

Proposed Amended Rule 1168 Adhesive and Sealant Applications

April 18, 2014

Stationary Source Committee





Background

- Rule applies to both stationary and area sources as well as some consumer/contractor uses
 - Consumer uses where not regulated by CARB

Emissions by Source	
Stationary Sources (AER & CLASS)	3%
Area sources	26%
Consumers and contractors	71%

- More than 15 years since last major reductions
 - Proposed limits reflect technology advancements
 - Foam Sealant inventory incorporated
 - Attempt to harmonize rule with OTC Model Rule
 - Definitions
 - Terminology

Rule Development Schedule

- May 2013 – Initiated survey process
- June 2013 – Commenced working group meetings
- September 2013 – Completed voluntary survey
- December 2013 – Public Workshop and CEQA Scoping Session



VOC Limits

SELECTED ADHESIVE CATEGORIES	CURRENT LIMIT	EFFECTIVE 1/1/2016	EFFECTIVE 1/1/2018
Carpet Pad	50 g/L	20 g/L	
Ceramic Tile	65 g/L	20 g/L	
Cove Base	50 g/L	20 g/L	
Dry Wall and Panel	50 g/L	20 g/L	
Indoor Flooring	50 g/L	20 g/L	
Multi-Purpose Construction	70 g/L	40 g/L	20 g/L
Outdoor Floor Covering	150 g/L	20 g/L	
Plastic Foams	50 g/L	20 g/L	
Reinforced Plastic Composite	250 g/L	200 g/L	
Rubber Floor	60 g/L	20 g/L	
Structural Glazing	100 g/L	40 g/L	
Structural Wood Member	140 g/L	50 g/L	
Subfloor	50 g/L	20 g/L	
VCT and Asphalt Tile	50 g/L	20 g/L	
Wood Flooring	100 g/L	50 g/L	20 g/L

- Numerous products compliant with proposal already in marketplace
- Freeze/Thaw stable products available
- Additional time provided for final Wood Flooring limit

VOC Limits (Cont.)

SELECTED SEALANT CATEGORIES	CURRENT LIMITS	EFFECTIVE 1/1/2015 ¹	EFFECTIVE 1/1/2016	EFFECTIVE 1/1/2018
Clear, Paintable and Immediately Water-Resistant	250 g/L	380 g/L		50 g/L ²
Foam	250 g/L	200 g/L		20 g/L ²
Potable Water	250 g/L	100 g/L		
Roadway	250 g/L		50 g/L	
Other Architectural	250 g/L		50 g/L	

1. Limits effective in 2015 reflect existing technology
2. Technology Assessment for Clear, Paintable and Immediately Water-Resistant Sealants and Foam Sealants prior to final limit implementation, including potential sub-categorization

VOC Limits (Cont.)

SELECTED ROOFING CATEGORIES	CURRENT LIMIT	EFFECTIVE 1/1/2018
Single Ply Roof Membrane Adhesive	250 g/L	100 g/L ¹
Other Roof Adhesive	250 g/L	100 g/L
Single Ply Roof Membrane Sealant	450 g/L	100 g/L ²
Other Roof Sealant	300 g/L	100 g/L ³



1. Includes assessment of wall and parapet (vertical) adhesives
2. Includes assessment of waterproofing mastic
3. Includes assessment of ply adhesives

- All roofing categories to undergo Technology Assessment
- Other Roof Sealants include Clear, Paintable and Immediately Water-Resistant Roof Sealants
- Exempting DMC for roofing products

Proposal

- DMC VOC exemption limited to roofing products
 - No carcinogenicity or long-term chronic data
 - Unconfined fully ventilated space
- Using OSHA PEL for contractor use
 - Appropriate for workplace exposure
 - 200 ppm
 - 100 to 500 gallons per day usage
- Using OEHHA interim acute REL for consumer use
 - More conservative approach
 - 5 ppm
 - 1 to 2 gallons per hour usage





Proposal (Cont.)

- Prohibit the use of Group II exempt compounds
- Expand applicability to aerosol adhesives used in manufacturing
- Require annual sales reporting for three years*
- Clarify product container labeling
 - VOC Content as applied
 - Manufacture date or date code
- Include additional VOC content test methods
- Remove/eliminate some exemptions

* May consider extension for products under technology assessment

Emission Reductions and Cost-Effectiveness

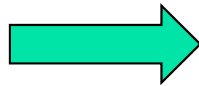
CATEGORY	EMISSION REDUCTIONS (tpd)	COST-EFFECTIVENESS (\$/ton)
Architectural Adhesives	0.4 to 0.8	\$0 (Similar cost)
Other Roof Adhesive	0.5 to 0.9	\$480 / \$10,100 ¹
Other Roof Sealant	1.0 to 2.0	\$480 / \$10,100 ¹
Single Ply Roof Membrane Adhesive	< 0.1	\$0 (Similar cost) ²
Single Ply Roof Membrane Sealant	< 0.1	\$0 (Similar cost) ³
Foam Sealant	0.5 to 0.9	\$10,900 to \$17,300

1. Higher cost if DMC not exempted; immediately water-resistant sealants have not been identified
2. Use may be limited due to local meteorological conditions
3. Use of primer (on some roof types) negates VOC reductions and increases cost by \$16.50/gallon

Issues/Responses

Issues

- Proposed VOC Limits too low; products not available for all situations



- Request for TBAC exemption
- Request for DMC exemption

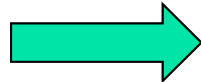
Responses

- ✓ *Additional time provided for reformulation, testing and certification; technology assessment*
- ✓ *No exemption included. OEHHA considers TBAC potential human carcinogen*
- ✓ *Including limited exemption for roofing products only*

Consumer Products Issues/Responses

Issues

- SCAQMD should not regulate any consumer products
- Regulation by SCAQMD preempts CARB from future regulations
- Lack of regulatory limit does not mean CARB not regulating
- Consumer product use at stationary sources should be regulated exclusively by CARB



Responses

- ✓ *District has regulated several product categories for many years (i.e. roofing products)*
- ✓ *H&S Code only preempts local air districts from adopting similar limits (i.e. Rule 1143)*
- ✓ *District and CARB agree that proposal consistent with current legal framework*
- ✓ *Precedent in several rules (i.e. Rule 1171 and Rule 1144) allows District to regulate manufacturing emission sources*

Aerosol Adhesive Use in Manufacturing Operations

- Currently exempted
 - CARB exclusive regulatory authority expired in 2000
- Expand applicability to aerosol adhesives used in manufacturing
- Cost-effective bulk products readily available

High Volume Use – Foam Fabricator	Product Type	Cost/lb	% Solids	Coverage (sqft/lb)	Cost per 10K sqft	One Time Equipment Costs	Payback
	Aerosol	\$13.53	19%	6.7	\$20,194	\$0	N/A
	Bulk	\$5.57	50%	17.5	\$3,183	\$1,000	3 weeks

Low Volume Use – Piñata Shop	Product Type	Daily Usage	% Solids	Solids Applied (lbs)	Daily Cost	One Time Equipment Costs	Payback
	Aerosol	5 cans	19%	0.77	\$54.95	\$0	N/A
	Bulk	1 pint	50%	0.77	\$6.38	\$500	2+ weeks

- Estimate does not include hazardous waste disposal for aerosol cans



Schedule

- Working Group Meetings Ongoing
- Set Hearing June 6, 2014
- Public Hearing July 11, 2014