Background

2017 Rule Amendment
- Included several new test methods

Governing Board Meeting
- Questioned how manufacturers could determine appropriate test method
- Directed staff to develop VOC Test Method Guidance Document

Prior to approval of Guidance Document
- Formulation data will be used to verify compliance
As adhesives and sealants evolve, new test methods must be developed.

Rule 1168 was adopted April 7, 1989
- 14 amendments since adoption
- Originally applicable only to adhesives
- 19 adhesive categories

1998 Amendment
- Added sealants
- 6 sealants categories
- 5 sealant primer categories

2017 Amendment
- Latest amendment
- 37 adhesive categories
- 5 adhesive primer categories
- 12 sealants categories
- 5 sealant primer categories
History of 1168 VOC Test Methods

1989
- Rule referenced Laboratory Methods of Analysis for Enforcement Samples
  - Gravimetric (bake and weigh) test method

1992
- Additional Methods:
  - Aerosols
  - VOC exempt compounds
  - Pipes cements

1998
- Additional Methods:
  - VOC exempt compounds

2000
- Additional Methods:
  - Cyanoacrylates
History of 1168 VOC Test Methods (cont.)

2017

Included 3 additional test methods

- Appendix A to Subpart PPPP of 40 CFR Part 63 - Determination of VOC Content of Reactive Adhesives
  - Included for reactive adhesives
  - Sandwich method where adhesive placed between two substrates
2017

History of 1168 VOC Test Methods (cont.)

2017 Included 3 additional test methods

- SCAQMD Method 313 and ASTM D6886
  - For low-VOC, non-reactive adhesives and sealants
  - Directly measure VOC content by Gas Chromatography-Mass Spectrometry
  - SCAQMD Method 313 utilized for compliance purposes
  - Guidance document will include clarification on the differences between methods
Method Development

• Ongoing Method Development
  • Foam Sealants
  • High pressure reactive adhesives
• Potential Future Method Development
  • One-component moisture cure urethanes
  • Thin-film energy curable
Flow Charts

- The key mechanism of the Guidance Document
- Direct stakeholder to appropriate test method
- Separate charts for adhesives and sealants
Adhesives

Pipe Cements
- SCAQMD Method 316A

Cyanoacrylates
- SCAQMD Method 316B

Energy Curable
- Thin Film
  - Formulation Data / ASTM D7767
- Non-Thin Film

Non-Reactive Adhesives >150 g/L
- U.S. EPA Reference Method 24

Reactive Adhesives
- 1K Moisture Cured Urethanes & Silicones
- 2K High Pressure
- All Others
  - Appendix A to Subpart PPP of 40 CRF Part 63

Method Development Needed

Manufacturers can use ASTM D 6886
Adhesives with Specific Test Methods

Staff does not anticipate further method development
Non-Reactive Adhesives

Adhesives

- Non-Reactive Adhesives $>150 \text{ g/L}$
  - U.S. Reference Method 24

- Non-Reactive Adhesives $\leq 150 \text{ g/L}$
  - SCAQMD Method 313

Manufacturers can use ASTM D 6886
Reactive Adhesives

Some method development required

U.S. EPA Reference Method 24

1K Moisture Cured Urethanes & Silicones

2K High Pressure

All Others

Method Development Needed

Formulation Data

Appendix A to Subpart PPPP of 40 CRF Part 63
UV/EB/LED Technology

Possible future method development

Adhesives

Energy Curable

Thin Film

Non-Thin Film

Formulation Data/ASTM D7767

Method Development Needed

U.S. EPA Reference Method 24
Sealants

Non-Reactive Sealants ≤150 g/L

- SCAQMD Method 313

Reactive Sealants and Non-Reactive Sealants >150 g/L

- U.S. EPA Reference Method 24

Expanding Foam

- Formulation Data
- Method Development Needed

Handheld and Pressurized Canisters

Manufacturers can use ASTM D 6886
Next Steps

- Draft Guidance Document released - July 18th
- Comments due - August 9, 2018
- Stationary Source Committee - September 21, 2018
- Board Presentation - October 5, 2018
- Continue Method Development
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