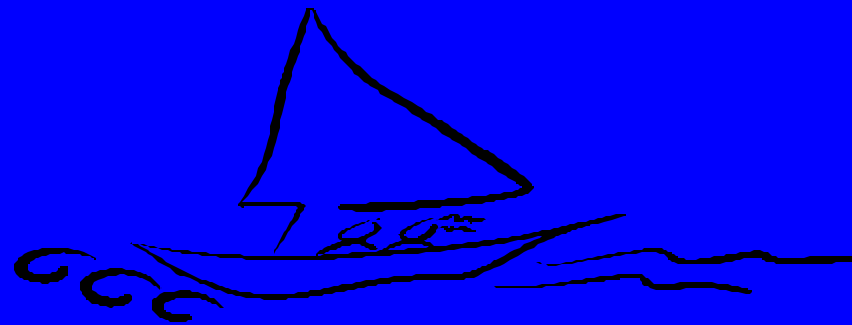


Boat Manufacturing National Emission Standards for Hazardous Air Pollutants

October 4 , 2001



General Information

- Proposed on July 14, 2000 (65 FR 43842)
- Final rule signed by Administrator on 8/14/2001.
- Can be found on Federal Register website at <http://www.access.gpo.gov/nara/> or at <http://www.epa.gov/ttn/caaa/t3pfpr.html>
- For information on applicability and rule determinations, contact the appropriate State or local agency representative
- For other information, contact Mark Morris at (919) 541-5416 or morris.mark@epa.gov

The Boat Rule Applies if:

- You manufacture hulls or decks of boats from fiberglass or aluminum, or assemble boats from premanufactured hulls and decks, or build molds to make fiberglass hulls or decks
- You have the potential to emit 10 tons per year of one hazardous air pollutant (HAP) or 25 tons per year of a combination of HAP (i.e., you are a "major source")

What Parts of a Boat Facility Are Covered?

- Open molding resin and gel coat operations (including pigmented gel coat, clear gel coat, production resin, tooling gel coat, and tooling resin)
- Closed molding resin operations
- Resin and gel coat mixing and application equipment cleaning operations
- Carpet and fabric adhesive operations
- Aluminum hull and deck coating operations

What Parts of a Boat Facility Are Not Covered?

- Aluminum coating operations on aluminum boats intended for nonrecreational use
- Antifoulant coatings
- Assembly adhesives
- Fiberglass hull and deck coatings
- Research and development activities
- Mold sealing and release agents
- Mold stripping and cleaning solvents
- Wood coatings

Compliance Dates

- For existing sources: Approximately 9/2004
- For new sources: Upon startup

Standard for Open Molding Operations

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

Where the numbers (46, 159, etc.) are "point values,"
M is mass of material, and the subscripts are:

R - Production Resin

PG- Pigmented Gelcoat

CG- Clear Gelcoat

TR- Tooling Resin

TG- Tooling Gelcoat

Open Molding Compliance Options

- Compliant materials
 - may average over rolling 12-month period
- Emissions averaging
 - using point values
- Add-on control device

Compliant Materials

Operation	Application Method	Organic HAP Content (weight %)
Production Resin	Atomized	28
	Nonatomized	35
Pigmented Gelcoat	Any Method	33
Clear Gelcoat	Any Method	48
Tooling Resin	Atomized	30
	Nonatomized	39
Tooling Gelcoat	Any Method	40

Compliant Materials

- If you always use materials meeting the limits in the table above, you only need to keep track of HAP content and application method
- If you use materials of varying HAP content, you would show compliance on a 12-month rolling average
 - You need to keep track of HAP content, application method, mass of material used, and perform the rolling average calculations

Emissions Averaging

- If you can't meet a limit in the table above for a material, then you can compensate for that by going below the limit(s) for other material(s)
- Use point values
 - Point values are a way to compare the emissions of different materials and different application methods
 - Plug in organic HAP content into a formula to get a point value
 - Point values have units of mass of HAP per mass of resin or gelcoat (kilogram HAP/megagram material)

Emissions Averaging

- Point value example:
 - Production resin with 35% organic HAP applied with a flowcoater
 - Point value equation for this scenario is:
 $0.014 \times (\text{HAP}\%)^{2.275}$
 - So, $0.014 \times (35)^{2.275} = 46$

Emissions Averaging

$$\text{"Actual" HAP} = (PV_R)(M_R) + (PV_{PG})(M_{PG}) + (PV_{CG})(M_{CG}) + (PV_{TR})(M_{TR}) + (PV_{TG})(M_{TG})$$

Where the point values are calculated as above, M is mass of material, and the subscripts are:

R - Production Resin

PG- Pigmented Gelcoat

CG- Clear Gelcoat

TR- Tooling Resin

TG- Tooling Gelcoat

Other Fiberglass Provisions

- Closed molding: no further reductions required
- Mixing containers (larger than 55 gallons) have to be covered
- Application equipment cleaning solvents must have less than 5% organic HAP
- Carpet and fabric adhesives must have less than 5% organic HAP

Aluminum Coating Operations

- Emission limits:
 - Wipedown solvents: 0.33 kilograms of organic HAP per liter of total coating solids applied
 - Coatings: 1.22 kilograms of organic HAP per liter of total coating solids applied
 - Can also meet a combined limit of 1.55 kg/l instead of the individual limits above

Aluminum Boat Operations: Other Provisions

- Spray gun cleaning work practices
- Carpet and fabric adhesives must have less than 5% organic HAP

Changes Since Proposal

- Research and development operations not covered
- Exemption for 100% vinyl ester skincoats
 - Still have to be applied with nonatomized technology
 - No more than 5% of total resin usage
- 12-month rolling average instead of 3-month rolling average