

Chapter 162: CONTROL FOR FIBERGLASS BOAT MANUFACTURING MATERIALS

SUMMARY: This regulation establishes consistent requirements for testing, evaluating and limiting volatile organic compound (VOC) emissions from fiberglass boat manufacturing operations.

1. Applicability

- A.** This regulation applies statewide.
- B.** This regulation applies to any facility that manufactures hulls or decks of boats and related parts, builds molds to make fiberglass boat hulls or decks and related parts from fiberglass, or makes polyester resin putties for assembling fiberglass parts; and whose total actual VOC emissions from the following operations exceed 2449 kilograms (5400 pounds) per rolling twelve month period, before the application of control systems and devices:
- (1) open molding resin and gel coat operations (including pigmented gel coat, clear gel coat, production resin, tooling gel coat and tooling resin;
 - (2) resins and gel coat mixing operations; and
 - (3) resins and gel coat application equipment and cleaning operations.

The owner or operator of a facility that solely manufactures fiberglass parts of boats, such as hatches, seats or boat trailers is not subject to this Chapter.

- C.** This regulation does not apply to the following activities:
- (1) The application of surface coatings applied to fiberglass boats;
 - (2) The application of surface coatings for fiberglass and metal recreational boats (pleasure craft); and
 - (3) The use of industrial adhesives in the assembly of fiberglass boats.
- D. Exemptions.** The following operations and/or materials are exempt from the monomer and nonmonomer VOC requirements of this Chapter:
- (1) Production resins (including skin coat resins) that meet the specification for use in military vessels or are approved by the U.S. Coast Guard for use in the construction of lifeboats, rescue boats, and other life saving appliances approved under 46 CFR Subchapter Q, or the construction of small passenger vessels regulated by 46 CFR Subchapter T, including but not limited to vessels of less than 100 tons carrying more than 6 and less than 150 passengers for hire. Production resins that meet these criteria

must be applied with nonatomizing resin application equipment in order to qualify for exemption under this subsection;

- (2) Pigmented, clear, and tooling gel coat used for part or mold repair and touch-up. The total gel coat materials included in this exemption must not exceed 1.0 (one) percent by weight of all resin and gel coat used at a facility on a 12-month rolling average basis;
- (3) Pure, 100 percent vinylester resin used for skin coats that are applied with nonatomizing resin application equipment and with the total amount of the resin materials not exceeding five percent by weight of all resin used at a facility on a 12 month rolling average basis. This exemption does not apply to blends of vinylester and polyester used for skin coats; and
- (4) Any closed molding operation as defined by this Chapter. Open molding resin and gel coat operations such as gel coat or skin coat layers that precede a closed molding operation are not exempt.

2. Definitions

- A. **Application equipment cleaning.** “Application equipment cleaning” means the process of flushing or removing resins and gel coats from the interior or exterior of equipment that is used to apply resin or gel coat in the manufacture of fiberglass parts.
- B. **Assembly adhesives.** “Assembly adhesives” means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.
- C. **Atomized application method.** “Atomized application method” means a resin application technology in which the resin leaves the application equipment and breaks into droplets or an aerosol as it travels from the application equipment to the surface of the part. Atomized application methods include, but are not limited to, resin spray guns and resin chopper spray guns.
- D. **Boat.** “Boat” means any type of vessel, other than a seaplane, that can be used for transportation on the water.
- E. **Clear gel coat.** “Clear gel coat” means gel coats that are clear or translucent so that underlying colors are visible. Clear gel coats are used to manufacture parts for sale. Clear gel coats do not include tooling gel coats used to build or repair molds.
- F. **Closed molding.** “Closed molding” means any molding process in which pressure is used to distribute the resin through the reinforcing fabric placed between two mold surfaces to either saturate the fabric or fill the mold cavity. The pressure may be clamping pressure, fluid pressure, atmospheric pressure, or vacuum pressure used either alone or in combination. The mold surfaces may be rigid or flexible. Closed molding

includes, but is not limited to, compression molding with sheet molding compound, infusion molding, resin injection molding (RIM), vacuum-assisted resin transfer molding (VARTM), resin transfer molding (RTM), and vacuum-assisted compression molding. Processes in which a closed mold is used only to compact saturated fabric or remove air or excess resin from the fabric (such as in vacuum bagging), are not considered closed molding. Open molding steps, such as application of a gel coat or skin coat layer by conventional open molding prior to a closed molding process, are not closed molding.

- G. Cured resin.** “Cured resin” or “cured gel coat” means resin or gel coat that has changed irreversibly from a liquid to a solid.
- H. Fiberglass boat.** “Fiberglass boat” means a vessel in which either the hull or deck is built from a composite material consisting of a thermosetting resin matrix reinforced with fibers of glass, carbon, aramid, or other material.
- I. Filled resin.** “Filled resin” or “filled production resin” means a resin to which an inert material has been added to change viscosity, density, shrinkage, or other physical properties.
- J. Flowcoater.** “Flowcoater” means a nonatomizing application method of applying resins and gel coats to an open mold with a fluid nozzle in a fan pattern with no air supplied to the nozzle.
- K. Gel coat.** “Gel coat” means a polyester resin surface coating, either pigmented or clear, that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.
- L. Mixing.** “Mixing” means any operation in which resin or gel coat, including the mixing of putties or polyester resin putties, is combined with additives that include, but are not limited to, fillers, promoters, or catalysts.
- M. Mold.** “Mold” means the cavity or surface into or on which gel coat, resin, and fibers are placed and from which finished fiberglass parts take their form.
- N. Monomer VOC.** “Monomer VOC” means a relatively low-molecular-weight organic compound such as styrene that combines with itself, or other similar compounds, by a cross-linking reaction to become a cured thermosetting resin.
- O. Monomer VOC content .** “Monomer VOC content ” means the weight of the monomer, divided by the weight of the polymer.
- P. Nonatomized application method.** “Nonatomized application method” means any application technology in which the resin is not broken into droplets or an aerosol as it travels from the application equipment to the surface of the part. Nonatomized application methods include, but are not limited to, flowcoaters, chopper flowcoaters,

pressure-fed resin rollers, resin impregnators, and hand application (for example, paint brush or paint roller).

- Q. Open molding resin and gel coat operation.** “Open molding resin and gel coat operation” means any process in which the reinforcing fibers and resin are placed in the mold and are open to the surrounding air while the reinforcing fibers are saturated with resin. For the purposes of this Chapter, open molding includes operations in which a vacuum bag or similar cover is used to compress an uncured laminate to remove air bubbles or excess resin, or to achieve a bond between a core material and a laminate.
- R. Pigmented gel coat.** “Pigmented gel coat” means opaque gel coats used to manufacture parts for sale. Pigmented gel coats do not include tooling gel coats used to build or repair molds.
- S. Polyester resin materials.** “Polyester resin materials” means unsaturated polyester resins, such as isophthalic, orthophthalic, halogenated, bisphenol A, vinyl ester, or furan resins; cross-linking agents; catalysts; gel coats; inhibitors; accelerators; promoters; and any other material containing VOC used in polyester resin operations.
- T. Polyester resin operations.** “Polyester resin operations” means fabricate, rework, repair, or touchup products for commercial, military, or industrial use by mixing, pouring, hand laying-up, impregnating, injecting, forming, winding, spraying, and/or curing by using unsaturated polyester resin materials.
- U. Production resin.** “Production resin” means any resin used to manufacture parts for sale. Production resins do not include tooling resins used to build or repair molds, or assembly adhesives as defined in this Chapter.
- V. Repair.** “Repair” means that portion of the fabrication process that requires the addition of polyester resin materials to portions of a previously fabricated product in order to mend damage.
- W. Resin.** “Resin” means any thermosetting resin with or without pigment containing styrene (CAS No. 100-42-5) or methyl methacrylate (CAS No. 80-62-6) and used to encapsulate and bind together reinforcement fibers in the construction of fiberglass parts.
- X. Resin impregnator.** “Resin impregnator” means a mechanical nonatomizing composite materials application method in which fiber reinforcement is saturated with resins in a controlled ratio for each specific composite product.
- Y. Roll-out.** “Roll-out” means the process of using rollers, squeegees, or similar tools to compact reinforcing materials saturated with resin to remove trapped air or excess resin.

- Z. Skin coat.** “Skin coat” means a layer of resin and fibers applied over the gel coat to protect the gel coat from being deformed by the next laminate layers.
- AA. Tooling gel coat.** “Tooling gel coat” means the gel coat used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which molds will be made.
- BB. Tooling resin.** “Tooling resin” means the resin used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which molds will be made.
- CC. Touch-up.** “Touch-up” means that portion of the process that is necessary to cover minor imperfections.
- DD. Vacuum bagging.** “Vacuum bagging” means any molding technique in which the reinforcing fabric is saturated with resin and then covered with a flexible sheet that is sealed to the edge of the mold and where a vacuum is applied under the sheet to compress the laminate, remove excess resin, or remove trapped air from the laminate during curing. Vacuum bagging does not include processes that meet the definition of closed molding.
- EE. Vinylester resin.** “Vinylester resin” means a thermosetting resin containing esters of acrylic or methacrylic acids and having double-bond and ester linkage sites only at the ends of the resin molecules.
- 3. Emission Limits.** Owners and operators of fiberglass boat manufacturing operations subject to this Chapter shall comply with the applicable emission limitations in Sections 3(A) through 3(D) of this Chapter by the use of one of the following options: 1) low monomer VOC content resins and gel coats; 2) emissions averaging among different operations; or 3) the use of add-on emission control devices.
- A. Low monomer VOC content option**
- (1) The monomer VOC content limits used for any open molding resin and gel coat operations subject to this Chapter and any molding operations that do not meet the definition of closed molding, such as vacuum bagging operations, shall not exceed the monomer VOC limits established in Table 1:

Table 1
Monomer Volatile Organic Compounds Limits for Open Molding Resin and Gel Coat Operations

| Material | Application Method | Monomer VOC Content Limits (weight percent) |
|--------------------|--------------------|---|
| Production resin | Atomized (spray) | 28 |
| Production resin | Nonatomized | 35 |
| Pigmented gel coat | Any Method | 33 |
| Clear gel coat | Any method | 48 |
| Tooling resin | Atomized | 30 |
| Tooling resin | Nonatomized | 39 |
| Tooling gel coat | Any method | 40 |

- (2) Alternative compliance method. The weighted average monomer VOC contents for a specific application method meets the monomer VOC content limit using Equation 1:

Equation 1

$$\text{Weighted Average Monomer VOC Content} = \frac{\sum_{i=1}^n (M_i \text{ VOC}_i)}{\sum_{i=1}^n (M_i)}$$

- Where M_i = mass of each open molding resin or gel coat used in the past 12 months in an operation, in megagrams.
 VOC_i = monomer VOC content, by weight percent, of each open molding resin or gel coat used in the past 12 months in an operation.
 n = number of different open molding resins or gel coats used in the past 12 months in an operation.

B. Emissions averaging option

- (1) Any molding resin and gel coat operations that a facility chooses to include in averaging emissions among different operations to meet a numerical monomer VOC mass emissions limit rather than complying with the monomer VOC content limits established in Section 3(A)(1) of this Chapter shall use Equation 2 to establish a facility-specific monomer VOC mass emission limit on a 12-month rolling average basis:

Equation 2

$$\text{Monomer VOC Limit} = 46(M_R) + 159(M_{PG}) + 291(M_{CG}) + 54(M_{TR}) + 214(M_{TG})$$

Where: Monomer VOC Limit = total allowable monomer VOC that can be emitted from the open molding operations included in the average, in kilograms per 12-month period.

M_R = mass of production resin used in the past 12 months, excluding any materials that are exempt, in megagrams.

M_{PG} = mass of pigmented gel coat used in the past 12 months, excluding any materials that are exempt, in megagrams.

M_{CG} = mass of clear gel coat used in the past 12 months, excluding any materials that are exempt, in megagrams.

M_{TR} = mass of tooling resin used in the past 12 months, excluding any materials that are exempt, in megagrams.

M_{TG} = mass of tooling gel coat used in the past 12 months, excluding any materials that are exempt, in megagrams.

The numerical coefficients associated with each term on the right side of Equation 2 are the allowable monomer VOC emission rates for that material in units of kilograms of monomer VOC per megagram of material used.

- (2) Any molding resin and gel coating operations that a facility chooses to include in averaging emissions among different operations to meet a numerical monomer VOC mass emission limit rather than to comply with the monomer VOC content limits established in Section 3(A)(1) of this Chapter shall use Equation 3 to demonstrate that the monomer VOC mass emissions from the operations included in the average do not exceed the emission limit calculated using Equation 2 from Subsection 3(B)(1) of this Chapter for the same period. This demonstration shall be conducted at the end of the first 12-month averaging period and at the end of every subsequent month for only those operations and materials included in the average.

Equation 3

$$\text{Monomer VOC emissions} = (PV_R)(M_R) + (PV_{PG})(M_{PG}) + (PV_{CG})(M_{CG}) + (PV_{TR})(M_{TR}) + (PV_{TG})(M_{TG})$$

Where: Monomer VOC emissions = monomer VOC emissions from open molding operations included in the average, in kilograms per 12-month period.

PV_R = weighted-average monomer VOC emission rate for production resin used in the past 12 months, in kilograms per megagram.

M_R = mass of production resin used in the past 12 months, excluding any materials that are exempt, in megagrams.

PV_{PG} = weighted-average monomer VOC emission rate for pigmented gel coat used in the past 12 months, in kilograms per megagram.

M_{PG} = mass of pigmented gel coat used in the past 12 months, excluding any material that are exempt, in megagrams.

PV_{CG} = weighted-average monomer VOC emission rate for clear gel coat used in the past 12 months, in kilograms per megagram.

M_{CG} = mass of clear gel coat used in the past 12 months, excluding any materials that are exempt, in megagrams.

PV_{TR} = weighted-average monomer VOC emission rate for tooling resin used in the past 12 months, in kilograms per megagram.

M_{TR} = mass of tooling resin used in the past 12 months, excluding any materials that are exempt, in megagrams.

PV_{TG} = weighted-average monomer VOC emission rate for tooling gel coat used in the past 12 months, in kilograms per megagram.

M_{TG} = mass of tooling gel coat used in the past 12 months, excluding any materials that are exempt, in megagrams.

- (3) Any molding resin and gel coat operations that a facility chooses to include in averaging emissions among different operations to meet a numerical monomer VOC emission rate limit rather than complying with the monomer VOC content limits established in Section 3(A)(1) of this Chapter shall use Equation 4 to compute the weighted-average monomer VOC emission rate for the previous 12 months for each open molding resin and gel coat operation included in the average for use in Equation 3:

Equation 4

$$PV_{OP} = \frac{\sum_{i=1}^n (M_i PV_i)}{\sum_{i=1}^n (M_i)}$$

Where: PV_{OP} = weighted-average monomer VOC emission rate for each open molding operation (PV_R , PV_{PG} , PV_{CG} , PV_{TR} , and PV_{TG}) included in the average, in kilograms of monomer VOC per megagram of material applied.

M_i = mass of resin or gel coat used within an operation in the past 12 months, in megagrams.

PV_i = the monomer VOC emission rate for resin or gel coat used within an operation in the past 12 months, in kilograms of monomer VOC per megagram of material applied. The equations in Table 2 shall be used to compute PV.

Table 2

Monomer Volatile Organic Compounds Emission Rate Formulas for Open Molding Resin and Gel Coat

| Material | Application Method | Formula |
|--|---|---|
| Production resin, tooling resin | a. Atomized b. Atomized, plus vacuum bagging with roll-out c. Atomized, plus vacuum bagging without roll-out d. Nonatomized e. Nonatomized, plus vacuum bagging with roll-out f. Nonatomized, plus vacuum bagging without roll-out | a. $0.014 \times (\text{Resin VOC}\%)^{2.425}$ b. $0.01185 \times (\text{Resin VOC}\%)^{2.425}$ c. $0.00945 \times (\text{Resin VOC}\%)^{2.425}$ d. $0.014 \times (\text{Resin VOC}\%)^{2.275}$ e. $0.011 \times (\text{Resin VOC}\%)^{2.275}$ f. $0.0076 \times (\text{Resin VOC}\%)^{2.275}$ |
| Pigmented gel coat, clear gel coat, tooling gel coat | All methods | $0.445 \times (\text{Gel Coat VOC}\%)^{1.675}$ |

C. Add-on emission control option. The owner or operator of any facility with molding resin and gel coat operations choosing to use add-on emission controls instead of complying with the monomer VOC content limits established in Section 3(A) of this Chapter shall:

- (1) Install control equipment to meet the monomer VOC limit determined by Equation 2 in Section 3(B)(1) of this Chapter, applying the mass of each material used during the control device performance test in Equation 2 to determine the emission limit (in kilograms of monomer VOC) that is applicable during the test, instead of using the mass of each material as it is established in Section 3(B)(1) of this Chapter;
- (2) Monitor and record relevant control device and capture system operating parameters during the control device performance test and use the recorded values to establish operating limits for those parameters; and
- (3) Monitor the operating parameters for the control device and emissions capture system and maintain the parameters within the established limits.

4. Calculating emission rates for filled resins

- (1) When using a filled production resin or filled tooling resin, the owner or operator shall calculate the emission rate for the filled material on an as-applied basis using Equation 5:

Equation 5

$$PV_F = \frac{PV_U \times (100 - \% \text{ Filler})}{100}$$

Where: PV_F = The as-applied monomer VOC emission rate for the filled production resin or tooling resin, in kilograms monomer VOC per megagram of filled material.

PV_U = The monomer VOC emission rate for the neat (unfilled) resin before filler is added, as calculated using the formulas in Table 2 of Section 3(B)(3) of this Chapter.

$\% \text{ Filler}$ = The weight-percent of filler in the as-applied filled resin system.

(2) If the filled resin:

- (1) Is used as a production resin then the value of PV_F calculated by Equation 5 shall not exceed 46 kilograms of monomer VOC per megagram of filled resin applied;
- (2) Is used as a tooling resin then the value of PV_F calculated by Equation 5 shall not exceed 54 kilograms of monomer VOC per megagram of filled resin applied;
- (3) Is included in the emissions averaging procedure then the facility shall use the value of PV_F calculated by Equation 5 for the value of PV_i in Equation 4 in Section 3(B)(3) of this Chapter.

5. Non-monomer VOC content

- A. Up to five percent of the non-monomer VOC content of a resin or gel coat shall be exempt from the VOC content limits of this Chapter.
- B. If the non-monomer VOC content limit of a resin or gel coat exceeds five percent, then the excess non-monomer VOC over five percent shall be added to the monomer VOC content. The monomer VOC content of resin and gel coat shall be determined by using SCAQMD Method 312-9, Determination of Percent monomer in polyester resins, revised 1996, unless the facility maintains records from the manufacturer to document the monomer VOC content of resin and gel coat materials.

6. Cleaning solvent standards

- A. The volatile organic compound content of cleaning solvents employed for routine application equipment cleaning shall contain a maximum of 5.0 per cent VOC by weight, or have a composite vapor pressure of no more than 0.50 mm Hg at sixty-eight degrees Fahrenheit, as determined by the cleaning solvent manufacturer's Material Safety Data Sheet (MSDS) or other appropriate documentation acceptable to the Department and EPA.
- B. Only non-volatile organic compound solvents shall be used to remove cured resin and gel coat from application equipment.

7. Work practice standards. All resin and gel coat containers with a capacity equal to or greater than 208 liters (55.0 gallons), including those used for on-site mixing of putties and polyester resin putties, shall have a cover with no visible gaps in place at all times. This work practice does not apply when materials are being manually added to or removed from a container, or when mixing equipment is being placed or removed from a container.

8. Test methods and compliance procedures. The owner or operator of any facility with open molding resin and gel coat operations choosing to use add-on emission controls pursuant to Section 3(C) of this Chapter shall perform compliance testing and demonstrate compliance using the methods and procedures described in Capture Efficiency Test Procedures, 06-096 CMR 126. The Department shall be notified 30 days prior to performing compliance testing, and test results shall be reported to the Department within 60 days after the test.

- A. When calculating the monomer VOC emission limitation in Section 3(B) of this Chapter, the owner or operator shall use the mass of each material used during the control device performance test (in lieu of the mass of each material used over the past twelve months) to determine the emission limit that is applicable during the test. If the measured emissions at the outlet of the control device are less than the emission limit, then the facility will be considered to have achieved compliance with the emission limit.
- B. If the owner or operator is using a filled production resin or tooling resin, compliance shall be demonstrated for the filled material on an as-filled basis using equation 6:

Equation 6

$$PV_F = PV_U \times \frac{(100 - \text{per cent filler})}{100}$$

Where: PV_F = The as-applied monomer VOC emission rate for a filled production resin or tooling resin, kilograms of monomer VOC per ton of filled material.

PV_U = The monomer VOC emission rate for the neat (unfilled) resin, before filler is added, as calculated using the formulas in Table 2 of this Chapter.

Per cent filler = The weight-per cent of filler in the as-applied filled resin system.

- C. The owner or operator subject to this Chapter choosing to use add-on emission controls pursuant to Section 3(C) of this Chapter shall perform additional testing and submit a report within ninety (90) days of receipt of notice from the Department if equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that the surface coating facility may be operating out of compliance with the emission limitations.

9. Monitoring and recordkeeping requirements

- A. The owner or operator of a fiberglass boat manufacturing facility that is subject to the monomer and nonmonomer VOC requirements of this Chapter shall collect and record the following information for each operation subject to this Chapter on a monthly basis and shall maintain the information at the facility for a period of five years:
- (1) The total quantity of atomized molding production resin, nonatomized production resin, pigmented gel coat, clear gel coat, atomized tooling resin, nonatomized tooling resin, and tooling gel coat used per month and the weighted-average monomer VOC contents for each operation.
 - (2) All calculations performed pursuant to Section 3 of this Chapter.
 - (3) The volatile organic compound content of each non-monomer resin and gel coat employed.
 - (4) For each cleaning solvent employed for routine application equipment cleaning, either the volatile organic compound content, by weight per cent or the composite vapor pressure, in mmHg; whichever is the applicable requirement selected to comply with the cleaning solvent requirements of Section 4 of this Chapter.
 - (5) Calculations performed to establish the monomer VOC emission limitation as specified in Section 3(B)(1) of this Chapter.
- B. If an owner or operator of a fiberglass boat manufacturing facility employs add-on control equipment consisting of a thermal incinerator or catalytic incinerator to achieve and maintain compliance pursuant to Section 3(C) of this Chapter, the owner or operator shall comply with the following requirements:
- (1) Continuous temperature monitoring and continuous temperature recording equipment shall be installed and operated to accurately measure and record the operating temperature(s) for the control device.

- (2) The following information shall be collected and recorded for each day of operation of the control device, and the information shall be maintained at the facility for a period of five years:
 - (a) A log or record of the operating time for the control device, monitoring equipment, and the open molding operation being controlled.
 - (b) For thermal incinerators, all three-hour periods of operation during which the average combustion temperature was more than fifty degrees Fahrenheit below the average combustion temperature during the most recent emission test that demonstrated that the open molding operation was in compliance.
 - (c) For catalytic incinerators, all three-hour periods of operation during which the average temperature of the dryer exhaust gases immediately before the catalyst bed was more than fifty degrees Fahrenheit below the average temperature of the dryer exhaust gases during the most recent emission test that demonstrated that the open molding operation was in compliance, and all three-hour periods during which the average temperature difference across the catalyst bed was less than eighty per cent of the average temperature difference during the most recent emission test that demonstrated that the open molding operation was in compliance.
- C. If an owner or operator of a fiberglass boat manufacturing facility operates add-on control equipment consisting of a carbon adsorption system to achieve and maintain compliance pursuant to Section 3(C) of this Chapter, the owner or operator shall comply with the following requirements:
- (1) One of the following types of monitoring and recording equipment shall be installed and operated for the carbon adsorption system:
 - (a) A continuous emission monitoring and recording system that is capable of accurately measuring and recording the concentration of organic compounds in the exhaust gases from the carbon adsorption system.
 - (b) Monitoring and recording equipment that are capable of accurately measuring and recording the total mass steam flow rate for each regeneration cycle of each carbon bed.
 - (c) Monitoring and recording equipment that are capable of accurately measuring and recording the temperature of each carbon bed after regeneration (and after completion of any cooling cycle(s)).
 - (2) The following information shall be collected and recorded for each day of operation of the carbon adsorption system, and the information shall be maintained at the facility for a period of five years:
 - (a) A log or record of the operating time for the carbon adsorption system, monitoring equipment, and the open molding operation being controlled.

- (b) For a carbon adsorption system that employs a continuous emission monitoring and recording system to measure and record the concentration of organic compounds in the exhaust gases, all three-hour periods of operation during which the average concentration level or reading in the exhaust gases is more than twenty per cent greater than the exhaust gas organic compound concentration level or reading measured by the most recent performance test that demonstrated that the open molding operation was in compliance.
- (c) For a carbon adsorption system that employs monitoring and recording equipment to measure and record the total mass steam flow rate for each regeneration cycle of each carbon bed, all carbon bed regeneration cycles during which the total mass steam flow rate was more than ten per cent below the total mass steam flow rate during the most recent performance test that demonstrated that the open molding operation was in compliance.
- (d) For a carbon adsorption system that employs monitoring and recording equipment to measure and record the temperature of each carbon bed after regeneration (and after completion of any cooling cycle(s)), all carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than ten per cent greater than the carbon bed temperature during the most recent performance test that demonstrated that the open molding operation was in compliance.
- (e) Each parameter monitor must record accurate and reliable data at least 98% of the source-operating time within any quarter of the calendar year unless the licensee can demonstrate to the satisfaction of the Department that the failure of the system to record accurate and reliable data was due to the performance of established quality assurance and quality control procedures or unavoidable malfunctions.

10. Reporting requirements

- A. Any owner or operator of a boat manufacturing facility that is subject to the provisions of this Chapter shall notify the Department of any record maintained in accordance with Section 6(A) of this Chapter showing the use of noncomplying materials. A copy of such record shall be sent to the Department within thirty days following the end of the month in which the use of noncomplying materials occurs.
- B. Any owner or operator of a fiberglass boat manufacturing facility that employs control equipment to achieve and maintain compliance pursuant to Section 3(C) of this Chapter shall submit to the Department quarterly summaries of the records required by Sections 8(B) and 8(C) of this Chapter. These quarterly reports shall be submitted no later than April 30th, July 31st, October 31st, and January 31st of each year, and shall cover the records for the previous calendar quarters.

11. Compliance dates

- A.** The owner or operator of a facility that is subject to this Chapter shall comply with the requirements of this Chapter no later than the following dates:
- (1) For any fiberglass boat manufacturing facility subject to this Chapter for which construction commenced prior to the effective date of this Chapter, the compliance date is either 36 months after the effective date of this Chapter or the date of initial startup of the fiberglass boat manufacturing facility, whichever is later.
 - (2) For any fiberglass boat manufacturing facility subject to this Chapter for which construction commenced on or after the effective date of this Chapter, the compliance date is the initial startup date of the boat manufacturing facility.
- B.** If an owner or operator of a fiberglass boat manufacturing facility that is subject to this Chapter employs add-on control equipment to achieve and maintain compliance with this Chapter, pursuant to Section 3(C) of this Chapter, the owner or operator shall demonstrate compliance with Section 3(C) of this Chapter by testing the volatile organic compound emissions from the control equipment in accordance with Section 6 of this Chapter and according to the following:
- (1) For any owner or operator of a facility subject to Section 11A)(1) of this Chapter, compliance with Section 3(C) shall be demonstrated no later than ninety days after the facility's compliance date. In addition, the Department may accept the results of an emission test conducted prior to the effective date of this Chapter, if the owner or operator provides the Department or its agent the opportunity to witness the test, an approved EPA emission test method was employed, and the operations during testing were consistent with the current operating conditions and operating capacity.
 - (2) For any owner or operator of a facility subject to Section 11(A)(2) of this Chapter, within one hundred eighty days after the facility's compliance date.
- C.** Additional testing of the VOC emission control equipment for a fiberglass boat manufacturing facility in accordance with Section 8(C) of this Chapter may be required by the Department to ensure continued compliance.

12. Initial notification and compliance certification

- A.** The owner or operator of a fiberglass boat manufacturing facility that is subject to this Chapter shall notify the Department in writing that the facility is subject to this Chapter. The notification shall be submitted no later than sixty days after the effective date of this Chapter, or within sixty days after the facility becomes subject to this Chapter, and shall provide the following information:
- (1) Name and address of the owner or operator;
 - (2) Address (i.e., physical location) of the affected facility;
 - (3) Description of the boat manufacturing facility and air emission license number, if assigned; and

- (4) Identification of the volatile organic compound emission requirement, the means of compliance and the compliance date for the fiberglass boat manufacturing facility.

B. Compliance certification

- (1) The owner or operator of a fiberglass boat manufacturing facility that is subject to this Chapter shall maintain records demonstrating compliance following the completion of any of the following requirements:
 - (a) For a fiberglass boat manufacturing facility subject to the VOC emission requirements in Sections 3 through 5 of this Chapter, the first documented achievement of compliance with the requirements; or
 - (b) For a fiberglass boat manufacturing facility subject to the add-on control requirement in Section 3(C) of this Chapter:
 - (i) The completion of installation and initial use of the add-on control system;
 - (ii) The completion of installation and initial use of any monitoring devices required under Section 9 of this Chapter; and
 - (c) The completion of any compliance testing conducted in accordance with Section 6 of this Chapter to demonstrate compliance with the applicable control requirement.
- (2) The compliance certification under Section 12(C)(1) of this Chapter shall provide the following, where applicable:
 - (a) A description of the compliance option employed.
 - (b) A description of the VOC emission control system.
 - (c) A description of the monitoring devices.
 - (d) A description of the records that document continuing compliance.
 - (e) The results of any compliance tests, including documentation of test data.
 - (f) The results of any records that document continuing compliance, including calculations.
 - (g) A statement by the owner or operator of the affected facility as to whether the boat manufacturing facility has complied with the requirement(s).

D. Exempted facilities

- (1) For the purpose of demonstrating that a source is not subject to this Chapter, the owner or operator shall maintain, for 5 years and for each monomer resin, monthly purchase records and Material Safety Data Sheets (MSDS), as used to comply with

the Occupational Safety and Health Administration's Hazard Communication Standard, 29 CFR 1910.1200.

- (2) The owner or operator of a fiberglass boat manufacturing facility that determines the boat manufacturing operations are not subject to the monomer and non-monomer VOC requirements of Sections 3 through 5 of this Chapter shall maintain the following records for a period of five years, as applicable:
- (a) For a production resin employed meeting the exemption requirements specified in Section 3(A)(3)(a) of this Chapter, the owner or operator shall keep a record of the resins which are being used for this exemption.
 - (b) For a pigmented, clear, and tooling gel coat employed meeting the exemption requirements specified in Section 3(A)(3)(b) of this Chapter, the amount of each of these types of coats employed and copies of calculations showing that the exempt amount does not exceed 1.0 per cent of all gel coat used.
 - (c) For a pure one hundred per cent vinylester used for skin coats meeting the exemption requirements specified in Section 3(a)(3)(c) of this Chapter, the amount of one hundred per cent vinylester skin coat employed and copies of calculations showing that the exempt amount does not exceed 5.0 per cent of all resin used.

STATUTORY AUTHORITY: 38 M.R.S.A. §585-A

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