

Proposed Amended Rule 1113

Architectural Coatings

Working Group Meeting #3

August 5, 2026



Join Zoom Webinar Meeting

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Teleconference Dial-In: 1-669-254-5252

Webinar Meeting ID: 160 772 9048

Agenda

PAR 1113 Progress Update

Rule 314 Background and Summary of Data
From WGM #2

Pathway Considerations for Prohibition

Coating Categories with Potential VOC
Reductions

Rule 314 Reporting Amendment

Next Steps

PAR 1113 Progress and Update



Summary of Recent Rule Development Efforts

Summary of Previous Working Group Meeting (WGM #2)

- WGM #2 discussed potential phase out options results of Para-Chlorobenzotrifluoride (pCBtF/CAS: 98-56-6) and tert-Butyl Acetate (t-BAc/CAS: 540-88-5) manufacturer survey data
- pCBtF/t-BAc containing products makes up a minor portion of most categories
- Highlighted categories that may pose some challenges with prohibition and need additional reformulation time

Rule Development Progress Since WGM #2

- Staff met with various stakeholders that both use and do not use pCBtF and that manufacture for different categories
 - Emphasized potential challenges in certain coating categories
 - Provided alternative products that can substitute pCBtF/t-BAc containing products
 - Provided insight to current Volatile Organic Compounds (VOC) limits and new potential limits

Rule 314 Background and Summary of Data from WGM #2



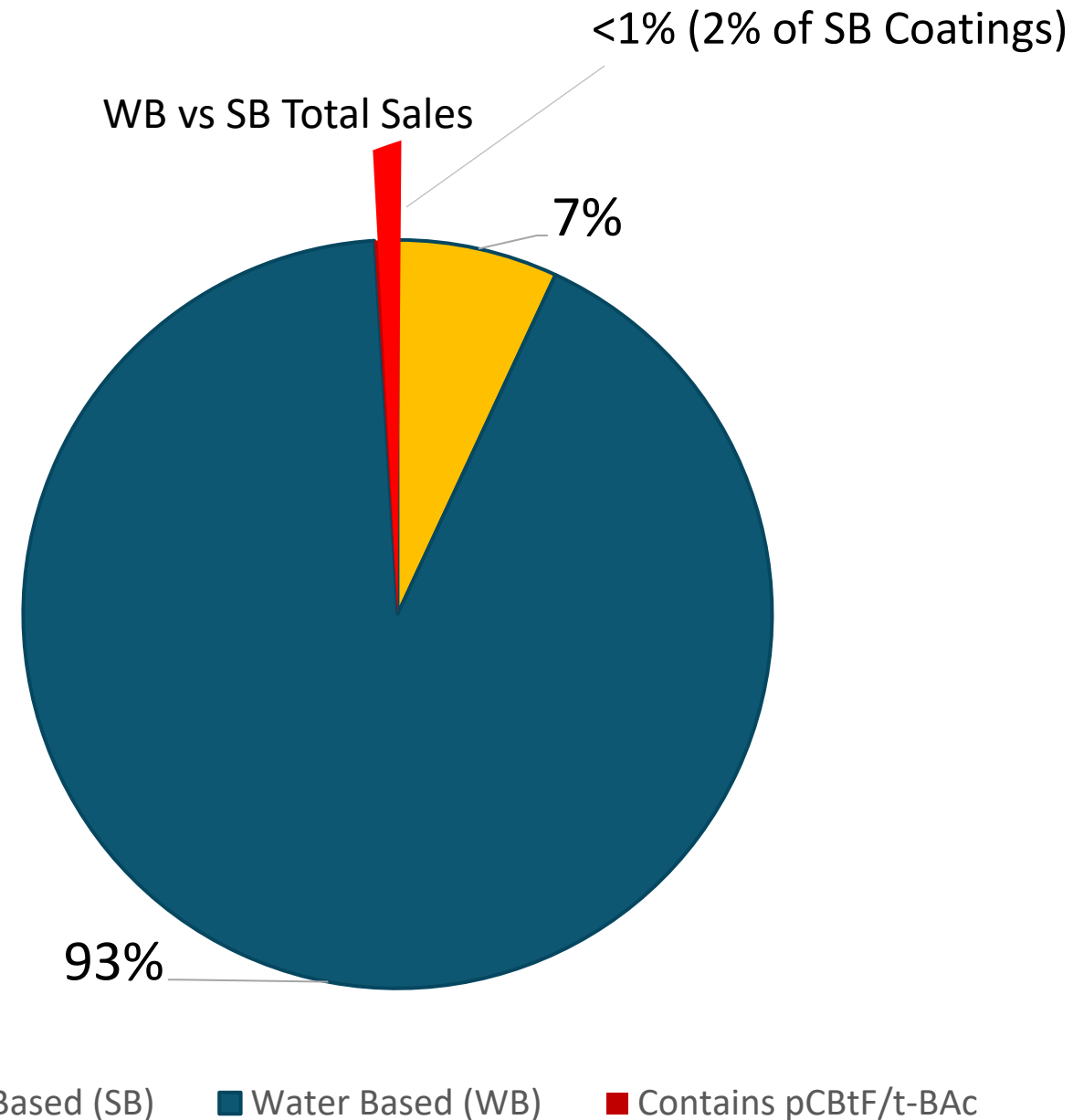
A close-up photograph of a hand wearing a white work glove, holding a paintbrush with a blue handle and applying paint to a light-colored surface. The background is blurred, showing more of the work area.

Rule 314 Background

- Adopted June 6, 2008
- Intended to recover the cost of implementing architectural coatings regulations and to gather data
 - Data generated from Rule 314 has been critical in achieving future VOC reductions from architectural coatings
- Encourages the sale of low-VOC coatings
 - Fees are based on emissions, so there are lower fees for low-VOC coating
- Data from reports is critical for analysis of the various categories and the current VOC levels of Rule 1113 products

Architectural Coatings and 314 Data Summary

- 57 categories in total
 - 31 categories are majority water based
 - 26 categories are majority solvent based
- 8.3 tpd of VOC from all coatings
- In 2024, approximately:
 - ~43 million total gallons sold
 - ~36 million gallons sold are less than 50 g/L
 - 93% of all coatings sold are water based
 - 7% sold are solvent based
- Majority of products sold (96%) have VOC content of 100 g/L or less



Level 1 and 2 Coating Categories

To differentiate categories that can swiftly phase out of pCBtF/t-BAC from more challenging categories, two category levels are proposed

Level 1 Categories

- Mostly water-based
- Little or no pCBtF/t-BAC
- Swift prohibition after rule adoption

Level 2 Categories

- Solvent based
- Formulated with pCBtF/t-BAC
- Expected to need time to phase out of pCBtF/t-BAC
- Expressed difficulties from manufacturers



Stakeholder Meetings and Conclusions

- Stakeholders expressed concern that the following categories will have challenges reformulating out of pCBtF and maintain the current VOC limits
 - Roof Coatings, Floor Coatings, Industrial Maintenance Coatings, Rust Preventative Coatings, and Zinc Rich Primers
 - Current reformulation timelines estimated to be 3-5 years
- Data from pCBtF survey suggests that in most categories sales of pCBtF containing products compose less than 1% of total sales volume
- Stakeholders expressed desire to align Rule 1113 with other recently amended coating rules
 - Rule 1136 – Wood Products Coatings
 - Rule 1107 – Coating of Metal Parts and Products

Roof Coatings



Yearly pCBtF use and percentages for Roof Coatings:

- ~5.6 Million Gallons sold in category
- ~4% (218,000 Gallons) are solvent based
- <1% (~56,000) of total volume sold reported using pCBtF
 - 53% - Average pCBtF percent content in products that report pCBtF

Manufacturer Comments:

- Coatings are temperature and environment dependent for application and curing
 - pCBtF is used for current solvent-based coatings in conditions where water-based coatings are not sufficient

Initial Conclusion:

- While high performance and specialized coatings may rely on exempt compounds, data shows a vast majority of coatings do not rely on exemptions and suitable replacements can be used or reformulated

Floor Coatings



Yearly pCBtF use and percentages for Floor Coatings:

- ~440,000 Gallons sold in category
- ~13.6% (60,000 Gallons) are solvent based
- ~1.5% (~7,000) of total volume sold reported using pCBtF
 - 16% - Average pCBtF percent content in products that report pCBtF

Manufacturer Comments:

- Coatings that contain pCBtF cannot meet current VOC limits without exemptions
 - Urethane single coats and coatings used in large parking structures might need a higher VOC limit at current formulations

Initial Conclusions:

Due to low pCBtF use the following phase out methods are proposed:

- Longer phase out timeline
- Alternative MIR Limits

Industrial Maintenance Coatings



Yearly pCBtF/t-BAc use and percentages for Industrial Maintenance Coatings:

- ~900,000 Gallons sold in category
- ~37% (~330,000 Gallons) are solvent based
- 4% (~36,000) of total volume sold reported using pCBtF
- 2% (~21,000) of total volume sold reported using t-BAc
 - Low overall use of pCBtF reported in category

Initial Conclusions:

Due to low pCBtF use the following phase out methods are proposed:

- Longer phase out timeline
- Alternative MIR Limits
- New Subcategories for niche uses

Rust Preventative Coatings



Yearly pCBtF use and percentages for Rust Preventative Coatings:

- ~198,000 Gallons sold in category
- ~50% (99,000 Gallons) are solvent based
- 49% (~97,000) of total volume sold reported using pCBtF

Concerns and Conclusions:

- Large percent of category uses pCBtF, and category has a relatively low VOC limit of 100 g/L
- Nearly all solvent based coatings use pCBtF, but half of coatings have transitioned to water-based formulations

Industrial Maintenance – Zinc Rich Primers Coatings



Yearly pCBtF use and percentages for Zinc Rich Primers Coatings:

- ~1,600 Gallons sold in category
- ~99% of coatings are solvent based
- ~9% (~150 Gallons) of total volume sold reported using t-BAc

Initial Conclusions:

Due to low pCBtF use the following phase out methods are proposed:

- Longer phase out timeline
- Alternative MIR Limits

Pathway Considerations for Prohibition



Swift Prohibition – Level 1 Coatings

A proposed prohibition timeline will be given to all categories, alongside any additional steps needed for specific categories

- Most categories report little or no pCBtF/t-BAc use and can phase out of usage with a phase out timeline
- As Level 1 Categories are not expected to have difficulties phasing out of pCBtF, a shorter timeline will be given to these categories
 - Will include sell-through and use-through dates
 - Considering a six-month prohibition date after rule adoption

Categories Proposed to be Level 1 Coatings

Proposed list is based on the following:

- Rule 314 data
- pCBtF/t-BAc manufacturer survey
- Meetings held with manufacturers and related stakeholders

List may change if staff receives additional input

COATING CATEGORY	
Bond Breakers	Mastic Coatings
Building Envelope Coating	Metallic Pigmented Coatings
Concrete-Curing Compounds	Multi-Color Coatings
Concrete-Curing Compounds For Roadways and Bridges	Nonflat Coatings
Concrete Surface Retarder	Pre-Treatment Wash Primers
Default	Reactive Penetrating Sealers
Driveway Sealer	Recycled Coatings
Dry-Fog Coatings	Sacrificial Anti-Graffiti Coatings
Faux Finishing Coatings	Shellac
Clear Topcoat	Clear
Decorative Coatings	Pigmented
Glazes	Stains
Japan	Stains, Interior
Trowel Applied Coatings	Stone Consolidants
Fire-Proofing Coatings	Swimming Pool Coatings
Flats	Repair
Form Release Compound	Other
Graphic Arts (Sign) Coatings	Tile and Stone Sealers
Color Indicating Safety Coatings	Traffic Coatings
Non-Sacrificial Anti-Graffiti Coatings	Tub and Tile Refinishing Coatings
Magnesite Cement Coatings	

Proposed Prohibition Pathways for Level 2 Categories

After meeting with various manufacturers, reviewing submitted surveys and Rule 314 manufacturer reports, staff are considering following pathways to pCBtF/t-BAC prohibition

- Pathways are not exclusive and multiple may be used in the same category, if needed

Pathway 1: Provide Time for Reformulation

Provide extended reformulation time to certain categories

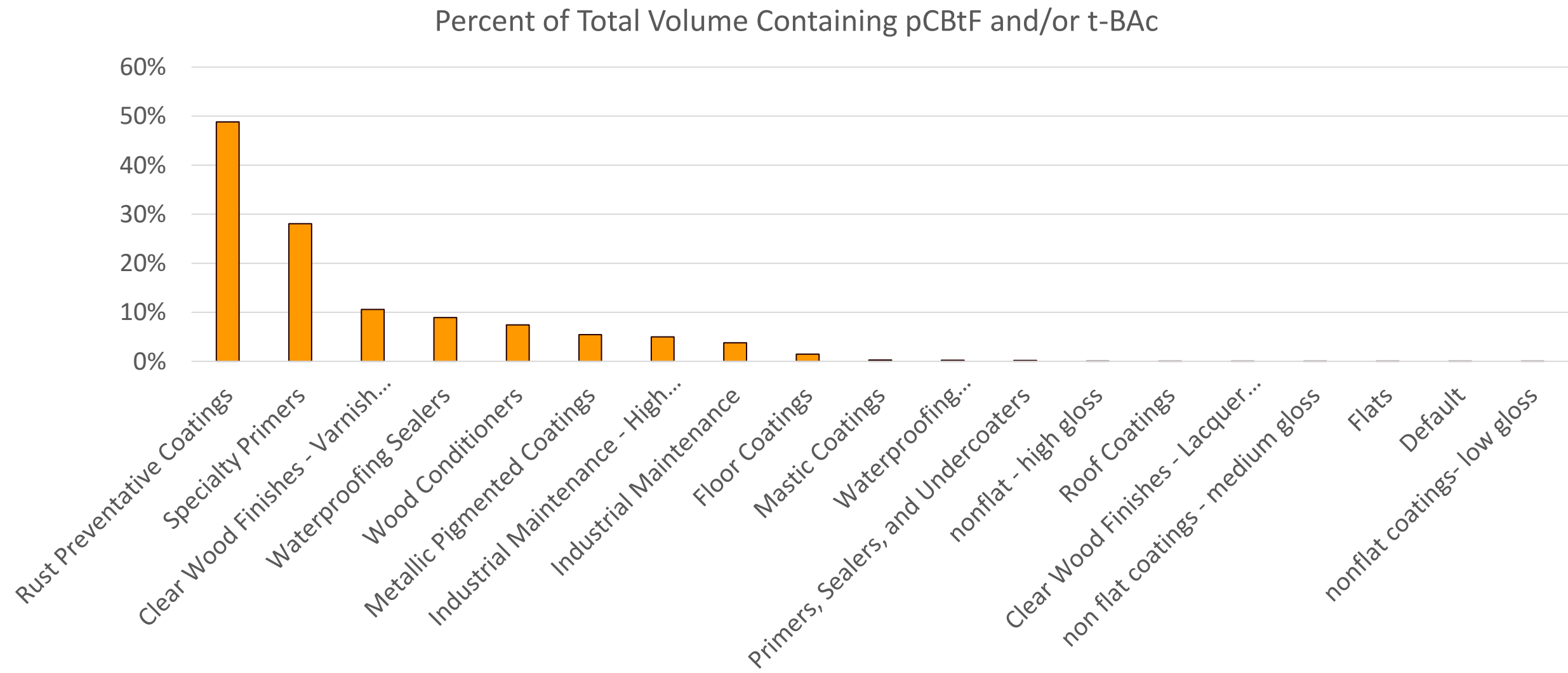
Pathway 2: MIR Based Alternative Limits

Allow alternative MIR based limits for more reformulation options

Pathway 3: New Coating Subcategories

Create new categories for applicable products to allow for more tailored changes

Coating Categories Reported with pCBtF and/or t-BAc



Pathway 1: Additional Time for Reformulation, and Maintain Current VOC Limits

Categories with significant pCBtF use than will be given longer phase out timelines

Level 1 categories: proposed to be given a 6-month timeline,

Level 2 categories: proposed longer timelines based on necessity of category

- Previously amended rules have timelines that range from 2 years to 6 years
- Categories that have products that have overlap by other rules will have timelines that align for consistency

Pathway 2: MIR Based Alternative Limits

- Alternative MIR based VOC limits are being considered as alternatives to mass-based limits
- Allows for more flexibility with using various solvents during reformulation
- Other rules include MIR based alternative limits, and PAR 1113 would seek to align relevant categories to those limits
 - Rules 1136 and Rule 1151 have products that overlap with Rule 1113, and aligning those would reduce reformulation and compliance complexity
- Staff will consider MIR based alternative limits for categories that present reformulation challenges

Mass-Based versus MIR VOC Limits

- MIR is a measure of the photochemical reactivity of a VOC, which estimates the weight of ozone produced from a weight of VOC
- Mass-based limits treat all solvents equally, other than water and exempt solvents which are not considered VOCs
- MIR-based limits restrict the ozone-forming potential of materials by limiting the weighted averages of the MIR value of each solvent (Product-Weighted MIR; PW-MIR)
- CARB uses reactivity-based limits for aerosol coatings and other consumer products
- Reactivity-based limits are another way to reduce ozone impacts from solvents and coatings

Table of Reactivity Limits Product-Weighted MIR in Grams Ozone per Gram Product (g O ₃ / g product)		
<i>Aerosol Coating Category</i>		
General Coatings	06/01/2002	01/01/2017
Clear Coating	1.50	0.85
Flat Coating	1.20	0.80
Fluorescent Coating	1.75	1.30
Metallic Coating	1.90	1.25
Nonflat Coating	1.40	0.95
Primer	1.20	0.70
Specialty Coatings (A)	01/01/2003	01/01/2017
Auto Body Primer	1.55	0.95
Electrical/Electronic/Conformal Coating		2.00
Exact Match Finish:		
Automotive	1.50	0.95
Engine	1.70	0.95
Industrial	2.05	1.20
Flexible Coating		1.60
Ground Traffic/Marking Coating	1.20	0.85
Mold Release Coating		1.10
Two Component Coating		1.20
Uniform Finish Coating		1.30

MIR Values of Some Common Solvents

- MIR-based limits would require manufacturers to choose solvents with lower reactivity
- Allows formulators more flexibility in formulating compliant products while also reducing air quality impacts
- MIR-based limits can be particularly useful for specialty categories that do not have a strong pathway to lower limits, such as products that are low-solids and not readily converted to water-based

Compound	MIR
2-pentenes	10.47
o-xylene	7.64
butanal	5.97
toluene	4.00
ethanol	1.53
MEK	1.48
nonane	0.78
methanol	0.67
isopropyl alcohol	0.61
tert-Butyl alcohol	0.41
acetone	0.36
pCBtF	0.13
methyl acetate	0.07
D4	0.00
benzaldehyde	0.00

Dimethyl Carbonate (DMC)

- Rule 102 – Definition of Terms, classifies exempt compounds into two groups
 - Group I: exempt compounds that are not expected to be restricted in the future
 - Group II: exempt compounds that are prohibited from use in many VOC rules because of toxicity or other environmental impacts
- Despite DMC's low MIR value, it is not included as an exempt due to toxicity concerns
 - Staff will work with the Office of Environmental Health Hazard Assessment (OEHHA) on DMC
 - In the future, it may be included as a Group II Compound, prohibiting its use in most South Coast AQMD rules

(B) Group II

methylene chloride (dichloromethane)
1,1,1-trichloroethane (methyl chloroform)
trichlorofluoromethane (CFC-11)
dichlorodifluoromethane (CFC-12)
1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113)
1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)
cyclic, branched, or linear, completely methylated siloxanes (VMS)
tetrachloroethylene (perchloroethylene)
ethylfluoride (HFC-161)
1,1,1,3,3,3-hexafluoropropane (HFC-236fa)
1,1,2,2,3-pentafluoropropane (HFC-245ca)
1,1,2,3,3-pentafluoropropane (HFC-245ea)
1,1,1,2,3-pentafluoropropane (HFC-245eb)
1,1,1,3,3-pentafluoropropane (HFC-245fa)
1,1,1,2,3,3-hexafluoropropane (HFC-236ea)
1,1,1,3,3-pentafluorobutane (HFC-365mfc)
chlorofluoromethane (HCFC-31)
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)
1 chloro-1-fluoroethane (HCFC-151a)

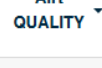
The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are either toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, chlorofluorocarbons (CFC), 1,1,1-trichloroethane (methyl chloroform), and carbon

Example of Impact of Reactivity

Roof Metal Primer

Component	Weight Percent	MIR	Weighted Average	Mass Based VOC Contribution
Light aliphatic hydrocarbon	37.5%	1.31	0.491	VOC
Iron Oxide	17.5%	0	0	Solid
Talc	17.5%	0	0	Solid
Zinc Oxide	2.5%	0	0	Solid
Zinc Chromate	2.5%	0	0	Solid
O-Xylene	2.2%	7.64	0.168	VOC
Ethylbenzene	0.5%	2.79	0.014	VOC
Crystalline Silica	0.15%	0	0	Solid
Total			0.673	~400g/L

- Example of solvent selection impact on reactivity
 - Shows how a product with a relatively high mass-based VOC content can have a relatively low PW-MIR value with the same contents



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Exempt Compounds

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Exempt Compounds

The United States Environmental Protection Agency (U.S. EPA) excludes certain organic compounds from the regulatory definition of a VOC based on the compound's negligible contribution to the formation of ground-level ozone, better known as smog. Smog is formed when VOCs photochemically react with oxides of nitrogen

MIR CALCULATOR					
Unknown/Unlisted Compound Default MIR:		11.97			
Add CAS Number†	Chemical Name	VOC or Non-VOC	CARB MIR	User Input Wt%††	MIR Contribution
xx	Chemical Not Found	VOC	11.97	20	2.394
0	Non-Volatile Content	Non-VOC	0	18	0.000
100	1-ethyl-4-methyl cyclohexane	VOC	1.44	12	0.173
224	C17 cycloalkane(s)*	VOC	0.52	8	0.042
55	3,3-dimethyl hexane*	VOC	1.24	6	0.074
678	acrolein	VOC	Total Entered Wt %++:		87.00
1067	methyl acetylene	VOC	As Submitted PW-MIR:		3.49
88	2,2,4-trimethyl hexane*	VOC	Water Content %		10.00
890	diisopropyl ether	VOC	Unaccounted/Missing Weight %:		3.00
931	acetone	VOC	Missing Compound Correction Factor:		0.36
			FINAL PRODUCT PW-MIR: 3.85		

- [pCBtF/t-BAc Timeline](#)
- [Current Alternative MIR Limits](#)
- PW-MIR Calculator Worksheet
(Forthcoming)

Coating Categories Projected to Fall Under Pathway 2

- Categories that do not have clear substitutes for pCBtF or are unable to reformulate within the current VOC limits
- Categories that have products that have overlap with other rules that already have MIR limits
 - Allows for consistency with reformulating products that are regulated by multiple South Coast AQMD rules
 - Categories may be redefined for consistency

The following categories are being considered for MIR limits:

Coating Category	Code	Current VOC Limit (g/L)	Existing MIR Limits In Other Rules
Roof Coatings	34	50	N/A
Wood Coatings			
Varnish	46,47	275	0.53 (Rule 1136)
Sanding Sealers	36	275	0.53 (Rule 1136)
Lacquer	20	275	0.53 (Rule 1136)

Pathway 3: Create New Coating Subcategories

- Option for categories that have distinct products that rely heavily on pCBtF
 - Products must be distinct enough to justify separating into a sub-category
- Can allow for a more tailored approach without increasing VOC limits for a large category
 - Reduces the potential emission increases from a broader VOC limit increase

Coating Categories Projected to Fall Under Pathway 3

- For select coating categories, creating a sub-category may allow for tailored limits and prohibition timelines
- This option would be used in conjunction with the previous 3 in cases where a subset of products need more time or higher limits compared to the rest of the category.
 - Subset of the new category must be unique enough to warrant another category
- Allows for VOC limit increases to be used in a more surgical manner to prevent unnecessary backsliding from larger categories

Stakeholders suggested the following categories may benefit from new subcategories:

- Masonry Waterproofing
 - Urethane Single Coat/Parking Structures 200 g/L
- Industrial Maintenance
- Zinc Rich Primers

Coating Categories with Potential VOC Limit Reductions



Categories with Potential Emission Reductions

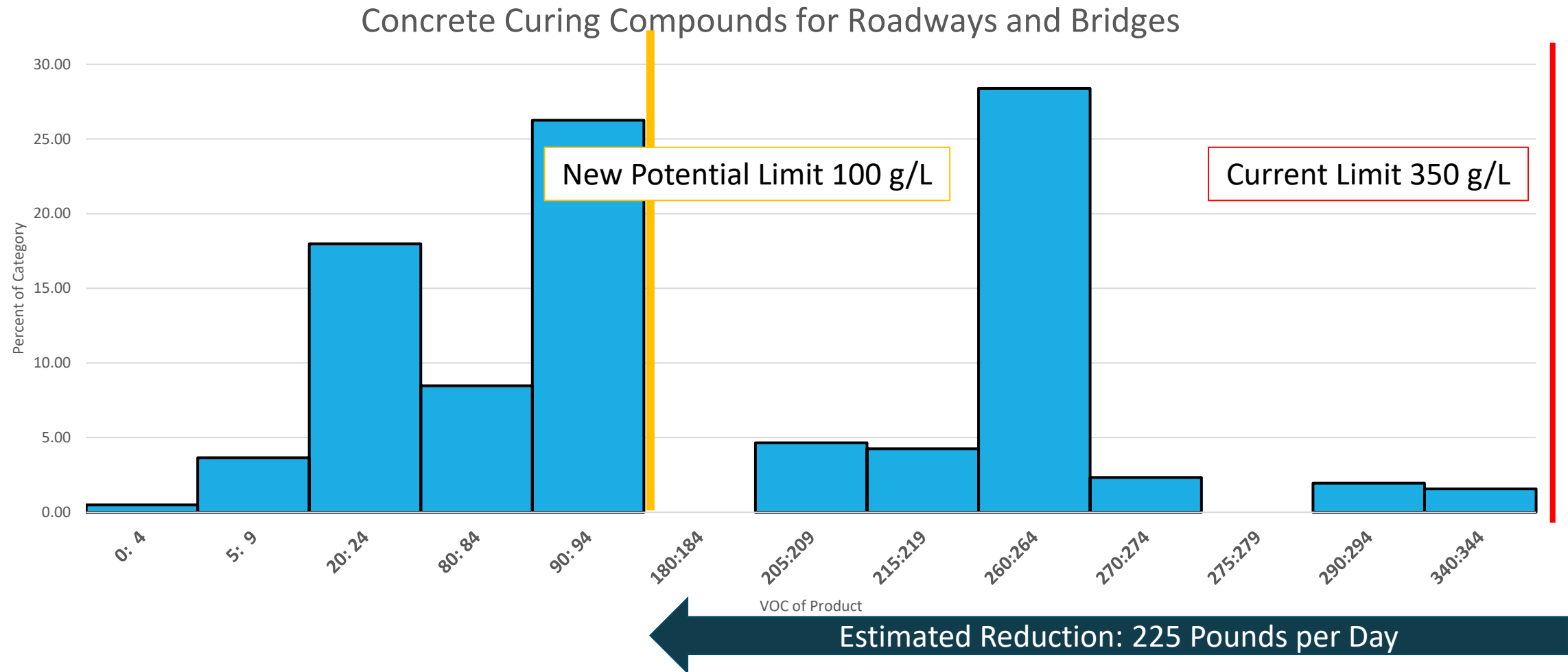
Coating categories with potential reductions:

- Concrete Curing Compounds for Roadways and Bridges
- Magnesite Cement Coatings

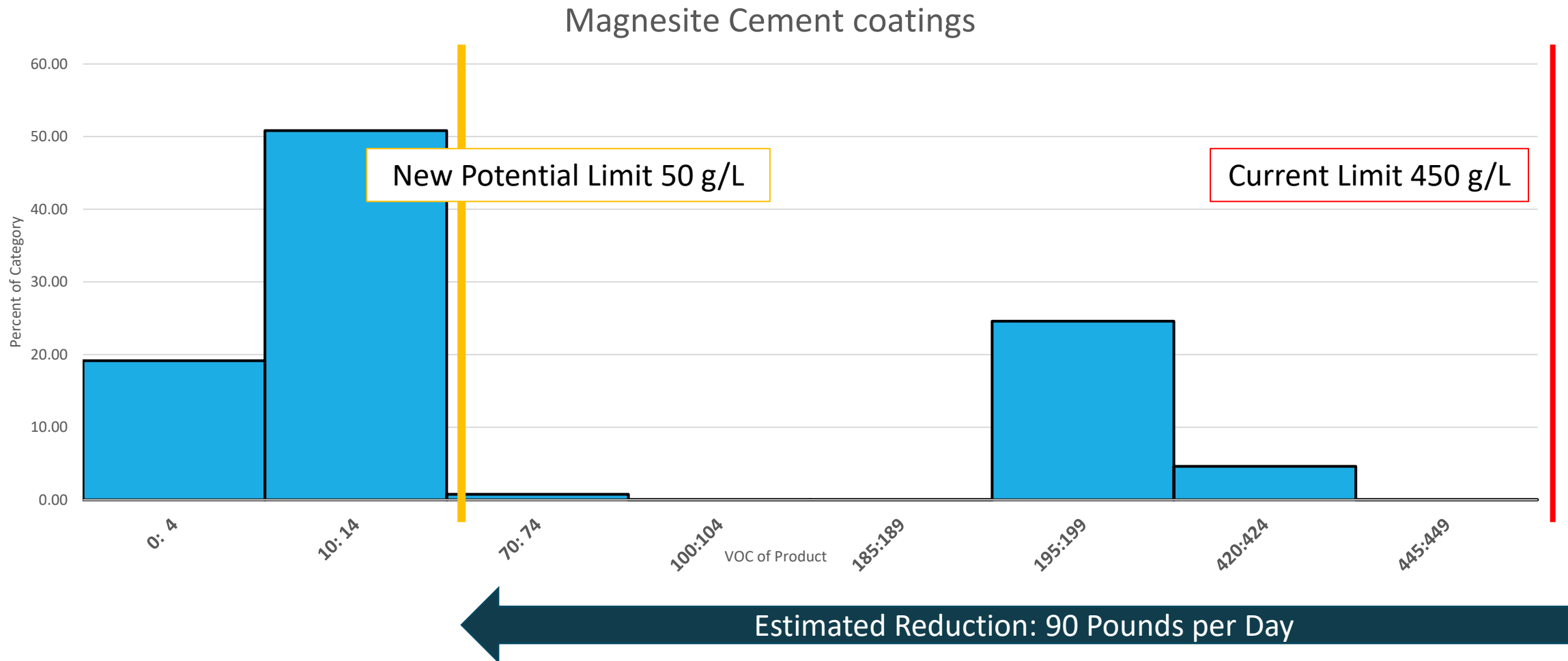
Categories were chosen due to the following characteristics:

- Little or no pCBtF or t-BAc use
- Majority of the category would already comply with the proposed limit
- Large enough category to offset potential increases
- Current limit has room for reductions

Categories with Potential Emission Reductions



Categories with Potential Emission Reductions



Categories with Limit Reductions

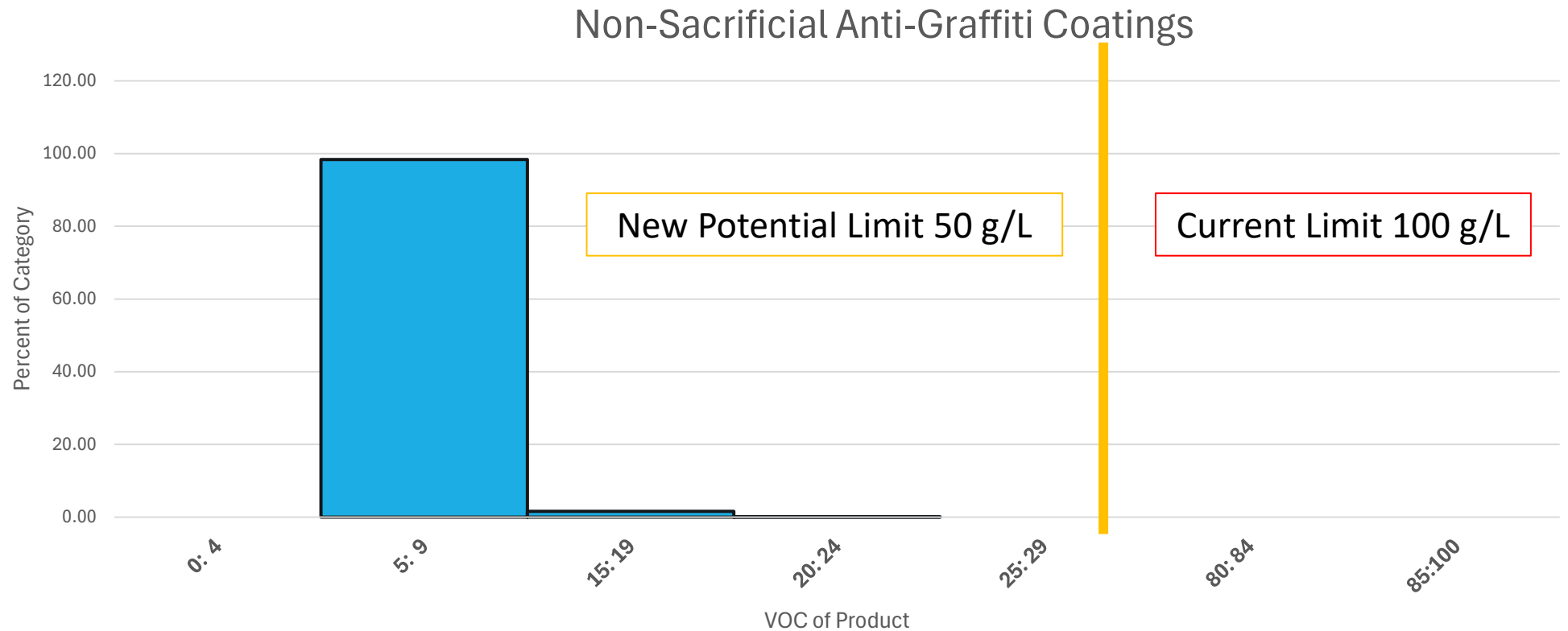
Multiple categories in Rule 1113 have limits higher than the reported product's VOC content. These categories will have lower limits proposed to align with the current market.

- Non-Sacrificial Anti-Graffiti Coatings • Multi-Color Coatings
- Swimming Pool Coatings – Repair

Categories were chosen due to the following characteristics:

- Sales Weighted Average VOC is <20% of VOC limit
- Current VOC limit is >50g/L
- Category does not rely on pCBtF/t-BAc
- Majority of products sold are below the current limit

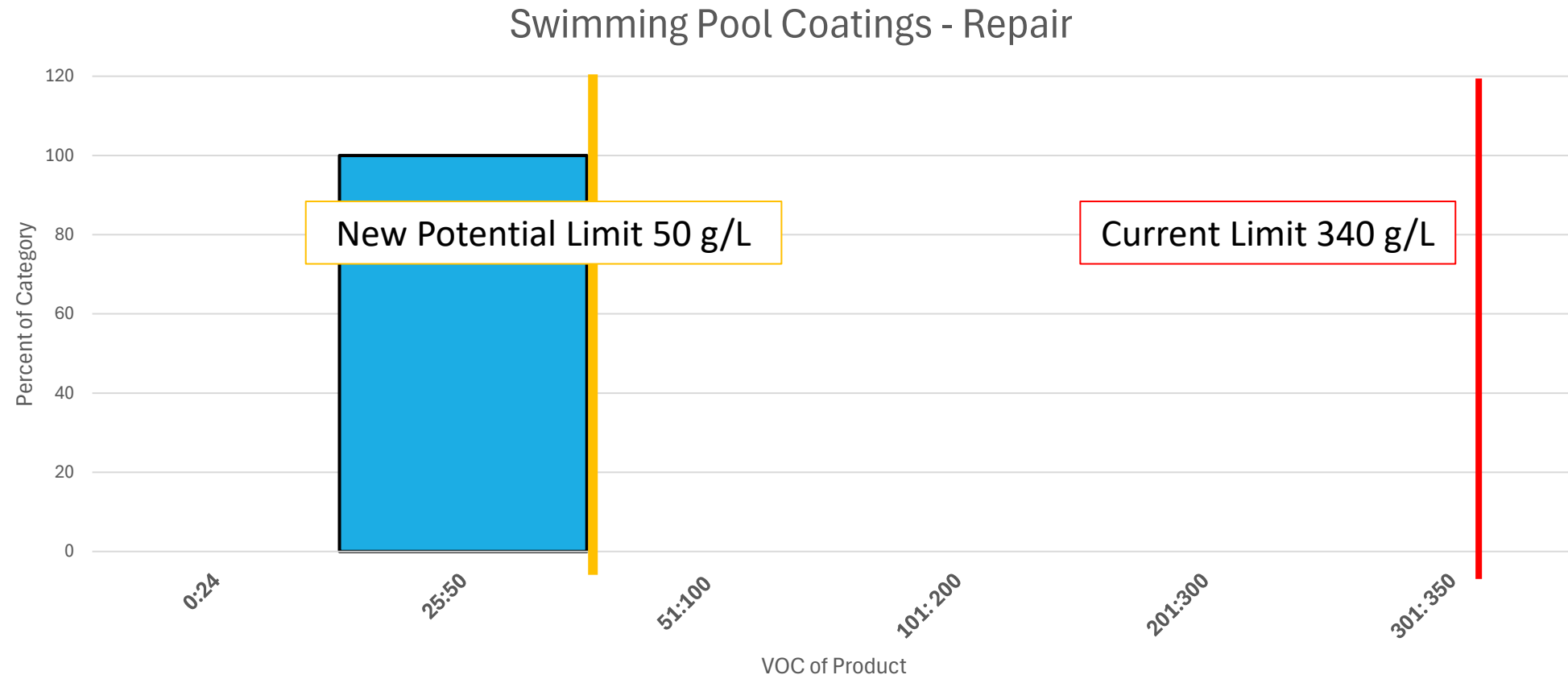
Categories with Limit Reductions



Sales Weighted Average VOC Content: 7 g/L

Percent of Current VOC Limit: 7%

Categories with Limit Reductions

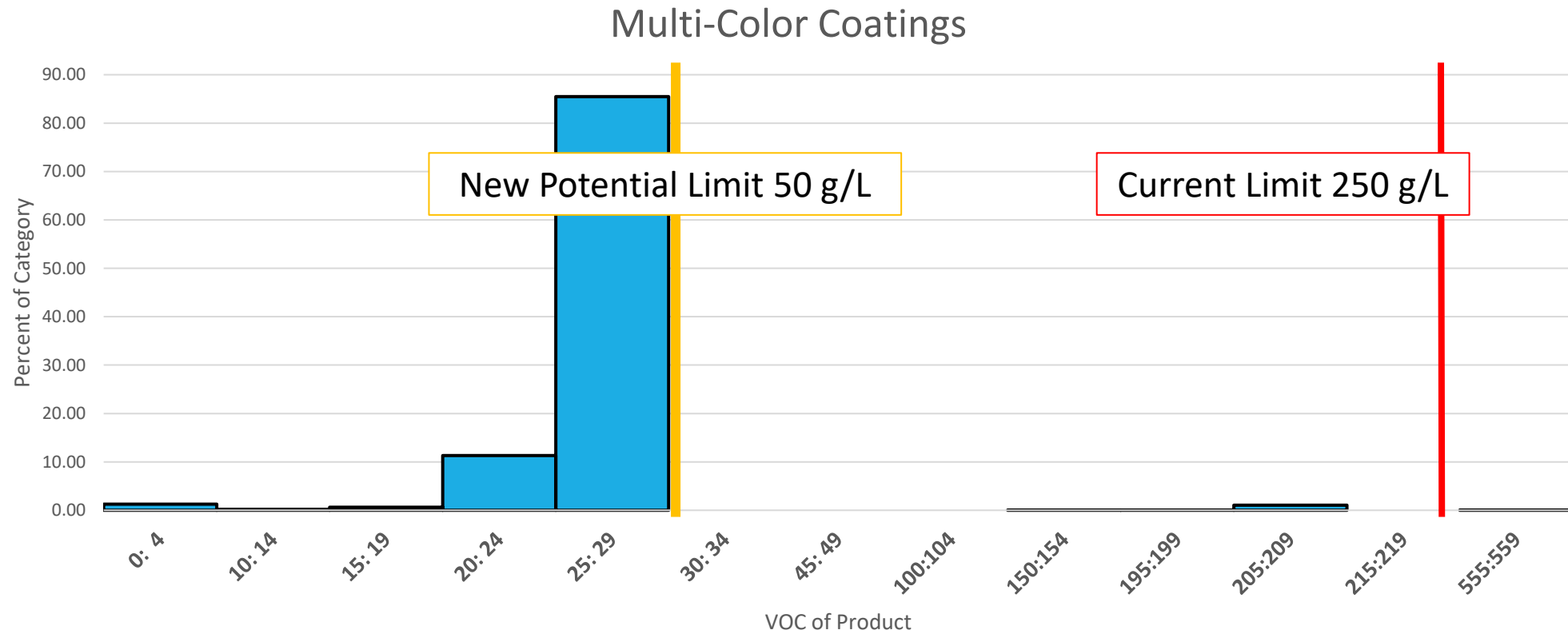


Sales Weighted Average VOC Content: 25 g/L

Percent of Current VOC Limit: 7%

Categories with Limit Reductions

Proposing to remove the Multi-Color Coatings category and applicable products would fall into the Flats or Non-Flats categories



Sales Weighted Average VOC Content: 28 g/L

Percent of Current VOC Limit: 11%

Rule 314 Reporting Amendment



Rule 314 Reporting Amendment

Rule 314 is intended to recover the cost of implementing architectural coatings regulations and to gather data

Amendment needed to Rule 314 alongside Rule 1113 to address adding alternative MIR limits and potential coating category changes

- Include updates to 1113 online reporting system
- Option of including MIR value if manufacturer opts to use MIR limits
- New coating categories, if any, included in the report
- Amended alongside PAR 1113 for reporting consistency
- Staff considering basing fees on a scale that sets an MIR and Mass Based Equivalent

Next Steps



Next Steps



Continue to hold Working Group and individual stakeholder meetings



Continue to review existing products on the market



Anticipated Public Hearing in 2027 (1st Half)

Working Group Materials

- Working group materials for each working group meeting will be made available:
<https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules>

The screenshot shows the South Coast AQMD website. The top navigation bar includes links for Language, FIND, About, Contact, Grants & Bids, Online Services, I'm Looking For, Sign Up, and a search bar. The main navigation menu features links for AIR QUALITY, INCENTIVES & PROGRAMS, RULES & COMPLIANCE (highlighted), PERMITS, NEWS, WEBCASTS, & CALENDAR, TECHNOLOGY ADVANCEMENT, RESOURCES, and MEETING AGENDAS & MINUTES. The breadcrumb trail reads: Home / Rules & Compliance / Rules / South Coast AQMD Rule Book / Proposed Rules. The page title is 'Proposed Rules and Proposed Rule Amendments'. On the left, a sidebar menu lists: Proposed Rules, Guide to South Coast AQMD Rules, Archived, and Recent Actions. The main content area contains the following text:

This page includes a list of rules that are actively in rule development or have recently been proposed and/or amended.

Information regarding Working Group Meetings, Public Workshops, and supporting documents such as presentations, draft staff reports, draft proposed rules, comment letters received, and other information can be found by clicking the rule in the table.

Information associated with the rule development process for rules that were adopted or amended within the past five years can be found on our [Archived Page](#).

Please refer to the [South Coast AQMD Rule Book](#) to obtain the current list of adopted or amended rules and regulations.

For current rule forecast please see the monthly [Governing Board Agenda](#).

Rule Name	Description
Regulation III	Fee Rules
Rule 218.2 and Rule 218.3	Proposed Rule 218.2 - Continuous Emission Monitoring System: General Provisions Proposed Rule 218.3 - Continuous Emission Monitoring System: Performance Specifications

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☐ South Coast AQMD Advisor	South Coast AQMD's comprehensive bi-monthly newsletter containing the latest news, including rule updates, the latest on programs for businesses and residents, and information about upcoming events, workshops, public hearings and compliance classes (More Information)
☐ Old Vehicle Scrapping	Vehicle scrapping updates for collectors and restorers of vintage cars (More Information)

Rule Updates:

☒ Rule 1113

Architectural Coatings

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