

# **Appendix A**

## **UEF Table**

## Unified Emission Factors for Open Molding of Composites

July 23, 2001

Emission Rate in Pounds of Styrene Emitted per Ton of Resin or Gelcoat Processed

Styrene content in resin/gelcoat, % <sup>(1)</sup>	<33 <sup>(2)</sup>	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	>50 <sup>(2)</sup>
Manual	0.126 x %styrene x 2000	83	89	94	100	106	112	117	123	129	134	140	146	152	157	163	169	174	180	((0.286 x %styrene) - 0.0529) x 2000
Manual w/ Vapor Suppressed Resin VSR <sup>(3)</sup>	Manual emission factor [listed above] x (1 - (0.50 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Atomized	0.169 x %styrene x 2000	111	126	140	154	168	183	197	211	225	240	254	268	283	297	311	325	340	354	((0.714 x %styrene) - 0.18) x 2000
Mechanical Atomized with VSR <sup>(3)</sup>	Mechanical Atomized emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Atomized Controlled Spray <sup>(4)</sup>	0.130 x %styrene x 2000	86	97	108	119	130	141	152	163	174	185	196	207	218	229	240	251	262	273	0.77 x ((0.714 x %styrene) - 0.18) x 2000
Mechanical Controlled Spray with VSR	Mechanical Atomized Controlled Spray emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Mechanical Non-Atomized	0.107 x %styrene x 2000	71	74	77	80	83	86	89	93	96	99	102	105	108	111	115	118	121	124	((0.157 x %styrene) - 0.0165) x 2000
Mechanical Non-Atomized with VSR <sup>(3)</sup>	Mechanical Non-Atomized emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																			
Filament application	0.184 x %styrene x 2000	122	127	133	138	144	149	155	160	166	171	177	182	188	193	199	204	210	215	((0.2746 x %styrene) - 0.0298) x 2000
Filament application with VSR <sup>(3)</sup>	0.120 x %styrene x 2000	79	83	86	90	93	97	100	104	108	111	115	118	122	125	129	133	136	140	0.65 x ((0.2746 x %styrene) - 0.0298) x 2000
Gelcoat Application	0.445 x %styrene x 2000	294	315	336	356	377	398	418	439	460	481	501	522	543	564	584	605	626	646	((1.03646 x %styrene) - 0.195) x 2000
Gelcoat Controlled Spray Application <sup>(4)</sup>	0.325 x %styrene x 2000	215	230	245	260	275	290	305	321	336	351	366	381	396	411	427	442	457	472	0.73 x ((1.03646 x %styrene) - 0.195) x 2000
Gelcoat Non-Atomized Application <sup>(6)</sup>	SEE Note 9 below	195	205	214	223	232	241	250	259	268	277	287	296	305	314	323	332	341	350	((0.4506 x %styrene) - 0.0505) x 2000
Covered-Cure after Roll-Out	Non-VSR process emission factor [listed above] x (0.60 for Manual <or> 0.85 for Mechanical)																			
Covered-Cure without Roll-Out	Non-VSR process emission factor [listed above] x (0.50 for Manual <or> 0.55 for Mechanical)																			

Emission Rate in Pounds of Methyl Methacrylate Emitted per Ton of Gelcoat Processed

MMA content in gelcoat, % <sup>(6)</sup>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	≥20
Gel coat application <sup>(7)</sup>	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	0.75 x %MMA x 2000

### Notes

- Including styrene monomer content as supplied, plus any extra styrene monomer added by the molder, but before addition of other additives such as powders, fillers, glass, etc.
- Formulas for materials with styrene content < 33% are based on the emission rate at 33% (constant emission factor expressed as percent of available styrene), and for styrene content > 50% on the emission rate based on the extrapolated factor equations; these are not based on test data but are believed to be conservative estimates. The value for "% styrene" in the formulas should be input as a fraction. For example, use the input value 0.30 for a resin with 30% styrene content by wt.
- The VSR reduction factor is determined by testing each resin/suppressant formulation according to the procedures detailed in the CFA Vapor Suppressant Effectiveness Test.
- SEE the CFA Controlled Spray Handbook for a detailed description of the controlled spray procedures.
- The effect of vapor suppressants on emissions from filament winding operations is based on the Dow Filament Winding Emissions Study.
- Including MMA monomer content as supplied, plus any extra MMA monomer added by the molder, but before addition of other additives such as powders, fillers, glass, etc.
- Based on gelcoat data from MMA Emission Study.
- SEE the July 17, 2001 EECS report Emission Factors for Non-Atomized Application of Gel Coats used in the Open Molding of Composites for a detailed description of the non-atomized gelcoat testing.
- Use the equation ((0.4506 x %styrene) - 0.0505) x 2000 for gelcoats with styrene contents between 19% and 32% by wt.; use the equation 0.185 x %styrene x 2000 for gelcoats with less than 19% styrene content by wt.

**Appendix B**  
**PTE Calculations**

## Mold Maintenance & Repair Operations PTE

Determination from plantwide usage

Coating	Usage (gal/hr)	Density (lb/gal)	%VOC	% HAP	VOC (tons)	Toluene (tons)
905 Cleaner	0.6516	7.05	100	70	20.12	14.08
Tooling Gel	0.0044	9.3	47	47	0.08	0.06
910 Sealer	0.0818	7.3	94.52	0	2.47	0.00
<b>Totals</b>					<b>22.68</b>	<b>14.14</b>

## Gel Coat and Resin PTE Calculations

### VOC/HAP Emissions

Coating	Usage (ton/hr)	% Styrene *	VOC/HAP Emission Factor (lb/ton)	VOC/HAP (ton/yr)
Gel Coat	0.2141	37	275.00	257.88
Resin **	0.4688	31	80.60	165.50
<b>Totals</b>			<b>355.60</b>	<b>423.38</b>

\* Assumes highest Styrene content possible that would be used

\*\* Assumes resin with highest emission factor. VIP Resin is less therefore, not used

### PM/PM10 Emissions

Coating	Usage (ton/hr)	% Solids *	% Transfer Efficiency **	% Control Efficiency	PTE Before Controls (tons)	PTE After Controls (tons)
Gel Coat	0.2141	69	90	99	129.41	1.29
Resin	0.4688	75	90	99	308.00	3.08
<b>Totals</b>					<b>437.41</b>	<b>4.37</b>

\* Assumes highest Solids content possible that would be used, which would be from White Gelcoat

\*\* Taken from guidance in Controlled Spray Handbook, but with conservative numbers derived from it  
*Catalyst figures are not included for particulate emissions because there are no solid in these products*

### Gel Coat and Resin Catalyst Emissions

Coating	Usage (ton/hr)	%VOC **	VOC (tons)
Resin Catalyst *	0.0056	2	0.98
Gel Coat Catalyst	0.0028	2	0.49
<b>Totals</b>			<b>1.47</b>

\* Assumes highest emitting resin catalyst, which is lauan backed.

\*\* There is no HAPs in these products, they are MEK based

**Potential To Emit (before controls) For Case Study Subject**

<b><i>Emission Unit</i></b>	<b><i>PM</i></b>	<b><i>PM10</i></b>	<b><i>VOC</i></b>	<b><i>HAP</i></b>
<b><i>Gel Coat</i></b>	129.41	129.41	257.88	257.88
<b><i>Lamination/Resin</i></b>	308.00	308.00	165.50	165.50
<b><i>Catalysts</i></b>	0	0	1.47	0
<b><i>Wood Shop</i></b>	39.42	39.42	0	0
<b><i>Trimming</i></b>	17.52	17.52	0	0
<b><i>Mold Maintenance &amp; Repair</i></b>	0	0	22.68	14.14
<b><i>TOTAL</i></b>	494.35	494.35	447.53	437.53

**Potential To Emit (after controls) For Case Study Subject**

<b><i>Emission Unit</i></b>	<b><i>PM</i></b>	<b><i>PM10</i></b>	<b><i>VOC</i></b>	<b><i>HAP</i></b>
<b><i>Gel Coat</i></b>	1.29	1.29	257.88	257.88
<b><i>Lamination/Resin</i></b>	3.08	3.08	165.50	165.50
<b><i>Catalysts</i></b>	0	0	1.47	0
<b><i>Wood Shop</i></b>	0.3942	0.3942	0	0
<b><i>Trimming</i></b>	0.1752	0.1752	0	0
<b><i>Mold Maintenance &amp; Repair</i></b>	0	0	0.00	0.00
<b><i>TOTAL</i></b>	4.94	4.94	424.85	423.38

## Wood Shop & Trimming PTE

### PM/PM10 Emissions

Coating	Sawdust Created (ton/hr)	% Control Efficiency	PTE Before Controls	PTE After Controls
Wood Shop	0.0045	99	39.42	0.3942
Trimming / Finishing	0.002	99	17.52	0.1752
			56.94	0.5694

PTE is based upon running 8760 hours per year

## **Appendix C**

### **Subpart WWWW Table 1, Emission Factor Calculation Formulas**

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

As specified in §63.5810, use the equations in the following table to calculate organic HAP emissions factors for specific open molding and centrifugal casting process streams:

If your operation And you use...  
 type is a new or existing...

With...	Use this organic HAP Emissions Factor (EF) Equation for materials with 33 percent or more organic HAP less than 33 percent organic HAP (19 percent for nonatomized gel for nonatomized gel coat) <sup>234</sup> ...	Use this organic HAP emissions Factor (EF) Equation for materials with 33 percent or more organic HAP (19 percent for nonatomized gel coat) <sup>234</sup> ...
1. open molding operation		
a. manual resin application		
i. nonvapor-suppressed resin	$EF = 0.126 \times \%HAP \times 2000$	$EF = ((0.286 \times \%HAP) - 0.0529) \times 2000$
ii. vapor-suppressed resin	$EF = 0.126 \times \%HAP \times 2000 \times (1 - (0.5 \times VSE \text{ factor}))$	$EF = ((0.286 \times \%HAP) - 0.0529) \times 2000 \times (1 - (0.5 \times VSE \text{ factor}))$
iii. vacuum bagging/closed-mold curing with roll-out	$EF = 0.126 \times \%HAP \times 2000 \times 0.8$	$EF = ((0.286 \times \%HAP) - 0.0529) \times 2000 \times 0.8$
iv. vacuum bagging/closed-mold curing without roll-out	$EF = (0.126 \times \%HAP \times 2000 \times 0.5)$	$EF = ((0.286 \times \%HAP) - 0.0529) \times 2000 \times 0.5$
b. atomized mechanical resin application		
i. nonvapor-suppressed resin	$EF = 0.169 \times \%HAP \times 2000$	$EF = ((0.714 \times \%HAP) - 0.18) \times 2000$
ii. vapor-suppressed resin	$EF = 0.169 \times \%HAP \times 2000 \times (1 - (0.45 \times VSE \text{ factor}))$	$EF = ((0.714 \times \%HAP) - 0.18) \times 2000 \times (1 - (0.45 \times VSE \text{ factor}))$
iii. vacuum bagging/closed-mold curing with roll-out	$EF = 0.169 \times \%HAP \times 2000 \times 0.85$	$EF = ((0.714 \times \%HAP) - 0.18) \times 2000 \times 0.85$
iv. vacuum bagging/closed-mold curing without roll-out	$EF = 0.169 \times \%HAP \times 2000 \times 0.55$	$EF = ((0.714 \times \%HAP) - 0.18) \times 2000 \times 0.55$
c. nonatomized mechanical resin application		
i. nonvapor-suppressed resin	$EF = 0.107 \times \%HAP \times 2000$	$EF = ((0.157 \times \%HAP) - 0.0165) \times 2000$
ii. vapor-suppressed resin	$EF = 0.107 \times \%HAP \times 2000 \times (1 - (0.45 \times VSE \text{ factor}))$	$EF = ((0.157 \times \%HAP) - 0.0165) \times 2000 \times (1 - (0.45 \times VSE \text{ factor}))$
iii. closed-mold curing with roll-out	$EF = 0.107 \times \%HAP \times 2000 \times 0.85$	$EF = ((0.157 \times \%HAP) - 0.0165) \times 2000 \times 0.85$
iv. vacuum bagging/closed-mold curing without roll-out	$EF = 0.107 \times \%HAP \times 2000 \times 0.55$	$EF = ((0.157 \times \%HAP) - 0.0165) \times 2000 \times 0.55$
d. atomized mechanical resin application with robotic or automated spray control <sup>5</sup>	$EF = 0.169 \times \%HAP \times 2000 \times 0.77$	$EF = 0.77 \times ((0.714 \times \%HAP) - 0.18) \times 2000$
e. filament application <sup>6</sup>	$EF = 0.184 \times \%HAP \times 2000$	$EF = ((0.2746 \times \%HAP) - 0.0298) \times 2000$
ii. vapor-suppressed resin	$EF = 0.12 \times \%HAP \times 2000$	$EF = ((0.2746 \times \%HAP) - 0.0298) \times 2000 \times 0.65$
f. atomized spray gel coat application	$EF = 0.445 \times \%HAP \times 2000$	$EF = ((1.03646 \times \%HAP) - 0.195) \times 2000$

g. nonatomized spray gel coat application	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	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 <sup>78</sup>	a. heated air blown through molds	EF = 0.558 x (%HAP) x 2000
	b. vented molds, but air vented through the molds is not heated	EF = 0.026 x (%HAP) x 2000

**Footnotes to Table 1**

- <sup>1</sup> The equations in this table are intended for use in calculating emission factors to demonstrate compliance with the emission limits in subpart WWW. These equations may not be the most appropriate method to calculate emission estimates for other purposes. However, this does not preclude a facilitator 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.
- <sup>2</sup> 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.
- <sup>3</sup> 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.
- <sup>4</sup> 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.
- <sup>5</sup> 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.
- <sup>6</sup> 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.
- <sup>7</sup> 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.
- <sup>8</sup> 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.

## **Appendix D**

### **Subpart WWWW Table 3, Emission Factor Limitations**

**40 CFR Table 3 To Subpart WWW Of Part 63.--Organic HAP Emissions Limits For Specific Open Molding, Centrifugal Casting, Pultrusion And Continuous Lamination/Casting Operations**

As specified in [§63.5805](#), you must meet the following organic HAP emissions limits that apply to you:

TABLE 3 TO SUBPART WWW OF [PART 63](#).--ORGANIC HAP EMISSIONS LIMITS FOR SPECIFIC OPEN MOLDING, CENTRIFUGAL CASTING, PULTRUSION AND CONTINUOUS LAMINATION/CASTING OPERATIONS

If your operation type is . . .	And you use . . .	Your organic HAP emissions limit is . . .
1. open molding--corrosion-resistant and/or high strength (CR/HS).	a. mechanical resin application.  b. filament application.  c. manual resin application.	113 lb/ton.  171 lb/ton.  123 lb/ton.
2. open molding--non-CR/HS.....	a. mechanical resin application.  b. filament application.  c. manual resin application.	88 lb/ton.  188 lb/ton.  87 lb/ton.
3. open molding--tooling.....	a. mechanical resin application.  b. manual resin application.	254 lb/ton.  157 lb/ton.
4. open molding--low-flame spread/low-smoke products.	a. mechanical resin application.  b. filament application.  c. manual resin application.	497 lb/ton.  270 lb/ton.  238 lb/ton.
5. open molding--shrinkage controlled resins <sup>2</sup> .	a. mechanical resin application.  b. filament application.  c. manual resin application.	354 lb/ton.  215 lb/ton.  180 lb/ton.
6. open molding--gel coat <sup>3</sup> .....	a. tooling gel coating.  b. white/off white pigmented gel coating.	440 lb/ton.  267 lb/ton.  377 lb/ton.  605 lb/ton.  854 lb/ton.

	c. all other   pigmented gel   coating.	522 lb/ton.   
	d. CR/HS or high   performance gel   coat.	   
	e. fire retardant   gel coat.	 
	f. clear   production gel   coat.	   
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7. centrifugal casting--CR/HS..	a. resin   application with   the mold closed,   and the mold is   vented during   spinning and cure.	25 lb/ton. <b>4</b>  NA--this is   considered to be   a closed molding   operation.  25 lb/ton. <b>4</b>
	b. resin   application with   the mold closed,   and the mold is   not vented during   spinning and cure.	Use the   appropriate open   molding emission   limit. <b>5</b> 
	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.	     
-----		
8. centrifugal casting--non-CR/ HS.	a. resin   application with   the mold closed,   and the mold is   vented during   spinning and cure.	20 lb/ton. <b>4</b>  NA--this is   considered to be   a closed molding   operation.  20 lb/ton. <b>4</b>
	b. resin   application with   the mold closed,   and mold is not   vented during the   spinning and cure.	Use the   appropriate open   molding emission   limit. <b>5</b> 
	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.	
9. pultrusion <sup>6</sup> .....	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.

**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 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 have 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.

## **Appendix E**

### **Subpart WWWW Table 4, Work Practices**

## 40 CFR Table 4 To Subpart WWWW Of Part 63.--Work Practice Standards

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 . . .
<p>1. a new or existing closed molding operation using compression/injection molding.</p> <p>may</p> <p>Materials</p> <p>slitting</p>	<p>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</p> <p>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.</p> <p>may be uncovered to feed to machines. Materials must be recovered after slitting.</p>
<p>2. a new or existing cleaning operation.</p> <p>may</p>	<p>not use cleaning solvents that contain HAP, except that styrene</p> <p>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.</p>
<p>3. a new or existing materials HAP-containing materials storage operation.</p>	<p>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.</p>

4. an existing or new SMC manufacturing operation. SMC	close or cover the resin delivery system to the doctor box on each 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 gaps manufacturing operations <sup>1</sup> .	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 <sup>1</sup> .	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 to a 95 percent efficient control device are exempt from this requirement.
8. all mixing or BMC manufacturing operations <sup>1</sup> .	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   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   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

are  
air

| 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  
  
| being charged or filled, and  
|vii. cover or shield from ambient  
  
| resin delivery systems to the wet-  
| out area(s) from reservoirs, tanks,  
| or sumps where practical.

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**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.

## **Appendix F**

### **Subpart WWWW Table 2, Compliance Date Timelines**

## 40 CFR Table 2 To Subpart WWW Of Part 63.--Compliance Dates For New And Existing Reinforced Plastic Composites Facilities

TABLE 2 TO SUBPART WWW 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:]

-----+-----+-----	
comply	Then you must
If your facility is . . .	And . . .   by this date . . .
-----+-----+-----	
1. An existing source.....	a. Is a major source  i. April 21, 2006,   on or before the   or   publication date of  ii. You must accept   this subpart.   and meet an     enforceable HAP     emissions limit     below the major     source threshold     prior to April 21,     2006.
2. An existing source that is an area source.	Becomes a major  3 years after   source after the   becoming a major   publication date of   source or April 21,   this subpart.   2006, 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/ tpy casting operations at the time of initial compliance with this subpart.	Subsequently  3 years of the date   increases its   your semi-annual   actual organic HAP   compliance report   emissions to 100   indicates your   tpy or more from   facility meets or   these operations,   exceeds the 100   which requires that   threshold.   the facility must     now comply with the     standards in     <a href="#">§63.5805 (b)</a> .
4. A new source.....	Is a major source at  Upon startup or   startup.   April 21, 2003,     whichever is later.
5. A new source.....	Is an area source at  Immediately upon   startup and becomes   becoming a major   a major source.   source.
6. A new source, and emits less than 100 tpy of semi- organic HAP from the combination of all open molding, centrifugal	Subsequently  3 years from the   increases its   date that your   actual organic HAP   annual compliance   emissions to 100   report indicates   tpy or more from   your facility

meets

casting, continuous		the combination of		or exceeds the 100
lamination/casting,		these operations,		tpy threshold.
pultrusion, SMC and BMC		which requires that		
manufacturing, and mixing		the facility must		
operations at the time of		now meet the		
initial compliance with		standards in		
this subpart.		<a href="#">§63.5805(d)</a> .		

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