

Lane Regional Air Protection Agency
Simple Air Contaminant Discharge Permit

REVIEW REPORT

Columbia Industrial Products

Permit No: 201288

PERMITTING

Permitting Action

1. The permit is a renewed Air Contaminant Discharge Permit (ACDP) for a "Simple – Low" source primarily of Volatile Organic Compounds (VOCs).

Other Permits

2. No other permits have been issued or are required by LRAPA for this facility.

Attainment Status

3. The facility is located in an attainment area for all pollutants except PM₁₀ (particulate matter less than 10 microns in size). The Eugene/ Springfield Air Quality Management Area is a non-attainment area for PM₁₀.

SOURCE DESCRIPTION

Overview

4. The facility is a composite plastic parts manufacturing operation at 29538 Airport Road, Unit A, in Eugene. The facility has one baghouse control device for PM (particulate matter)/PM₁₀ emissions. There are no pollution control devices for VOC emissions. The facility is required to conduct monthly VOC and HAP emissions estimations to ensure compliance with the VOC PSEL and to document that actual emissions of any single HAP are less than 5 tons/year (50% of the single HAP major source threshold). This ACDP is a renewed permit for an existing facility. The facility operates 4160 hours per year (16 hours per day, 5 days per week, 52 weeks per year).

Process and Control Devices

5. Proposed air contaminant sources at the facility consist of the following:
 - 1 Resin Storage Tank (tote)
 - 1 Electrically-heated curing oven
 - 2 Product press
 - 3 mat-resin immersion baths
 - Finishing equipment including:
 - Lathe
 - Saws
 - Sanding
 - Baghouse

EMISSIONS

6. The pollutant(s) of concern associated with this facility type are PM, PM₁₀, and VOC. Emissions of PM are estimated to be negligible due to the location of the activities (inside a building) and to the limited quantity of PM/PM₁₀ expected from sawing and sanding of the fiberglass plates produced here. VOC emissions result primarily from the use of styrene-containing resins. Styrene is a VOC

and a HAP. The other criteria pollutants are emitted at negligible levels. Emission calculation details are as follows:

Process	Pollutant	Throughput	Lb/ton	Emissions
Fiberglass-related	VOC/HAP	109.2 tons/yr resin used	66.98*	7314.7 lb/year Styrene or 3.7 tons/yr
Particulate-related	PM/PM10	NA	2**	Negligible

Assumptions:

-Resin styrene content of 31.3%

*VOC/HAP Emission factor is from CFA (Composites Fabricators Association) from the table of Unified Emission Factors for mechanical non-atomized (0.107x31.33%)

**PM emission factor is from sawmill general permit for sanderdust

-PM emissions assumed to be minimal

MINIMAL PERMIT DETERMINATION

7. The Agency has determined that the facility qualifies as a Simple Low permit for the following reasons:
 - 7.a. Actual emissions of a single HAP are less than 5 tons/year. Should actual emissions of any single HAP exceed 50% of the major source threshold (50% of 10 tons/year any single HAP), the facility may be required to obtain a Standard ACDP.

SPECIAL CONDITIONS

8. The permit on public notice included a 151,515 lb/year resin usage limit and a stack testing requirement in the permit to determine if the facility estimates of emissions from this process are accurate, and to verify that the facility remains below 50% of the major HAP source threshold. This condition was removed at the request of the facility in the final permit and was replaced by the requirement that the facility perform monthly emissions calculations to determine compliance with the VOC PSEL and to ensure actual emissions of any single HAP (styrene) are less than 50% of the 10 ton/year major source threshold for any single HAP.

NESHAPS/MACT APPLICABILITY

9. Based on current emission estimates of the potential to emit (PTE) less than the proposed major source threshold, there are no sources at this facility for which NESHAPS/MACT standards have been proposed or promulgated.

NSPS APPLICABILITY

10. There are no sources at this facility for which NSPS standards have been promulgated.

PUBLIC NOTICE

11. The draft permit was on public notice from July 21, 2010 to August 25, 2010. One written comment was submitted during the 35-day comment period.

Columbia Industrial Products Resin Usage last 12 months

	35% Styrene	35% Styrene	Total Mo.
7/1/2009	7700	232	
Aug	8180	814	8994
Sept	11920	822	12742
Oct	14900	392	15292
Nov	12900	1056	13956
Dec	11900	1299	13199
Jan	19500	529	20029
Feb	17400	1336	18736
Mar	16120	4590	20710
Apr	21200	1252	22452
May	16430	936	17366
June	29410	1778	31188
July	22820	929	23749

Total resin 12 months 218413

109.2 tons resin
 66.98 emission factor mech. non-atomized resin w/ 31.3% styrene
 7314.7 lbs styrene

Unified Emission Factors for Open Molding of Composites

July 23, 2001



COMPOSITES ONE

Emission Rate in Pounds of Styrene Emittred per Ton of Resin or Gelcoat Processed		Composites One																			
Styrene content in resin/gelcoat, % ⁽¹⁾	<33 ⁽²⁾	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	>50 ⁽²⁾	
		(0.286 x %styrene) - 0.0529) x 2000																			
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 ⁽³⁾	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 ⁽³⁾	Mechanical Atomized emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																				
Mechanical Atomized Controlled Spray ⁽⁴⁾	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 Atomized 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 ⁽³⁾	Mechanical Non-Atomized emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																				
Flament 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	
Flament application with VSR ⁽³⁾	Flament application with VSR emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																				
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 ⁽⁴⁾	Gelcoat Controlled Spray Application emission factor [listed above] x (1 - (0.45 x specific VSR reduction factor for each resin/suppressant formulation))																				
Gelcoat Non-Atomized Application ⁽⁴⁾	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	
Covered-Cure after Roll-Out	Non-VSR process emission factor [listed above] x (0.80 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 Emittred per Ton of Gelcoat Processed

MMA content in gelcoat % ⁽⁵⁾	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	≥20
Gel coat application ⁽⁷⁾	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

- 1 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.
- 2 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.
- 3 The VSR reduction factor is determined by testing each resin/suppressant formulation according to the procedures detailed in the *CFA Vapor Suppressant Effectiveness Test*.
- 4 SEE the *CFA Controlled Spray Handbook* for a detailed description of the controlled spray procedures.
- 5 The effect of vapor suppressants on emissions from flament winding operations is based on the *Pow Flament Winding Emissions Study*.
- 6 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.
- 7 Based on gelcoat data from *MMA Emission Study*.
- 8 SEE the July 17, 2001 *ECCS 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.
- 9 Use the equation ((0.4506 x %styrene) - 0.0509) 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.