



# Proposed Amended Rule 1168 – Adhesive and Sealant Applications

## *Public Consultation*

September 27, 2022, 10:00 AM (PDT)

Join zoom meeting:

[https://scaqmd.zoom.us/j/998 8996 4635](https://scaqmd.zoom.us/j/99889964635)

Meeting ID: 998 8996 4635

# Agenda

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Background

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Public Process

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Rule Approach

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Revisions Since Public Workshop

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Next Steps

# Background

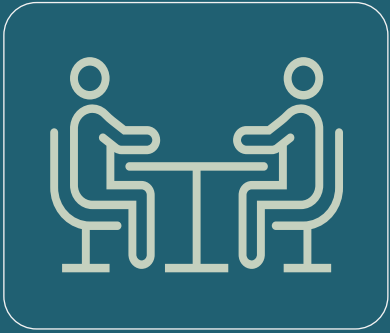
## Rule 1168

- Applies to adhesives, adhesive primers, sealants, and sealant primers
- 2017/2018 emission inventory 6.2 tpd of VOC
- Adopted in 1989; last amended in 2017
  - 2017 amendment required a technology assessment for nine categories
  - Based on technology assessment, staff concluded a rule amendment was required

## Toxicity of Currently Exempt Compounds

- Staff presented an assessment of t-BAC, including concerns about pCBtF, in April 2017
- Board directed staff to prioritize lowering toxicity over VOC reductions

# Public Process



Staff has been meeting regularly with industry stakeholders and their representatives since November 2021, including:

- Roofing associations, Adhesive and Sealant Council (ASC), Plastic Pipe and Fittings Association (PPFA), Single Ply Roof Industry (SPRI), Foam Industry stakeholders, and manufacturers of different regulated products



Discussed individual meetings analysis findings and staff considerations in public meetings

- Four Working Group Meetings since February 2022
  - February 11, April 12, July 21, and August 11
- Public Workshop held on September 1, 2022

# Rule Approach

Proposed amendments presented at the September 1, 2022, Public workshop:

- VOC limits and effective dates for several product categories or new subcategories
- Prohibition of t-BAc and pCBtF
- Rule clarification and streamlining

This presentation focuses on additional proposed amendments addressing concerns identified following the Public Workshop:

- Added and updated some definitions
- Added revisions to certain VOC limits and effective dates
- Delayed pCBtF prohibition for certain categories
- Included a conditional exemption for Opteon 1100
- Added weight-based VOC limits to all categories for products sold packaged and applied using a propellant
- Added reporting requirements for t-Bac and pCBtF used in Regulated Products

Additional Revisions  
Since Public Workshop (9/1/2022)

# Definitions (c) – Energy Curable Adhesives and Sealants

On August 22, 2022, USEPA issued a partial State Implementation Plan (SIP) disapproval for Rules 1106 and 1107 for the following:

- ASTM Test Method D7767-11 is not an USEPA approved test method
- ASTM Test Method D7767-11 cannot be used to enforce a SIP approved rule

SIP disapprovals result in sanctions if not resolved

Staff proposing to remove the definition of Energy Curable Sealants and Adhesives, which includes test method, to avoid disapproval

~~(3031) ENERGY CURABLE ADHESIVES AND SEALANTS are single-component reactive products that cure upon exposure to visible light, ultra-violet light, or to an electron beam. The VOC content of thin film Energy Curable Adhesives and Sealants may be determined by manufacturers using ASTM Test Method 7767 Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.~~

# Definitions (c) – Exempt Compounds

Amend definition of an Exempt Compound to include conditional exemption for Opteon 1100

- Contingent on OEHHA assessment
- Not exempt unless the conditions are met

Exemption limited to two-component foam sealants applied in an industrial or professional setting

~~(3133)~~ EXEMPT COMPOUNDS are as defined in Rule 102 – Definition of Terms (Rule 102). For the purpose of this rule, Opteon 1100 (cis-1,1,1,4,4,4-hexafluoro-2-butene/HFO-1336mzz-Z) shall only be considered exempt as a VOC for High-Pressure Two-Component Foam Sealants and Low-Pressure Two-Component Foam Sealants when used in an industrial or professional setting by workers trained with procedures and guidelines to reduce potential risk of exposure, if the Office of Environmental Health Hazard Assessment has sufficient information to establish a Cancer Inhalation Unit Risk Factor, an acute reference exposure level (REL) and a chronic REL of Opteon 11000 and, upon completion of its assessment:

(A) Does not adopt a Cancer Inhalation Unit Risk Factor for Opteon 1100; ~~and~~

(B) Develops an acute reference exposure level (REL) or interim acute REL for Opteon 1100, which is higher than or equal to the acute REL or interim acute REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd); and

(C) Develops a chronic REL or interim chronic REL for Opteon 1100, which is higher than or equal to the chronic REL or interim chronic REL for trans-1-Chloro-3,3,3-Trifluoropropene (HFO-1233zd).



# Definitions (c) – New Subcategory Definitions

Propose new subcategories of roofing adhesives and sealants to allow for longer time to reformulate without pCBtF

New subcategories requires new definitions

EPDM/TPO SINGLE PLY ROOF MEMBRANE ADHESIVE is any adhesive to be used for the installation or repair of Ethylene Propylene Diene Terpolymer (EPDM) and Thermoplastic Polyolefin (TPO) single ply roof membrane. Installation includes, but is not limited to, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.

CUT EDGE SINGLE PLY ROOF MEMBRANE SEALANT is a Low-Solids sealant designed to seal the edges of the non-factory edges (cut edges) of single ply roof membrane as a final step to reinforce membrane installation and inhibit water from traveling through the center scrim area.

ROOF ADHESIVE PRIMER is a film-forming material applied to a substrate, prior to the application of an adhesive or adhesive tape to increase adhesion or bond strength, promote wetting, or form a chemical bond with a subsequently applied adhesive and is marketed and sold exclusively for the installation or repair of roofing materials.

# Requirements (d) – Table 1 VOC Limits

- Updated VOC limits and effective dates
- Included some new subcategories

Category	New Subcategory	Existing Limit (g/L)	Proposed Limits (g/L)	
			Future Limit	Effective Date
Rubber Vulcanization Adhesive	N/A	850	250	<u>1/1/2023</u> <u>1/1/2028</u>
Clear, Paintable, and Immediately Water-Resistant Sealant	N/A	380	250	<u>1/1/2023</u> <u>1/1/2026</u>
All Other Adhesive Primers	Roof Adhesive Primers	250	N/A	1/1/2023
Single Ply Roof Membrane Adhesive	EPDM/TPO Single Ply Roof Membrane Adhesive	250	N/A	<u>Upon Adoption</u>
Single Ply Roof Membrane Sealant	Cut Edge Single Ply Roof Membrane Sealant	450	250	1/1/2023

# Requirements (d) – Table 1 VOC Limits

Propose weight-based VOC limit for all categories

- Converted based on 1 g/L = 0.1 weight percent

Regulated Products would be subject to one of two metrics:

- Weight % VOC for products packaged and applied using propellant
- g/L for all other products

(ed) Requirements

(1) A person shall not use, sell, store, supply, distribute, offer for sale, or manufacture Regulated Products subject to the provisions of this rule, which contain VOC in excess of the applicable limits specified in Table 1 below where:

(A) Regulated Products packaged and applied using a propellant shall comply with the percent VOC by weight limit; and

(B) All other products shall comply with the gram per liter (g/L) limit.

Table 1 – Regulated Product Categories and VOC Limits

Category	VOC Limits (g/L, <u>unless otherwise indicated</u> ) <sup>1</sup>			Future Effective Date <u>1/1/2019</u>	<u>1/1/2023</u>
	Current Limit	Limit Effective <u>1/1/2023</u>	Limit at Future Effective Date <u>Upon Adoption</u>		
<b>Adhesives</b>					
Architectural Applications					
Building Envelope Membrane Adhesive	250 <u>g/L;</u> 25%				
Carpet Pad Adhesive	50 <u>g/L;</u> 5%				
Ceramic Glass, Porcelain, & Stone Tile Adhesive	65 <u>g/L;</u> 6.5%				
Cove Base Adhesive	50 <u>g/L;</u> 5%				
Dry Wall and Panel Adhesive	50 <u>g/L;</u> 5%				
Multi-Purpose Construction Adhesives	70 <u>g/L;</u> 7%				

# Requirements (d)(2) – Regulated Product Categorization

Propose clarification to the most restrictive clause

A product of a specialty category with a VOC limit is not subject to the VOC limit of the default “All Other” category

- For example, All Clear, Paintable, and Immediately Water-Resistant Sealant are subject to 380 g/L limit, not:
  - All Other Roof Sealant (300 g/L) or
  - All Other Architectural Sealant (250 g/L)

(B) If anywhere on the Regulated Product container, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the Regulated Product may be used, or is suitable for use, as a Regulated Product for which a VOC standard in a specific category is specified in Table 1, then the lowest VOC standard shall apply. -This provision does not apply to Substrate Specific Adhesives or the default subcategories which includes: All Other Roof Adhesives, All Other Indoor Floor Covering Adhesives, All Other Outdoor Floor Covering Adhesives, All Other Plastic Welding Cements, All Other Adhesives, All Other Roof Sealants, All Other Architectural Sealants, All Other Sealants, All Other Adhesive Primers, and All Other Sealant Primers.

# Reporting and Recordkeeping Requirements (e)

Propose to add reporting requirement for any product containing more than 0.01 weight percent of t-BAc or/and pCBtF

- Reporting would apply to manufacturer's Quantity and Emission Reports (QER) subparagraph (e)(1)(G), and
- Big Box QERs subparagraph (e)(2)(J)

(G) Weight percent of tertiary-Butyl Acetate and parachlorobenzotrifluoride for any product containing more than 0.01 weight percent of each;

**Table 2: Reporting Timeline**

Reporting Deadlines		Reported Years
Manufacturers & Private Labelers	Big Box Retailers & Distribution Centers	
September 1, 2019	May 1, 2019	2017, 2018
September 1, 2022	May 1, 2022	2020, 2021
September 1, 2025	May 1, 2025	2023, 2024
September 1, 2030	May 1, 2030	2028, 2029
September 1, 2035	May 1, 2035	2033, 2034
September 1, 2040	May 1, 2040	2038, 2039

# Administrative Requirements (g)

## New Labeling Requirements

- Amending labeling requirement to address Regulated Products packaged and applied using a propellant that will be regulated by a weight percent VOC

(ii) Effective July 1, 2023, Regulated Products packaged and applied using a propellant shall display the VOC as percent VOC by weight; and. ~~The VOC content shall be determined by calculation based on product formulation or laboratory analysis using the applicable test method in subdivision (e)(f).~~

# Prohibition of Sales and Use (h)

Propose to add prohibition timeline in table format for clarity

Based on stakeholder feedback and evaluation of reported data, staff proposes:

- Some delays of pCBtF prohibition for specialty products that rely on pCBtF; and
- Shorter sell-through and use-through periods will help offset delays

**Table 3: t-BAc and pCBtF and t-BAc Prohibition Timeline**

<u>Category</u>	<u>Prohibition Effective Date</u>	<u>Sell-through End Date</u>	<u>Use-through End date</u>
<u>pCBtF Prohibition Effective Dates</u>			
<u>Roof Adhesive Primer</u>	<u>January 1, 2027</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<u>Cut Edge Single Ply Roof Membrane Sealant</u>			
<u>EPDM/TPO Single Ply Roof Membrane Adhesive</u>			
<u>Single Ply Roof Membrane Adhesive (Except EPDM/TPO)</u>	<u>January 1, 2025</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<u>Clear, Paintable, and Immediately Water-Resistant Sealant</u>	<u>January 1, 2026</u>	<u>January 1, 2028</u>	<u>January 1, 2028</u>
<u>All Regulated Products not listed above</u>	<u>January 1, 2024</u>	<u>January 1, 2027</u>	<u>January 1, 2028</u>
<u>t-BAc Prohibition Effective Dates</u>			
<u>All Regulated Products</u>	<u>January 1, 2024</u>	<u>January 1, 2027</u>	<u>January 1, 2028</u>

# Exemption – Recordkeeping for Stationary Source Low Emission Product Use

Previously proposed to lower the exemption threshold from 20 to 5 g/L

Revised proposal to change the threshold to 20 g/L (or 2%), or half the applicable limit, whichever is lower

- For example, a product with a 20 g/L limit would be exempt from this recordkeeping requirement, only if its VOC emission is at or lower than 10 g/L
- Products up to 40 g/L could use this exemption if the emission can be at or lower than half the applicable limit

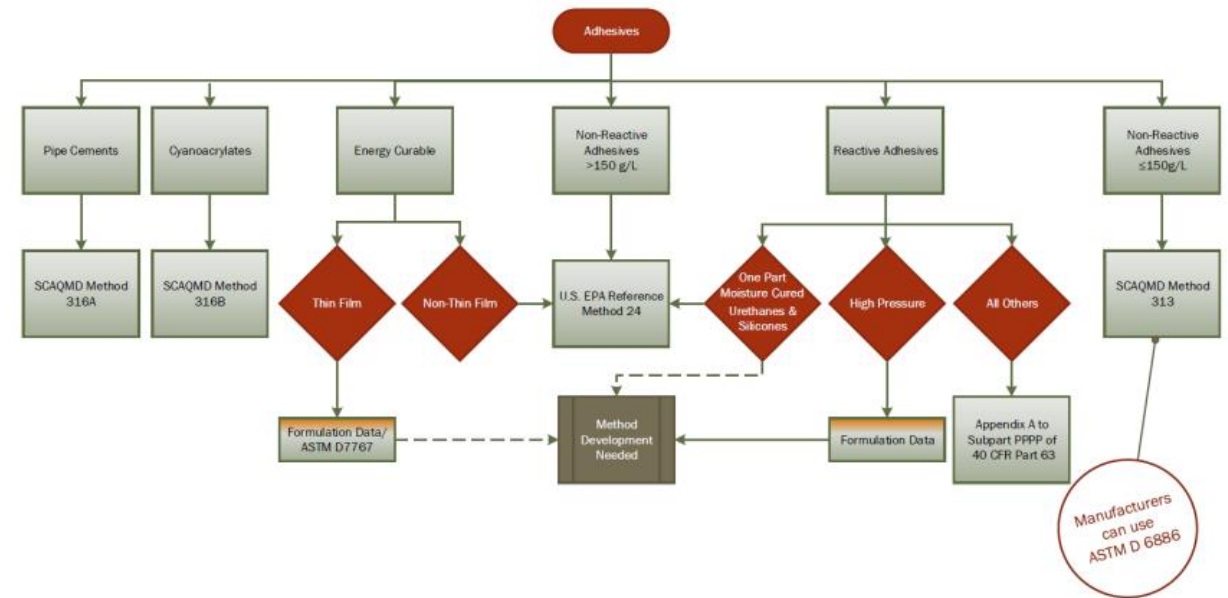
- (8) The recordkeeping provisions of subdivisions (c) and (d) in paragraph (e)(8); shall not apply to an owner or operator of a stationary source within the South Coast AQMD provided regulated products with a the VOC content of the Regulated Products are lower than the following no more than:
- (A) Regulated Products packaged and applied using a propellant, 2 percent VOC by weight or half the applicable VOC limit, whichever is lower;
  - (B) Low-solids Regulated Products, 20 grams per liter material or half the applicable VOC limit, whichever is lower; and
  - (C) All other Regulated Products, 20 grams per liter, or half the applicable VOC limit, less water and less exempt compounds, whichever is lower. or no more than 20 grams per liter material for low-solids Regulated Products.



# VOC Test Method Guidance Document \*

- Asphaltic roofing adhesives manufacturers expressed concern over the proposed VOC limit due to test method
- Rule 1168 Test Method Guidance Document specifies which test method should be used for each product type
  - Specifies a gas chromatography method for non-reactive adhesives  $\leq 150$  g/L
  - Not best method for testing asphaltic roofing adhesives
- Staff will revise the guidance document to specify these products should be analyzed by USEPA Method 24
  - May limit test to only the solids test (ASTM D 2369)

## Rule 1168 Test Method Determination: Adhesives



# Next Steps – Rulemaking Process

Release Draft Rule Language and Staff Report –  
October 4, 2022

Set Hearing – October 7, 2022

Public Hearing – November 4, 2022

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