

(zzz) VOC Emissions from the Fiberglass Boat Manufacturing.

1. No person shall cause, let, permit, suffer or allow the emissions of monomer VOC from open molding resin and gel coat operations to exceed the limit specified by Equation 1 of this section, based on a 12-month rolling average.

Equation 1:

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

where:

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

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

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

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

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

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

2. The emission limit specified by Equation 1 of this subsection shall be achieved by one or more of the options listed in paragraphs 2.(i) through 2.(iii) of this subsection:

(i) Emissions averaging option: Demonstrate that emissions from the open molding resin and gel coat operations included in the average meet the emission limit specified by Equation 1 of this subsection using the procedures described in subparagraph 3. of this subsection.

(I) Compliance with this option is based on a 12-month rolling average; and

(II) Those operations and materials not included in the emissions average must comply with either paragraph 2.(ii) or 2.(iii) of this subsection.

(ii) Compliant materials option: Demonstrate compliance by using resins and gel coats that meet the monomer VOC content requirements specified in subparagraph 4. of this subsection.

(I) Compliance with this option is based on a 12-month rolling average.

(iii) Add-on control option: Use an enclosure and add-on control device, and demonstrate that the resulting emissions meet the emission limit specified by Equation 1 of this subsection.

(l) Compliance with this option is based on control device performance testing and control device monitoring.

3. Emissions Averaging Option:

(i) Compliance using this option is demonstrated on a 12-month rolling average basis and is determined at the end of every month (12 times per year).

(ii) At the end of the first twelfth month after initial operation and at the end of every subsequent month, use Equation 2 of this subsection to demonstrate that the monomer VOC emissions from those operations included in the average do not exceed the emission limit specified by Equation 1 of this subsection for the same 12-month period. (Include terms in Equation 1 and Equation 2 of this subsection only for those operations and materials included in the average.)

Equation 2:

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 calculated using the monomer VOC emission equations for each operation included in the average (kilograms).

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

M_R = Mass of production resin used in the past 12 months (megagrams).

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

M_{PG} = Mass of pigmented gel coat used in the past 12 months (megagrams).

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

M_{CG} = Mass of clear gel coat used in the past 12 months (megagrams).

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

M_{TR} = Mass of tooling resin used in the past 12 months (megagrams).

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

M_{TG} = Mass of tooling gel coat used in the past 12 months (megagrams).

(iii) At the end of every calendar month, use Equation 3 of this subsection to compute the weighted average monomer VOC emission rate for each open molding resin and gel coat operation included in the average:

Equation 3:

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

where:

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

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

n = Number of different open molding resins and gel coats used within an operation in the past 12 months.

PV_i = The monomer VOC emission rate for resin or gel coat i used within an operation in the past 12 months, kilograms of monomer VOC per megagram of material applied.

(iv) The monomer VOC emission rate (PV_i) from the atomization of production resin or tooling resin is computed by the following equation:

$$[(0.014)(\text{Resin VOC}\%^{2.425})]$$

(v) The monomer VOC emission rate (PV_i) from the atomization plus vacuum bagging with roll-out of production resin or tooling resin is computed by the following equation:

$$[(0.01185)(\text{Resin VOC}\%^{2.425})]$$

(vi) The monomer VOC emission rate (PV_i) from the atomization plus vacuum bagging without roll-out of production resin or tooling resin is computed by the following equation:

$$[(0.00945)(\text{Resin VOC}\%^{2.425})]$$

(vii) The monomer VOC emission rate (PV_i) from the non-atomization of production resin or tooling resin is computed by the following equation:

$$[(0.014)(\text{Resin VOC}\%^{2.275})]$$

(viii) The monomer VOC emission rate (PV_i) from the non-atomization plus vacuum bagging with roll-out of production resin or tooling resin is computed by the following equation:

$$\left[(0.0110) (\text{Resin VOC} \%^{2.275}) \right]$$

(ix) The monomer VOC emission rate (PV_i) from the non-atomization plus vacuum bagging without roll-out of production resin or tooling resin is computed by the following equation:

$$\left[(0.0076) (\text{Resin VOC} \%^{2.275}) \right]$$

(x) The monomer VOC emission rate (PV_i) from the application of any pigmented gel coat, clear gel coat or tooling gel coat is computed by the following equation:

$$\left[(0.445) (\text{Gel Coat VOC} \%^{1.675}) \right]$$

4. Compliant Coating Option: For each open molding operation complying using the compliant materials option:

(i) The monomer VOC content requirements are specified in paragraphs 4.(i)(I) through 4.(i)(VII).

(I) The weighted-average monomer VOC content requirement for spray atomized production resin operations is 28 percent (weight percent).

(II) The weighted-average monomer VOC content requirement for nonatomized production resin operations is 35 percent (weight percent).

(III) The weighted-average monomer VOC content requirement for pigmented gel coat operations applied using any method is 33 percent (weight percent).

(IV) The weighted-average monomer VOC content requirement for clear coat gel operations using any method is 48 percent (weight percent).

(V) The weighted-average monomer VOC content requirement for atomized tool resin operations is 30 percent (weight percent).

(VI) The weighted-average monomer VOC content requirement for nonatomized tooling resin operations is 39 percent (weight percent).

(VII) The weighted-average monomer VOC content requirement for tooling gel coat operations applied using any method is 40 percent (weight percent).

(ii) Compliance using the monomer VOC content requirements listed in paragraph 4.(i)(I) through 4.(i)(VII) is based on a 12-month rolling average that is calculated at the end of every month.

(iii) At the end of the first twelfth month and at the end of every subsequent month, if all resins and gel coats used in an operation have monomer VOC contents no greater than the applicable monomer VOC content limits specified in paragraph 4.(i)(I) through 4.(i)(VII), then:

(I) Compliance with the emission limit specified by Equation 1 of this subsection for the particular operation is achieved; and

(II) There is no need to complete the calculations required by paragraph 4.(iv) for that operation.

(iv) If compliance as specified in subparagraph 4.(iii) is not achieved, calculate the weighted-average monomer VOC content for all resins and gel coats [excluding filled resins] used in the previous 12 months at the end of every month using Equation 4:

Equation 4:

Weighted-Average Monomer VOC Content (%) =

$$\left[\frac{\sum_{i=1}^n [(M_i)(VOC_i)]}{\sum_{i=1}^n (M_i)} \right]$$

where:

M_i = Mass of open molding resin or gel coat i used in the past 12 months in an operation (megagrams).

VOC_i = Monomer VOC content, by weight percent, of open molding resin or gel coat i 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.

(v) The monomer VOC emissions from the use of filled production resins and filled tooling resins shall be calculated using Equation 5:

(I) Equation 5:

$$(PV_F) = (PV_U) \left[\frac{(100 - \% \text{ Filler})}{100} \right]$$

where:

PV_F = The as-applied monomer VOC emission rate for the filled production resin or tooling resin (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 paragraphs 3.(iv) through 3.(x), whichever is applicable.

% Filler = The weight-percent of filler in the as-applied filled resin system.

(II) The value of PV_F calculated by Equation 5 shall not exceed 46 kilograms of monomer VOC per megagram of filled resin, as applied, if the filled resin used is a production resin.

(III) The value of PV_F calculated by Equation 5 shall not exceed 54 kilograms of monomer VOC per megagram of filled resin, as applied, if the filled resin used is a tooling resin.

(IV) The facility shall use the value of PV_F calculated using Equation 5 if the facility is including a filled resin in Equation 3 of this subsection.

5. Add-On Control Option: If product performance requirements or other needs dictate the use of higher monomer VOC materials than those that would meet the recommended emission limits specified in subparagraph 4. of this subsection, a fiberglass boat manufacturing facility shall:

(i) Install and operate a thermal oxidizer as an add-on control device and meet the operating limits specified in Table 4 of 40 CFR Part 63 Subpart VVV, as amended, that apply to the emission capture system and thermal oxidizer.

(ii) Use of an add-on control device other than a thermal oxidizer, or monitoring an alternative parameter and complying with a different operating limit must be approved by the Director.

6. The non-monomer VOC content of filled resins shall not exceed 5 percent (weight percent) for all resins and gel coats included in VOC limits described in paragraphs 1. through 5. of this subsection.

7. All resin and gel coat mixing containers with a capacity equal to or greater than 55 gallons, including those used for on-site mixing of putties and polyputties, shall have a cover with no visible gaps in place at all times except during the following operations:

(i) When mixing is being manually added to or removed from a container; and

(ii) When mixing or pumping equipment is being placed or removed from a container.

8. The VOC content of cleaning solvents for routine application equipment cleaning shall not contain in excess of 5 percent VOC by weight.

9. For the purpose of this subsection, the definitions specified in 40 CFR Part 63.5779, as amended, are hereby incorporated and adopted by reference with the following additions:

(i) "Fiberglass boat manufacturing" means a facility that manufacturers 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. For purposes of this subsection, fiberglass boat manufacturing does not include facilities that manufacture solely parts of boats (such as hatches, seats, or lockers), or boat trailers, but not manufacture hulls or decks of boats from fiberglass, or build molds to make fiberglass boat hulls or decks. If a facility

manufactures hulls or decks, or molds for hulls or decks, then the manufacture of all other fiberglass boat parts, including small parts such as hatches, seats, and lockers is also covered.

(ii) "Monomer" means a volatile organic compound that partly combines with itself, or other similar compounds, by a cross-linking reaction to become a part of the cured resin.

10. Applicability: On and after January 1, 2015, the requirements of this subparagraph (zzz) shall apply to facilities at which the actual emissions of volatile organic compounds from all non-exempt fiberglass boat manufacturing processes at a facility equal or exceed 2.7 tons per 12-month rolling period for facilities located in Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton counties. Any physical or operational changes that are necessary to comply with the provisions specified in this subparagraph are subject to the compliance schedule specified in subparagraph 12. Prior to January 1, 2015, such facilities shall comply with the provisions of subparagraph 391-3-1-.02(2)(tt), if applicable.

11. Applicability: The requirements of this Subparagraph (zzz) will no longer be applicable by the compliance deadlines if the counties specified in subparagraph 10. are re-designated to attainment for the 1997 National Ambient Air Quality Standard for ozone prior to January 1, 2015. In the event the 1997 National Ambient Air Quality Standard for ozone is violated in the specified counties, the requirements of this Subparagraph (zzz) will only be reinstated if the Director determines that the measure is necessary to meet the requirements of the contingency plan.

12. Compliance Schedule:

(i) An application for a permit to construct and operate volatile organic compound emission control systems and/or modifications of process and/or coatings used must be submitted to the Division no later than **July 1, 2014**.

(ii) On-site of construction of emission control systems and/or modification of process or coatings must be completed by **November 1, 2014**.

(iii) Full compliance with the applicable requirements specified Subparagraph (zzz) must be completed before **January 1, 2015**.

13. Applicability: The requirements of this subsection apply to the following operations at a fiberglass boat manufacturer:

(i) open molding and gel coat operations (including pigmented gel coat, clear gel coat, production resin, tooling gel coat, and tooling resin);

(ii) resins and gel coat mixing operations; and

(iii) resins and gel coat application equipment cleaning operations.

14. Applicability: The requirements of this subsection do not apply to the following operations at a fiberglass boat manufacturer:

(i) Surface coating applied to fiberglass boats;

(ii) Surface coating for fiberglass and metal recreational boats (pleasure craft); and

(iii) industrial adhesives used in the assembly of fiberglass boats.

15. Exemptions: The following activities are exempt from the open molding emission limit specified in subparagraph 1. of this subsection:

(i) Production resins (including skin coat resins) that shall meet specifications for use in military vessels or shall be 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. Production resins for which this exemption is used must be applied with nonatomizing (non-spray) resin application equipment. You must keep a record of the resins for which you are using this exemption.

(ii) 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 percent by weight of all gel coat used at the facility on a 12-month rolling average basis. You must keep a record of the amount of gel coats used per month for which you are using this exemption and copies of calculations showing that the exempt amount does not exceed 1 percent of all gel coat used.

(iii) Pure, 100 percent vinylester resin used for skin coats. This exemption does not apply to blends of vinylester and polyester resins used for skin coats. The total resin materials included in the exemption cannot exceed 5 percent by weight of all resin used at the facility on a 12-month rolling-average basis. You must keep a record of the amount of 100 percent vinylester skin coat resin used per month that is eligible for this exemption and copies of calculations showing that the exempt amount does not exceed 5 percent of all resin used.