

then the final layer of fiberglass /resin/filler is sprayed onto the mold and hand rolled. Once the resin has cured, the various parts are removed from their molds or forms and trimmed, repaired, assembled and prepared for shipping.

The acrylic process use sheets which are clamped into a holding frame and heated. The sheet is then transferred to a molding unit where a vacuum is used to shape a part, such as a bathtub. After the shell has cooled, the sheets are placed in another holding fixture where the first coat of polyester resin (skin coat) is applied, and then the final layers of fiberglass/resin/filler are sprayed onto the acrylic shell bathtub and hand rolled against the shell. After curing the shell is bonded to a pre-fabricated base. The part is transferred to the buffing/polishing stations where any scratches or defects are fixed.

Polyester styrene resins, gel coat, fiberglass, filler (calcium sulfate) and catalysts are the main raw materials. Volatile organic material emissions from the open-mold molding process of fiberglass reinforced plastics manufacturing will be from spraying and curing of the resin and curing agent. The resins used contain monomers (usually styrene) that chemically link to become polymers when a chemical initiator is added. This causes the liquid resin to become solid. However, during application of the resin, some of the monomer evaporates out of the resin before it cross-links, resulting in emissions of VOM. Particulate matter emissions from the spraying operation will be controlled by filters.

1.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Booth Description	Emission Control Equipment
EP-1	Gel Coat	Filter Pack
EP-2	Gel Coat	Filter Pack
EP-3	Misting Station	Filter Pack
EP-4	Skin/Final Coat	Filter Pack
EP-5	Skin/Final Coat	Filter Pack
EP-6	Skin/Final Coat	Filter Pack
EP-7	Skin/Final Coat	Filter Pack
EP-8	Skin/Final Coat	Filter Pack
EP-9	Specialty Booth	Filter Pack

1.1.3 Applicability Provisions and Applicable Regulations

- a. The "affected units" for the purpose of these unit specific conditions, are the units described in Conditions 1.1.1 and 1.1.2.

- b. The affected units are subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reinforced Plastic Composites Production 40 CFR 63, Subpart WWWW.
 - i. The affected units shall comply with all applicable emission limits for new or reconstructed equipment as required by Table 3 or 7 of 40 CFR 63 Subpart WWWW. (See also Attachment 1)
 - ii. The Permittee shall comply with all applicable work practice standards as required by Table 4 of 40 CFR 63 Subpart WWWW. (See also Attachment 1)
- c. The affected units are subject to 35 IAC Part 218 Subpart CC, Polyester Resin Product Manufacturing Process, which provides that every owner or operator of a polyester resin products manufacturing process:
 - i. Shall comply with a monomer content of no more than:
 - A. 48% by weight for polyester resin materials used for products requiring corrosion resistance or fire retardant, pursuant to 35 IAC 218.666(1)(A)(i).
 - B. 50% by weight for clear gel coat as applied, pursuant to 35 IAC 218.666(1)(A)(iii).
 - C. 45% by weight as applied, for other pigmented gel coats, pursuant to 35 IAC 218.666(1)(A)(iv).
 - ii. Shall comply with all other applicable control requirements in 35 IAC 218.666.
- d. The affected units are subject to 35 IAC 212.321(a), which provides that no person shall not cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

- e. The affected units are subject to 35 IAC 218.301, which provides that no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit. This standard is applicable to the affected units because the principal constituent in the VOM emissions, styrene, is a photochemically reactive material, as defined by 35 IAC 211.4690.

1.1.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on this project not being a modification subject to 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM) because the annual emissions of VOM from the plant after the project will be less than 100 tons, the major source threshold.

1.1.5 Production Limitations

- a. Usage of Materials for affected booths, other than the specialty booth, shall not exceed the following limits:

<u>Material</u>	<u>Material Usage</u>	
	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
Gel Coat/Mist coat Resin	50	400
Other Resin	240	1900

- b. Usage of resin for the affected specialty booth shall not exceed the following limits:

<u>Material Usage</u>	
<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
5.8	46.4

- c. The Permittee shall follow good operating practices for the affected units, including periodic inspection, routine maintenance and prompt repair of defects.
- d. The Permittee shall not use volatile organic material for cleanup of the affected units.

1.1.6 Emission Limitations

- a. i. The volatile organic material (VOM) emissions from the plant, from operations other than the affected specialty spray booth shall not

exceed 100 lbs/ton of resin, annual average, 12.0 tons per month and 96.0 tons per year.

- ii. Volatile Organic Material (VOM) emissions of the specialty spray booth shall not exceed 0.63 tons/month and 2.0 tons/year.
 - iii. VOM emissions from the affected units shall be determined using USEPA endorsed Methodology for determining VOM emissions such as the Unified Emission Factors for open molding of composites developed by the Composite Fabricators Association.
- b. This permit is issued based on negligible emissions of PM from the affected units. For this purpose emissions shall not exceed 0.1 lbs/hour and 0.44 tons/year.

1.1.7 Testing Requirements

- a. The monomer content of polyester resin materials shall be determined:
- i. From supplier data and operating data [35 IAC 218.668(a)(3)(A)];
 - ii. By sampling and analysis by the methods set forth in SCAQMD Method 312-91 [35 IAC 218.668(a)(3)(B)]; or
 - iii. By site-specific sampling and analysis methods approved by the Illinois EPA and USEPA in a federally enforceable permit [35 IAC 218.668(a)(3)(C)].
- b. Any Vapor Suppressant Effectiveness (VSE) factor used to estimate VOM emissions from resin application shall be determined using Appendix A to 40 CFR 63 Subpart WWWW "Test Method for Determining Vapor Suppressant Effectiveness."

1.1.8 Monitoring Requirements

- a. The Permittee shall perform scheduled inspections to confirm the proper use of closed containers, covers on vats, vessels, and tanks, as required by Condition 1.1.3(c) (ii).

1.1.9 Recordkeeping Requirements

- a. The Permittee shall comply with all applicable recordkeeping, notification and reporting requirements in the NESHAP 40 CFR 63.5905, 63.5910, 63.5915 and 63.5920.
- b. The Permittee shall comply with all applicable recordkeeping and reporting requirements pursuant to 35 IAC 218.672.
- c. The Permittee shall keep on file a demonstration that the maximum hourly emissions of organic material from each affected emission unit is no more than 8.0 lbs/hour. This demonstration shall be based on the maximum usage of material that would occur for the production of any products made in the unit and the maximum VOM content and loss associated with such product.
- d. The Permittee shall keep the following records related to material usage in the affected units.
 - i. The name and identification number of each gel coating and resin as applied on the unit;
 - ii. Records of each gel coating and resin usage for the affected units, (lbs/month and lbs/year); and
 - iii. The VOM, styrene, MMA and other HAP percent by weight content of the gel coatings and resin with the source of this information.
- e. The Permittee shall keep log of inspection and maintenance for the affected units.
- f. The Permittee shall keep the following records related to emissions from the affected units.
 - i. A file containing the appropriate emission factors for VOM and HAP for different classes of gel mist coats and resins. This file shall be updated when new materials are introduced into production or the formation of existing materials is changed, so that data is current.
 - ii. The monthly and aggregate VOM and HAP emissions from the affected emission sources based on the material usage, with all supporting calculations and documentation.

1.1.10 Reporting Requirements

- a. The Permittee shall comply with all applicable recordkeeping, notification and reporting requirements in the NESHAP 40 CFR 63.5905, 63.5910, 63.5915 and 63.5920.
- b. The Permittee shall promptly notify the Illinois EPA of deviations of affected units with permit requirements. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.
- c. Two copies of the report and notifications required by this permit shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276
Telephone: 217/782-5811 Facsimile: 217/524-4710

and one copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016
Telephone: 847/294-4000 Facsimile: 847/294-4018

2.0 The Permittee is authorized to operate the affected units under this construction permit until a final action is taken to address this project in a revision to or a renewal of the CAAPP permit.

If you have any questions on this, please call Shashi Shah at 217/782-2113.

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

ECB:SRS:psj

cc: Region 1

ATTACHMENT 1

Selected Requirements of 40 CFR 63, Subpart WWWW

1. The organic HAP emissions from open molding and gel coat operations shall not exceed those allowed by 40 CFR 63.5805(b) and Table 3, as follows:

Operation	Mode of operation	Organic Hap Emissions Limit	Highest Organic HAP Content, or Weighted Average Organic HAP Content (Weight Percent)
Open molding non-corrosion resistant and/or high strength	Manual resin application	87	38.4
Open molding - gel coat	White-off white	267	30
	All other pigments	377	37

Compliance with these requirements shall be demonstrated as follows:

- a. Meet the individual HAP emission limits in lb/ton, for each applicable open molding operation type in Table 3 of 40 CFR Part 63 Subpart WWWW, as required by 40 CFR 63.5810(a); or
- b. HAP Emission Factor Averaging Option - Demonstrate each month that the weighted average of the organic HAP emission limits in Table 3 of 40 CFR Part 63 Subpart WWWW are met for the last 12-month period, as required by 40 CFR 63.5810(b); or
- c. Use resin and gel coats that do not exceed the maximum organic HAP contents in Table 3 of 40 CFR Part 63 Subpart WWWW, as required by 40 CFR 63.5810(d).

2. The following work practice standards shall be implemented [63.5805(b) and Table 4].

Type of Operation	Work practice standards
All HAP-containing materials storage operations	Keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing material storage tanks may be vented as necessary for safety.
All mixing operations	Use mixer cover with no visible gaps present in the mixing covers, except that gaps of up to one inch are permissible around the mixer shafts and any required instrumentation. Keep the mixer covers closed while actual mixing is occurring except when adding materials or changing covers to the mixing vessels.
All cleaning operations	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.

SRS:psj

