001, P002, P003, P004, P005, R001, and R002 shall not exceed 86.34 tons VOC per rolling, 12-month summation.

   Applicable Compliance Method:
   Compliance shall be based upon the record keeping requirements specified in Section A.III.1. of this permit.

d. Emission Limitation:
The PE from this emissions unit shall not exceed 0.09 lb/hr and 0.39 TPY.

Applicable Compliance Method:
If required, compliance shall be demonstrated through emission test performed in accordance with the methods and procedures specified in OAC rule 3745-17-03(B)(10).

e. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:
If required, compliance shall be demonstrated through visible emission observations performed in accordance with the method and procedures specified in OAC rule 3745-17-03(B)(1).

f. Emission Limitation:
The maximum organic HAP emissions, as applied, for each coating employed in this emissions unit shall not exceed 0.16 lb organic HAP emitted per lb coating solids per rolling, 12-month.

Applicable Compliance Method:
Compliance shall be based upon the record keeping requirements specified in Section A.III.1. of this permit.

VI. Miscellaneous Requirements

1. The following terms and conditions are federally enforceable: Section A.I. (only the requirements associated with OAC rule 3745-31-05(C), 40 CFR Part 63, subpart A and PPPP), A.I.2.c., A.II.3., A.III.1.h., A.III.1.m., A.IV.3., and A.V.1.c. and f.

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(R002) - Cleaner, Promoter, Primer (including catalyst and reducer) and Paint Application

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

ATTACHMENT #1

Tables to Subpart WWWW of Part 63

Table 1 to Subpart WWWW of Part 63 - Equations to Calculate Organic HAP Emissions Factors for Specific Open Molding and Centrifugal Casting Process Streams

As required in §§63.5796, 63.5799(a)(1) and (b), and 63.5810(a)(1), to calculate organic HAP emissions factors for specific open molding and centrifugal casting process streams you must use the equations in the following table:

If your operation type is a new or existing...	And you use...	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) [2 3 4]...	Use this organic HAP emissions Factor (EF) Equation for materials with 33 percent or more organic HAP (19 percent for nonatomized gel coat) [2 3 4]...
1.open molding operation	a. manual resin application	i. nonvapor-suppressed resin	EF = 0.126 x % HAP x 2000	EF = ((0.286 x %HAP)-0.0529) x 2000
		ii. vapor-suppressed resin	EF = 0.126 x % HAP x 2000 x (1- (0.5 x VSE factor))	EF = ((0.286 x %HAP)-0.0529) x 2000 x (1-(0.5 x VSE factor))
		iii. vacuum bagging/closed-mold curing with roll out	EF = 0.126 x % HAP x 2000 x 0.8	EF = ((0.286 x %HAP)-0.0529) x 2000 x 0.8
		iv. vacuum bagging/`closed-mold curing without roll-out	EF = (0.126 x % HAP x 2000 x 0.5	EF = ((0.286 x %HAP)-0.0529) x 2000 x 0.5
	b. atomized mechanical resin application	i. nonvapor-suppressed resin	EF = 0.169 x %HAP x 2000	EF = ((0.714 x %HAP)-0.18) x 2000
		ii. vapor-suppressed resin	EF = 0.169 x %HAP x 2000 x (1-(0.45 x VSE factor))	EF = ((0.714 x %HAP)-0.18) x 2000 x (1-(0.45 x VSE factor))
		iii. vacuum bagging/closed-mold curing with roll-out	EF = 0.169 x %HAP x 2000 x 0.85	EF = ((0.714 x %HAP)-0.18) x 2000 x 0.85
		iv. vacuum bagging/closed-mold curing without roll-out	EF = 0.169 x %HAP x 2000 x 0.55	EF = ((0.714 x %HAP)-0.18) x 2000 x 0.55
	c. nonatomized mechanical resin application	v. nonvapor-suppressed resin	EF = 0.107 x %HAP x 2000	EF = ((0.157 x %HAP)-0.0165) x 2000
		vi. vapor-suppressed resin	EF = 0.107 x %HAP x 2000 x (1-(0.45 x VSE factor))	EF = ((0.157 x %HAP)-0.0165) x 2000 x (1-(0.45 x VSE factor))
		vii. closed-mold curing with roll-out	EF = 0.107 x %HAP x 2000 x 0.85	EF = ((0.157 x %HAP)-0.0165) x 2000 x 0.85
		viii. vacuum bagging/closed-mold curing without roll-out	EF = 0.107 x %HAP x 2000 x 0.55	EF = ((0.157 x %HAP)-0.0165) x 2000 x 0.55
	d. atomized mechanical resin application with robotic or automated spray control [5]	nonvapor-suppressed resin	EF = 0.169 x %HAP x 2000 x 0.77	EF = 0.77 x ((0.714 x %HAP)-0.18) x 2000
	e. filament application [6]	i. nonvapor-suppressed resin	EF = 0.184 x %HAP x 2000	EF = ((0.2746 x %HAP)-0.0298) x 2000
		ii. vapor-suppressed resin	EF = 0.12 x %HAP x 2000	EF = ((0.2746 x %HAP)-0.0298) x 2000 x 0.65
	f. atomized spray gel coat application	nonvapor-suppressed gel coat	EF = 0.445 x %HAP x 2000	EF = ((1.03646 x %HAP)-0.195) x 2000
	g. nonatomized spray gel coat application	nonvapor-suppressed gel coat	EF = 0.185 x %HAP x 2000	EF = ((0.4506 x %HAP)-0.0505) x 2000
	h. atomized spray gel coat application using robotic or automated spray	nonvapor-suppressed gel coat	EF = 0.445 X %HAP X 2000 X 0.73	EF = ((1.03646 x %HAP)-0.195) x 2000 X 0.73

2. centrifugal casting operations [7 8]	heated air blown through molds	nonvapor-suppressed resin	EF = 0.558 x (%HAP) x 2000	EF = 0.558 x (%HAP) x 2000
	vented molds, but air vented through the molds is not heated	nonvapor-suppressed resin	EF = 0.026 x (%HAP) x 2000	EF = 0.026 x (%HAP) x 2000

Footnotes to Table 1

[1] The equations in this table are intended for use in calculating emission factors to demonstrate compliance with the emission limits in 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.

[2] To obtain the organic HAP emissions 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 63.5810. The organic HAP emissions factors have units of lbs of organic HAP per ton of resin or gel coat applied.

[3] 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.

[4] 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.

[5] 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 equation.

[6] 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.

[7] 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.

[8] 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 uses 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.

Table 2 to Subpart WWWW of Part 63 - Compliance Dates for New and Existing Reinforced Plastic Composites Facilities

As required in §§63.5800 and 63.5840 you must demonstrate compliance with the standards by the dates in the following table:

If your facility is...	and...	then you must comply by this date:
1. an existing source	a. is a major source on or before the publication date of this subpart	i. **[INSERT DATE 3 YEARS FROM PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER]**, or ii. you must accept and meet an enforceable HAP emissions limit below the major source threshold prior to **[INSERT DATE 3 YEARS FROM PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER]**.
2. an existing source that is an area source	becomes a major source after the publication date of this subpart	3 years after becoming a major source or **[INSERT DATE 3 YEARS FROM PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER]**, whichever is later.
3. an existing source, and emits less than 100 tpy of organic HAP from the combination of all centrifugal casting and continuous lamination/casting operations at the time of initial compliance with this subpart	subsequently increases its actual organic HAP emissions to 100 tpy or more from these operations, which requires that the facility must now comply with the standards in §63.5805(b)	3 years of the date your semi-annual compliance report indicates your facility meets or exceeds the 100 tpy threshold.
4. a new source	is a major source at startup	upon startup or **[INSERT DATE OF PUBLICATION OF THIS FINAL RULE IN THE FEDERAL REGISTER]**, whichever is later.

5. a new source	is an area source at startup and becomes a major source	immediately upon becoming a major source.
6. a new source, and emits less than 100 tpy of organic HAP from the combination of all open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC and BMC manufacturing, and mixing operations at the time of initial compliance with this subpart	subsequently increases its actual organic HAP emissions to 100 tpy or more from the combination of these operations, which requires that the facility must now meet the standards in §63.5805(d)	3 years from the date that your semi-annual compliance report indicates your facility meets or exceeds the 100 tpy threshold.

As specified in §63.5805, you must meet the following organic HAP emissions limits that apply to you:

Table 3 to Subpart WWWW of Part 63 - Organic HAP Emissions Limits for Specific Open Molding, Centrifugal Casting, Poltrusion and Continuous Lamination/Casting Operations

If your operation type is...	And you use...	[1] Your organic HAP emissions limit is...
1. open molding - corrosion-resistant and/or high strength (CR/HS)	a. mechanical resin application	113 lb/ton
	b. filament application	171 lb/ton
	c. manual resin application	123 lb/ton
2. open molding - non-CR/HS	a. mechanical resin application	88 lb/ton
	b. filament application	188 lb/ton
	c. manual resin application	87 lb/ton
3. open molding - tooling	a. mechanical resin application	254 lb/ton
	b. manual resin application	157 lb/ton
4. open molding - low-flame spread/low-smoke products	a. mechanical resin application	497 lb/ton
	b. filament application	270 lb/ton
	c. manual resin application	238 lb/ton
5. open molding - shrinkage controlled resins[2]	a. mechanical resin application	354 lb/ton
	b. filament application	215 lb/ton
	c. manual resin application	180 lb/ton
6. open molding - gel coat [3]	a. tooling gel coating	440 lb/ton
	b. white/off white pigmented gel coating	267 lb/ton
	c. all other pigmented gel coating	377 lb/ton
	d. CR/HS or high performance gel coat	605 lb/ton
	e. fire retardant gel coat	854 lb/ton
	f. clear production gel coat	522 lb/ton
7. centrifugal casting - CR/HS	a. resin application with the mold closed, and the mold is vented during spinning and cure. b. resin application with the mold closed, and mold is not vented during the spinning and cure. c. resin application with the mold open, and the mold is vented during spinning and cure. d. resin application with the mold open, and the mold is not vented during spinning and cure.	25 lb/ton [4] NA - this is considered to be a closed molding operation 20 lb/ton [4] Use the appropriate open molding emission limit [5]
8. centrifugal casting -non-CR/HS	a. resin application with the mold closed, and the mold is vented during spinning and cure. b. resin application with the mold closed, and mold is not vented during the spinning and cure. c. resin application with the mold open, and the mold is vented during spinning and cure. d. resin application with the mold open, and the mold is not vented during spinning and cure.	20 lb/ton [4] NA - this is considered to be a closed molding operation. 20 lb/ton [4] Use the appropriate open molding emission limit [5]
9. pultrusion [6]	N/A	reduce total organic HAP emissions by at least 60 weight percent

10. continuous lamination/ casting	N/A	reduce total organic HAP emissions by at least 58.5 weight percent or not exceed a organic HAP emissions limit of 15.7 lbs of organic HAP per ton of neat resin plus and neat gel coat plus

Footnotes to Table 3

[1] Organic HAP emissions limits for open molding and centrifugal casting are expressed as lb/ton. You must be at or below these values based on a 12-month rolling average.

[2] This emission limit applies regardless of whether the shrinkage controlled resin is used as a production resin or a tooling resin.

[3] If you only apply gel coat with manual application, for compliance purposes treat the gel coat as if it were applied using atomized spray guns to determine both emission limits and emission factors. If you use multiple application methods and any portion of a specific gel coat is applied using nonatomized spray, you may use the nonatomized spray gel coat equation to calculate an emission factor for the manually applied portion of that gel coat. Otherwise, use the atomized spray gel coat application equation to calculate an emission factors.

[4] For compliance purposes, calculate your emission factor using only the appropriate centrifugal casting equation in item 2 of Table 1 to this subpart, or a site specific emission factor for after the mold is closed as discussed in §63.5796.

[5] Calculate your emission factor using the appropriate open molding covered cure emission factor in item 1 of Table 1 to this subpart, or a site specific emission factor as discussed in §63.5796.

[6] Pultrusion machines that produce parts that meet the following criteria: 1,000 or more reinforcements or the glass equivalent of 1,000 ends of 113 yield roving or more; and a cross sectional area of 60 square inches or more are not subject to this requirement. Their requirement is the work practice of air flow management which is described in Table 4 to this subpart.

As specified in §63.5805, you must meet the work practice standards in the following table that apply to you:

Table 4 to Subpart WWWW of Part 63 - Work Practice Standards

For....	You must....
1. a new or existing closed molding operation using compression/injection molding	uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting.
2. a new or existing cleaning operation	not use cleaning solvents that contain HAP, except that styrene may be used as a cleaner in closed systems, and organic HAP containing cleaners may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin.
3. a new or existing materials HAP-containing materials storage operation	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.
4. an existing or new SMC manufacturing operation	close or cover the resin delivery system to the doctor box on each SMC manufacturing machine. The doctor box itself may be open.
5. an existing or new SMC manufacturing operation	use a nylon containing film to enclose SMC.
6. All mixing or BMC manufacturing operations [1]	use mixer covers with no visible gaps present in the mixer covers, except that gaps of up to 1 inch are permissible around mixer shafts and any required instrumentation.
7. All mixing or BMC manufacturing operations [1]	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. Vents routed ro a 95 percent efficient control device are exempted from this requirement.
8. All mixing or BMC manufacturing operations [1]	keep the mixer covers closed while actual mixing is occurring except when adding materials or changing covers to the mixing vessels.

9. a new or existing pultrusion operation manufacturing parts that meet the following criteria: 1,000 or more reinforcements or the glass equivalent of 1,000 ends of 113 yield roving or more; and have a cross sectional area of 60 square inches or more that is not subject to the 95 percent organic HAP emission reduction requirement	i. not allow vents from the building ventilation system, or local or portable fans to blow directly on or across the wet-out area(s), ii. not permit point suction of ambient air in the wet-out area(s) unless that air is directed to a control device, iii. use devices such as deflectors, baffles, and curtains when practical to reduce air flow velocity across the wet-out area(s), iv. direct any compressed air exhausts away from resin and wet-out area(s), v. convey resin collected from drip-off pans or other devices to reservoirs, tanks, or sumps via covered troughs, pipes, or other covered conveyance that shields the resin from the ambient air, vi. cover all reservoirs, tanks, sumps, or HAP-containing materials storage vessels except when they are being charged or filled, and vii. cover or shield from ambient air resin delivery systems to the wet-out area(s) from reservoirs, tanks, or sumps where practical.

[1] Containers of 5 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). For polymer casting mixing operations, containers with a surface area of 500 square inches or less may be open while active mixing is taking place.

Table 5 to Subpart WWWW of Part 63 - Alternative Organic HAP Emissions Limits for Open Molding, Centrifugal Casting, and SMC Manufacturing Operations Where the Standards are Based on a 95 Percent Reduction Requirement

As specified in §§63.5805, as an alternative to the 95 percent organic HAP emissions reductions requirement, you may meet the appropriate organic HAP emissions limits in the following table:

If your operation type is...	And you use...	Your organic HAP emissions limit is [a]...
1. open molding - corrosion-resistant and/or high strength (CR/HS)	a. mechanical resin application	6 lb/ton
	b. filament application	9 lb/ton
	c. manual resin application	7 lb/ton
2. open molding - non-CR/HS	a. mechanical resin application	13 lb/ton
	b. filament application	10 lb/ton
	c. manual resin application	5 lb/ton
3. open molding - tooling	a. mechanical resin application	13 lb/ton
	b. manual resin application	8 lb/ton

4. open molding - low flame spread/low smoke products	a. mechanical resin application	25 lb/ton
	b. filament application	14 lb/ton
	c. manual resin application	12 lb/ton
5. open molding - shrinkage controlled resins	a. mechanical resin application	18 lb/ton
	b. filament application	11 lb/ton
	c. manual resin application	9 lb/ton
6. open molding - gel coat [b]	a. tooling gel coating	22 lb/ton
	b. white/off white pigmented gel coating	22 lb/ton
	c. all other pigmented gel coating	19 lb/ton
	d. CR/HS or high performance gel coat	31 lb/ton
	e. fire retardant gel coat	43 lb/ton
	f. clear production gel coat	27 lb/ton
7. centrifugal casting - CR/HS [c, d]	a vent system that moves heated air through the mold	27 lb/ton
8. centrifugal casting - non-CR/HS [c, d]	a vent system that moves heated air through the mold	21 lb/ton
7. centrifugal casting - CR/HS [c, d]	a vent system that moves ambient air through the mold	2 lb/ton
8. centrifugal casting - non-CR/HS [c, d]	a vent system that moves ambient air through the mold	1 lb/ton
9. SMC Manufacturing	N/A	2.4 lb/ton

[a] Organic HAP emissions limits for open molding and centrifugal casting expressed as lb/ton are calculated using the equations shown in Table 1 to this subpart. You must be at or below these values based on a 12-month rolling average.

[b] These limits are for spray application of gel coat. Manual gel coat application must be included as part of spray gel coat application for compliance purposes using the same organic HAP emissions factor equation and organic HAP emissions limit. If you only apply gel coat with manual application, treat the manually applied gel coat as if it were applied with atomized spray for compliance determinations.

[C] Centrifugal casting operations where the mold is not vented during spinning and cure are considered to be closed molding and are not subject to any emissions limit. Centrifugal casting operations where the mold is not vented during spinning and cure, and the resin is applied to the open centrifugal casting mold using mechanical or manual open molding resin application techniques are considered to be open molding operations and the appropriate open molding emission limits apply.

[d] Centrifugal casting operations where the mold is vented during spinning and the resin is applied to the open centrifugal casting mold using mechanical or manual open molding resin application techniques, use the appropriate centrifugal casting emission limit to determine compliance. Calculate your emission factor using the appropriate centrifugal casting emission factor in Table 1 to this subpart, or a site specific emission factor as discussed in §63.5796.

Table 6 to Subpart WWWW of Part 63 - Basic Requirements for Performance Tests, Performance Evaluations, and Design Evaluations for New and Existing Sources Using Add-On Control Devices

As required in §63.5850 you must conduct performance tests, performance evaluations, and design evaluation according to the requirements in the following table:

For ...	You must ...	Using ...	According to the following requirements.
1. each enclosure used to collect and route organic HAP emissions to an add-on control device that is a PTE	meet the requirements for a PTE	EPA method 204 of appendix M of 40 CFR part 51	Enclosures that meet the requirements of EPA Method 204 of appendix M of 40 CFR part 51 for a PTE are assumed to have a capture efficiency of 100%. Note that the criteria that all access doors and windows that are not treated as natural draft openings shall be closed during routine operation of the process is not intended to require that these doors and windows be closed at all times. It means that doors and windows must be closed any time that you are not actually moving parts or equipment through them. Also, any styrene retained in hollow parts and liberated outside the PTE is not considered to be a violation of the EPA Method 204 criteria.
2. each enclosure used to collect and route organic HAP emissions to an add-on control device that is not a PTE	a. determine the capture efficiency of each enclosure used to capture organic HAP emissions sent to an add-on control device	i. EPA methods 204B through E of appendix M of 40 CFR part 51, or	(1) Enclosures that do not meet the requirements for a PTE must determine the capture efficiency by constructing a temporary total enclosure according to the requirements of EPA Method 204 of appendix M of 40 CFR part 51 and measuring the mass flow rates of the organic HAP in the exhaust streams going to the atmosphere and to the control device. Test runs for EPA Methods 204B through E of appendix M of 40 CFR part 51 must be at least 3 hours.
		ii. an alternative test method that meets the requirements in 40 CFR part 51, appendix M.	(1) The alternative test method must the data quality objectives and lower confidence limit approaches for alternative capture efficiency protocols requirements contained in 40 CFR part 63 subpart KK, appendix A.

3. each control device used to comply with a percent reduction requirement, or a organic HAP emissions limit	determine the control efficiency of each control device used to control organic HAP emissions	the test methods specified in §63.5850 to this subpart.	Testing and evaluation requirements are contained in 40 CFR part 63, subpart SS, and §63.5850 to this subpart.
4. Determining organic HAP emission factors for any operation	determine the mass organic HAP emissions rate	the test methods specified in §63.5850 to this subpart.	Testing and evaluation requirements are contained in 40 CFR part 63, subpart SS, and §63.5850 to this subpart.

Table 7 to Subpart WWWW of Part 63 - Options Allowing Use of the Same Resin Across Different Operations That Use the Same Resin Type

As specified in §§63.5810(d), when electing to use the same resin(s) for multiple resin application methods, you may use any resin(s) with an organic HAP content less than or equal to the values shown in the following table, or any combination of resins whose weighted average organic HAP content based on a 12-month rolling average is less than or equal to the values shown in the following table:

If your facility has the following resin type and application method...	The highest resin weight is * * * percent organic HAP content, or weighted average weight percent organic HAP content, you can use for...	is...
1. CR/HS resins, centrifugal casting [1] [2]	a. CR/HS mechanical	[3]48.0
	b. CR/HS filament application	48.0
	c. CR/HS manual	48.0
2. CR/HS resins, nonatomized mechanical	a. CR/HS filament application	46.4
	b. CR/HS manual	46.4
3. CR/HS resins, filament application	CR/HS manual	42.0
4. non-CR/HS resins, filament application	a. non-CR/HS mechanical	[3]45.0
	b. non-CR/HS manual	45.0
	c. non-CR/HS centrifugal casting [1] [2]	45.0
5. non-CR/HS resins, nonatomized mechanical	a. non-CR/HS manual	38.5
	b. non-CR/HS centrifugal casting [1] [2]	38.5
6. non-CR/HS resins, centrifugal casting [1] [2]	non-CR/HS manual	37.5
7. tooling resins, nonatomized mechanical	tooling manual	91.4
8. tooling resins, manual	tooling atomized mechanical	45.9

[1] If the centrifugal casting operation blows heated air through the molds, then 95 percent capture and control must be used if the facility wishes to use this compliance option.

[2] If the centrifugal casting molds are not vented, the facility may treat the centrifugal casting operations as if they were vented if they wish to use this compliance option.

[3] Nonatomized mechanical application must be used.

Table 8 to Subpart WWWW of Part 63 - Initial Compliance With organic HAP Emissions Limits

As specified in §63.5860(a), you must demonstrate initial compliance with organic HAP emissions limits as specified in the following table:

For ...	That must meet the following organic HAP emissions limit...	You have demonstrated initial compliance if...
1. open molding and centrifugal casting operations	a. an organic HAP emissions limit shown in Tables 3 or 5 to this subpart, or an organic HAP content limit shown in Table 7 to this subpart	i. you have met the appropriate organic HAP emissions limits for these operations as calculated using the procedures in §63.5810 on a 12-month rolling average 1 year after the appropriate compliance date, and/or ii. you demonstrate that any individual resins or gel coats not included in (I) above, as applied, meet their applicable emission limits, or iii. you demonstrate using the appropriate values in Table 7 to this subpart that the weighted average of all resins and gel coats for each resin type and application method meet the appropriate organic HAP contents.
2. open molding, centrifugal casting, continuous lamination/ casting, SMC and BMC manufacturing, and mixing operations	a. reduce total organic HAP emissions by at least 95 percent by weight	total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency testing specified in Table 6 to this subpart, are reduced by at least 95 percent by weight.
3.continuous lamination/ casting operations	a. reduce total organic HAP emissions by at least 58.5 weight percent, or b. not exceed an organic HAP emissions limit of 15.7 lbs of organic HAP per ton of neat resin plus and neat gel coat plus	total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency in Table 6 to this subpart and the calculation procedures specified in §§63.5865 through 63.5890, are reduced by at least 58.5 percent by weight. total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency testing specified in Table 6 to this subpart and the calculation procedures specified in §§63.5865 through 63.5890, do not exceed 15.7 lbs of organic HAP per ton of neat resin plus and neat gel coat plus.

4.continuous lamination/ casting operations	a. reduce total organic HAP emissions by at least 95 weight percent or b. not exceed an organic HAP emissions limit of 1.47 lbs of organic HAP per ton of neat resin plus and neat gel coat plus	total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency testing specified in Table 6 to this subpart and the calculation procedures specified in §§63.5865 through 63.5890, are reduced by at least 95 percent by weight. total organic HAP emissions, based on the results of the capture efficiency and destruction efficiency testing specified in Table 6 and the calculation procedures specified in §§63.5865 through 63.5890, do not exceed 1.47 lbs of organic HAP per ton of neat resin plus and neat gel coat plus.
5.pultrusion operations	a. reduce total organic HAP emissions by at least 60 percent by weight	i. total organic HAP emissions, based on the results of the capture efficiency and add-on control device destruction efficiency testing specified in Table 6 to this subpart, are reduced by at least 60 percent by weight, and/or ii. as part of the notification of initial compliance status, the owner/operator submits a certified statement that all pultrusion lines not controlled with an add-on control device, but for which an emission reduction is being claimed, are using direct die injection, and/or wet-area enclosures that meet the criteria of §63.5830.
6.pultrusion operations	a. reduce total organic HAP emissions by at least 95 percent by weight	i. total organic HAP emissions, based on the results of the capture efficiency and add-on control device destruction efficiency testing specified in Table 6 to this subpart, are reduced by at least 95 percent by weight.

Table 9 to Subpart WWWW of Part 63. Initial Compliance With Work Practice Standards

As specified in §63.5860(a), you must demonstrate initial compliance with work practice standards as specified in the following table:

For ...	That must meet the following standard...	You have demonstrated initial compliance if...
1. a new or existing closed molding operation using compression/injection molding	uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting.	the owner or operator submits a certified statement in the notice of compliance status that only one charge is uncovered, unwrapped or exposed per mold cycle per compression/injection molding machine, or prior to the loader, hoppers are closed except when adding materials, and materials are recovered after slitting.
2. a new or existing cleaning operation	not use cleaning solvents that contain HAP, except that styrene may be used in closed systems, and organic HAP containing materials may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin between storage and applying resin to the mold or reinforcement.	the owner or operator submits a certified statement in the notice of compliance status that all cleaning materials, except styrene contained in closed systems, or materials used to clean cured resin from application equipment, contain no HAP.
3. a new or existing materials HAP-containing materials storage operation	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.	the owner or operator submits a certified statement in the notice of compliance status that all HAP-containing storage containers are kept closed or covered except when adding or removing materials, and that any bulk storage tanks are vented only as necessary for safety.

4. an existing or new SMC manufacturing operation	close or cover the resin delivery system to the doctor box on each SMC manufacturing machine. The doctor box itself may be open.	the owner or operator submits a certified statement in the notice of compliance status that the resin delivery system is closed or covered.
5. an existing or new SMC manufacturing operation	use a nylon containing film to enclose SMC.	the owner or operator submits a certified statement in the notice of compliance status that a nylon-containing film is used to enclose SMC.
6. an existing or new mixing or BMC manufacturing operation	use mixer covers with no visible gaps present in the mixer covers, except that gaps of up to 1 inch are permissible around mixer shafts and any required instrumentation.	the owner or operator submits a certified statement in the notice of compliance status that mixer covers are closed during mixing except when adding materials to the mixers, and that gaps around mixer shafts and required instrumentation are less than 1 inch.
7. an existing mixing or BMC manufacturing operation	not actively vent mixers to the atmosphere while the mixing agitator is turning, except that venting is allowed during addition of materials, or as necessary prior to adding materials for safety.	the owner or operator submits a certified statement in the notice of compliance status that mixers are not actively vented to the atmosphere when the agitator is turning except when adding materials or as necessary for safety.
8. a new or existing mixing or BMC manufacturing operation	keep the mixer covers closed during mixing except when adding materials to the mixing vessels.	the owner or operator submits a certified statement in the notice of compliance status that mixers closed except when adding materials to the mixing vessels.

9. a new or existing pultrusion operation manufacturing parts with 1000 or more reinforcements and a cross section area of 60 square inches or more that is not subject to the 95 percent organic HAP emission reduction requirement	i. not allow vents from the building ventilation system, or local or portable fans to blow directly on or across the wet-out area(s), ii. not permit point suction of ambient air in the wet-out area(s) unless that air is directed to a control device, iii. use devices such as deflectors, baffles, and curtains when practical to reduce air flow velocity across the wet-out area(s), iv. direct any compressed air exhausts away from resin and wet-out area(s), v. convey resin collected from drip-off pans or other devices to reservoirs, tanks, or sumps via covered troughs, pipes, or other covered conveyance that shields the resin from the ambient air, vi. cover all reservoirs, tanks, sumps, or HAP-containing materials storage vessels except when they are being charged or filled, and vii. cover or shield from ambient air resin delivery systems to the wet-out area(s) from reservoirs, tanks, or sumps where practical.	the owner or operator submits a certified statement in the notice of compliance status that they have complied with all the requirements listed in 9.i through 9.vii.

Table 10 to Subpart WWWW of Part 63 - Data Requirements for New and Existing Continuous Lamination Lines and Continuous Casting Lines Complying with a Percent Reduction Limit on a Per Line Basis

As required in §63.5865(a), in order to comply with a percent reduction limit for continuous lamination lines and continuous casting lines you must determine the data in the following table:

For each line where the wet-out area...	And the oven...	You must determine...
1. has an enclosure that is not a permanent total enclosure (PTE) and the captured organic HAP emissions are controlled by an add-on control device	a. is uncontrolled	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual controlled wet-out area organic HAP emissions, iii. annual uncontrolled oven organic HAP emissions, iv the capture efficiency of the wet-out area enclosure, v. the destruction efficiency of the add-on control device, and vi. the amount of neat resin plus and neat gel coat plus applied.
2. has an enclosure that is a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. is uncontrolled	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual controlled wet-out area organic HAP emissions, iii. annual uncontrolled oven organic HAP emissions, iv. that the wet-out area enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE, v. the destruction efficiency of the add-on control device, and vi. the amount of neat resin plus and neat gel coat plus applied.
3. is uncontrolled	a. is controlled by an add-on control device	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual uncontrolled oven organic HAP emissions, iii. annual controlled oven organic HAP emissions, iv. the capture efficiency of the oven, v. the destruction efficiency of the add-on control device, and vi. the amount of neat resin plus and neat gel coat plus applied.

4. has an enclosure that is not a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. is controlled by an add-on control device	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual controlled wet-out area organic HAP emissions, iii. annual uncontrolled oven organic HAP emissions, iv. annual controlled oven organic HAP emissions; v. the capture efficiency of the wet-out area enclosure, vi. inlet organic HAP emissions to the add-on control device, vii. outlet organic HAP emissions from the add-on control device, and viii. the amount of neat resin plus and neat gel coat plus applied.
5. has an enclosure that is a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. is controlled by an add-on control device	i. that the wet-out area enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE, ii. the capture efficiency of the oven, and iii. the destruction efficiency of the add-on control device.

Table 11 to Subpart WWWW of Part 63 - Data Requirements for New and Existing Continuous Lamination and Continuous Casting Lines Complying with a Percent Reduction Limit or a Lbs/Ton Limit on an Averaging Basis

As required in §63.5865, in order to comply with a percent reduction limit or a lbs/ton limit on an averaging basis for continuous lamination lines and continuous casting lines you must determine the data in the following table:

For each ...	That ...	You must determine ...
1. wet-out area	is uncontrolled	annual uncontrolled wet-out area organic HAP emissions.
2. wet-out area	a. has an enclosure that is not a PTE	i. the capture efficiency of the enclosure, and ii. annual organic HAP emissions that escape the enclosure.
3. wet-out area	has an enclosure that is a PTE	that the enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE.
4. oven	is uncontrolled	annual uncontrolled oven organic HAP emissions.
5. line	a. is controlled or uncontrolled	i. the amount of neat resin plus applied, and ii. the amount of neat gel coat plus applied.

6. add-on control device	i. total annual inlet organic HAP emissions, and total annual outlet organic HAP emissions.

Table 12 to Subpart WWWW of Part 63. Data Requirements for New and Existing Continuous Lamination Lines and Continuous Casting Lines Complying with a Lbs/Ton Organic HAP Emissions Limit on a Per Line Basis

As required in §63.5865(b), in order to comply with a lbs/ton organic HAP emissions limit for continuous lamination lines and continuous casting lines you must determine the data in the following table:

For each line where the wet-out area ...	And the oven ...	You must determine ...
1. is uncontrolled	a. is uncontrolled	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual uncontrolled oven organic HAP emissions, and iii. annual neat resin plus and neat gel coat plus applied.
2. has an enclosure that is not a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. is uncontrolled	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual controlled wet-out area organic HAP emissions, iii. annual uncontrolled oven organic HAP emissions, iv. the capture efficiency of the wet-out area enclosure, v. the destruction efficiency of the add-on control device, and vi. the amount of neat resin plus and neat gel coat plus applied.
3. has an enclosure that is a PTE, and the captured organic HAP emissions are controlled by an add-on control device	a. is uncontrolled	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual controlled wet-out area organic HAP emissions, iii. annual uncontrolled oven organic HAP emissions, iv. that the wet-out area enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE, v. the destruction efficiency of the add-on control device, and vi. the amount of neat resin plus and neat gel coat plus applied.

4. is uncontrolled	a. is controlled by an add-on control device	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual uncontrolled oven organic HAP emissions, iii. annual controlled oven organic HAP emissions, iv. the capture efficiency of the oven, v. the destruction efficiency of the add-on control device, and vi. the amount of neat resin plus and neat gel coat plus applied.
5. has an enclosure that is not a PTE and the captured organic HAP emissions are controlled by an add-on control device	a. is controlled by an add-on control device	i. annual uncontrolled wet-out area organic HAP emissions, ii. annual controlled wet-out area organic HAP emissions, iii. annual uncontrolled oven organic HAP emissions, iv. annual controlled oven organic HAP emissions, v. the capture efficiency of the wet-out area enclosure, vi. the capture efficiency of the oven, vii. the destruction efficiency of the add-on control device, and viii. the amount of neat resin plus and neat gel coat plus applied.
6. has an enclosure that is a PTE, and the captured organic HAP emissions are controlled by an add-on control device	a. is controlled by an add-on control device	i. that the wet-out area enclosure meets the requirements of EPA Method 204 of appendix M to 40 CFR part 51 for a PTE, ii. the capture efficiency of the oven, iii. inlet organic HAP emissions to the add-on control device, and iv. outlet organic HAP emissions from the add-on control device.

Table 13 to Subpart WWWW of Part 63. Applicability and Timing of Notifications

As required in §63.5905(a), you must determine the applicable notifications and submit them by the dates shown in the following table:

If your facility...	You must submit...	By this date.
1. is an existing source subject to this subpart	an Initial Notification containing the information specified in §63.9(b)(2)	no later than the dates specified in §63.9(b)(2).
2. is a new source subject to this subpart	the notifications specified in §63.9(b)(4) and (5)	no later than the dates specified §63.9(b)(4) and (5).
3. qualifies for a compliance extension as specified in §63.9(c)	a request for a compliance extension as specified in §63.9(c)	no later than the dates specified in §63.6(i).
4. is complying with organic HAP emissions limit averaging provisions	a Notification of Compliance Status as specified in §63.9(h)	no later than 1 year plus 30 days after your facility's compliance date.
5. is complying with organic HAP content limits, application equipment requirements, or organic HAP emissions limit other than organic HAP emissions limit averaging	a Notification of Compliance Status as specified in §63.9(h)	no later than 30 calendar days after your facility's compliance date.
6. is complying by using an add-on control device	a. a notification of intent to conduct a performance test as specified in §63.9(e)	no later than the date specified in §63.9(e).

	b. a notification of the date for the CMS performance evaluation as specified in §63.9(g)	the date of submission of notification of intent to conduct a performance test.
	c. a Notification of Compliance Status as specified in §63.9(h)	no later than 60 calendar days after the completion of the add-on control device performance test and CMS performance evaluation.

Table 14 to Subpart WWWW of Part 63 - Requirements for Reports

As required in §63.5910(a), (b), (g), and (h), you must submit reports on the schedule shown in the following table:

You must submit a(n)	The report must contain...	You must submit the report...
1. compliance report	a. a statement that there were no deviations during that reporting period if there were no deviations from any emission limitations (emission limit, operating limit, opacity limit, and visible emission limit) that apply to you and there were no deviations from the requirements for work practice standards in Table 4 to this subpart that apply to you. If there were no periods during which the CMS, including CEMS, and operating parameter monitoring systems, was out of control as specified in §63.8(c)(7), the report must also contain a statement that there were no periods during which the CMS was out of control during the reporting period.	semiannually according to the requirements in §63.5910(b).
	b. the information in §63.5910(d) if you have a deviation from any emission limitation (emission limit, operating limit, or work practice standard) during the reporting period. If there were periods during which the CMS, including CEMS, and operating parameter monitoring systems, was out of control, as specified in §63.8(c)(7), the report must contain the information in §63.5910(e).	semiannually according to the requirements in §63.5910(b).
	c. the information in §63.10(d)(5)(i) if you had a startup, shutdown or malfunction during the reporting period, and you took actions consistent with your startup, shutdown, and malfunction plan.	semiannually according to the requirements in §63.5910(b).

2. an immediate startup, shutdown, and malfunction report if you had a startup, shutdown, or malfunction during the reporting period that is not consistent with your startup, shutdown, and malfunction plan	a. actions taken for the event.	by fax or telephone within 2 working days after starting actions inconsistent with the plan.
	b. the information in §63.10(d)(5)(ii).	by letter within 7 working days after the end of the event unless you have made alternative arrangements with the permitting authority. (§63.10(d)(5)(ii)).

Table 15 to Subpart WWWW of Part 63 - Applicability of General Provisions (Subpart A) to Subpart WWWW of Part 63

As specified in §63.5925, the parts of the General Provisions which apply to you are shown in the following table:

The general provisions reference...	That addresses...	And applies to subpart WWWW of Part 63...	Subject to the following additional information...
§63.1(a)(1)	General applicability of the general provisions	Yes	Additional terms defined in subpart WWWW of Part 63, when overlap between subparts A and WWWW of Part 63 of this part, subpart WWWW of Part 63 takes precedence.
§63.1(a)(2) through (4)	General applicability of the general provisions	Yes	
§63.1(a)(5)	Reserved	No	
§63.1(a)(6)	General applicability of the general provisions	Yes	
§63.1(a)(7) through (9)	Reserved	No	
§63.1(a)(10) through (14)	General applicability of the general provisions	Yes	
§63.1(b)(1)	Initial applicability determination	Yes	Subpart WWWW of Part 63 clarifies the applicability in §§63.5780 and 63.5785.
§63.1(b)(2)	Reserved	No	
§63.1(b)(3)	Record of the applicability determination	Yes	
§63.1(c)(1)	Applicability of this part after a relevant standard has been set under this part	Yes	Subpart WWWW of Part 63 clarifies the applicability of each paragraph of subpart A to sources subject to subpart WWWW of Part 63.

§63.1(c)(2)	Title V operating permit requirement	Yes	All major affected sources are required to obtain a title V operating permit. Area sources are not subject to subpart WWWW of Part 63.
§63.1(c)(3) and (4)	Reserved	No	
§63.1(c)(5)	Notification requirements for an area source that increases HAP emissions to major source levels	Yes	
§63.1(d)	Reserved	No	
§63.1(e)	Applicability of permit program before a relevant standard has been set under this part	Yes	
§63.2	Definitions	Yes	Subpart WWWW of Part 63 defines terms in §63.5935. When overlap between subparts A and WWWW of Part 63 occurs, you must comply with the subpart WWWW of Part 63 definitions, which take precedence over the subpart A definitions.
§63.3	Units and abbreviations	Yes	Other units and abbreviations used in subpart WWWW of Part 63 are defined in subpart WWWW of Part 63.
§63.4	Prohibited activities and circumvention	Yes	§63.4(a)(3) through (5) is reserved and does not apply.
§63.5(a)(1) and (2)	Applicability of construction and reconstruction	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(b)(1)	Relevant standards for new sources upon construction	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.

§63.5(b)(2)	Reserved	No	
§63.5(b)(3)	New construction/ reconstruction	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(b)(4)	Construction/ reconstruction notification	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(b)(5)	Reserved	No	
§63.5(b)(6)	Equipment addition or process change	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(c)	Reserved	No	
§63.5(d)(1)	General application for approval of construction or reconstruction	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.5(d)(2)	Application for approval of construction	Yes	
§63.5(d)(3)	Application for approval of reconstruction	No	
§63.5(d)(4)	Additional information	Yes	
§63.5(e)(1) through (5)	Approval of construction or reconstruction	Yes	
§63.5(f)(1) and (2)	Approval of construction or reconstruction based on prior State preconstruction review	Yes	
§63.6(a)(1)	Applicability of compliance with standards and maintenance requirements	Yes	

§63.6(a)(2)	Applicability of area sources that increase HAP emissions to become major sources	Yes	
§63.6(b)(1) through (5)	Compliance dates for new and reconstructed sources	Yes	Subpart WWWW of Part 63 clarifies compliance dates in §63.5800.
§63.6(b)(6)	Reserved	No	
§63.6(b)(7)	Compliance dates for new operations or equipment that cause an area source to become a major source	Yes	New operations at an existing facility are not subject to new source standards.
§63.6(c)(1) and (2)	Compliance dates for existing sources	Yes	Subpart WWWW of Part 63 clarifies compliance dates in §63.5800.
§63.6(c)(3) and (4)	Reserved	No	
§63.6(c)(5)	Compliance dates for existing area sources that become major	Yes	Subpart WWWW of Part 63 clarifies compliance dates in §63.5800.
§63.6(d)	Reserved	No	
§63.6(e)(1) and (2)	Operation & maintenance requirements	Yes	
§63.6(e)(3)	Startup, shutdown, and malfunction plan and recordkeeping	Yes	Subpart WWWW of Part 63 requires a startup, shutdown, and malfunction plan only for sources using add-on controls.

§63.6(f)(1)	Compliance except during periods of startup, shutdown, and malfunction	No	Subpart WWWW of Part 63 requires compliance during periods of startup, shutdown, and malfunction, except startup, shutdown, and malfunctions for sources using add-on controls.
§63.6(f)(2) and (3)	Methods for determining compliance	Yes	
§63.6(g)(1) through (3)	Alternative standard	Yes	
§63.6(h)	Opacity and visible emission Standards	No	Subpart WWWW of Part 63 does not contain opacity or visible emission standards.
§63.6(i)(1) through (14)	Compliance extensions	Yes	
§63.6(i)(15)	Reserved	No	
§63.6(i)(16)	Compliance extensions	Yes	
§63.6(j)	Presidential compliance exemption	Yes	
§63.7(a)(1)	Applicability of performance testing requirements	Yes	
§63.7(a)(2)	Performance test dates	No	Subpart WWWW of Part 63 initial compliance requirements are in §63.5840.
§63.7(a)(3)	CAA Section 114 authority	Yes	
§63.7(b)(1)	Notification of performance test	Yes	

§63.7(b)(2)	Notification of rescheduled performance test	Yes	
§63.7(c)	Quality assurance program, including test plan	Yes	Except that the test plan must be submitted with the notification of the performance test.
§63.7(d)	Performance testing facilities	Yes	
§63.7(e)	Conditions for conducting performance tests	Yes	Performance test requirements are contained in §63.5850. Additional requirements for conducting performance tests for continuous lamination/casting are included in §63.5870.
§63.7(f)	Use of alternative test method	Yes	
§63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes	
§63.7(h)	Waiver of performance tests	Yes	
§63.8(a)(1) and (2)	Applicability of monitoring requirements	Yes	
§63.8(a)(3)	Reserved	No	
§63.8(a)(4)	Monitoring requirements when using flares	Yes	
§63.8(b)(1)	Conduct of monitoring exceptions	Yes	
§63.8(b)(2) and (3)	Multiple effluents and multiple monitoring systems	Yes	

§63.8(c)(1)	Compliance with CMS operation and maintenance requirements	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(c)(2) and (3)	Monitoring system installation	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(c)(4)	CMS requirements	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(c)(5)	Continuous Opacity Monitoring System (COMS) minimum procedures	No	Subpart WWWW of Part 63 does not contain opacity standards.
§63.8(c)(6) through (8)	CMS calibration and periods CMS is out of control	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(d)	CMS quality control program, including current test plan and all previous versions	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(1)	Performance evaluation of CMS	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(2)	Notification of performance evaluation	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(3) and (4)	CMS requirements/ alternatives	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.

§63.8(e)(5)(i)	Reporting performance evaluation results	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(e)(5)(ii)	Results of COMS performance evaluation	No	Subpart WWWW of Part 63 does not contain opacity standards.
§63.8(f)(1) through (3)	Use of an alternative monitoring method	Yes	
§63.8(f)(4)	Request to use an alternative monitoring method	Yes	
§63.8(f)(5)	Approval of request to use an alternative monitoring method	Yes	
§63.8(f)(6)	Request for alternative to relative accuracy test and associated records	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.8(g)(1) through (5)	Data reduction	Yes	
§63.9(a)(1) through (4)	Notification requirements and general information	Yes	
§63.9(b)(1)	Initial notification applicability	Yes	
§63.9(b)(2)	Notification for affected source with initial startup before effective date of standard	Yes	
§63.9(b)(3)	Reserved	No	

§63.9(b)(4)(i)	Notification for a new or reconstructed major affected source with initial startup after effective date for which an application for approval of construction or reconstruction is required	Yes	
§63.9(b)(4)(ii) through (iv)	Reserved	No	
§63.9(b)(4)(v)	Notification for a new or reconstructed major affected source with initial startup after effective date for which an application for approval of construction or reconstruction is required	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.9(b)(5)	Notification that you are subject to this subpart for new or reconstructed affected source with initial startup after effective date and for which an application for approval of construction or reconstruction is not required	Yes	Existing facilities do not become reconstructed under subpart WWWW of Part 63.
§63.9(c)	Request for compliance extension	Yes	

§63.9(d)	Notification of special compliance requirements for new source	Yes	
§63.9(e)	Notification of performance test	Yes	
§63.9(f)	Notification of opacity and visible emissions observations	No	Subpart WWWW of Part 63 does not contain opacity or visible emission standards.
§63.9(g)(1)	Additional notification requirements for sources using CMS	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.9(g)(2)	Notification of compliance with opacity emission standard	No	Subpart WWWW of Part 63 does not contain opacity emission standards.
§63.9(g)(3)	Notification that criterion to continue use of alternative to relative accuracy testing has been exceeded	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.9(h)(1) through (3)	Notification of compliance status	Yes	
§63.9(h)(4)	Reserved	No	
§63.9(h)(5) and (6)	Notification of compliance status	Yes	
§63.9(i)	Adjustment of submittal deadlines	Yes	
§63.9(j)	Change in information provided	Yes	

§63.10(a)	Applicability of recordkeeping and reporting	Yes	
§63.10(b)(1)	Records retention	Yes	
§63.10(b)(2) (i) through (v)	Records related to startup, shutdown, and malfunction	Yes	Only applies to facilities that use an add-on control device.
§63.10(b)(2) (vi) through (xi)	CMS records, data on performance tests, CMS performance evaluations, measurements necessary to determine conditions of performance tests, and performance evaluations	Yes	
§63.10(b)(2) (xii)	Record of waiver of recordkeeping and reporting	Yes	
§63.10(b)(2) (xiii)	Record for alternative to the relative accuracy test	Yes	
§63.10(b)(2)(xiv)	Records supporting initial notification and notification of compliance status	Yes	
§63.10(b)(3)	Records for applicability determinations	Yes	
§63.10(c)(1)	CMS records	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.

§63.10(c) (2) through (4)	Reserved	No	
§63.10(c) (5) through (8)	CMS records	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.10(c)(9)	Reserved	No	
§63.10(c) (10) through (15)	CMS records	Yes	This section applies if you elect to use a CMS to demonstrate continuous compliance with an emission limit.
§63.10(d)(1)	General reporting requirements	Yes	
§63.10(d)(2)	Report of performance test results	Yes	
§63.10(d)(3)	Reporting results of opacity or visible emission observations	No	Subpart WWWW of Part 63 does not contain opacity or visible emission standards.
§63.10(d)(4)	Progress reports as part of extension of compliance	Yes	
§63.10(d)(5)	Startup, shutdown, and malfunction reports	Yes	Only applies if you use an add-on control device.
§63.10(e) (1) through (3)	Additional reporting requirements for CMS	Yes	This section applies if you have an add-on control device and elect to use a CEM to demonstrate continuous compliance with an emission limit.
§63.10(e)(4)	Reporting COMS data	No	Subpart WWWW of Part 63 does not contain opacity standards.
§63.10(f)	Waiver for recordkeeping or reporting	Yes	

§63.11	Control device requirements	Yes	Only applies if you elect to use a flare as a control device.
§63.12	State authority and delegations	Yes	
§63.13	Addresses of State air pollution control agencies and EPA Regional Offices	Yes	
§63.14	Incorporations by reference	Yes	
§63.15	Availability of information and confidentiality	Yes	

APPENDIX A TO SUBPART WWWW - TEST METHODS

VAPOR SUPPRESSANT EFFECTIVENESS TEST PROTOCOL

1. Scope and Application

1.1 Applicability. If a facility is using vapor suppressants to reduce hazardous air pollutant (HAP) emissions, the organic HAP emission factor equations in Table 1 to this subpart require that the vapor suppressant effectiveness factor be determined. The vapor suppressant effectiveness factor is then used as one of the inputs into the appropriate organic HAP emission factor equation. The vapor suppressant effectiveness factor test is not intended to quantify overall volatile emissions from a resin, nor to be used as a stand-alone test for emissions determination. This test is designed to evaluate the performance of film forming vapor suppressant resin additives. The results of this test are used only in combination with the organic HAP emissions factor equations in Table 1 to this subpart to generate emission factors.

1.1.1 The open molding process consists of application of resin and reinforcements to the mold surface, followed by a manual rollout process to consolidate the laminate, and the curing stage where the laminate surface is not disturbed. Emission studies have shown that approximately 50 percent to 55 percent of the emissions occur while the resin is being applied to the mold. Vapor suppressants have little effect during this portion of the lamination process, but can have a significant effect during the curing stage. Therefore, if a suppressant is 100 percent effective, the overall emissions from the process would be reduced by 45 percent to 50 percent, representing the emissions generated during the curing stage. In actual practice, vapor suppressant effectiveness

will be less than 100 percent and the test results determine the specific effectiveness in terms of the vapor suppressant effectiveness factor. This factor represents the effectiveness of a specific combination of suppressant additive and resin formulation.

1.1.2 A resin manufacturer may supply a molder with a vapor-suppressed resin, and employ this test to provide the molder with the vapor suppressant effectiveness factor for that combination of resin and vapor suppressant. The factor qualifies the effectiveness of the vapor suppressant when the resin is tested in the specific formulation supplied to the molder. The addition of fillers or other diluents by the molder may impact the effectiveness of the vapor suppressant. The formulation, including resin/glass ratio and filler content, used in the test should be similar to the formulation to be used in production. The premise of this method is to compare laminate samples made with vapor suppressant additive and made without the additive. The difference in emissions between the two yields the vapor suppressant effectiveness factor.

1.1.3 The method uses a mass balance determination to establish the relative loss of the volatile component from unsaturated polyester or vinyl ester resins, with and without vapor suppressant additives. The effectiveness of a specific vapor suppressant and resin mixture is determined by comparing the relative volatile weight losses from vapor suppressed and non-suppressed resins. The volatile species are not separately analyzed. While the species contained in the volatile component are not determined, an extended listing of potential monomer that may be contained in unsaturated polyester or vinyl ester resins is provided in Table 1.1. However, most polyester and vinyl ester resin formulations presently used by the composites industry only contain styrene monomer.

Table 1.1 List of Monomers potentially present in unsaturated polyester/vinyl ester resins

Monomer	CAS Number
Styrene	100-42-5
Vinyl toluene	25013-15-4
Methyl methacrylate	80-62-6
Alpha methyl styrene	98-83-9
Para methyl styrene	Vinyl toluene isomer
Chlorostyrene	1331-28-8
Diallyl phthalate	131-17-9
Other volatile monomers	Various

2. Summary of Method

2.1 Differences in specific resin and suppressant additive chemistry affect the performance of a vapor suppressant. The purpose of this method is to quantify the effectiveness of a specific combination of vapor suppressant and unsaturated polyester or vinyl ester resin as they are to be used in production. This comparative test quantifies the loss of volatiles from a fiberglass reinforced laminate during the roll-out and curing emission phases, for resins formulated with and without a suppressant additive. A criterion for this method is the testing of a non-vapor suppressed resin system and testing the same resin with a vapor suppressant. The two resins are as identical as possible with the exception of the addition of the suppressant to one. The exact formulation used for the test will be determined by the in-use production requirements. Each formulation of resin, glass, fillers, and additives is developed to meet particular customer and or performance specifications.

2.2 The result of this test is used as an input factor in the organic HAP emissions factor equations in Table 1 to this subpart, which allows these equations to predict emissions from a specific combination of resin and suppressant. This test does not provide an emission rate for the entire lamination process.

3. Definitions and Acronyms

3.1 Definitions

3.1.1 Vapor suppressant. An additive that inhibits the evaporation of volatile components in unsaturated polyester or vinyl ester resins.

3.1.2 Unsaturated polyester resin. A thermosetting resin commonly used in composites molding.

3.1.3 Unsaturated vinyl ester resin. A thermosetting resin used in composites molding for corrosion resistant and high performance applications.

3.1.4 Laminate. A combination of fiber reinforcement and a thermoset resin.

3.1.5 Chopped strand mat. Glass fiber reinforcement with random fiber orientation.

3.1.6 Initiator. A curing agent added to an unsaturated polyester or vinyl ester resin.

3.1.7 Resin application roller. A tool used to saturate and compact a wet laminate.

3.1.8 Gel time. The time from the addition of initiator to a resin to the state of resin gelation.

3.1.9 Filled resin system. A resin, which includes the addition of inert organic or inorganic materials to modify the resin properties, extend the volume and to lower the cost. Fillers include, but are not limited to; mineral particulates; microspheres; or organic particulates. This test is not intended to be used to determine the vapor suppressant effectiveness of a filler.

3.1.10 Material safety data sheet. Data supplied by the manufacturer of a chemical product, listing hazardous chemical components, safety precautions, and required personal protection equipment for a specific product.

3.1.11 Tare(ed). Reset a balance to zero after a container or object is placed on the balance; that is to subtract the weight of a container or object from the balance reading so as to weigh only the material placed in the container or on the object.

3.1.12 Percent glass. The specified glass fiber weight content in a laminate. It is usually determined by engineering requirements for the laminate.

3.2 Acronyms

3.2.1 VS - vapor suppressed or vapor suppressant

3.2.2 NVS - non-vapor suppressed

3.2.3 VSE - vapor suppressant effectiveness

3.2.4 VSE Factor - vapor suppressant effectiveness factor used in the equations in Table 1 to this subpart

3.2.5 CSM - chopped strand mat

3.2.6 MSDS - material safety data sheet

4. Interferences

There are no identified interferences which affect the results of this test.

5. Safety

Standard laboratory safety procedures should be used when conducting this test. Refer to specific MSDS for handling precautions.

6. Equipment and Supplies

Note: Mention of trade names or specific products or suppliers does not constitute an endorsement by the Environmental Protection Agency.

6.1 Required Equipment

6.1.1 Balance enclosure[1]

6.1.2 Two (2) laboratory balances - accurate to ±0.01g[2]

6.1.3 Stop watch or balance data recording output to data logger with accuracy ±1 second[3]

6.1.4 Thermometer - accurate to ±2.0^{0}F(±1.0^{0}C)[4]

6.1.5 A lipped pan large enough to hold the cut glass without coming into contact with the vertical sides, e.g. a pizza pan[5]

6.1.6 Mylar film sufficient to cover the bottom of the pan[6]

6.1.7 Tape to keep the Mylar from shifting in the bottom of the pan.[7]

6.1.8 Plastic tri-corner beakers of equivalent - 250 ml to 400 ml capacity[8]

6.1.9 Eye dropper or pipette[9]

6.1.10 Disposable resin application roller, 3/16" - 3/4" diameter x 3" -6" roller length[10]

6.1.11 Hygrometer or psychrometer[11] accurate to ± 5percent

6.1.12 Insulating board, (Teflon, cardboard, foam board etc.) to prevent the balance from becoming a heat sink.[12]

6.2 Optional Equipment

6.2.1 Laboratory balance - accurate to ±.01g with digital output, such as an RS-232 bi-directional interface[13] for use with automatic data recording devices.

6.2.2 Computer with recording software configured to link to balance digital output. Must be programmed to record data at the minimum intervals required for manual data acquisition.

6.3 Supplies

6.3.1 Chopped strand mat - 1.5 oz/ft^2 [14]

7. Reagents and Standards

7.1 Initiator. The initiator type, brand, and concentration will be specified by resin manufacturer, or as required by production operation.

7.2 Polyester or vinyl ester resin

7.3 Vapor suppressant additive

8. Sample Collection, Preservation, and Storage

This test method involves the immediate recording of data during the roll out and curing phases of the lamination process during each test run. Samples are neither collected, preserved, nor stored.

9. Quality Control

Careful attention to the prescribed test procedure, routing equipment calibration, and replicate testing are the quality control activities for this test method. Refer to the procedures in Section 11. A minimum of six test runs of a resin system without a suppressant and six test runs of the same resin with a suppressant shall be performed for each resin and suppressant test combination.

10. Calibration and Standardization

10.1 The laboratory balances, stopwatch, hygrometer and

thermometer shall be maintained in a state of calibration prior to testing and thereafter on a scheduled basis as determined by the testing laboratory. This shall be accomplished by using certified calibration standards.

10.2 Calibration records shall be maintained for a period of 3 years.

11. Test Procedure

11.1 Test Set-up

11.1.1 The laboratory balance is located in an enclosure to prevent fluctuations in balance readings due to localized air movement. The front of enclosure is open to permit work activity, but positioned so that local airflow will not effect balance readings. The ambient temperature is determined by suspending the thermometer at a point inside the enclosure.

11.1.2 The bottom of the aluminum pan is covered with the Mylar film. The film is held in position with tape or by friction between the pan and the film.

11.1.3 The resin and pan are brought to room temperature. This test temperature must be between 70^0F and 80^0F. The testing temperature cannot vary more than $\pm 2^0$F during the measurement of test runs. Temperature shall be recorded at the same time weight is recorded on suppressed and non-suppressed test data sheets, shown in Table 17.1.

11.1.4 The relative humidity may not change more than ±15percent during the test runs. This is determined by recording the relative humidity in the vicinity of the test chamber at the beginning and end of an individual test run. This data is recorded on the test data sheets shown in Table 17.1.

11.1.5 Two plies of nominal 1.5 oz/ft^2 chopped strand mat (CSM) are cut into a square or rectangle with the minimum surface area of 60 square inches (i.e. a square with a side dimension of 7.75 inches).

11.1.6 The appropriate resin application roller is readily available.

11.2 Resin Gel Time/Initiator Percentage

11.2.1 Previous testing has indicated that resin gel time influences the emissions from composite production. The testing indicated that longer the gel times led to higher emissions. There are a number of factors that influence gel time including initiator type, initiator brand, initiator level, temperature and resin additives. Under actual usage conditions a molder will adjust the initiator to meet a gel time requirement. In this test procedure, the vapor suppressed and non-vapor suppressed resin systems will be adjusted to the same gel time by selecting the appropriate initiator level for each.

11.2.2 All test runs within a test will be processed in a manner that produces the same resin gel time ± 2 minutes. To facilitate the resin mixing procedure, master batches of resin and resin plus vapor suppressant of resin are prepared. These resin master batches will have all of the required ingredients except initiator; this includes filler for filled systems. The gel times for the tests are conducted using the master batch and adjustments to meet gel time requirements shall be made to the master batch before emission testing is conducted. Test temperatures must be maintained within the required range, during gel time testing. Further gel time testing is not required after the non-vapor suppressed and vapor suppressed master batches are established with gel times within ± 2 minutes. A sufficient quantity of each resin should be prepared to allow

for additional test specimens in the event one or more test fails to meet the data acceptance criteria discussed in Section 11.5 and shown in Table 17.2.

11.2.3 The specific brand of initiator and the nominal percentage level recommended by the resin manufacturer will be indicated on the resin certificate of analysis[15]; or, if a unique gel time is required in a production laminate, initiator brand and percentage will be determined by that specific requirement.

11.2.4 Examples

11.2.4.1 The resin for a test run is specified as having a 15-minute cup gel time at 77^0F using Brand X initiator at 1.5 percent by weight. The non-suppressed control resin has a 15-minute gel time. The suppressed resin has a gel time of 17-minutes. An initiator level of 1.5 percent would be selected for the both the non-suppressed and the suppressed test samples.

11.2.4.2 Based on a specific production requirement, a resin is processed in production using 2.25 percent of Brand Y initiator, which produces a 20-minute gel time. This initiator at level of 2.25 percent produces a 20 minute gel time for the non-suppressed control resin, but yields a 25-minute gel time for the suppressed resin sample. The suppressed resin is retested at 2.50 percent initiator and produces a 21-minute gel time. The initiator levels of 2.25 percent and 2.50 percent respectively would yield gel times within ±2 minutes.

11.3 Test Run Procedure for Unfilled Resin (see the data sheet shown in Table 17.1).

11.3.1 The insulating board is placed on the balance.

11.3.2 The aluminum pan with attached Mylar film is placed on the balance, and the balance is tared (weight reading set to zero with the plate on the balance.)

11.3.3 Place two plies of 1.5 oz. CSM on the balance and record the weight (glass weight).

11.3.4 The resin beaker and stirring rod are put on the second balance and tared.

11.3.5 The required resin weight and initiator weight are calculated (refer to calculation formulas in 12.2).

11.3.6 The disposable resin application roller is placed on the edge of the plate.

11.3.7 The balance is tared, with the aluminum pan, Mylar film, glass mat, and resin application roller on the balance pan.

11.3.8 Resin is weighed into a beaker, as calculated, using the second balance. The mixing stick should be tared with the beaker weight.

11.3.9 Initiator is weighed into the resin, as calculated, using an eyedropper or a pipette, and the combination is mixed.

11.3.10 Initiated resin is poured on chopped strand mat in a pe-determined pattern (see Figure 11.6).

11.3.11 A stopwatch is started from zero.

11.3.12 The initial laminate weight is recorded.

11.3.13 The plate is removed from balance to enable roll-out of the laminate.

11.3.14 The wet laminate is rolled with the resin application roller to completely distribute the resin, saturate the chopped strand mat, and eliminate air voids. Roll-out time should be in the range of 2 to 3[16] minutes and vary less than ± 10 percent of the average time required for the complete set of six suppressed and six non-suppressed runs.

11.3.15 Record the rollout end time (time from start to completion of rollout).

11.3.16 Place the resin application roller on the edge of the plate when rollout is completed.

11.3.17 Place the plate back on the balance pan. Immediately record the weight.

11.3.18 For the first test in a series of six tests, weight is recorded every 5-minute interval (suppressed and non-suppressed). The end of the test occurs when three consecutive equal weights are recorded or a weight gain is observed (the last weight before the increased weight is the end of test weight). For the remaining five tests in the series, after the initial weights are taken, the next weight is recorded 30 minutes before the end of the test, as suggested by the results from the first test. It is likely that the time to reach the end point of a suppressed resin test will be shorter than the time required to complete a non-suppressed test. Therefore, the time to start taking data manually may be different for suppressed and non-suppressed resins.

11.4 Test Run Procedures for Filled Resin Systems[17]

Note that the procedure for filled systems differs from the procedure for unfilled systems. With filled systems, resin is applied to one ply of the CSM and the second ply is placed on top of the resin.

11.4.1 The insulating board is placed on the balance.

11.4.2 The aluminum pan with attached Mylar film is placed on the balance, and the balance is tared (weight reading set to zero with the plate on the balance.)

11.4.3 Place two plies of 1.5 oz. CSM on the balance and record the weight (glass weight).

11.4.4 Remove the top ply of fiberglass and record its weight (weight of 1st layer of glass).

11.4.5 The required resin weight and initiator weight are calculated (refer to calculation formulas in 12.2). Calculate the weight of filled resin and initiator based on the 2 layers of fiberglass.

11.4.6 The resin beaker and stirring rod are put on the second balance and tared.

11.4.7 A disposable resin application roller is placed on the edge of the plate.

11.4.8 The balance is tared, with the aluminum pan, Mylar film, glass mat, and resin application roller on the balance pan.

11.4.9 Resin is weighed into the beaker, as calculated, using the second balance. The mixing stick should be tared with the beaker weight.

11.4.10 Initiator is weighed into the resin, as calculated, using an eyedropper or a pipette, and the combination is mixed.

11.4.11 Initiated resin is poured on the single ply of CSM in a pre-determined pattern. Refer to Figure 11.6.

11.4.12 A stopwatch is started from zero.

11.4.13 Record the weight of the resin ans single ply of CSM (L_1). The initial laminate weight equals L_1 plus the weight of second glass layer.

11.4.14 Replace the second layer of fiberglass.

11.4.15 Remove the plate from the balance to allow roll-out of the laminate.

11.4.16 Roll the wet laminate with the resin application roller to completely distribute the resin, saturate the chopped strand mat, and eliminate air voids. Roll-out time should be in the range of 2 to 3[16] minutes and vary less than ± 10 percent of the average time required for the complete set of six suppressed and six non-suppressed runs.

11.4.17 Record the roll-out end time (time from start to completion of rollout).

11.4.18 Place the resin application roller on the edge of the plate when rollout is completed.

11.4.19 Place the plate back on the balance pan. The initial weight is recorded immediately.

11.4.20 For the first test run in a series of six, weight is recorded at every 5-minute interval (suppressed and non-suppressed). The end of the test occurs when three consecutive equal weights are recorded or a weight gain is observed (the last weight before the increased weight is the end of test weight). For the remaining five tests in the series, after the initial weights are taken, the next weight is recorded 30 minutes before the end of the test, as suggested by the results from the first test. It is likely that the time to reach the end point of a suppressed resin test will be shorter than the time required to complete a non-suppressed test. Therefore, the time to start taking data manually may be different for suppressed and non-suppressed resins.

11.5 Data Acceptance Criteria

11.5.1 A test set is designed as twelve individual test runs using the same resin, initiator, and gel time, six of the test runs use the resin non-vapor suppressed and the other six use it vapor suppressed.

11.5.2 If a test run falls outside any of the time, temperature, weight or humidity variation requirements, it must be discarded and run again.

11.5.3 The laminate roll out time for each individual test run must vary less than ± 10 percent of the average time required for the complete set of six suppressed and six non-suppressed runs.

11.5.4 Test temperature for each test run must be maintained within ±2^{0}F and the average must be between 70^0 and 80^0 F. Refer to 11.1.3.

11.5.5 The difference in the amount of resin for each run must be within ±10 percent of the average weight for the complete set of six suppressed and six non-suppressed runs.

11.5.6 The relative humidity from each test run must be within ±15 percent of the average humidity for the complete set of six suppressed and six non-suppressed tests. Refer to 11.1.4

11.5.7 The glass content for each test set must be within ±10 percent of the average resin-to-/glass ratio for the complete set of six suppressed and six non-suppressed runs. Refer to 12.2).

11.5.8 The filler content for each test of a test set must be within ±5 percent of the average filler content for the complete set of six suppressed and six non-suppressed runs. Refer to 12.2.

11.6 Resin Application Pour Pattern

11.6.1 To facilitate the distribution of resin across the chopped strand mat, and to provide consistency from test to test, a uniform pour pattern should be used. A typical pour pattern is shown below:

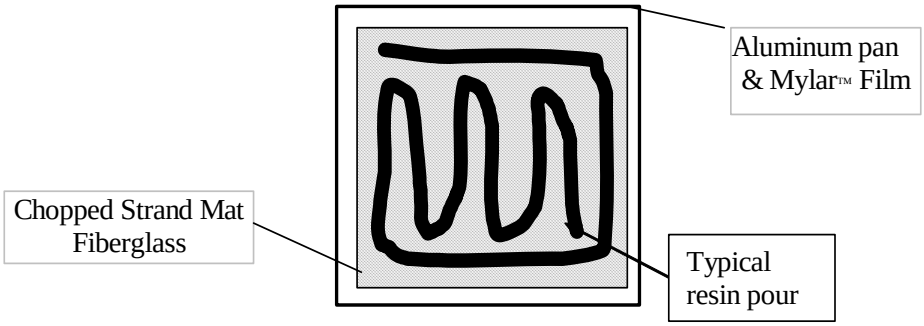

Figure 11.6 Resin Distribution Diagram

11.6.2 The resin is to be evenly distributed across the entire surface of the chopped strand mat using the resin application roller to achieve a wet look across the surface of the laminate. Pushing excess resin off the reinforcement and onto the Mylar sheet should be avoided. No resin is to be pushed more than ½ inch beyond the edge of the glass mat. If excess resin is pushed further from the glass mat, it will void the test run. As part of this process, typical visible air voids are to be eliminated by the rollout process. If the pour pattern is different from the above, it must be recorded and attached to test data sheet 17.1.

12. Data Analysis and Calculations

12.1 Data Analysis

This test method requires a simple mass balance calculation, no special data analysis is necessary.

12.2 Calculations

12.2.1 The target glass content (percent) for unfilled resin systems is determined from the specific production parameters being evaluated. In absence of any specific production requirements the target may be set at the tester's discretion.

12.2.2 Glass content determination (expressed as a per cent):

% Glass = Glass wt(g)/(Glass wt(g) + Resin weight (g))

12.2.3 Weight of resin required:

Resin weight required = (Glass wt (g)/% glass)-Glass wt (g)

12.2.4 Filled resin formulation determination for filled resin systems (e.g.>30 percent filler by weight for a particulate filler, or >1 percent by weight for a lightweight filler, such as hollow microspheres):

% Resin content = resin weight(g)/(resin weight(g) + glass weight(g) + filler weight(g))

% Glass content = glass weight(g)/(resin weight(g) +glass weight(g) + filler weight(g))

Filler content = filler weight(g)/(resin weight(g) + glass weight(g) + filler weight(g))

12.2.5 Initiator weight determination:

Initiator weight (g) = Resin weight(g) x Initiator %

12.2.6 Emission weight loss determination:

Emissions weight loss(g) = Initial resin weight(g) - Final resin weight (g)

12.2.7 % Emission weight loss:

% Emission Weight Loss = (Emission weight loss(g) ÷ Initial resin weight(g) X 100

12.2.8 Average % Emission Weight Loss (assuming six test runs):

$$\text{Average \% Emission Weight Loss} = \sum_{i}^{N=6}(\text{\% Emission Weight Loss}_i)/6$$

12.2.9 VSE Factor calculation:

VSE Factor = 1 -(Average % VS Emission Weight Loss/Average NVS Emission Weight Loss)

Table 12.1 Example Calculation

Test #	% VS Weight Loss	% NVS Weight Loss
1	6.87	10.86

2	6.76	11.23
3	5.80	12.02
4	5.34	11.70
5	6.11	11.91
6	6.61	10.63
Average Weight Loss	6.25	11.39
	VSE Factor	0.4

VSE Factor = 0.45

VSE Factor is used as input into the appropriate equation in Table 1 to this subpart.

Example from Table 1 to this subpart:

Manual Resin Application, 35 percent HAP resin, VSE Factor of 0.45

HAP Emissions with vapor suppresants = ((0.286 x %HAP)-0.0529) x 2000 x (1-(0.5 x VSE factor))

HAP Emissions with vapor suppresants = ((0.286 x .35)-0.0529) x 2000 x (1-(0.5 x .45))

HAP Emissions with vapor suppresants = 73 pounds of HAP emissions per ton of resin.

13. Method Performance

13.1 Bias

The bias of this test method has not been determined.

13.2 Precision Testing

13.2.1 Subsequent to the initial development of this test protocol by the Composites Fabricators Association, a series of tests were conducted in three different laboratory facilities. The purpose of this round robin testing was to verify the precision of the test method in various laboratories. Each laboratory received a sample of an orthophthalic

polyester resin from the same production batch, containing 48 per cent styrene by weight. Each testing site was also provided with the same vapor suppressant additive. The suppressant manufacturer specified the percentage level of suppressant additive. The resin manufacturer specified the type and level of initiator required to produce a 20 minute gel time. The target glass content was 30percent by weight.

13.2.2 Each laboratory independently conducted the VSE test according to this method. A summary of the results is included in Table 13.1.

TABLE 13.1 Round Robin Testing Results

	Test Lab 1		Test Lab 2		Test Lab 3	
	NVS	VS	NVS	VS	NVS	VS
Average percent WT Loss	4.24	1.15	4.69	1.84	5.73	1.61
Standard Deviation	0.095	0.060	0.002	0.002	0.020	0.003
VSE Factor		0.730		0.607		0.720

13.3 Comparison to EPA Reference Methods

This test has no corresponding EPA reference method.

14. Pollution Prevention

The sample size used in this method produces a negligible emission of HAP, and has an insignificant impact upon the atmosphere.

15. Waste Management

The spent and waste materials generated during this test are disposed according to required facility procedures, and waste management recommendations on the corresponding material safety data sheets.

16. References and footnotes

16.1 Footnotes

[1] Balance Enclosure - The purpose of the balance enclosure is to prevent localized airflow from adversely affecting the laboratory balance. The enclosure may be a simple three-sided box with a top and an open face. The configuration of the enclosure is secondary to the purpose of providing a stable and steady balance reading, free from the effects of airflow, for accurate measurements. The enclosure can be fabricated locally. A typical enclosure is shown in Figure 17.1.

[2] Laboratory Balance - Ohaus Precision Standard Series P/N TS400D or equivalent - Paul N. Gardner Co. 316 NE 1st St. Pompano Beach, FL 33060 or other suppliers.

[3] Stop Watch - Local supply.

[4] Thermometer - Mercury thermometer - ASTM No. 21C or equivalent; Digital thermometer - P/N TH-33033 or equivalent - Paul N. Gardner Co. 316 NE 1st St. Pompano Beach, FL 33060 or other suppliers.

[5] Aluminum Pan - Local supply.

[6] Mylar - Local supply.

[7] Double Sided Tape - 3M Double Stick Tape or equivalent, local supply.

[8] Laboratory Beakers - 250 to 400ml capacity - Local laboratory supply.

[9] Eye Dropper or Pipette - Local laboratory supply.

[10] Disposable Resin Application Roller Source - Wire Handle Roller P/N 205-050-300 or Plastic Handle Roller P/N 215-050-300 or equivalent; ES Manufacturing Inc., 2500 26st Ave. North, St. Petersburg, FL 33713, www.esmfg.com, or other source. Refer to Figure 17.3.

[11] Hygrometer or Psychrometer - Model# THWD-1, or equivalent - Part # 975765 by Amprobe Instrument, 630 Merrick Road, P.O. Box 329, Lynbrook, NY 11563 516-593-5600

[12] Insulating Board (Teflon, cardboard, foam board etc.) - Local supply.

[13] Laboratory Balance With Digital Output - Ohaus Precision Standard Series P/N TS120S or equivalent - Paul N. Gardner Co. 316 NE 1st St. Pompano Beach, FL 33060 or other suppliers.

[14] Chopped Strand Mat - 1.5 oz/ft^2 Sources: Owens Corning Fiberglas - Fiberglas M-723; PPG Industries - ABM HTX; Vetrotex America - M-127 or equivalent.

[15] Certificate of Analysis: Resin gel time, as recorded on the resin certificate of analysis, is measured using a laboratory standard gel time procedure. This procedure typically uses a 100 gram cup sample at 77^{0}F (25^{0}C), a specific type of initiator and a specified percentage.

[16] Roll-out times may vary with resin viscosity or resin additive. The important aspect of this step is to produce the same roll-out time for both the suppressed and non-suppressed samples.

[17] While this test can be used with filled resin systems, the test is not designed to determine the effect of the filler on emissions, but rather to measure the effect of the suppressant additive in the resin system. When evaluating a filled system both the non-vapor suppressed and vapor suppressed samples should be formulated with the same type and level of filler.

16.2 References

1. Phase 1 - Baseline Study Hand Lay-up, CFA, 1996

2. CFA Vapor Suppressant Effectiveness Test Development, 4/3/98, correspondence with Dr. Madeleine Strum, EPA, OAQPS

3. CFA Vapor Suppressant Effectiveness Screening Tests, 4/4/98

4. Styrene Suppressant Systems Study, Reichhold Chemical, 11/30/98

5. Evaluation of the CFA's New Proposed Vapor Suppressant Effectiveness Test, Technical Service Request #: ED-01-98, BYK Chemie, 6/3/98

6. Second Evaluation of the CFA's New Proposed Vapor Suppressant Effectiveness Test, Technical Service Request #: ED-02-98, BYK Chemie, 1/26/99

17. Data Sheets and Figures

17.1 This data sheet, or a similar data sheet, is used to record the test data for filled, unfilled, suppressed and non-suppressed tests. If additional time is required, the data sheet may be extended.

Table 17.1 Test Data Sheet

Test Number			Test Type		
			VS (_____)		NVS (____)
Resin			Filled (____)		Unfilled (___)
Initiator				Initiator, %	_____
Vapor Suppressant				VS, %	_____
Weight of 2 layers of glass, g	_____	Weight of 1st glass layer, g	_____	Weight of 2nd glass layer, g	_____
Initial Resin Weight,(g)			Time (Min.)	Weight g	Temp ^{0}F

Glass content, (%)			55		
Initial Temperature ^{0}F:			60		
Initial Humidity %			65		
Resin Initiator Level,%			70		
Resin gel time, (min.)			75		
Resin filler content, %			80		
Roll out time, (min.)			85		
Time, (min.)	Weight, g	Temp, ^{0}F	90		
Initial			95		
			100		
0			105		
5			110		
10			115		
15			120		
20			125		
25			130		
30			135		
35			140		
40			145		
45			150		
50			155		
Final Time, min.	Final Weight, g.		Final Temp, ^{0}F	Final Humidity, %	

17.2 Data Acceptance Criteria Worksheet

The following worksheet is used to determine the quality of collected data (i.e.

insure the data collected all meets acceptance criteria)

Table 17.2. Data Acceptance Criteria Worksheet

Test No.	**Temperature**			**Laminate Roll Out Time, Min**	**Relative Humidity, %**		**Resin Weight, (g)**	**Glass Content, %**	**Resin Distribution**	**Meets Criteria Y/N**
	Min	**Max**	**Delta**		**Initial**	**Final**				
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
Average										
Criteria			**± 2^0F**	**±10% of Average**	**± 15 of Average**		**± 10% of Avg.**	**± 10% of Avg.**	**<½ inch off mat**	**All Y**

17.3 VSE Factor Calculation

Table 17.3 Calculations Worksheet

Vapor Suppressed		Non-Vapor Suppressed	
Test #	% Weight Loss	Test #	% Weight Loss
Average Weight Loss			
VSE Factor			

VSE Factor = 1-(% Average Weight $Loss_{VS}$/ % Average Weight $Loss_{NVS}$)

17.4 Figures

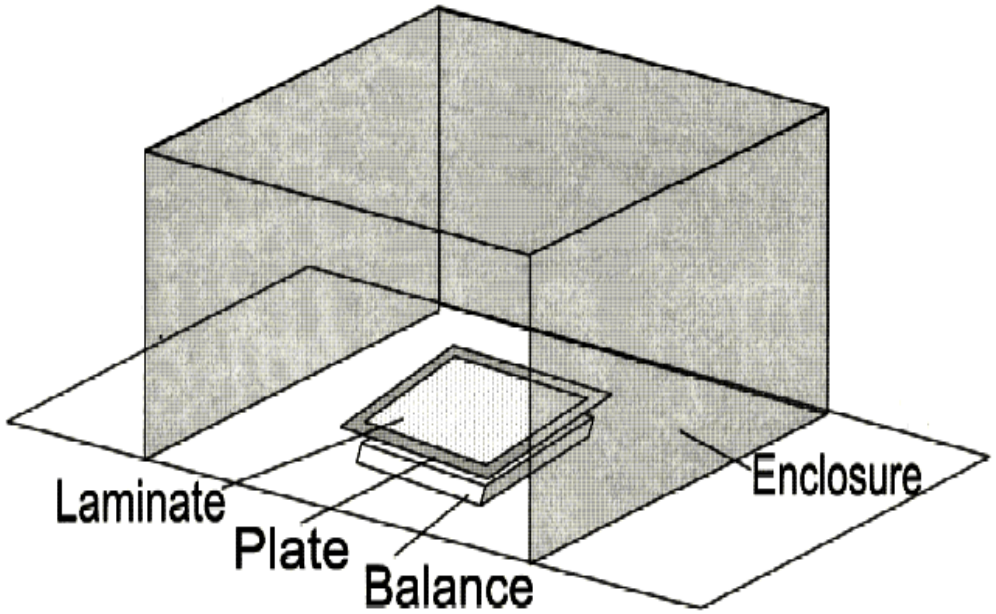

Figure 17.1 Typical Balance Enclosure

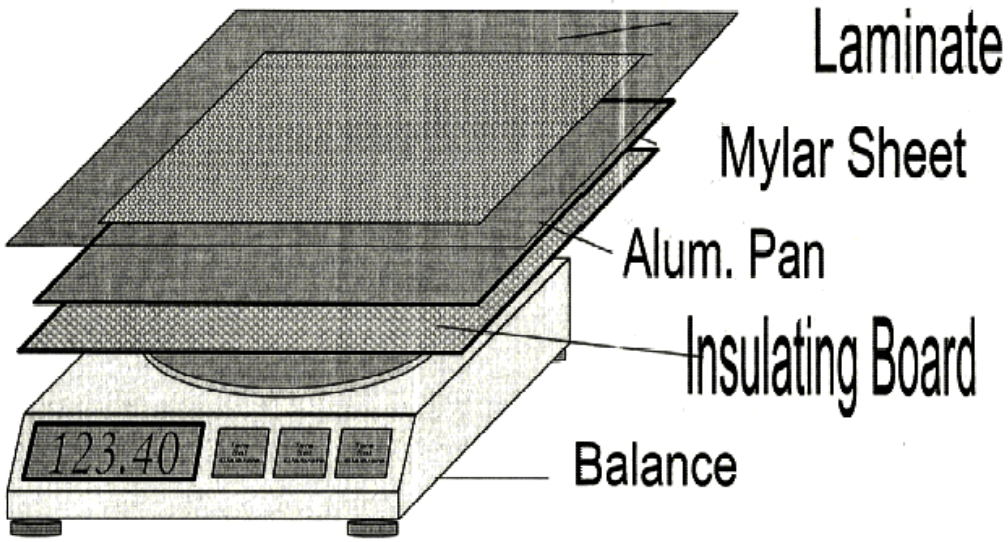

Figure 17.2 Scale, Plate, Insulating Board, Mylar, Laminate Order

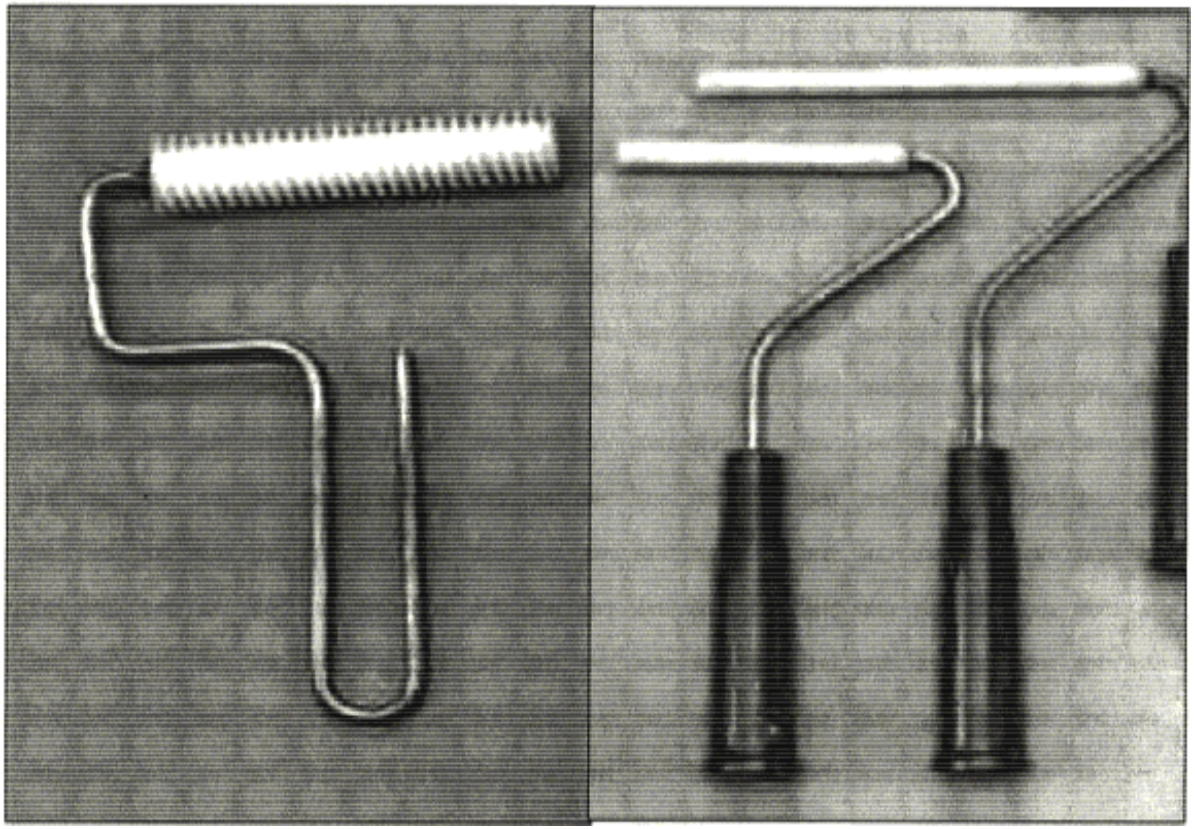

Figure 17.3 Typical FRP Rollers

Attachment #2
Tables and Appendix A to Subpart PPPP of Part 63

Appendix A to Subpart PPPP of Part 63—Determination of Weight Volatile Matter Content and Weight Solids Content of Reactive Adhesives

1.0 Applicability and Principle

1.1 *Applicability*: This method applies to the determination of weight volatile matter content and weight solids content for most one-part or multiple-part reactive adhesives. Reactive adhesives are composed, in large part, of monomers that react during the adhesive curing reaction, and, as a result, do not volatilize. The monomers become integral parts of the cured adhesive through chemical reaction. At least 70 weight percent of the system, excluding water and non-volatile solids such as fillers, react during the process. This method is not appropriate for cyanoacrylates. For cyanoacrylates, South Coast Air Quality Management District Test Method 316B should be used. This method is not appropriate for one-part moisture cure urethane adhesives or for silicone adhesives. For one-part moisture cure urethane adhesives and for silicone adhesives, EPA Method 24 should be used.

1.2 Principle: One-part and multiple-part reactive adhesives undergo a reactive conversion from liquid to solid during the application and assembly process. Reactive adhesives are applied to a single surface, but then are usually quickly covered with another mating surface to achieve a bonded assembly. The monomers employed in such systems typically react and are converted to non-volatile solids. If left uncovered, as in a Method 24 (ASTM D2369) test, the reaction is inhibited by the presence of oxygen and volatile loss of the reactive components competes more heavily with the cure reaction. If this were to happen under normal use conditions, the adhesives would not provide adequate performance. This method minimizes this undesirable deterioration of the adhesive performance.

2.0 Materials and Apparatus

2.1 Aluminum foil, aluminum sheet, non-leaching plastic film or non-leaching plastic sheet, approximately 3 inches by 3 inches. Precondition the foil, film, or sheet for 30 minutes in an oven at 110 ± 5 degrees Celsius and store in a desiccator prior to use. Use tongs or rubber gloves or both to handle the foil, film, or sheet.

2.2 Flat, rigid support panels slightly larger than the foil, film, or sheet. Polypropylene with a minimum thickness of ⅛ inch is recommended for the support panels. Precondition the support panels for 30 minutes in an oven at 110 ± 5 degrees Celsius and store in a desiccator prior to use. Use tongs or rubber gloves or both to handle the support panels.

2.3 Aluminum spacers, ⅛ inch thick. Precondition the spacers for 30 minutes in an oven at 110 ± 5 degrees Celsius and store in a desiccator prior to use. Use tongs or rubber gloves or both to handle the spacers.

2.4 Forced draft oven, type IIA or IIB as specified in ASTM E145–94 (Reapproved 2001), "Standard Specification for Gravity-Convection and Forced-Ventilation Ovens" (incorporated by reference, see § 63.14).

2.5 Electronic balance capable of weighing to ±0.0001 grams (0.1 mg).

2.6 Flat bottom weight (approximately 3 lbs) or clamps.

Material and Apparatus Notes

1—The foil, film, or sheet should be thick or rigid enough so that it can be easily handled in the test procedure.

You may use the mass fraction values in the following table for solvent blends for which you do not have test data or manufacturer's formulation data and which match either the solvent blend name or the chemical abstract series (CAS) number. If a solvent blend matches both the name and CAS number for an entry, that entry's organic HAP mass fraction must be used for that solvent blend. Otherwise, use the organic HAP mass fraction for the entry matching either the solvent blend name or CAS number, or use the organic HAP mass fraction from table 4 to this subpart if neither the name or CAS number match.

TABLE 3 TO SUBPART PPPP OF PART 63—DEFAULT ORGANIC HAP MASS FRACTION FOR SOLVENTS AND SOLVENT BLENDS

Solvent/solvent blend	CAS. No.	Average organic HAP mass fraction	Typical organic HAP, percent by mass
1. Toluene	108–88–3	1.0	Toluene.
2. Xylene(s)	1330–20–7	1.0	Xylenes, ethylbenzene.
3. Hexane	110–54–3	0.5	n-hexane.
4. n-Hexane	110–54–3	1.0	n-hexane.
5. Ethylbenzene	100–41–4	1.0	Ethylbenzene.
6. Aliphatic 140		0	None.
7. Aromatic 100		0.02	1% xylene, 1% cumene.

§63.8(c)(8)	CMS Out-of-Control Periods and Reporting	No	Section 63.4520 requires reporting of CMS out-of-control periods.
§63.8(d)–(e)	Quality Control Program and CMS Performance Evaluation.	No	Subpart PPPP does not require the use of continuous emissions monitoring systems.
§63.8(f)(1)–(5)	Use of an Alternative Monitoring Method	Yes.	
§63.8(f)(6)	Alternative to Relative Accuracy Test	No	Subpart PPPP does not require the use of continuous emissions monitoring systems.
§63.8(g)(1)–(5)	Data Reduction	No	Sections 63.4567 and 63.4568 specify monitoring data reduction.
§63.9(a)–(d)	Notification Requirements	Yes.	
§63.9(e)	Notification of Performance Test	Yes	Applies only to capture system and add-on control device performance tests at sources using these to comply with the standards.
§63.9(f)	Notification of Visible Emissions/Opacity Test	No	Subpart PPPP does not have opacity or visible emission standards.
§63.9(g)(1)–(3)	Additional Notifications When Using CMS	No	Subpart PPPP does not require the use of continuous emissions monitoring systems.
§63.9(h)	Notification of Compliance Status	Yes	Section 63.4510 specifies the dates for submitting the notification of compliance status.
§63.9(i)	Adjustment of Submittal Deadlines	Yes.	
§63.9(j)	Change in Previous Information	Yes.	

8. Aromatic 150		0.09	Naphthalene.
9. Aromatic naphtha	64742–95–6	0.02	1% xylene, 1% cumene.
10. Aromatic solvent	64742–94–5	0.1	Naphthalene.
11. Exempt mineral spirits	8032–32–4	0	None.
12. Ligroines (VM & P)	8032–32–4	0	None.
13. Lactol spirits	64742–89–6	0.15	Toluene.
14. Low aromatic white spirit	64742–82–1	0	None.
15. Mineral spirits	64742–88–7	0.01	Xylenes.
16. Hydrotreated naphtha	64742–48–9	0	None.
17. Hydrotreated light distillate	64742–47–8	0.001	Toluene.
18. Stoddard solvent	8052–41–3	0.01	Xylenes.
19. Super high-flash naphtha	64742–95–6	0.05	Xylenes.
20. Varsol® solvent	8052–49–3	0.01	0.5% xylenes, 0.5% ethylbenzene.
21. VM & P naphtha	64742–89–8	0.06	3% toluene, 3% xylene.
22. Petroleum distillate mixture	68477–31–6	0.08	4% naphthalene, 4% biphenyl.

TABLE 1 TO SUBPART PPPP OF PART 63—OPERATING LIMITS IF USING THE EMISSION RATE WITH ADD-ON CONTROLS OPTION

For the following device . . .	You must meet the following operating limit . . .	And you must demonstrate continuous compliance with the operating limit by . . .
1. Thermal oxidizer	a. The average combustion temperature in any 3-hour period must not fall below the combustion temperature limit established according to § 63.4567(a).	i. Collecting the combustion temperature data according to § 63.4568(c); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average combustion temperature at or above the temperature limit.
2. Catalytic oxidizer	a. The average temperature measured just before the catalyst bed in any 3-hour period must not fall below the limit established according to § 63.4567(b); and either	i. Collecting the temperature data according to § 63.4568(c); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average temperature before the catalyst bed at or above the temperature limit.
	b. Ensure that the average temperature difference across the catalyst bed in any 3-hour period does not fall below the temperature difference limit established according to § 63.4567(b)(2); or	i. Collecting the temperature data according to § 63.4568(c); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average temperature difference at or above the temperature difference limit.
7. Emission capture system that is not a PTE according to § 63.4565(a).	a. The average gas volumetric flow rate or duct static pressure in each duct between a capture device and add-on control device inlet in any 3-hour period must not fall below the average volumetric flow rate or duct static pressure limit established for that capture device according to § 63.4567(f).	i. Collecting the gas volumetric flow rate or duct static pressure for each capture device according to § 63.4568(g); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average gas volumetric flow rate or duct static pressure for each capture device at or above the gas volumetric flow rate or duct static pressure limit.

§ 63.5(e)	Approval of Construction/Reconstruction	Yes.	
§ 63.5(f)	Approval of Construction/Reconstruction Based on Prior State Review.	Yes.	
§ 63.6(a)	Compliance With Standards and Maintenance Requirements—Applicability.	Yes.	
§ 63.6(b)(1)–(7)	Compliance Dates for New and Reconstructed Sources.	Yes	Section 63.4483 specifies the compliance dates.
§ 63.6(c)(1)–(5)	Compliance Dates for Existing Sources	Yes	Section 63.4483 specifies the compliance dates.
§ 63.6(e)(1)–(2)	Operation and Maintenance	Yes.	
§ 63.6(e)(3)	Startup, Shutdown, and Malfunction Plan	Yes	Only sources using an add-on control device to comply with the standard must complete startup, shutdown, and malfunction plans.
§ 63.6(f)(1)	Compliance Except During Startup, Shutdown, and Malfunction.	Yes	Applies only to sources using an add-on control device to comply with the standard.
§ 63.6(f)(2)–(3)	Methods for Determining Compliance	Yes.	
§ 63.6(g)(1)–(3)	Use of an Alternative Standard	Yes.	
§ 63.6(h)	Compliance With Opacity/Visible Emission Standards.	No	Subpart PPPP does not establish opacity standards and does not require continuous opacity monitoring systems (COMS).
§ 63.6(i)(1)–(16)	Extension of Compliance	Yes.	
§ 63.6(j)	Presidential Compliance Exemption	Yes.	
§ 63.7(a)(1)	Performance Test Requirements—Applicability.	Yes	Applies to all affected sources. Additional requirements for performance testing are specified in §§ 63.4564, 63.4565, and 63.4566.

You must comply with the applicable General Provisions requirements according to the following table:

TABLE 2 TO SUBPART PPPP OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART PPPP OF PART 63

Citation	Subject	Applicable to subpart PPPP	Explanation
§ 63.1(a)(1)–(14)	General Applicability	Yes.	
§ 63.1(b)(1)–(3)	Initial Applicability Determination	Yes	Applicability to subpart PPPP is also specified in § 63.4481.
§ 63.1(c)(1)	Applicability After Standard Established	Yes.	
§ 63.1(c)(2)–(3)	Applicability of Permit Program for Area Sources.	No	Area sources are not subject to subpart PPPP.
§ 63.1(c)(4)–(5)	Extensions and Notifications	Yes.	
§ 63.1(e)	Applicability of Permit Program Before Relevant Standard is Set.	Yes.	
§ 63.2	Definitions	Yes	Additional definitions are specified in § 63.4581.
§ 63.3(a)–(c)	Units and Abbreviations	Yes.	
§ 63.4(a)(1)–(5)	Prohibited Activities	Yes.	
§ 63.4(b)–(c)	Circumvention/Severability	Yes.	
§ 63.5(a)	Construction/Reconstruction	Yes.	
§ 63.5(b)(1)–(6)	Requirements for Existing, Newly Constructed, and Reconstructed Sources.	Yes.	
§ 63.5(d)	Application for Approval of Construction/Reconstruction.	Yes.	

For the following device . . .	You must meet the following operating limit . . .	And you must demonstrate continuous compliance with the operating limit by . . .
	c. Develop and implement an inspection and maintenance plan according to §63.4567(b)(4).	i. Maintaining an up-to-date inspection and maintenance plan, records of annual catalyst activity checks, records of monthly inspections of the oxidizer system, and records of the annual internal inspections of the catalyst bed. If a problem is discovered during a monthly or annual inspection required by §63.4567(b)(4), you must take corrective action as soon as practicable consistent with the manufacturer's recommendations.
3. Regenerative carbon adsorber	a. The total regeneration desorbing gas (*e.g.*, steam or nitrogen) mass flow for each carbon bed regeneration cycle must not fall below the total regeneration desorbing gas mass flow limit established according to §63.4567(c); and	i. Measuring the total regeneration desorbing gas (*e.g.*, steam or nitrogen) mass flow for each regeneration cycle according to §63.4568(d); and ii. Maintaining the total regeneration desorbing gas mass flow at or above the mass flow limit.
	b. The temperature of the carbon bed, after completing each regeneration and any cooling cycle, must not exceed the carbon bed temperature limit established according to §63.4567(c).	i. Measuring the temperature of the carbon bed after completing each regeneration and any cooling cycle according to §63.4568(d); and ii. Operating the carbon beds such that each carbon bed is not returned to service until completing each regeneration and any cooling cycle until the recorded temperature of the carbon bed is at or below the temperature limit.
4. Condenser	a. The average condenser outlet (product side) gas temperature in any 3-hour period must not exceed the temperature limit established according to §63.4567(d).	i. Collecting the condenser outlet (product side) gas temperature according to §63.4568(e); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average gas temperature at the outlet at or below the temperature limit.

§ 63.7(a)(2)	Performance Test Requirements—Dates	Yes	Applies only to performance tests for capture system and control device efficiency at sources using these to comply with the standards. Section 63.4560 specifies the schedule for performance test requirements that are earlier than those specified in § 63.7(a)(2).
§ 63.7(a)(3)	Performance Tests Required By the Administrator.	Yes.	
§ 63.7(b)–(e)	Performance Test Requirements—Notification, Quality Assurance, Facilities Necessary for Safe Testing, Conditions During Test.	Yes	Applies only to performance tests for capture system and add-on control device efficiency at sources using these to comply with the standards.
§ 63.7(f)	Performance Test Requirements—Use Alternative Test Method.	Yes	Applies to all test methods except those of used to determine capture system efficiency.
§ 63.7(g)–(h)	Performance Test Requirements—Data Analysis, Recordkeeping, Reporting, Waiver of Test.	Yes	Applies only to performance tests for capture system and add-on control device efficiency at sources using these to comply with the standards.
§ 63.8(a)(1)–(3)	Monitoring Requirements—Applicability	Yes	Applies only to monitoring of capture system and add-on control device efficiency at sources using these to comply with the standards. Additional requirements for monitoring are specified in § 63.4568.
§ 63.8(a)(4)	Additional Monitoring Requirements	No	Subpart PPPP does not have monitoring requirements for flares.
§ 63.8(b)	Conduct of Monitoring	Yes.	
§ 63.8(c)(1)–(3)	Continuous Monitoring Systems (CMS) Operation and Maintenance.	Yes	Applies only to monitoring of capture system and add-on control device efficiency at sources using these to comply with the standard. Additional requirements for CMS operations and maintenance are specified in § 63.4568.
§ 63.8(c)(4)	CMS	No	Section 63.4568 specifies the requirements for the operation of CMS for capture systems and add-on control devices at sources using these to comply.
§ 63.8(c)(5)	COMS	No	Subpart PPPP does not have opacity or visible emission standards.
§ 63.8(c)(6)	CMS Requirements	No	Section 63.4568 specifies the requirements for monitoring systems for capture systems and add-on control devices at sources using these to comply.
§ 63.8(c)(7)	CMS Out-of-Control Periods	Yes.	

§63.10(a)	Recordkeeping/Reporting—Applicability and General Information.	Yes.	
§63.10(b)(1)	General Recordkeeping Requirements	Yes	Additional requirements are specified in §§63.4530 and 63.4531.
§63.10(b)(2) (i)–(v)	Recordkeeping Relevant to Startup, Shutdown, and Malfunction Periods and CMS.	Yes	Requirements for startup, shutdown, and malfunction records only apply to add-on control devices used to comply with the standards.
§63.10(b)(2) (vi)–(xi)		Yes.	
§63.10(b)(2) (xii)	Records	Yes.	
§63.10(b)(2) (xiii)		No	Subpart PPPP does not require the use of continuous emissions monitoring systems.
§63.10(b)(2) (xiv)		Yes.	
§63.10(b)(3)	Recordkeeping Requirements for Applicability Determinations.	Yes.	
§63.10(c)(1)–(6)	Additional Recordkeeping Requirements for Sources with CMS.	Yes.	
§63.10(c)(7)–(8)		No	The same records are required in §63.4520(a)(7).
§63.10(c)(9)–(15)		Yes.	
§63.10(d)(1)	General Reporting Requirements	Yes	Additional requirements are specified in §63.4520.
§63.10(d)(2)	Report of Performance Test Results	Yes	Additional requirements are specified in §63.4520(b).
§63.10(d)(3)	Reporting Opacity or Visible Emissions Observations.	No	Subpart PPPP does not require opacity or visible emissions observations.
§63.10(d)(4)	Progress Reports for Sources With Compliance Extensions.	Yes.	
§63.10(d)(5)	Startup, Shutdown, and Malfunction Reports	Yes	Applies only to add-on control devices at sources using these to comply with the standards.
§63.10(e)(1)–(2)	Additional CMS Reports	No	Subpart PPPP does not require the use of continuous emissions monitoring systems.
§63.10(e)(3)	Excess Emissions/CMS Performance Reports	No	Section 63.4520(b) specifies the contents of periodic compliance reports.
§63.10(e)(4)	COMS Data Reports	No	Subpart PPPP does not specify requirements for opacity or COMS.
§63.10(f)	Recordkeeping/Reporting Waiver	Yes.	
§63.11	Control Device Requirements/Flares	No	Subpart PPPP does not specify use of flares for compliance.
§63.12	State Authority and Delegations	Yes.	
§63.13	Addresses	Yes.	
§63.14	Incorporation by Reference	Yes.	
§63.15	Availability of Information/Confidentiality	Yes.	

5. Concentrators, including zeolite wheels and rotary carbon adsorbers.	a. The average gas temperature of the desorption concentrate stream in any 3-hour period must not fall below the limit established according to § 63.4567(e); and	i. Collecting the temperature data according to § 63.4568(f); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average temperature at or above the temperature limit.
	b. The average pressure drop of the dilute stream across the concentrator in any 3-hour period must not fall below the limit established according to § 63.4567(e).	i. Collecting the pressure drop data according to § 63.4568(f); ii. Reducing the pressure drop data to 3-hour block averages; and iii. Maintaining the 3-hour average pressure drop at or above the pressure drop limit.
6. Emission capture system that is a PTE according to § 63.4565(a).	a. The direction of the air flow at all times must be into the enclosure; and either	i. Collecting the direction of air flow, and either the facial velocity of air through all natural draft openings according to § 63.4568(g)(1) or the pressure drop across the enclosure according to § 63.4568(g)(2); and ii. Maintaining the facial velocity of air flow through all natural draft openings or the pressure drop at or above the facial velocity limit or pressure drop limit, and maintaining the direction of air flow into the enclosure at all times.
	b. The average facial velocity of air through all natural draft openings in the enclosure must be at least 200 feet per minute; or	i. *See* items 6.a.i and 6.a.ii.
	c. The pressure drop across the enclosure must be at least 0.007 inch H_2O, as established in Method 204 of appendix M to 40 CFR part 51.	i. *See* items 6.a.i and 6.a.ii.

You may use the mass fraction values in the following table for solvent blends for which you do not have test data or manufacturer's formulation data.

TABLE 4 TO SUBPART PPPP OF PART 63— DEFAULT ORGANIC HAP MASS FRACTION FOR PETROLEUM SOLVENT GROUPS[a]

Solvent type	Average organic HAP mass fraction	Typical organic HAP, percent by mass
Aliphatic[b]	0.03	1% Xylene, 1% Toluene, and 1% Ethylbenzene.
Aromatic[c]	0.06	4% Xylene, 1% Toluene, and 1% Ethylbenzene.

[a] Use this table only if the solvent blend does not match any of the solvent blends in Table 3 to this subpart by either solvent blend name or CAS number and you only know whether the blend is aliphatic or aromatic.

[b] Mineral Spirits 135, Mineral Spirits 150 EC, Naphtha, Mixed Hydrocarbon, Aliphatic Hydrocarbon, Aliphatic Naphtha, Naphthol Spirits, Petroleum Spirits, Petroleum Oil, Petroleum Naphtha, Solvent Naphtha, Solvent Blend.

[c] Medium-flash Naphtha, High-flash Naphtha, Aromatic Naphtha, Light Aromatic Naphtha, Light Aromatic Hydrocarbons, Aromatic Hydrocarbons, Light Aromatic Solvent.

3.0 Procedure

3.1 Two procedures are provided. In Procedure A the initial specimen weight is determined by weighing the foil, film, or sheet before and after the specimen is dispensed onto the foil, film, or sheet. In Procedure B the initial specimen weight is determined by weighing the adhesive cartridge (kit) before and after the specimen is dispensed.

3.2 At least four test specimens should be run for each test material. Run the test at room temperature, 74 degrees Fahrenheit (23 degrees Celsius).

Procedure A

1. Zero electronic balance.
2. Place 2 pieces of aluminum foil (or aluminum sheet, plastic film, or plastic sheet) on scale.
3. Record weight of aluminum foils. (A).
4. Tare balance.
5. Remove top piece of aluminum foil.
6. Dispense a 10 to 15 gram specimen of premixed adhesive onto bottom piece of aluminum foil. Place second piece of aluminum foil on top of the adhesive specimen to make a sandwich.
7. Record weight of sandwich (specimen and aluminum foils). (B).
8. Remove sandwich from scale, place sandwich between two support panels with aluminum spacers at the edges of the support panels to make a supported sandwich. The spacers provide a standard gap. Take care to mate the edges.
9. Place the supported sandwich on a flat surface.
10. Place the weight on top of the supported sandwich to spread the adhesive specimen to a uniform thickness within the sandwich. Check that no adhesive squeezes out from between the pieces of aluminum foil or through tears in the aluminum foil.
11. Allow to cure 24 hours.
12. Remove the sandwich from between the support panels. Record the weight of the sandwich. This is referred to as the 24 hr weight. (C).
13. Bake sandwich at 110 degrees Celsius for 1 hour.
14. Remove sandwich from the oven, place immediately in a desiccator, and cool to room temperature. Record post bake sandwich weight. (D).

Procedure B

1. Zero electronic balance.
2. Place two pieces of aluminum foil (or aluminum sheet, plastic film, or plastic sheet) on scale.
3. Record weight of aluminum foils. (A).
4. Tare balance.
5. Place one support panel on flat surface. Place first piece of aluminum foil on top of this support panel.
6. Record the weight of a pre-mixed sample of adhesive in its container. If dispensing the adhesive from a cartridge (kit), record the weight of the cartridge (kit) plus any dispensing tips. (F).
7. Dispense a 10 to 15 gram specimen of mixed adhesive onto the first piece of aluminum foil. Place second piece of aluminum foil on top of the adhesive specimen to make a sandwich.
8. Record weight of the adhesive container. If dispensing the adhesive from a cartridge (kit), record the weight of the cartridge (kit) plus any dispensing tips. (G).
9. Place the aluminum spacers at the edges of the bottom support panel polypropylene sheet. The spacers provide a standard gap.
10. Place the second support panel on top of the assembly to make a supported sandwich. Take care to mate the edges.
11. Place the supported sandwich on a flat surface.
12. Place the weight on top of the supported sandwich to spread the adhesive specimen to a uniform thickness within the sandwich. Check that no adhesive squeezes out from between the pieces of aluminum foil or through tears in the aluminum foil.
13. Allow to cure 24 hours.
14. Remove the sandwich from between the support panels. Record the weight of the sandwich. This is referred to as the 24 hr weight. (C).
15. Bake sandwich at 110 degrees Celsius for 1 hour.
16. Remove sandwich from the oven, place immediately in a desiccator, and cool to room temperature.
17. Record post-bake sandwich weight. (D).

Procedural Notes

1—The support panels may be omitted if the aluminum foil (or aluminum sheet, plastic film, or plastic sheet) will not tear and the adhesive specimen will spread to a uniform thickness within the sandwich when the flat weight is placed directly on top of the sandwich.

2—Clamps may be used instead of a flat bottom weight to spread the adhesive specimen to a uniform thickness within the sandwich.

3—When dispensing from a static mixer, purging is necessary to ensure uniform, homogeneous specimens. The weighing in Procedure B, Step 6 must be performed after any purging.

4—Follow the adhesive manufacturer's directions for mixing and for dispensing from a cartridge (kit).

4.0 Calculations

4.1 The total weight loss from curing and baking of each specimen is used to determine the weight percent volatile matter content of that specimen

Procedure A

Weight of original specimen (S) = (B) – (A)
Weight of post-bake specimen (P) = (D) – (A)
Total Weight Loss (L) = (S) – (P)

Procedure B

Weight of original specimen (S) = (F) – (G)
Weight of post-bake specimen (P) = (D) – (A)
Total Weight Loss (L) = (S) – (P)

Procedure A and Procedure B

Weight Percent Volatile Matter Content

(V) = [(Total weight loss)/(Initial specimen weight)] × 100 = [(L)/(S)] × 100

4.2 The weight volatile matter content of a material is the average of the weight volatile matter content of each specimen of that material. For example, if four specimens of a material were tested, then the weight percent volatile matter content for that material is:

V = [V1 + V2 + V3 + V4]/4

Where:

Vi = the weight percent volatile matter content of specimen i of the material.

4.3 The weight percent solids content of the material is calculated from the weight percent volatile content of the material.

Weight Percent Solids Content (N) = 100 – (V)

Calculation Notes

1—The weight loss during curing and the weight loss during baking may be calculated separately. These values may be useful for identifying sources of variation in the results obtained for different specimens of the same material.

2—For both Procedure A and Procedure B, the weight loss during curing is (S) – [(C) – (A)] and the weight loss during baking is (C) – (D).

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