

Proposed Amended Rule 1168 Adhesive and Sealant Applications



Working Group Meeting #8
May 20, 2014

Agenda

- Introductions
- Stationary Source Committee Update
- Survey Results & Emission Inventory
- Products Compliant with Future Limits
- Proposed Draft Rule Language
- Draft EA Status Update
- Future Meeting Schedule
- Adjourn



SSC Update

- Meeting held on April 18th
- Committee request further data on the following items:
 - Written concurrence from CARB on regulatory authority
 - More information on the health concerns related to TBAC and DMC
 - Status of SCAQMD Method 313
- Report back to SSC on June 20th

Survey

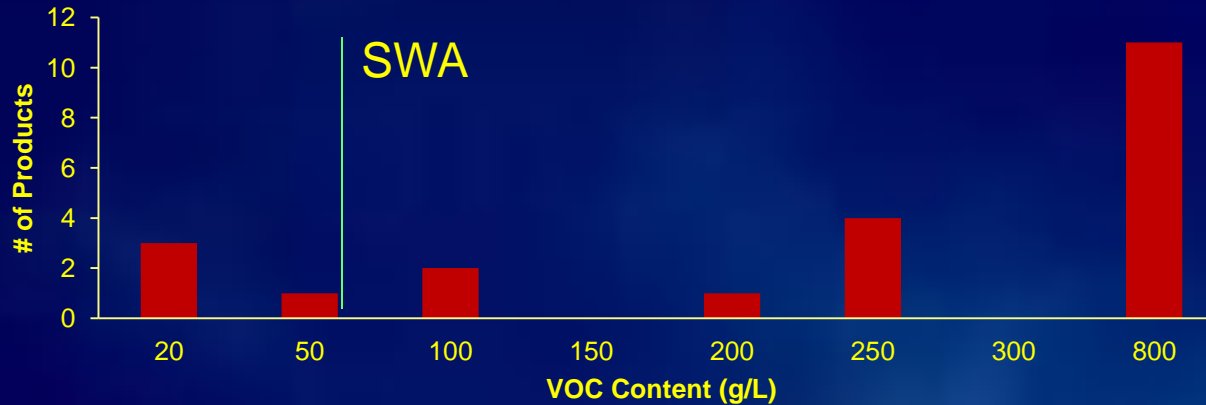
- More than 60 responses
 - Previously had only 17 responses
 - Handful still have not responded

Source	Volume (MM gal)	Emissions (tpd) ^{1,2}
Previous inventory	0.88	0.34
Current inventory	19.16	9.66
2012 AQMD inventory	N/A	3.49

- Inventory excludes products subject to CARB Consumer Products Regulation
- Inventory includes errors in reported Material VOC content

Adhesive Primers

Product Distribution



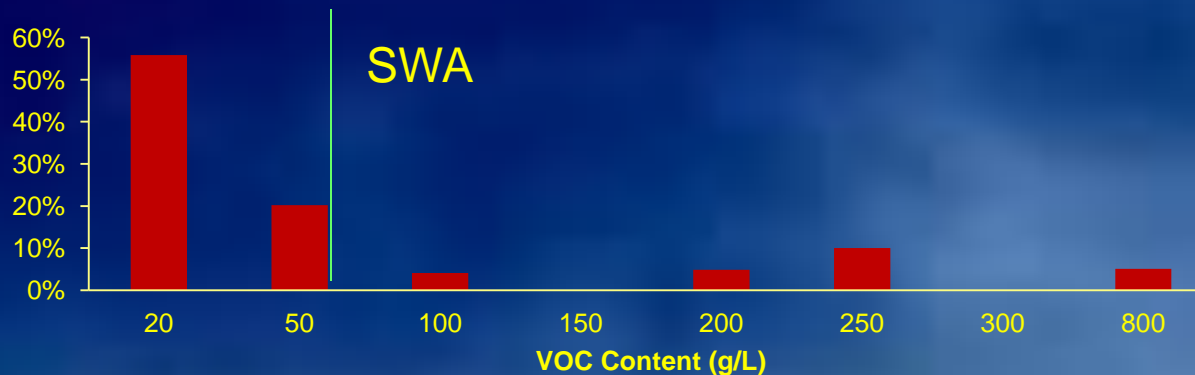
Current Limit:
250 g/L

Category Emissions:
0.01 tpd

SWA VOC Content:
62 g/L

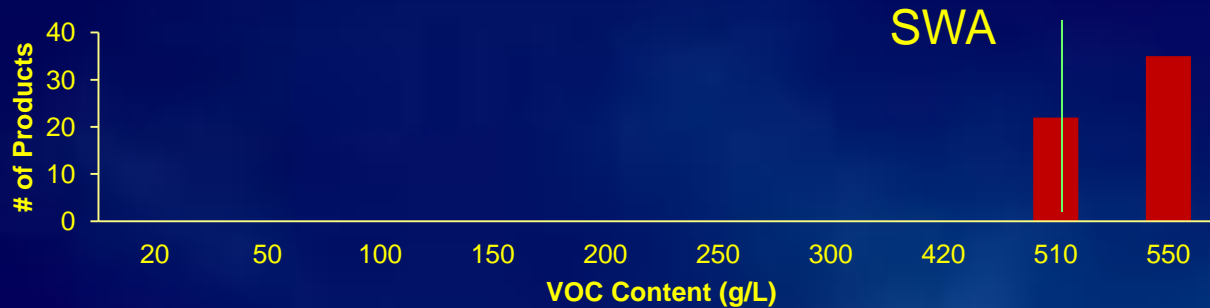
Proposed Limit:
250 g/L

Relative Volume



Adhesive Primers for Plastic

Product Distribution



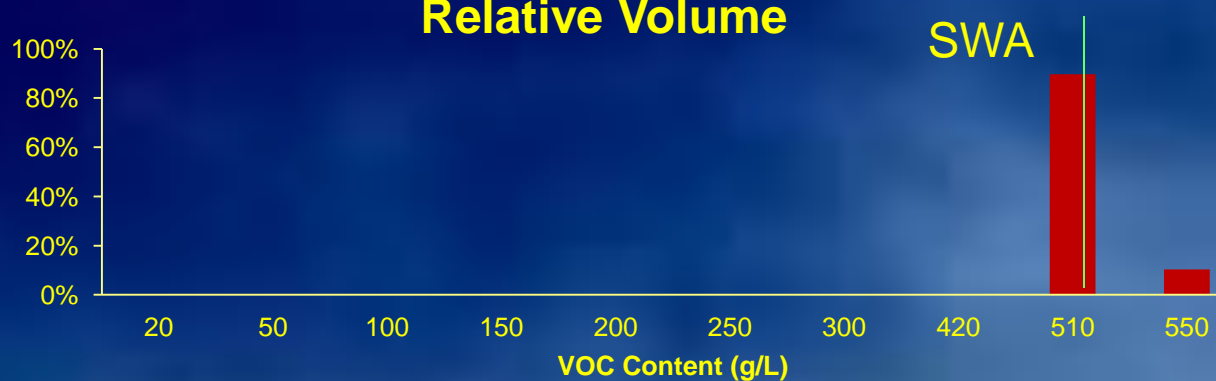
Current Limit:
550 g/L

Category Emissions:
0.03 tpd

SWA VOC Content:
514 g/L

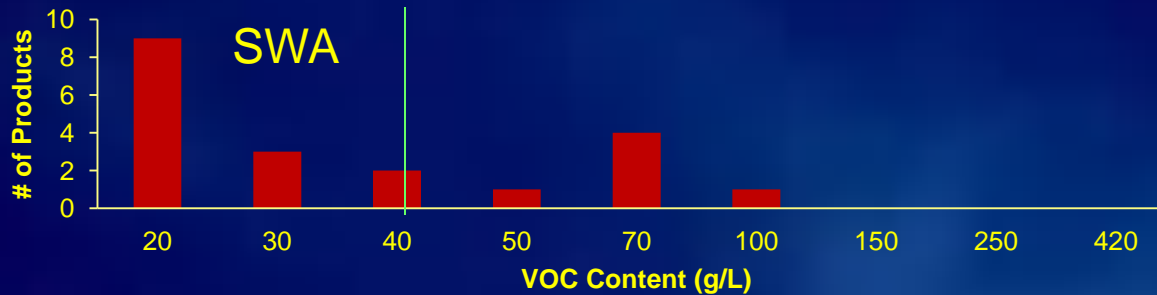
Proposed Limit:
550 g/L

Relative Volume

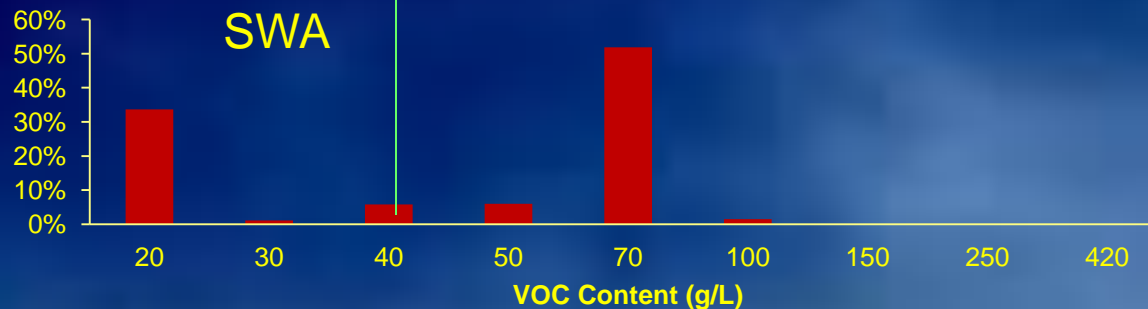


Ceramic Tile Adhesive

Product Distribution



Relative Volume



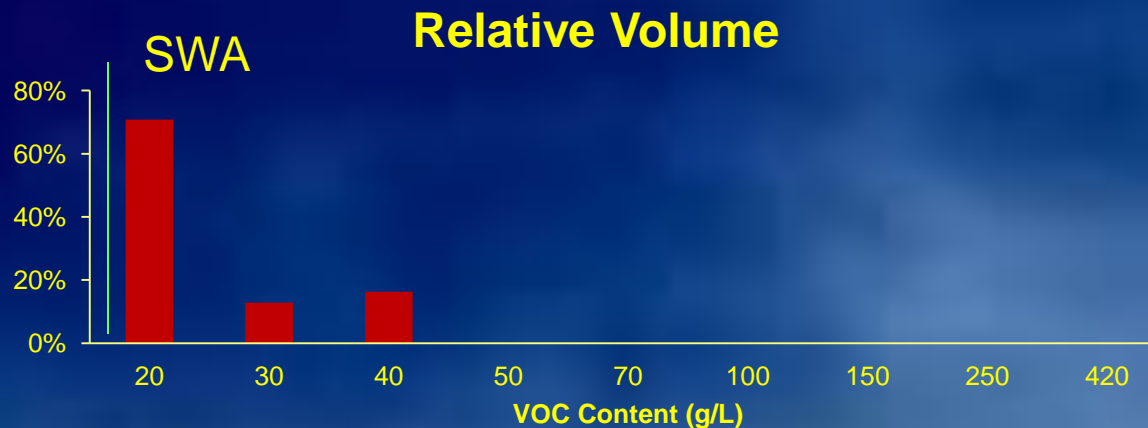
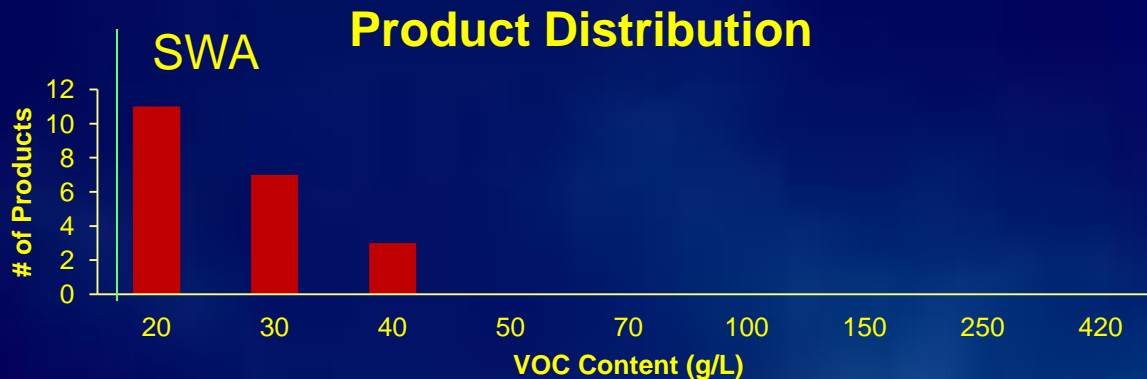
Current Limit:
65 g/L

Category Emissions:
0.09 tpd

SWA VOC Content:
42 g/L

Proposed Limit:
20 g/L

Cove Base Adhesive



Current Limit:
50 g/L

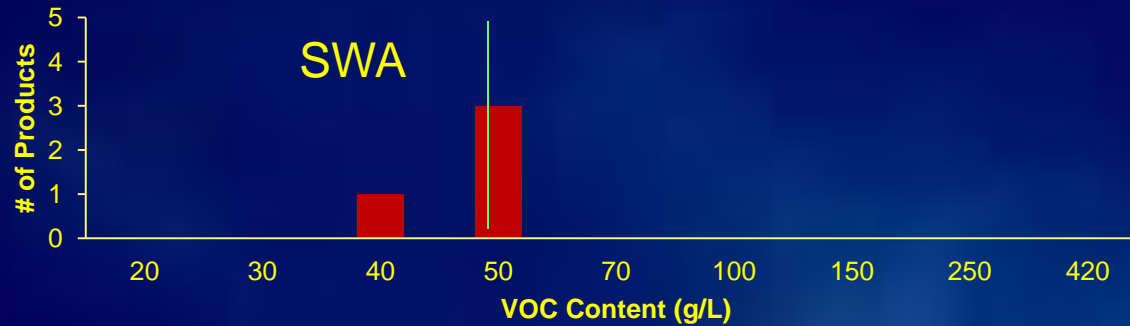
Category Emissions:
0.01 tpd

SWA VOC Content:
9 g/L

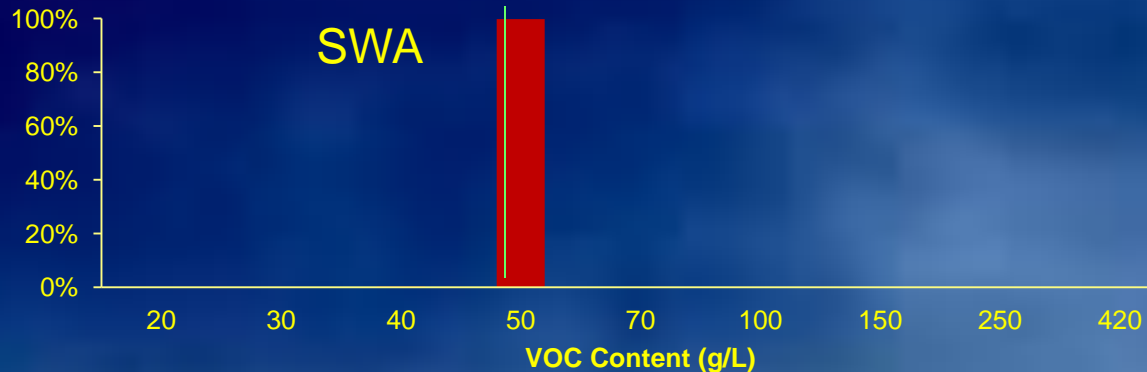
Proposed Limit:
20 g/L

Dry Wall & Panel Adhesive

Product Distribution



Relative Volume



Current Limit:
50 g/L

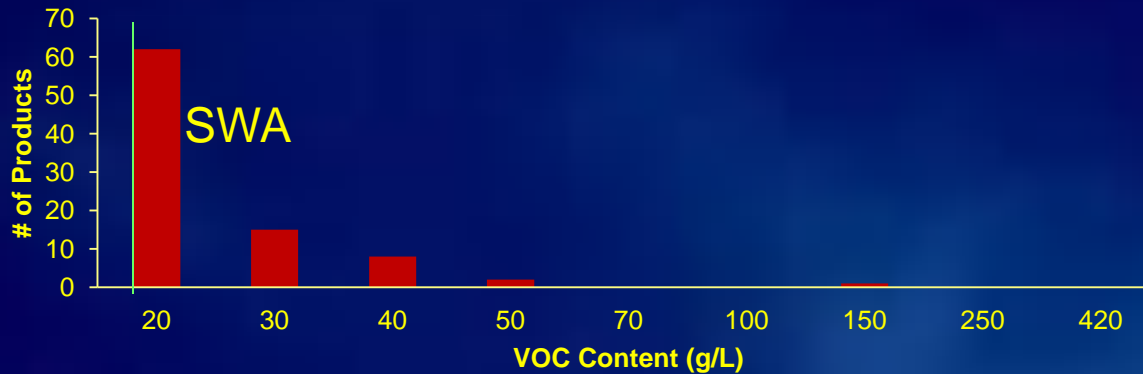
Category Emissions:
0.01 tpd

SWA VOC Content:
48 g/L

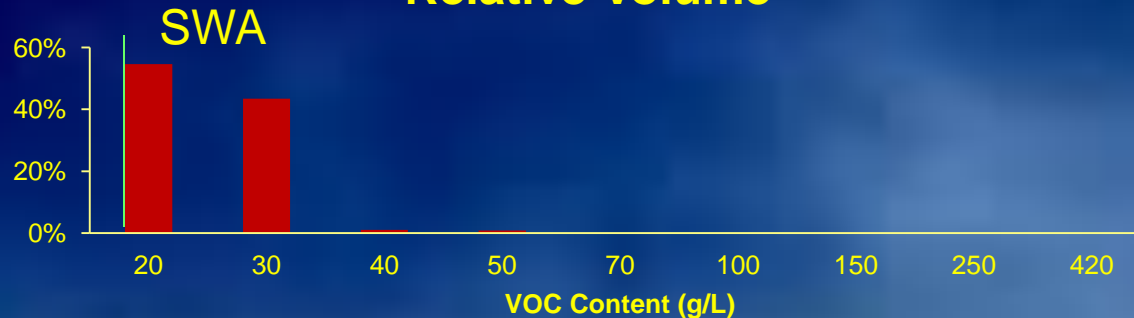
Proposed Limit:
20 g/L

Indoor Flooring Adhesive

Product Distribution



Relative Volume



Current Limit:
50 g/L

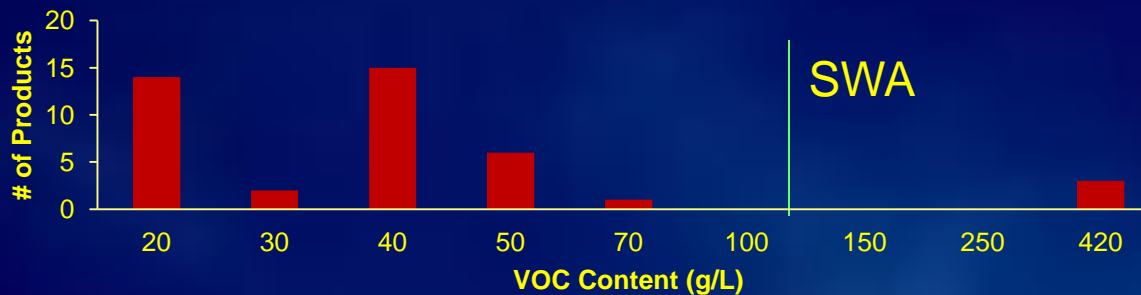
Category Emissions:
0.15 tpd

SWA VOC Content:
15 g/L

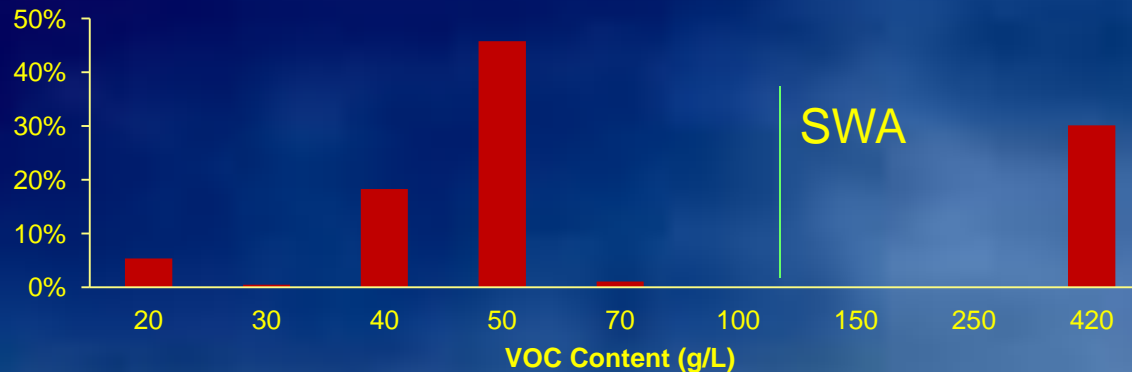
Proposed Limit:
20 g/L

Multi-Purpose Construction Adhesive

Product Distribution



Relative Volume



Current Limit:
70 g/L

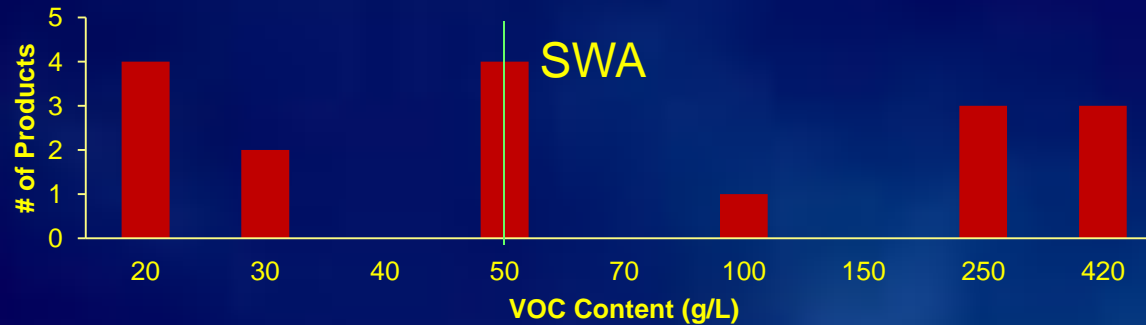
Category Emissions:
0.67 tpd

SWA VOC Content:
110 g/L

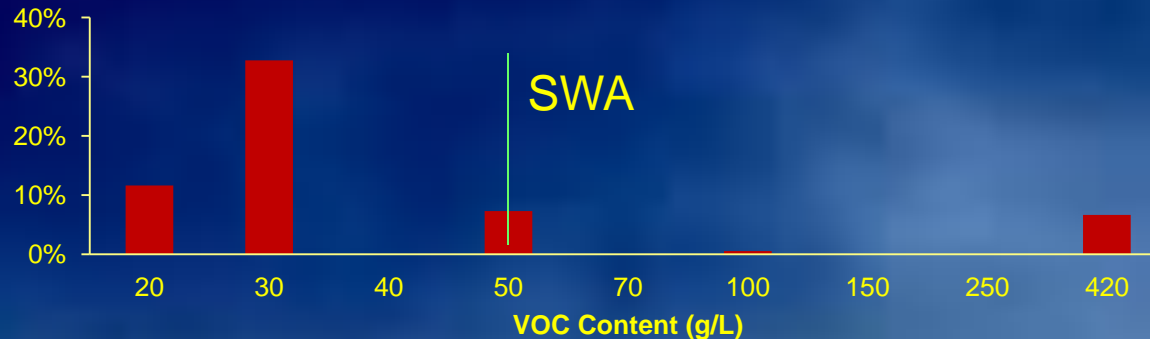
Proposed Limit:
20 g/L

Subfloor Adhesive

Product Distribution



Relative Volume



Current Limit:
50 g/L

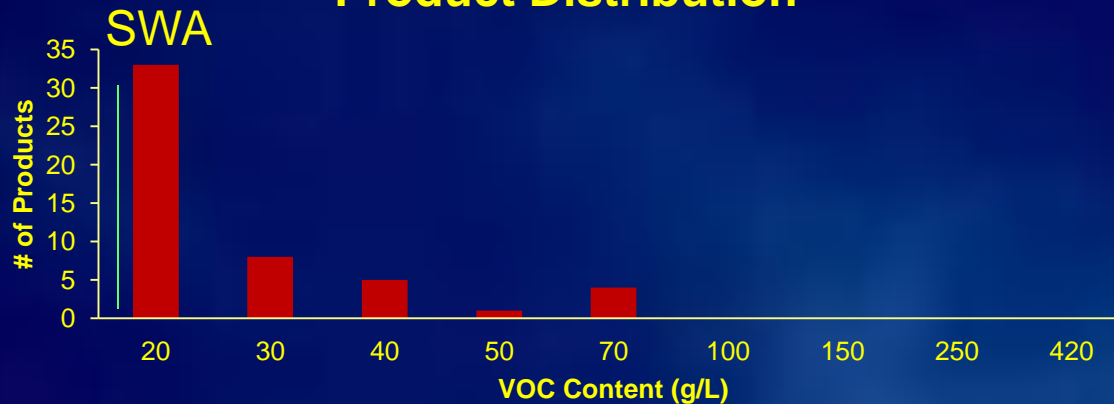
Category Emissions:
0.93 tpd

SWA VOC Content:
51 g/L

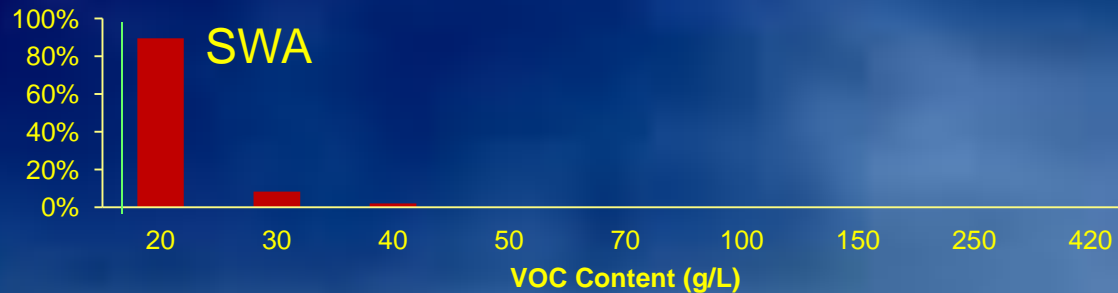
Proposed Limit:
50 g/L

VCT and Asphalt Tile Adhesive

Product Distribution



Relative Volume



Current Limit:
50 g/L

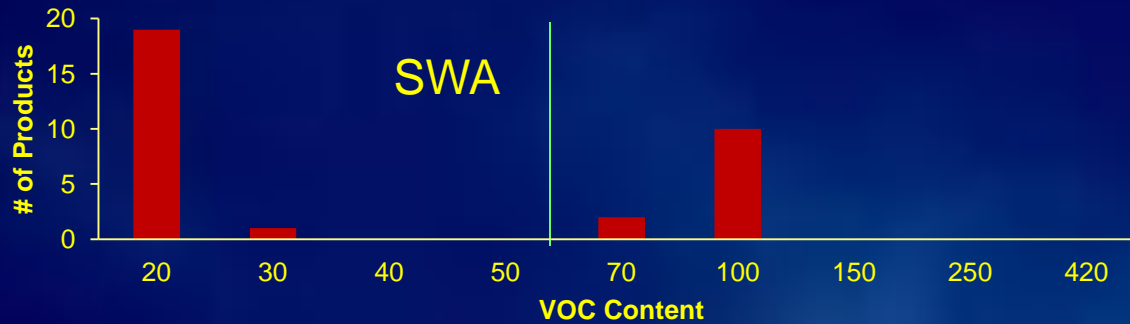
Category Emissions:
0.07 tpd

SWA VOC Content:
5 g/L

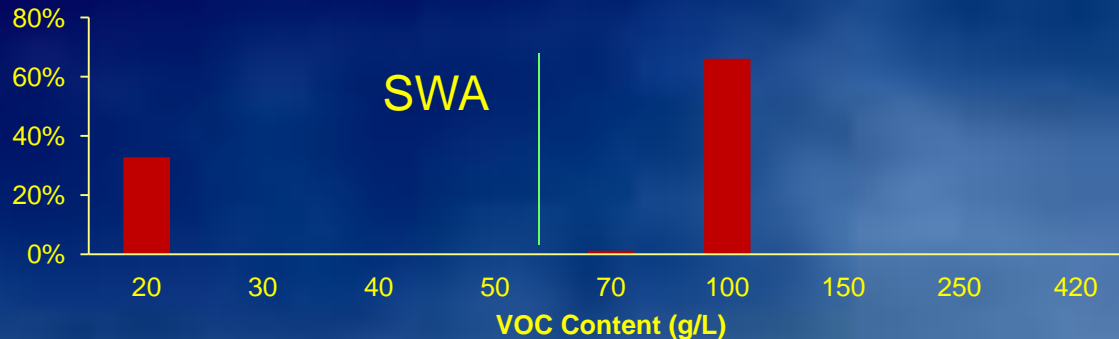
Proposed Limit:
20 g/L

Wood Floor

Product Distribution



Relative Volume



Current Limit:
100 g/L

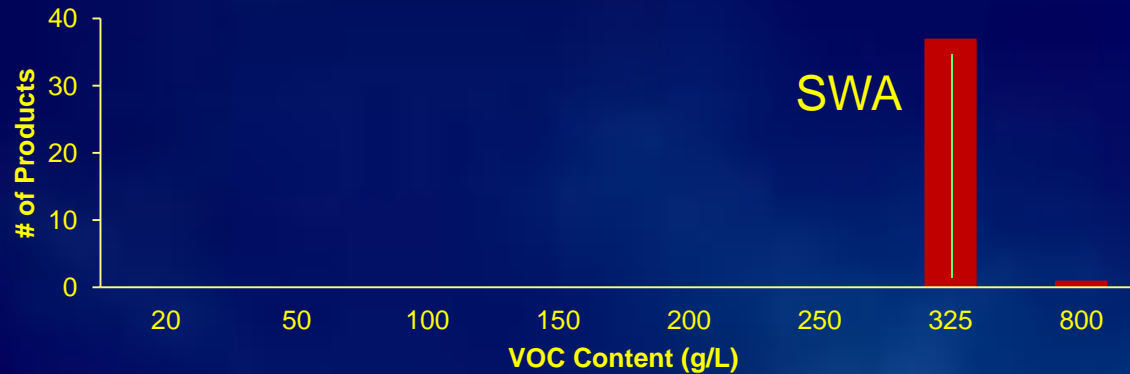
Category Emissions:
1.55 tpd

SWA VOC Content:
56 g/L

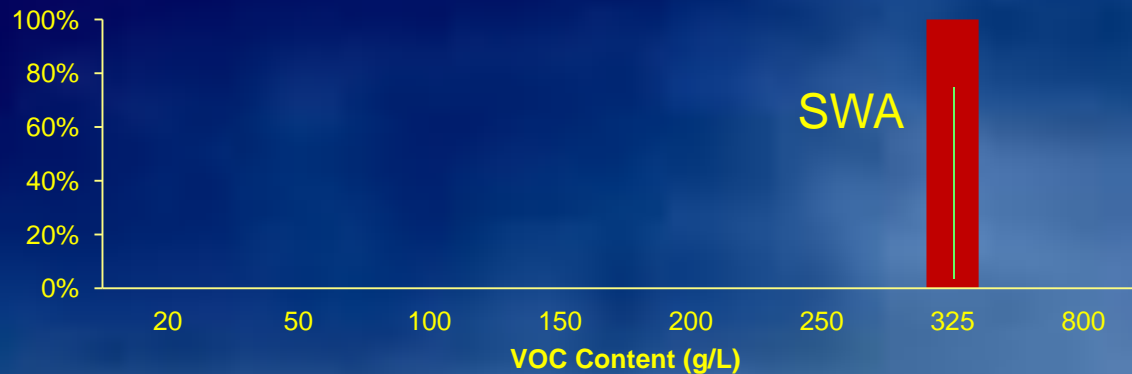
Proposed Limit:
20 g/L

ABS Welding

Product Distribution



Relative Volume



Current Limit:
325 g/L

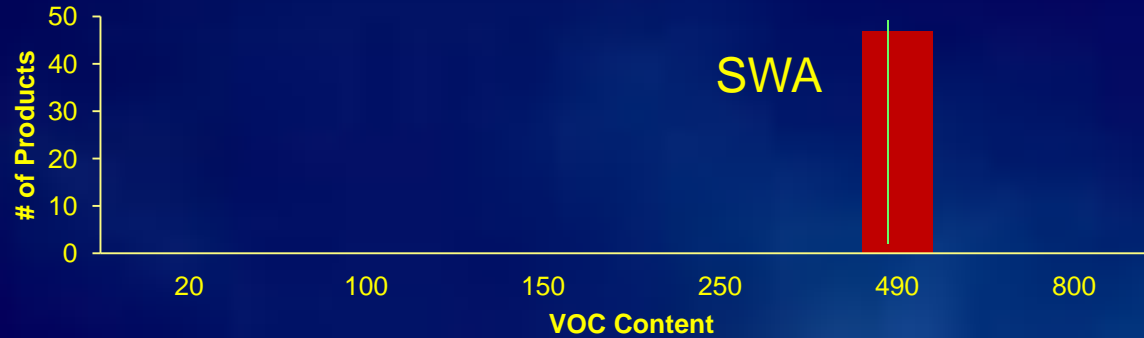
Category Emissions:
0.19 tpd

SWA VOC Content:
325 g/L

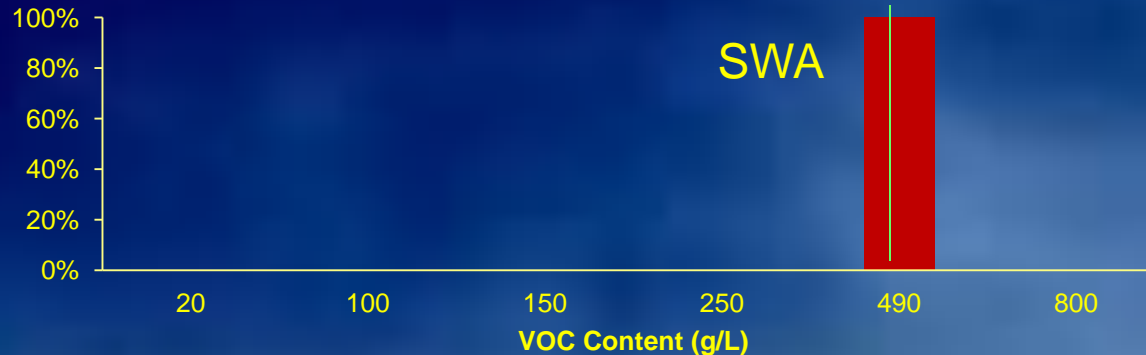
Proposed Limit:
325 g/L

CPVC Welding

Product Distribution



Relative Volume



Current Limit:
490 g/L

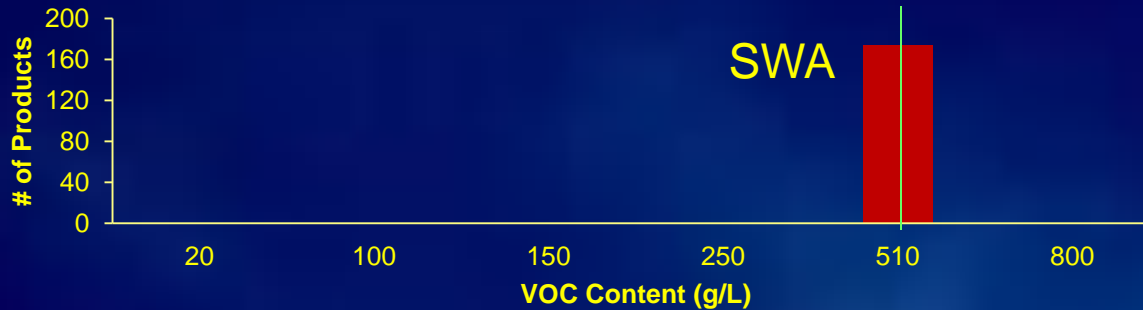
Category Emissions:
0.05 tpd

SWA VOC Content:
490 g/L

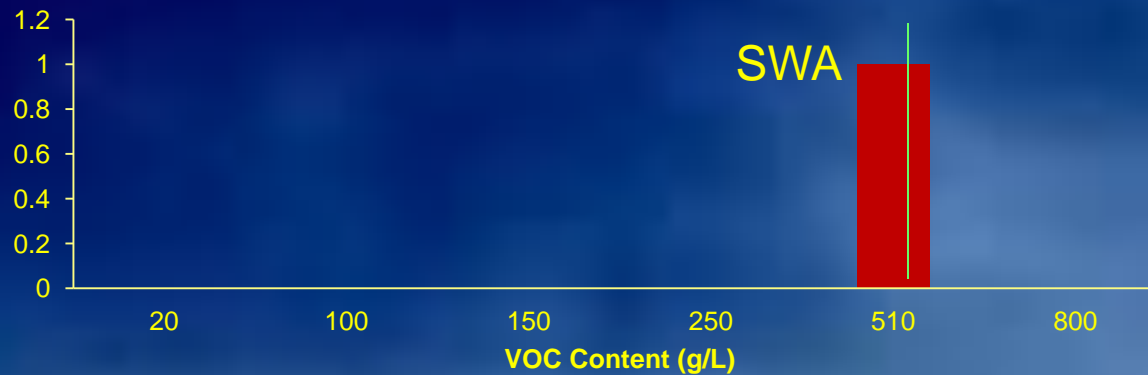
Proposed Limit:
490 g/L

PVC Welding

Product Distribution



Relative Volume



Current Limit:
510 g/L

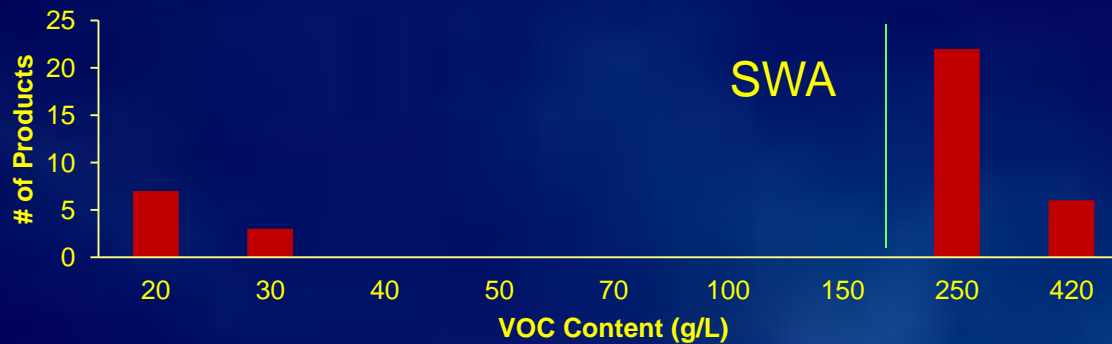
Category Emissions:
0.89 tpd

SWA VOC Content:
510 g/L

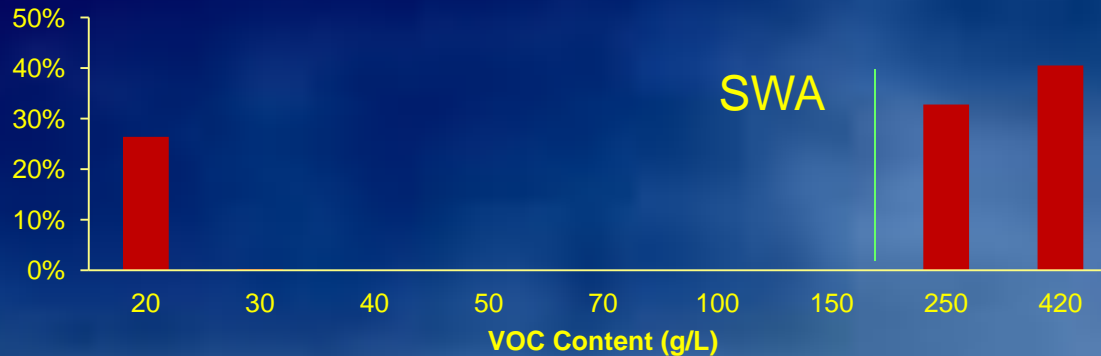
Proposed Limit:
510 g/L

Roof Adhesives - Other

Product Distribution



Relative Volume



Current Limit:
250 g/L

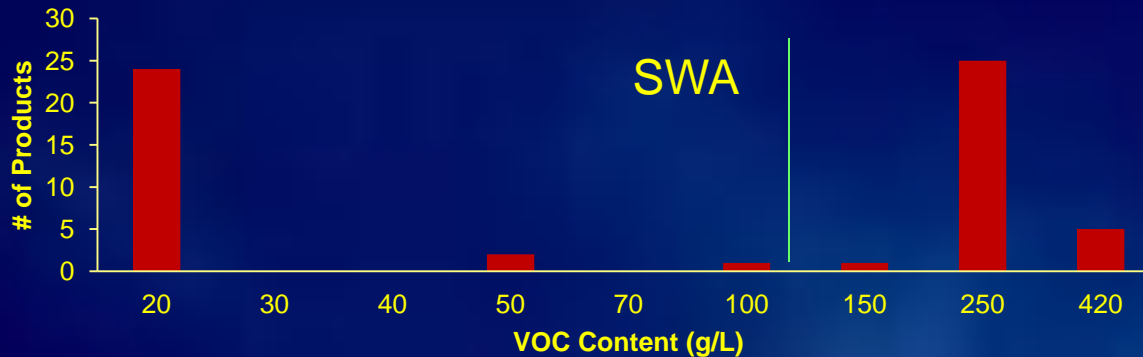
Category Emissions:
0.74 tpd

SWA VOC Content:
178 g/L

Proposed Limit:
100 g/L

Roof Adhesives – Single Ply

Product Distribution



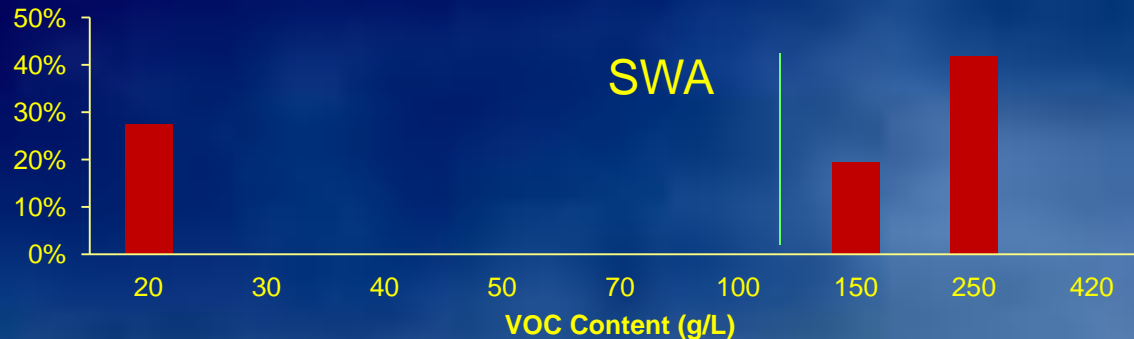
Current Limit:
250 g/L

Category Emissions:
0.26 tpd

SWA VOC Content:
121 g/L

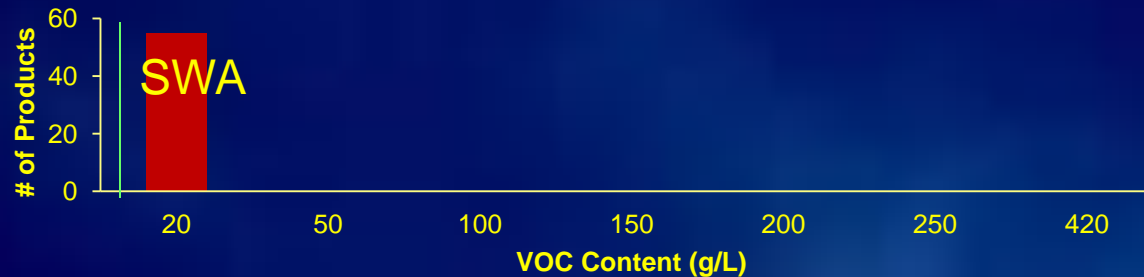
Proposed Limit:
100 g/L

Relative Volume



Substrate Adhesives – Wood

Product Distribution



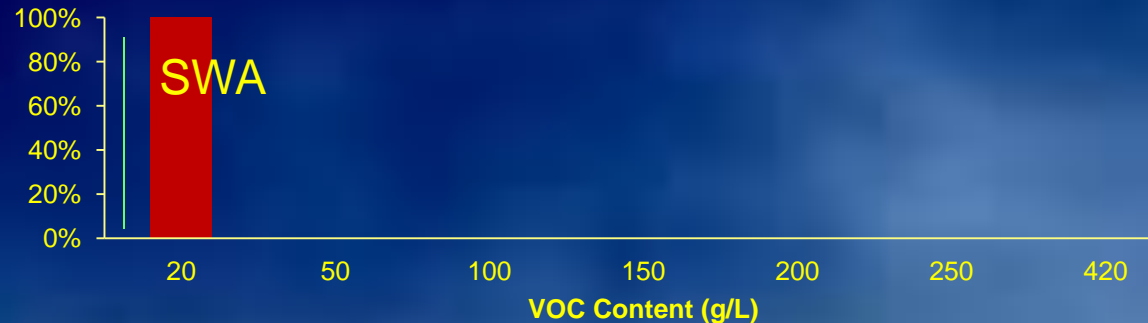
Current Limit:
30 g/L

Category Emissions:
0.09 tpd

SWA VOC Content:
6 g/L

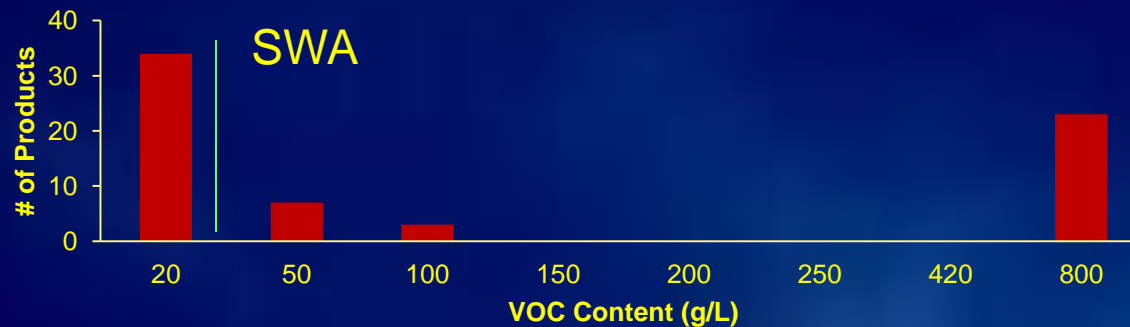
Proposed Limit:
30 g/L

Relative Volume

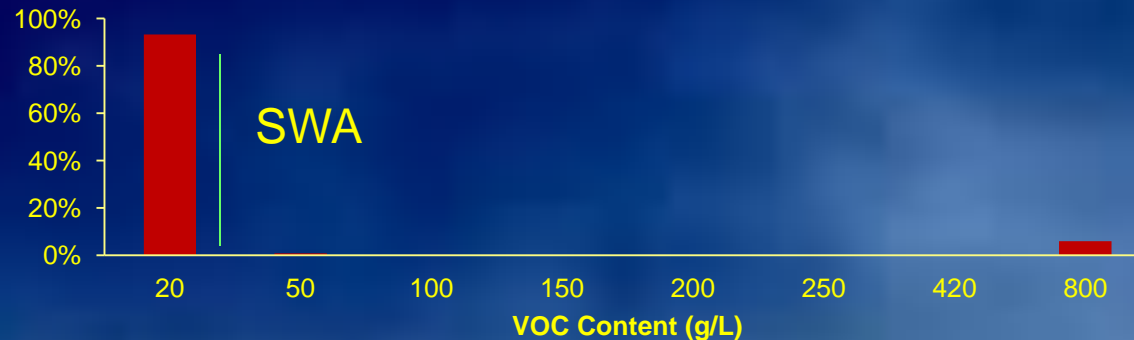


Substrate Adhesives – All Other Substrates

Product Distribution



Relative Volume



Current Limit:
Varies

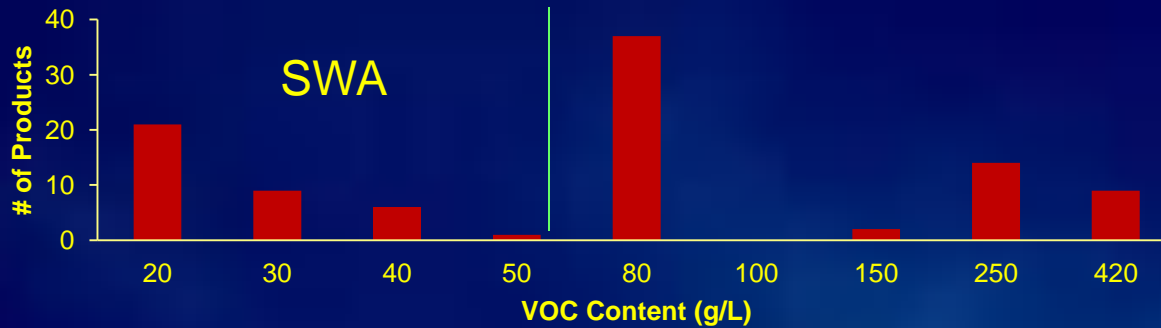
Category Emissions:
0.23 tpd

SWA VOC Content:
36 g/L

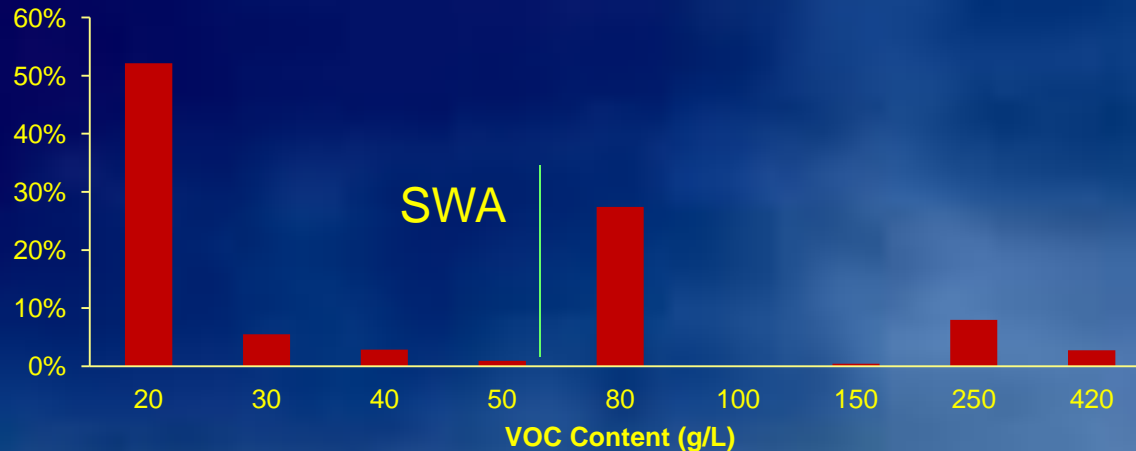
Proposed Limit:
No change

Contact Adhesives

Product Distribution



Relative Volume



Current Limit:
80 g/L

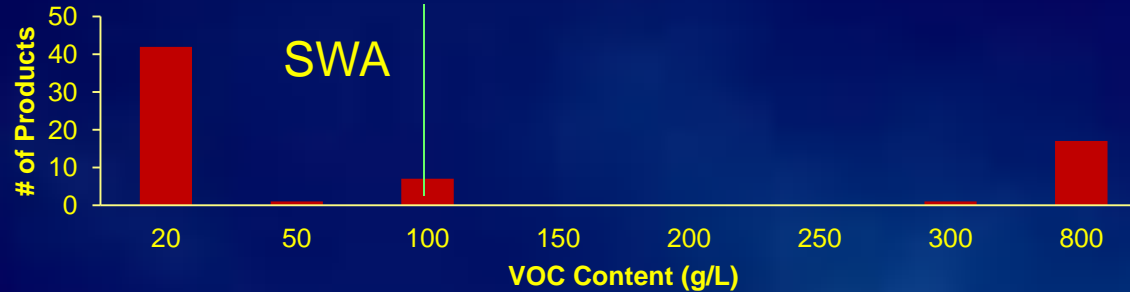
Category Emissions:
0.05 tpd

SWA VOC Content:
62 g/L

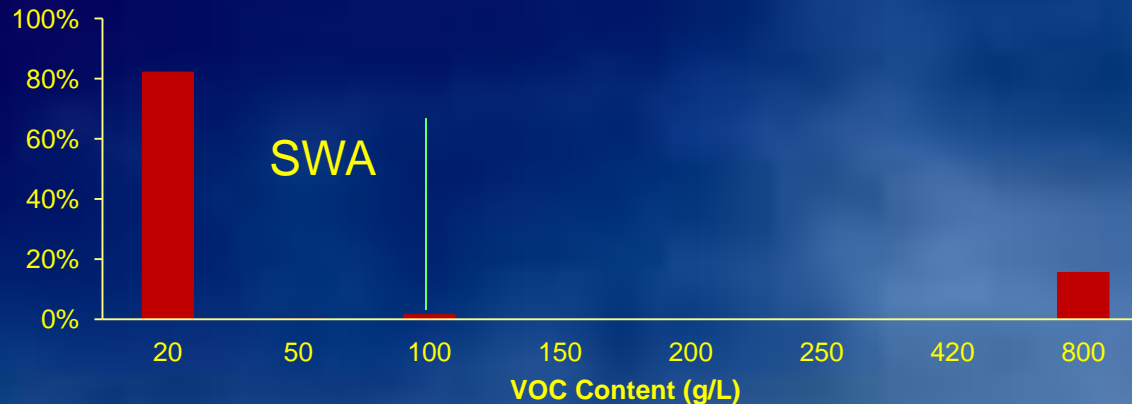
Proposed Limit:
80 g/L

Special Purpose Contact Adhesives

Product Distribution



Relative Volume



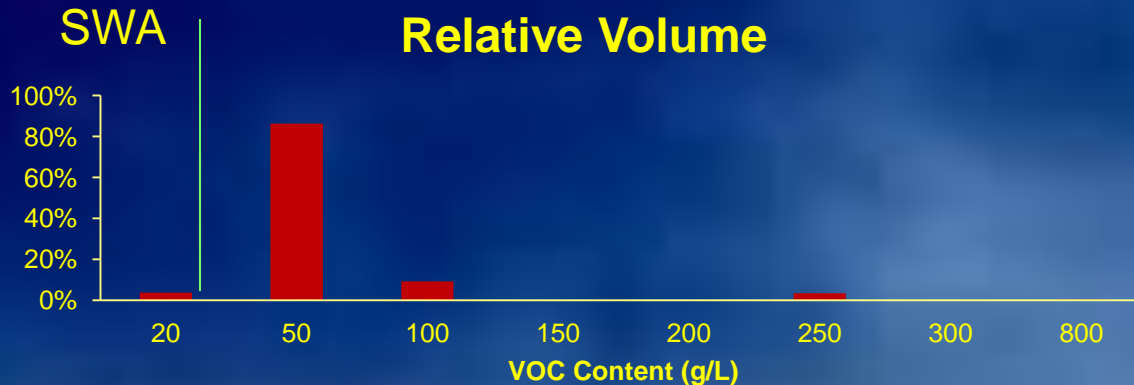
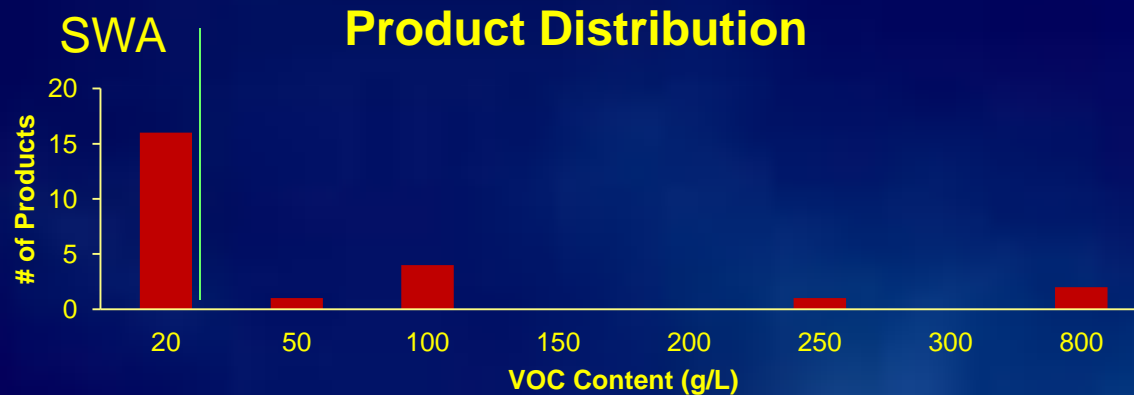
Current Limit:
250 g/L

Category Emissions:
0.67 tpd

SWA VOC Content:
97 g/L

Proposed Limit:
250 g/L

All Other Adhesives



Current Limit:
250 g/L

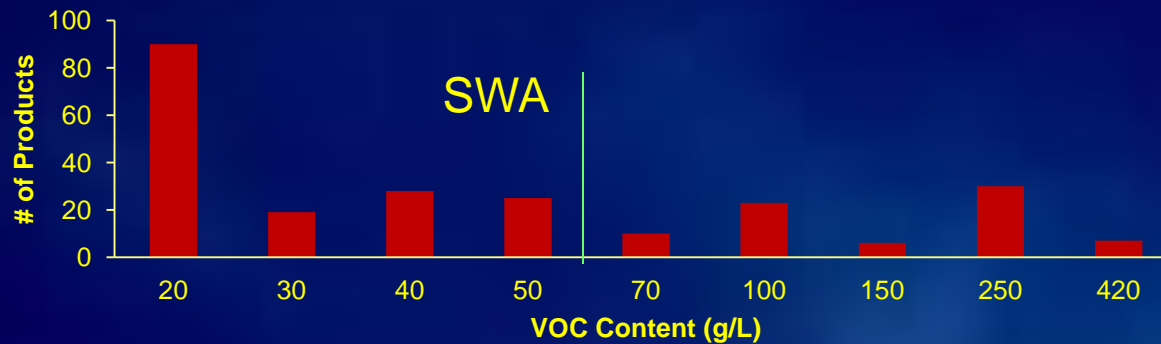
Category Emissions:
0.01 tpd

SWA VOC Content:
28 g/L

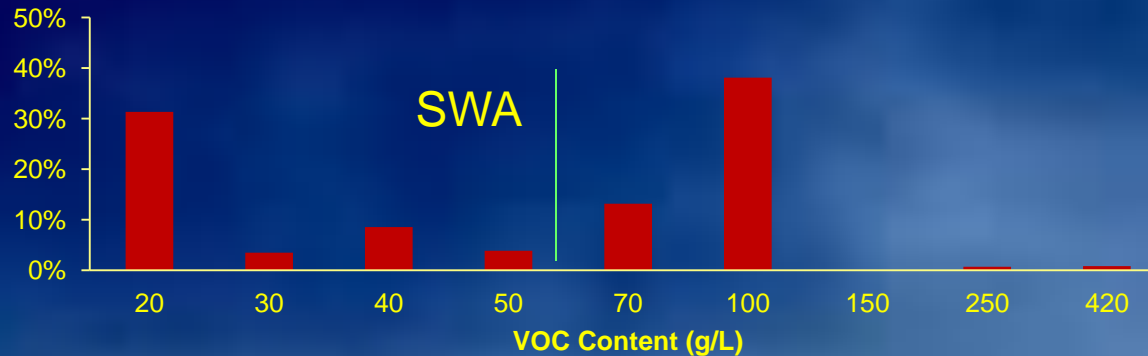
Proposed Limit:
250 g/L

Architectural Sealants

Product Distribution



Relative Volume



Current Limit:
250 g/L

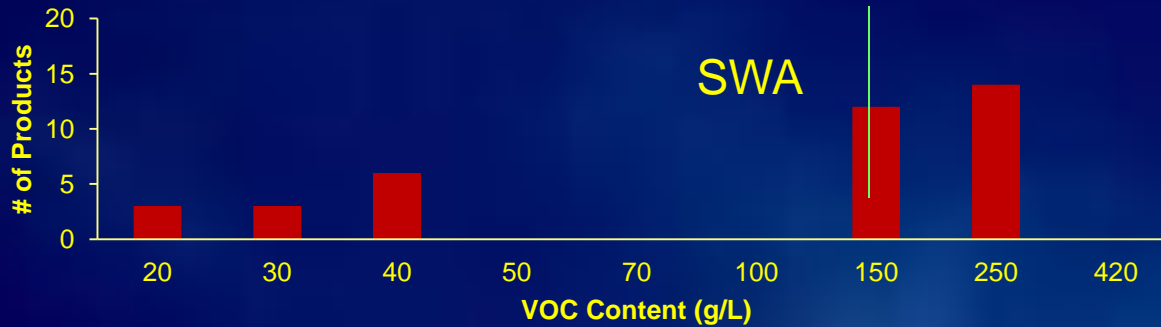
Category Emissions:
0.51 tpd

SWA VOC Content:
57 g/L

Proposed Limit:
50 g/L

Foam Sealants

Product Distribution



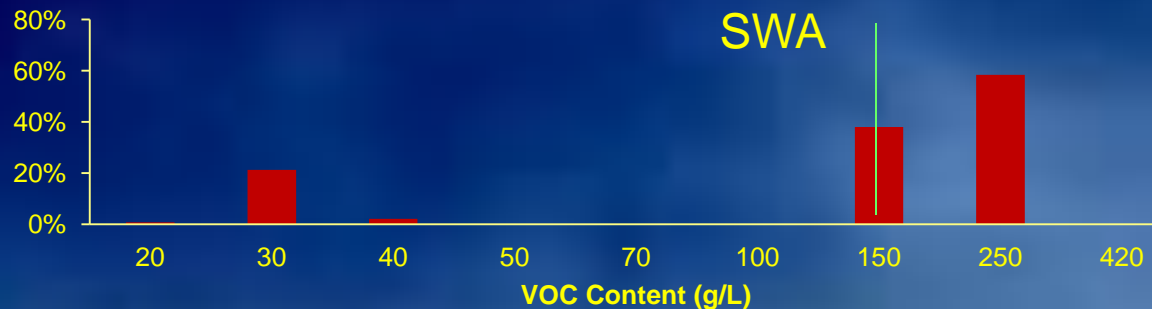
Current Limit:
250 g/L

Category Emissions:
0.28 tpd

SWA VOC Content:
150 g/L

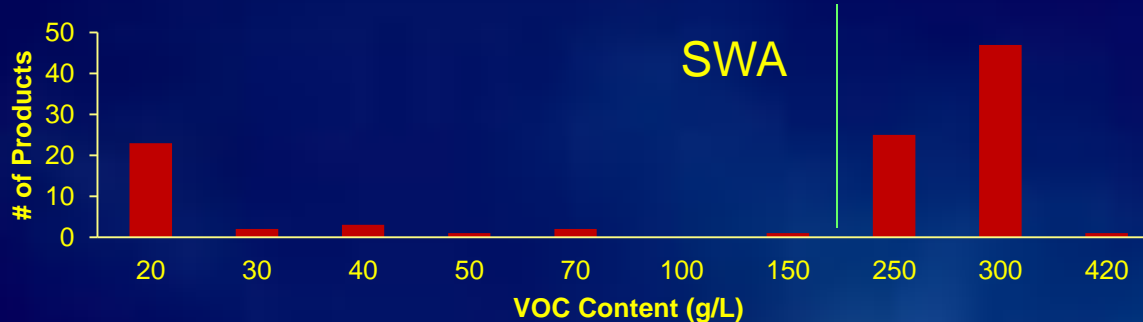
Proposed Limit:
20 g/L

Relative Volume



Roof Sealants – Other

Product Distribution



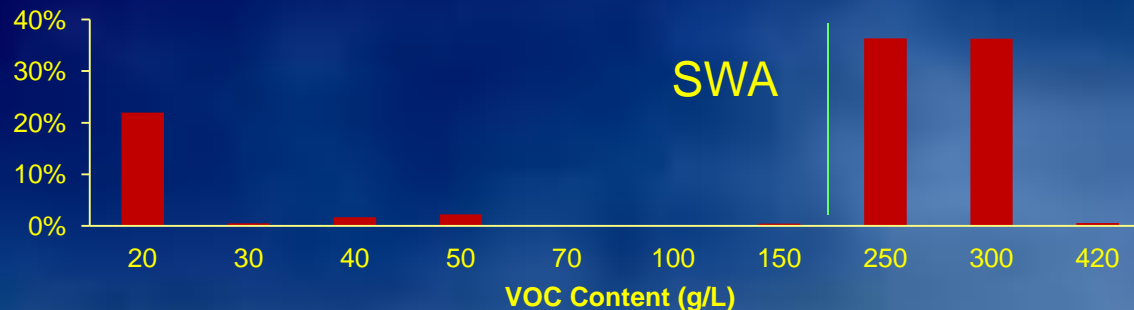
Current Limit:
300 g/L

Category Emissions:
1.35 tpd

SWA VOC Content:
186 g/L

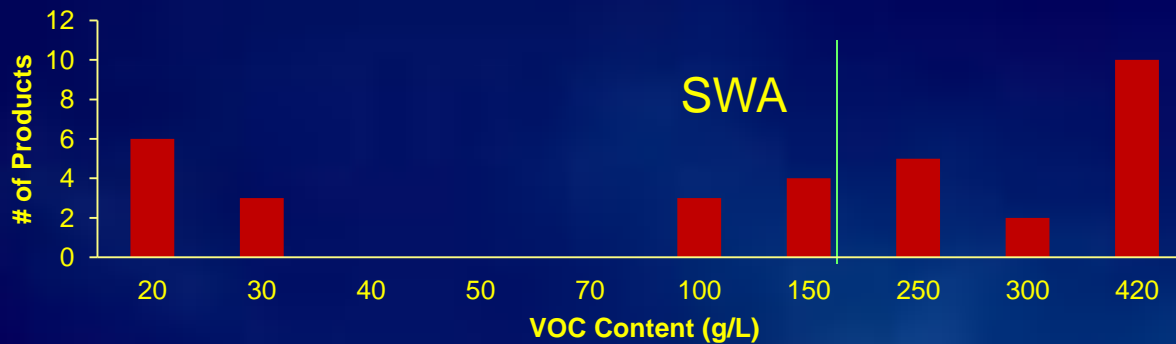
Proposed Limit:
100 g/L

Relative Volume



Roof Sealants – Single Ply

Product Distribution



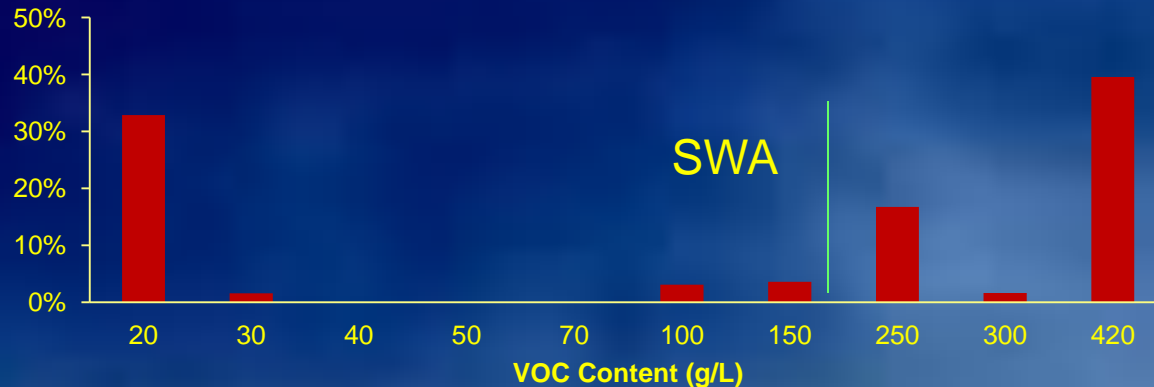
Current Limit:
450 g/L

Category Emissions:
0.02 tpd

SWA VOC Content:
174 g/L

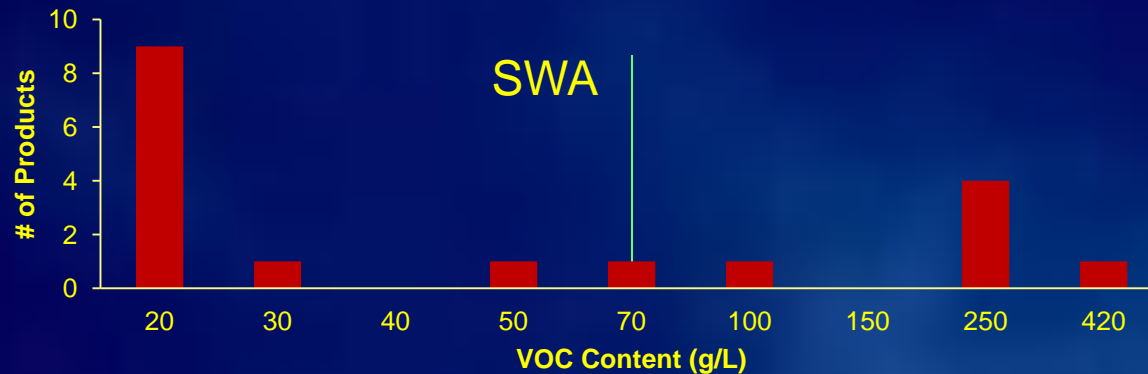
Proposed Limit:
100 g/L

Relative Volume

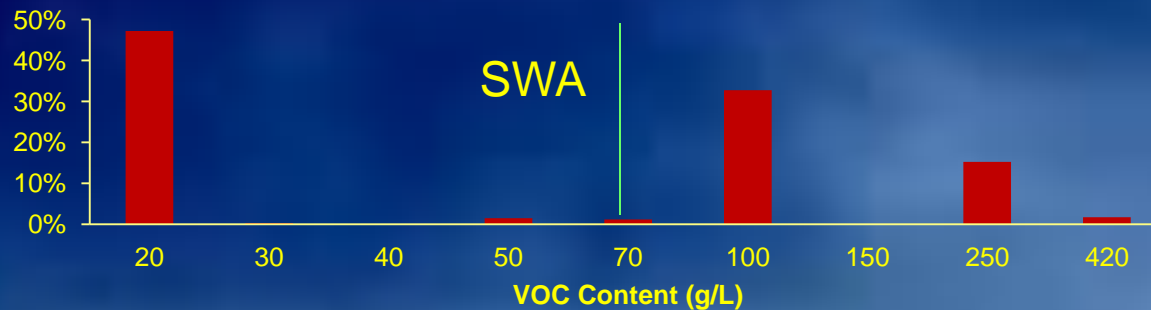


Roadway Sealants

Product Distribution



Relative Volume



Current Limit:
250 g/L

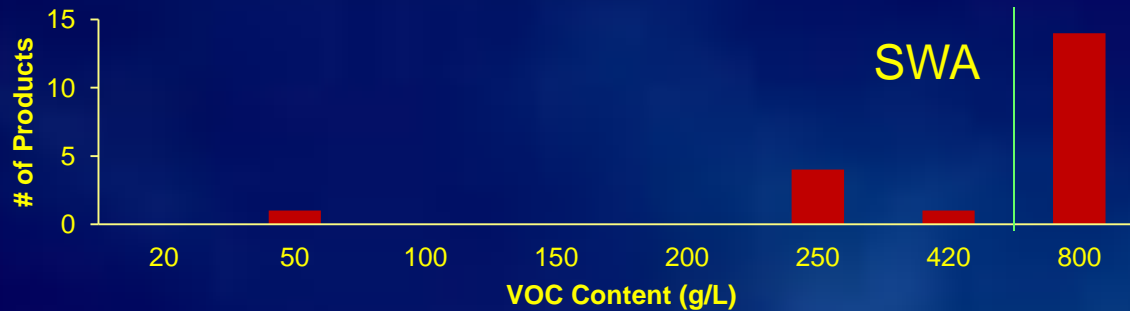
Category Emissions:
0.02 tpd

SWA VOC Content:
70 g/L

Proposed Limit:
50 g/L

Sealant Primers

Product Distribution



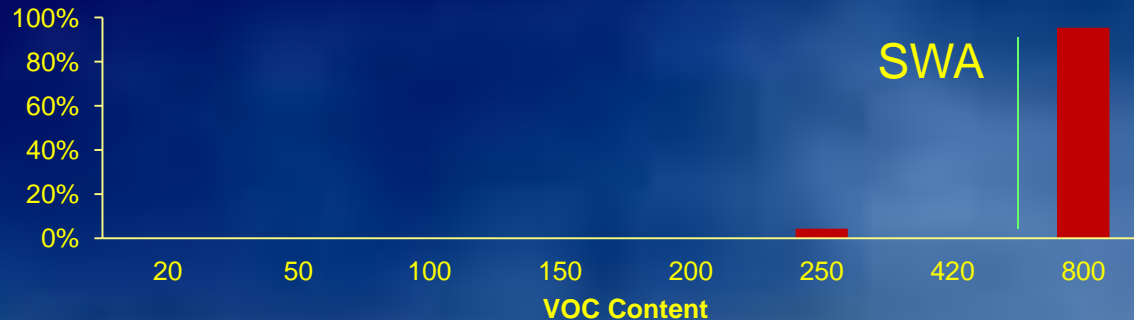
Current Limit:
750 g/L

Category Emissions:
0.01 tpd

SWA VOC Content:
538 g/L

Proposed Limit:
750 g/L

Relative Volume



Reported Emission Inventory and Reductions by Category

Proposed Limit: 20 g/L

Category	Emission Inventory (tpd)	Emission Reductions (tpd)
Architectural Adhesives		
Multi-Purpose Construction	0.67	0.3
Subfloor	0.93	0.0
Wood Floor	1.55	0.5
All Other Architectural Adhesives	0.33	0.2
Top & Trim Adhesives	0.28	<0.2>
Other Roof Adhesives	0.74	0.3
Other Roof Sealants	1.35	0.6
Single Ply Roof Membrane Adhesives	0.26	0.1
Single Ply Roof Membrane Sealants	0.02	-
Architectural Sealants	0.51	0.3
Foam Sealants	0.28	0.2
Plastic Welding (All)	1.16	0.0
All Other Categories	1.58	0.0

Products Compliant with Future Limits

- Products already in marketplace
- Revised list based on working group comments and observations
- Substantial changes to following categories:
 - Subfloor
 - Drywall and Panel
 - Multipurpose Construction



CHAPCO® Safe-Set® 154

Performance Plus Multi-Purpose Adhesive



MULTI-PURPOSE ADHESIVES

1. PRODUCT NAME
CHAPCO® Safe-Set® 154 Performance Plus Multi-Purpose Adhesive

2. MANUFACTURER
H.B. Fuller Construction Products Inc.
1105 South Frontenac Street
Aurora, IL 60504-6451 U.S.A.
800.952.0225 Office
800.952.2368 Fax
chapco-adhesive.com

3. DESCRIPTION
All CHAPCO® Safe-Set® adhesives are solvent-free, non-flammable, freeze/thaw stable, and nearly odor-free. Safe-Set adhesives can be used where other adhesives might present potential health risks. They are suitable for office buildings, hotels, hospitals, schools, restaurants, and assisted living facilities.

Safe-Set 154 can be used to install carpet and fiber backed sheet goods to all approved subfloors. It's an economical adhesive that exhibits fast grab and good tack. For use with fiber backed sheet goods and the following backings: Jute, Synthetic Fiber Back, Enhancer Back, and Needle punch carpet from all major manufacturers. Not for use with vinyl back carpet.

Packaging
Four U.S. Gallon pail (15.14 l)
Product #70-4701-1370

Coverage
For carpet, approximately 10-13 square yards (90-108 square feet) per gallon. For sheet goods, approximately 18-20 square yards (160-180 square feet) per gallon. Coverage will vary with the type of floor covering and job conditions.

Storage/ Shelf Life
Store indoors only. Protect from freezing. Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided. Should adhesive freeze, allow to thaw at room temperature and stir well before using. Maximum shelf life is 1 year from date of manufacture in unopened package.

Limitations
Full cure takes 48-72 hours; the finished installation must be protected from moisture and/or freezing for a minimum of 24 hours. Not for use with vinyl back carpet.

Cautions
Read complete cautionary information printed on product container prior to use. For medical emergency information, call 1-888-853-1758.

This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about guidelines for the proper use and application of the covered CHAPCO products under normal environmental and working conditions. Because each project is different, H.B. Fuller Construction Products Inc. cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

4. TECHNICAL DATA

CHAPCO® Safe-Set® 154 Performance Plus Multi-Purpose Adhesive	
Base	Latex
Cleanability	Medium/Fair
Shelf Life	One Year, Unopened
Color	Clear
Weight per gallon	11.71 lbs.
Open Time	45-60 Minutes
VOC	0g/L Calculated

5. INSTALLATION INSTRUCTIONS

Preparation of Surface:
Use on grade, above grade, or below grade. Safe-Set 154 may be used over structurally sound surfaces of plywood (sanded), hardboard, concrete, and terrazzo. Use a high quality latex portland cement patching compound to fill or level any irregular areas. The floor must be sound, dry, and free from dirt, dust, old adhesive, grease, wax, or other foreign matter. Concrete floors must be fully cured, free from dust, moisture, excessive alkalinity, curing agents, and excessive moisture vapor emissions (3 lbs./1,000 SF/24 hrs.). On and below grade concrete must have a satisfactory moisture barrier beneath the slab.

Application Instructions
The adhesive, floor covering, and room should be maintained at a minimum temperature of 65°F for 48 hours prior to, during, and after installation. For most carpet backings use a 1/8" x 1/8" x 1/16" notched trowel. For deeply textured backings use a 1/8" x 1/8" x 1/16" U-notched trowel. For fiber backed sheet goods use a 1/16" x 1/16" x 1/16" square notched trowel. Apply only that amount of adhesive that can be covered in 45 minutes. That open time will vary with the temperature, humidity and porosity of the substrate. Check open time periodically by filling a section just laid to be certain there is 100% transfer of adhesive to the back of the floor covering. For best results let the adhesive tack up before installing carpet. After installation, roll sheet goods with a 75-100 lb. roller. For carpet use a carpet crease or light weight (25-50 lb.) roller. Restrict heavy foot traffic or rolling loads for at least 24 hours.

Clean-up
Fresh adhesive (less than 8 hours old) can be removed with ice cold soapy water and wet cloth. Dried adhesive can be removed from carpet with mineral spirits or acetone. For dried adhesive film, use mineral spirits or acetone carefully as these products can compromise the floor finish. Always refer to the material manufacturer for proper dried adhesive removal procedures.

6. AVAILABILITY AND COST
To locate a distributor in your area, please contact:
phone: 800-832-9002
website: chapco-adhesive.com

7. WARRANTY
H.B. Fuller Construction Products Inc. offers a limited warranty on this product when installed in accordance with H.B. Fuller Construction Products Inc. printed specifications. Ask your sales associate or call 800-832-9002 for a copy of the limited warranty.

Category: Adhesive - Architectural Applications – Ceramic Tile Adhesives

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
DuraPro AF0044	1	Product is freeze/thaw stable if frozen not lower than -10°C.
HB Fuller Chapco SS-88	10	Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided.
HB Fuller Chapco SS-90	5	Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided.
Polygem 307	0	No data (epoxy)
TEC 101	1	Freeze/thaw stable to -10°F (-23°C)

Category: Adhesive - Architectural Applications – Cove Base

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
Advanced Adhesive Tech AAT-432	0	No data
HB Fuller Chapco Safe-Set 4	10	Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided.
HB Fuller Chapco Safe-Set 400	6	Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided.
HB Fuller TEC 714	5	Freeze/thaw stable to 10°F (-12°C) for a minimum of 5 cycles.
Johnsonite 960	1	Freeze thaw up to 5 cycles at 20°F (-6.7°C)
WF Taylor Envirotec 2040	12	Freeze-thaw stable to 10°F.
W.W. Henry 440	0	Freeze/thaw stable to 10°F (-12°C). Avoid lower temperatures or multiple freeze/thaw cycles.
XL Stix 4000	0	Freeze thaw protected to 15° F

Category: Adhesive - Architectural Applications – Dry Wall and Panel

Proposed Limit: 40 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
Chem Link Wallsecure	< 20	WallSecure will not freeze.
DAP Beats the Nail VOC Panel & Foam Construction Adhesive	29	Freeze/Thaw stable
Eco-Bond Adhesive	0	ECO-BOND will not freeze.
Liquid Nails DWP-24	32	Passes 5 cycles

Category: Adhesive - Architectural Applications – Indoor Flooring*

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
AAT-335 Double Glue-Down Adhesive	0	Freeze/Thaw Stable
Armstrong S-288	14	Freeze/Thaw Stable
DAP 7079800185	0	Passes 5 Cycles
Johnsonite 965	13	Freeze thaw up to 5 cycle/Thaw at 20°F (-7°C)
Parabond M-2850	0	Freeze thaw stable to 10°F. Protect from Freezing.
Roberts 3095	0	Protect from freezing
Roberts 6700	0	Freeze-Thaw Stability: To -12°C (+10°F) before product is cured.
Shaw 6300	0	Stable for 5 cycles to 10°F.

*Includes Indoor Carpet Adhesives

Category: Adhesive - Architectural Applications – Indoor Flooring (Cont.)

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
TEC 700	0	Freeze/thaw stable
TEC 704	0	Freeze/thaw stable
TEC 705	5	Do not allow product to freeze.
TEC 717	0	Freeze/thaw stable
TEC 722	0	Freeze/thaw stable
W.W. Henry 130	1	Freeze/thaw stable to 10°F (-12°C). Avoid lower temperatures or multiple freeze/thaw cycles.
W.W. Henry 176	4	Freeze/thaw stable to 10°F (-12°C). Avoid lower temperatures or multiple freeze/thaw cycles.
W.W. Henry 351	4	Freeze/thaw stable to 10°F (-12°C). Avoid lower temperatures or multiple freeze/thaw cycles.
W.W. Henry 377	4	Keep from freezing
W.W. Henry 451	3	Freeze/thaw stable to 10°F (-12°C). Avoid lower temperatures or multiple freeze/thaw cycles.

Category: Adhesive - Architectural Applications – Multipurpose Construction

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
DAP Beats the Nail All Purpose Construction Adhesive	2	5 cycles
DAP Strongstik Instant Grab Adhesive	12	Passes 5 cycles
Henkel OSI SF450	5	Not damaged by freezing.
Miracle Foamseal F6400-LVR	2	No data

Category: Adhesive - Architectural Applications – Outdoor Floor Covering

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
Bostik D808 Ext Carpet Adh	<1	5 cycles at 10°F
Flexco Flex-Tuft Adhesive	17	Material is Freeze Thaw Stable above 10° F (-12° C).
HB Fuller TEC 975	0	Do not allow product to freeze.
Parabond 2850	0	Freeze thaw stable to 10°F. Protect from Freezing.
Roberts 6700	0	To -12°C (+10°F) before product is cured.
Roberts Capitol CA024	0	Protect from freezing
Shaw 6300	0	Stable for 5 cycles to 10°F.
XL Brand Stix 1100	0	Do not allow product to freeze.

Category: Adhesive - Architectural Applications – Rubber Flooring

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
Bostik Green Fusion	0	Stable
Burke BR-711 Rubber and Vinyl Stair Tread and Tile Adhesive	0	No data
Eco Surfaces E-Grip III	0	Stable
EcoSpray 1300	0	No data
Johnsonite 140	0	This product is not freeze thaw stable.
RHC 3100 Rubber Tile & Tread Adhesive	0	Material is Freeze Thaw Stable, up to five (5) cycles.
ROPPE ROP500 Spray Adhesive	0	Protect material from freezing
Staticworx StatBond One-Part Acrylic Adhesive	<10	Yes – 5 cycles
W.W. Henry 412	0	Freeze / thaw stable: resists temperature extremes

Category: Adhesive - Architectural Applications – Structural Glazing

Proposed Limit: 40 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
Dow Corning 983	18	No data
Dow Corning 995	30	No data
GE 7700	17	No data
GE SCS 2000	20	No data
GE SSG 4000	37	No data
GE SSG 4600	21	No data
Sika SG 500	2	No data

Category: Adhesive - Architectural Applications – Structural Wood Member

Proposed Limit: 50 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
Henkel Loctite PL Premium	45	Not damaged by freezing.
Henkel Loctite PL PR Adv	22	Not damaged by freezing.
BASF Sonneborn Premium Ad	45	Adhesive remains flexible even when stored at freezing temperatures.
Proposed:	50	

Category: Adhesive - Architectural Applications – Subfloor

Proposed Limit: Retain Current Limit

Category: Adhesive - Architectural Applications – VCT and Asphalt Tile

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
AAT 367	0	No data
AAT 370	0	Freeze-Thaw Stable to 15°F.
Armstrong S-599	14	Freeze-thaw stable
Armstrong S-700	0	Freeze-thaw stable to 10°F
Burke BR 711	0	No data
DriTac Eco-6200GR	0	No data
HB Fuller Chapco Safe Set 299	3	Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided.
HB Fuller Chapco Safe Set 321	0	Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided.
HB Fuller Chapco Safe Set 730	0	Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided.
HB Fuller Chapco Safe Set 775	0	Adhesive is freeze/thaw stable to 10°F. Prolonged or repeated freeze/thaw cycles should be avoided.
RHC 3600 Vinyl Tile & Tread Adhesive	1	Material is Freeze Thaw Stable, up to five (5) cycles.
Roberts 2038	2	Do not freeze
Roberts 2057	0	Roberts 2057 adhesive is freeze-thaw stable at 10°F (-12.2°C) or above and may be permanently damaged if stored below 10°F (-12.2°C).

Category: Adhesive - Architectural Applications – VCT and Asphalt Tile (Cont.)

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
Staticworx StatBond Adhesive	<1	Yes – 5 cycles at 0°F
TEC 006	14	Adhesive is freeze/thaw stable to 10°F (-12°C). Prolonged or repeated freeze/thaw cycles should be avoided.
TEC 713	0	Freeze/thaw stable to 10°F (-12°C) for a minimum of 5 cycles.
TEC 730	4	Freeze/thaw stable to 10°F (-12°C) for a minimum of 5 cycles.
TEC 744	0	Freeze/thaw stable to 10°F (-12°C) for a minimum of 5 cycles.
VPI 150 Conductive Epoxy Adhesive	0	No data
VPI 165 Acrylic Conductive Adhesive	0	No data
WF Taylor Envirotec 2033	23	Freeze/thaw stable to 10° F
WF Taylor MS Plus	Negligible	Freeze/thaw stable to 10° F
W.W. Henry 420 Clear VCT Floor Adhesive	1	Freeze/Thaw Stable to 10°F (-12°C). Avoid lower temperatures or multiple freeze/thaw cycles.
W.W. Henry 530	0	No data
XL Brands Stix 5600	0	No data

Category: Adhesive - Architectural Applications – Wood Flooring

Proposed Limit: 20 g/L

Product Name	VOC Content (g/L)	Freeze/Thaw
AAT Problemsolver EW	12	Freeze Thaw Stability 15-20°F
APAC 979	15	Protect containers from freezing in transit and storage.
APAC 999	20	Protect containers from freezing in transit and storage.
DriTac 1001 All in One	0	No data
HB Fuller 244	16	Protect from freezing
HB Fuller Chapco 266	30	Stable
Shaw 4051	0	No data
TEC Multi-Powered Wood Flooring Adhesive	30	Stable
TEC Woodlock 765	0	Freeze/thaw stable to 10°F (-12°C) for a minimum of 5 cycles
USG Durock Wood Flooring Adhesive	2	Do not freeze
Vermeister Monosil	0	No data
WF Taylor 2020 Wood Master Engineered Floor Adhesive	19	Freeze thaw stable to 10°F (-12.22°C). Avoid multiple freeze thaw cycles.
WF Taylor Meta-Tec MS-Plus	0	While this adhesive is freeze-thaw stable it is necessary to protect it from freezing.
W.W. Henry 1171 N	25	Freeze/Thaw Stable to 10°F (-12°C). Avoid low temperatures or multiple freeze/thaw cycles

Category: Adhesive - Architectural Applications – Single Ply Roof Membrane

Proposed Limit: 100 g/L

ADHESIVE	TYPE	VOC g/L	Contains TBAC	Temp Restrictions*	EPDM	TPO	PVC
JM Roofing System Urethane Adhesive**	Reactive	0	N	40°F+	X	X	X
Firestone XR Stick**	Reactive	13	N	40°F+		X	
Tremco Tremply HP 4510 Adhesive WB	Water	17	N	45°F+			
Firestone ISO Spray S	Reactive	54	Y	40°F+		X	
Durolast Duro-Fleece CR20	Reactive	68	N	40°F+			X
Carlisle Aquabase 120	Water	<10	N	40°F+	X	X	
Carlisle FAST Adhesive**	Reactive	<100	N	25°F+	X	X	X
Flex Fleeceback Substrate Adhesive	Water	<100	N	40°F+		X	X
Flex FB Low Rise Foam Adhesive**	Reactive	<100	N	40°F+	X	X	X
Flex WB 7008 Lamination Adhesive	Water	<100	N	40°F+		X	X
Firestone Water Based Bonding Adhesive	Water	<100	N	40°F+	X	X	
Firestone ISO Stick (XR Stick?)**	Reactive	<100	N			X	
JM TPO Membrane Adhesive Water Based	Water	<100	N	50°F+		X	
GAF Everguard WB bonding Adhesive	Water	<20	N	40°F+		X	X
JM EPDM Membrane Adhesive Water Based	Water	<100	N	50°F+	X		
GAF Olybond 500 Adhesive Fastener**	Reactive	<100	N	40°F+		X	X
Durolast Duro-Fleece Membrane Adhesive	Reactive	<100	N	40°F+			X

*Similar to solvent-based products

Category: Adhesive - Architectural Applications – Single Ply Roof Membrane (Mod Bit only)

Proposed Limit: 100 g/L

Adhesive	Type	VOC g/L	Temp Restrictions
Firestone LiquiGard Adhesive (Parts A and B)	Reactive	0	45°F+
Johns Manville MBR Bond Adhesive	Reactive	0	50°F+
Tremco BURmastic Adhesive SF	Reactive	<40	No data
Tremco FAS-n-FREE	Reactive	<20	45°F+
Siplast SFT Adhesive	Reactive	<100	40°F+
Soprema COLPLY EF Adhesive	Reactive	32	50°F+

Category: Adhesive - Architectural Applications – Other Roof Adhesives

Proposed Limit: 100 g/L

Product Name	VOC Content (g/L)	Temperature Restriction
Elite 100% Solids Insulation Adhesive	<20	45°F+
Tremco Polyroof SF	<20	50°F+
Firestone LiquiGard Adhesive (Parts A and B)	0	45°F+
Johns Manville MBR Bond Adhesive	0	50°F+
Tremco BURmastic Adhesive SF	<40	No data
Tremco FAS-n-FREE	<20	45°F+
Siplast SFT Adhesive	<100	40°F+
Soprema COLPLY EF Adhesive	32	50°F+
Tremco Premium III	0	40°F+
Tremco Premium IV	0	50°F+

Category: Sealant - Architectural Applications – Foam Sealant (Aerosol Only)

Proposed Limit: 200 g/L (2015); 20 g/L (2018)

Product Name	VOC Content (g/L)	Aerosol
Clayton Touch n Foam	155	Yes
Fomo Handifoam 40	0	Yes
Fomo Straw Foam Sealant	165	Yes
Hilti CF812	2	Yes
Honeywell Enovate	206	Yes
Owens Corning ProPink One	206	Yes
Red Devil Foam & Fill Minimal Expanding	150	Yes
Red Devil Foam & Fill Triple Expanding	150	Yes

Category: Sealant - Architectural Applications – Other Roof Sealant

Proposed Limit: 100 g/L

Product Name	VOC Content (g/L)	Immediately Water-Resistant
DAP Premium Polyurethane Roof & Flashing Sealant	36	No
Chem Link M-1	< 20	No
DeWitt's 617 Clear Roof and Construction Sealant	14	No
Epmar Flexible Seal 60	> 300	Yes
Franklin International Titebond WeatherMaster Metal Roof Sealant	28	No
Geocel 2300 CPW	> 300	Yes
Henry 900	5	No
Henry 925B	5	No
Loctite PL Polyurethane Roof & Flashing Sealant	35	No
Red Devil RD 3000 Blacktop & Roof Repair Sealant	35	No
Sashco Through the Roof	300	Yes
Seaman FTR 101	82	No
Tremco Reglet Joint Sealant 30	53	No
Tremco TremSEAL Pitch Pocket Sealer	0	No

Category: Sealant - Architectural Applications – Single Ply Roof Membrane Sealant

Product Name	VOC Content (g/L)	Notes
Carlisle Sure-Seal 2 Part Pourable Sealer	<100	Substrates must be primed
Carlisle Universal Single Ply Sealant	<100	
Carlisle Sure-Seal One Part Pourable Sealer	<100	Substrates must be primed
Carlisle White One Part Pourable Sealer	<100	EPDM/TPO Substrates must be primed
Firestone Pourable Sealant S-10	<100	
Firestone FillGard Pourable Sealer	<100	
Firestone FillGard M Pourable Sealer	<100	
JM EPDM/PVC Pourable Sealer	<100	
JM TPO Pourable Sealer	<100	
Sika Sarnafiller (Chemlink Pro Pack)	<100	
Sika Sikaflex - 11FC	<100	Substrates must be primed
Sika Sikaflex - 1a	<100	
GAF EverGuard Grey Pourable Sealant (A and B)	<100	
Seaman FTR 101	<100	
Durolast DURO-CAULK PLUS	<100	
Durolast Pitch-Pan Filler	<100	
Tremco TremSeal S	<100	May require use of primer or toluene wipe
Tremco TremSeal Pitch Pocket Sealer	<100	May require use of primer
Tremco SOLARGARD Seam Sealer	<100	
Mule-Hide Universal Single-Ply Sealant	<100	
Mule-Hide Pourable Sealer	<100	Substrates must be primed
Mule-Hide One-Part Pourable Sealer	<100	Substrates must be primed
Proposed:	100	

Category: Sealant - Architectural Applications – All Other Architectural Sealants

Proposed Limit: 50 g/L

Product Name	VOC Content (g/L)
BASF MasterSeal NP 1	35
BOSS 370 HVAC/R Silicone Sealant	29
Chem Link Clear General Purpose Sealant	14
C.R. Laurence M66	9
Color Rite ASC	22
DAP Alex Plus Clear	44
Franklin International Titebond All Purpose	14
Franklin International Titebond Multi-Purpose 100% Silicone	29
Mapei Planibond JF	36
Henkel OSI Greenseries Flameseal	33
Henkel OSI Greenseries SC-175	45
Project 1 6000-6500	28
Surebond SB-188	30
TEC 155	29
TEC AccuColor Sanded Siliconized Acrylic Caulk	12
White Lightning MaXimus Paintable Polymer	< 30
White Lightning 3006	45

Category: Sealant - Roadway Sealant

Proposed Limit: 50 g/L

Product Name	VOC Content (g/L)
DAP Blacktop VOC – Compliant Filler and Sealer	0
Enviroseal LAS-320-HD	< 25
Franklin International Concrete Repair	21
Franklin International Titebond Blacktop Repair	21
Henkel Loctite PL Concrete Crack Sealant	43
Mapei Planiseal RapidJoint 15	28
Red Devil Blacktop Driveway Repair	18
Red Devil Blacktop Repair - Acrylic	20
White Lightning Concrete Driveway Repair	14

Proposed Draft Rule Language

- **Plastic Welding**
 - Revised definitions
 - Plastic Adhesive Primer
 - ABS to PVC Transition Cement
 - Expanded Method 316A to include all plastic welding
 - Added labeling requirements
- **Limit Changes**
 - Some effective upon adoption where regulatory relief provided
 - ABS to PVC Transition Cement
 - Dry Wall and Panel Adhesive
 - Subfloor Adhesive
- **Exemptions**
 - Field installation of potable water linings and covers
 - Labeling for dry and hot melt adhesives

Under Consideration

- **Ambient Reactive Cured Adhesive**
 - Will include pending approval of modification to SCAQMD Method 316B
- **Rubber Cement**
 - Recommending exemption until 2018 to allow CARB to adopt limit in CPR
- **TBAC and DMC for roofing products**
- **Methylene chloride containing products**
 - Retain exemption for solvent welding of hard acrylic substrates
- **Control Equipment Efficiency**
 - Limit output to 50 ppm VOC by volume

VOC Limits (Roofing)

- Products already meet proposed limits for all roof types
- Extending effective dates to 2018
 - Allows for two years reformulation and 18 months certification
- Clear, paintable, water-resistant sealant will have same limit as other roof sealants
 - Need for immediately water-resistance beyond just clear and paintable products

CEQA Status Update

Tentative Schedule

- Working Group meetings June 19, 2014
- Report to Stationary Source Committee June 20, 2014
- Public Hearing September 5 2014

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