

Public Workshop for Proposed Amendments to the Aerosol Coatings and the Consumer Products Regulations

February 26, 2013



Workshop Agenda

- Aerosol Coatings Regulation proposed amendments
- Consumer Products Regulation proposed amendments
- Hairspray Credit Program proposed amendments
- Ongoing work
- LVP-VOC research
- Proposed changes to ARB Test Method 310
- Schedule

Aerosol Coatings Regulation Proposed Amendments

3

Aerosol Coatings

Agenda

- ❑ Background
- ❑ Proposed amendments overview
- ❑ Applicability
- ❑ Definitions
- ❑ Proposed reactivity limits
- ❑ Assignment of MIR values
- ❑ Administrative requirements
- ❑ Test methods and compliance verification

4

Background

- ❑ Achieve maximum feasible reduction
- ❑ Aerosol Coating Products Regulation last amended in 2000
 - Established Reactivity-based limits based on Maximum Incremental Reactivity (MIR) Scale
- ❑ “Aerosol Coating Product” is defined as: “a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant,”

5

Background (Cont.)

- ❑ Prohibition on use of Toxic Air Contaminants
 - Trichloroethylene
 - Methylene Chloride
 - Perchloroethylene

6

Background (Cont.)

- Technological basis for proposal
 - 2010 Aerosol Coating Products Survey
 - Adjusted for market coverage
 - Results:
 - Total sales ~ 40 tons per day (tpd)
 - Total reactive organic compound (ROC) emissions ~ 29 tpd
 - Total VOC emissions ~ 20 tpd

7

Proposed Amendments

8

Proposed Amendments

- ❑ Deletion of mass-based and expired provisions

Section 94520, Applicability

- ❑ Proposing to clarify that all products are regulated, unless specifically exempted
- ❑ Reiterated in section 94522(a)(1)

Section 94521, Definitions

- Proposing to clarify and/or align common definitions with Consumer Products Regulation
 - Adhesive
 - Anti-Static Product
 - High-Temperature Coating
 - Lubricant

11

Section 94521, Definitions (Cont.)

- Proposed new definitions:

Extender	Pigment
Flexible Coating	Plasticizer
Fragrance	Resin
Impurity	Uniform Finish Coating

12

Section 94521, Definitions (Cont.)

- ❑ Proposed “Flexible Coating” definition
 - To provide a flexible, protective coating to various surfaces
 - Would exclude “Undercoating” as defined in Consumer Products Regulation
 - Deletion of “Automotive Underbody Coating” definition
- ❑ Proposed “Uniform Finish Coating” definition (Edge Blenders)
 - Products performing similar function but without resin would be Paint Thinners

13

Section 94522, Reactivity Limits

- ❑ Proposing lower limits for most categories
 - Limits for 13 categories designed to provide reductions
 - Represent ~90% of ROC emissions
 - New limits for 3 categories
 - Limits for 24 categories ‘capped’
 - Equivalent VOC reduction of 4.7 tpd
 - South Coast AQMD 2.0 tpd
- ❑ Proposal designed so focus of R&D efforts is on those categories where greatest air quality benefits are achieved

14

Proposed Reactivity Limits

General Coating Category	Proposed PWMIR Limit (g O ₃ / g Product)
Clear Coating	0.80
Flat Paint Product	0.80
Fluorescent Coating	0.80
Metallic Coating	1.20
Nonflat Paint Product	0.80
Primer	0.60

Proposed effective date of 1/1/2016

15

Proposed Reactivity Limits (Cont.)

Specialty Coatings Category (A)	PWMIR Limit (g O ₃ /g Product)
Auto Body Primer	0.95
Exact Match Finish*	0.90
Ground Traffic/Marking Coating	0.80
Electrical/Electronic/Conformal Coating**	2.00
Flexible Coating**	1.60
Mold Release Coating	1.10
Uniform Finish Coating**	1.30

*Combined

**New Proposal since September 2012

Proposed Effective Date of 1/1/2016

16

Categories with Proposed 'Cap' Limits

Art Fixatives or Sealant	Photograph Coating
Automotive Bumper and Trim Product	Pleasure Craft Finish Primer/ Surfacer/Undercoater
Aviation or Marine Primer	Pleasure Craft Topcoat
Aviation Propeller Coating	Polyolefin Adhesion Promoter
Corrosion Resistant Brass, Bronze, or Copper Coating	Shellac Sealer
Floral Coating	Slip-Resistant or Non-Slip Grip Coating
Glass Coating	Spatter/Multicolor/ Stucco Coating
High Temperature Coating	Vinyl/Fabric/Leather/ Plastic / Polycarbonate Coating
Hobby/Model/Craft Coating:	Webbing/Veiling Coating
Enamel	Weld-Through Primer
Lacquer	Wood Stain
Clear or Metallic	Wood Touch-Up/Repair/ Restoration Coating
Marine Spar Varnish	

Proposed effective date of 1/1/2015

17

Section 94522, Sell-Through

- ❑ Proposing to align provisions with Consumer Product Regulation
 - Provisions for Multi-unit packages
 - Notification requirements for products sold during sell-through period

18

Section 94522(j), Assignment of MIR Values

- Proposing to assign MIR Values as follows:
 - “Coating Solids,” “Extender,” fillers, and “Plasticizer” are assigned a MIR value of 0.0
 - “Fragrance”
 - In amount of up to 0.25 % by weight assigned a MIR value of 0.0
 - Any amount >0.25 % by weight shall use the MIR value for terpinolene (6.36)
 - Compound not listed
 - If isomer listed, MIR value for listed isomer shall be used
 - If more than one isomer listed, highest MIR shall be used
 - For ROC not listed in the Table of MIR values, the MIR value for 1,2,3,-trimethyl benzene (11.97) shall be used

19

Section 94522, Assignment of MIR Values (Cont.)

- Other proposed MIR provisions
 - Values will be good until at least 5 years from the effective date
 - Determine date when 2010 MIR values shall be used
 - Reorganize “Oxygenated Organics” section of the Table of MIR (section 94700)

20

Section 94523, Exemptions

- ❑ Proposing to delete exemptions for
 - Electrical Coatings
 - Mold Release products

21

Section 94524, Administrative Requirements

- ❑ Proposing modifications to the product dating requirements to align with Consumer Products Regulation
 - Date code options
 - Multi-unit packages
- ❑ Proposing to clarify the types of data to be reported

22

Section 94526, Test Methods

- ❑ Proposing to expand Test Methods section to include compliance verification processes
- ❑ Proposing modifications, clarifications, and additions to the analytical/compliance process
 - Increase the number of days from 10 to 20 days to supply formulation data
 - Clarify what constitutes formulation data
 - Clarify that incorrect formulation data or providing no data are violations
 - Require annual filing of contact information for Responsible Party

23

Section 94526, Test Methods

- ❑ CARB Method 310 is primary method to verify compliance
 - New Hydrocarbon Solvent(s) analysis method will be part of Method 310
 - Analytical results will override if in conflict with formulation data
- ❑ Specify MIR values to be applied to results of Hydrocarbon Solvent(s) analysis

24

Section 94526, Test Methods and Compliance Verification (Cont.)

Proposed MIR Values for Hydrocarbon Solvent Fraction

Hydrocarbon Solvent Fraction	MIR Value (October 2, 2010)
<i>Alkanes</i>	
Alkane(s) containing 5 carbons	1.45
Alkane(s) containing 6 carbons	1.27
Alkane(s) containing 7 carbons	1.41
Alkane(s) containing 8 carbons	1.27
Alkane(s) containing 9 carbons	1.09
Alkane(s) containing 10 carbons	0.90
Alkane(s) containing 11+ carbons	To be determined
<i>Aromatic Compounds</i>	
Xylene isomers, Ethyl benzene	7.64
Aromatics containing 9 carbons	7.99
Aromatics containing C10+carbons	To be determined

25

Consumer Products Regulation Proposed Amendments

26

Agenda

- ❑ Background
- ❑ Proposed amendments
 - Definitions
 - Aerosol Adhesive products
 - Multi-purpose Solvent and Paint Thinner products
- ❑ Hairspray Credit Program Proposed amendments
- ❑ Ongoing work
- ❑ LVP-VOC research
- ❑ Proposed changes to ARB Method 310
- ❑ Schedule

27

Background

- ❑ Consumer Products
 - Chemically formulated
 - Used by household and institutional consumers
 - Include household, home and garden, personal care, aerosol paint, automotive maintenance products, etc.

28

Background (Cont.)

- ❑ California Clean Air Act
 - Achieve the maximum feasible reduction in VOC emissions
 - Technologically and commercially feasible regulations
 - Must not eliminate a product form
- ❑ Assembly Bill 32 calls for reductions in greenhouse gases

29

Proposed Definitional Modifications

- ❑ Deleting expired portions of definitions
- ❑ Undercoating
 - Solely for use on the undercarriage of motor vehicles
 - Products making additional claims are “Flexible Coatings”
- ❑ Waterproofer
 - Deletion of definition
 - Aerosol products to be regulated as “Vinyl/Fabric/Leather/Plastic/Polycarbonate Coatings”
- ❑ Aerosol Adhesive
- ❑ Dry Lubricant

30

Proposed Definitional Modifications (Cont.)

- ❑ Hair “Finishing” Spray
 - “Hair Spray” category name modification to clarify that only spray products used to finish styled hair are included
- ❑ Hair Styling Product
 - Includes products that claim to protect hair from heat styling appliance damage
- ❑ “No Rinse Shampoo” product
 - Define and exempt from “Hair Styling Product” category
- ❑ Hair Styling Gel
 - Deletion of definition
 - Products included in “Hair Styling Product” category

31

Proposed Amendments Pertaining to Aerosol Adhesive Products

32

Technological Basis

- 2010 Survey data results:
 - Products reported: over 150
 - Sales of ~ 2 tons per day
 - VOC emissions of ~1 tpd
 - Mist and Web Spray adhesives with most emissions

33

Proposed Standards for Aerosol Adhesives

Aerosol Adhesive Category Name	Proposed VOC standard (%)	VOC Reductions (tons/day)
Mist Spray Adhesive	30	0.26
Web Spray Adhesive	40	0.07

- No changes to standards for Special Purpose Spray adhesives
- Global warming potential (GWP) limit of 150 for Mist and Web Spray categories
- Proposed effective date of 1/1/2017

34

Proposed Amendments Pertaining to Multi-purpose Solvent and Paint Thinner Products

35

Presentation Overview

- ❑ Results of Technical Assessment
- ❑ Issues proposal designed to address
- ❑ Proposed Amendments

36

Technical Assessment Summary

- ❑ Purpose to reconfirm feasibility of Multi-purpose Solvent and Paint Thinner 3% VOC Limits
 - Scheduled to become effective December 31, 2013
 - Determine whether aerosol products performing same function should be regulated

37

Technical Assessment Summary (Cont.)

- ❑ Data for Multi-purpose Solvent and Paint Thinner products sold statewide
 - 2011 sales and formulation data for products meeting current 30% VOC Limit
 - Information on research and development efforts to comply with the 3% VOC Limit
 - Information on aerosol products
- ❑ 25 Companies reported data for ~ 350 products
 - Includes reported aerosol products

38

Technical Assessment Summary (Cont.)

- ❑ ~6,800 gallons of product sold per day statewide
 - ~1.0 TPD of VOC emissions
 - ~4.0 TPD of LVP-VOC emissions were reported
- ❑ Products have already reformulated to meet 3% VOC Limit
 - 84% of reported Multi-purpose Solvent products
 - 43% of reported Paint Thinner products
 - Primarily formulations using exempt VOCs
 - Most manufacturers did not indicate reliance on LVP-VOC usage to comply with limit

39

Issues Proposal Designed to Address

- ❑ Air quality benefits from ARB and South Coast AQMD regulations less than anticipated
- ❑ Products relabeling to avoid compliance with South Coast AQMD Rule 1143
- ❑ Exemptions for specialty thinners
- ❑ Aerosol products performing the same functions are currently not regulated

40

Summary of Proposed Amendments

- ❑ Modify definitions
 - Strengthen criteria to qualify for specialty Paint Thinner exemption
- ❑ VOC limits for aerosol products
- ❑ Modify Most Restrictive Limit provision
- ❑ Expand what types of VOCs “count” toward compliance with limits

41

Multi-purpose Solvent Definition

- ❑ Proposing to specify that:
 - Products that display on the label a specific chemical name are “Multi-purpose Solvents”
 - Examples include mineral spirits, ketone, Japan Dryer, turpentine, toluene, xylene(s), acetone, naphtha, or alcohol
 - All product forms included
 - Products that meet the definition, but make additional claims anywhere on the label, continue to be categorized as “Multi-purpose Solvent”

42

Paint Thinner Definition

- Proposing to specify that:
 - Any product that is suitable for use to reduce the viscosity of coating compositions or components is included
 - Includes aerosol “edge blender” products
 - Excludes products that meet the definition for “Uniform Finish Coating” in section 94521(a)
 - All product forms included
 - Products that meets the definition, but make additional claims anywhere on the label, continue to be categorized as “Paint Thinner”

43

Paint Thinner Exemptions

- Proposing that:
 - Artist Solvent/Thinner exemption applies to products labeled exclusively as such
 - Exemption for Industrial Maintenance Coating, Zinc-Rich Primer, or High Temperature Coating thinner only applies if:
 - Responsible Party manufactures an Industrial Maintenance Coating, Zinc-Rich Primer, or High Temperature Coating, and
 - Label states specific coating product for which the thinner is used

44

Standards for Aerosol Products

- Proposing VOC limit for aerosol Multi-purpose Solvent and Paint Thinner products
 - 10% by weight VOC effective 1/1/16
 - All other existing provisions for Multi-purpose Solvent and Paint Thinner products would apply
 - Prohibition on use of compounds with Global Warming Potential (GWP) values of 150 or greater
 - Prohibition on use of methylene chloride, perchloroethylene, and trichloroethylene
 - 1% by weight Aromatic Compound content limit

45

Compliance with VOC Standards

- Proposing that VOC limits for Multi-purpose Solvent and Paint Thinner products apply to any compound that volatilizes after being oven cured at 110 degrees Celsius for one hour
 - Less water and exempt VOC compounds such as acetone

46

Exemptions

- Proposing that the VOC limits for Multi-purpose Solvent and Paint Thinner products do not apply to compounds that do not volatilize after being oven cured at 110 degrees Celsius for one hour

47

Most Restrictive Limit Provision

- Proposing to modify the Most Restrictive Limit provision to:
 - Specify that Multi-purpose Solvent and Paint Thinner products that make claims that they are suitable for use for another category **must** do **both** of the following:
 - Meet the lowest VOC limit
 - Meet the lowest limit following requirements for Multi-purpose Solvent and Paint Thinner products

48

Hairspray Credit Program Proposed Amendments

49

Hairspray Credit Program Regulation

- ❑ Proposing to rescind because no longer applicable (sections 94560-94575)
- ❑ Rationale:
 - Regulation to provide incentive for early or over-compliance with 55% VOC Hair Finishing Spray standard
 - January 1, 2005: Ability to generate credits expired
 - No applications received for Hairspray Emission Reduction Credits (HERC)
 - January 1, 2010: Ability to use HERCs expired

50

Ongoing Work

51

Evaluation of VOC Exemption Petition

- Trans-1,3,3,3-tetrafluoropropene (HFO-1234ze)
 - Nonflammable low global-warming potential (GWP) low reactive propellant
 - U.S. EPA exempted on June 7, 2012
 - Petition for VOC exemption from Consumer Products Regulation submitted August 8, 2012, by Honeywell Specialty Materials

52

Multi-purpose Lubricant & Penetrant Technical Assessment

- ❑ Assess feasibility of 2013 VOC limit of 25%
- ❑ 55 responses received
- ❑ Most companies indicate on track to comply but reformulating products has been more challenging than anticipated

53

Consumer Products Fee Program (AB 10x)

- ❑ Applies to companies with California product sales that result in VOC emissions of 250 or more tons per year
- ❑ Fiscal Year 2012-2013 fees
 - Based on 2010 emissions
 - Total emissions calculated using combined 2001, 2003, 2006 consumer product surveys, and 2010 aerosol coatings survey, or more recent information from companies
 - Final fee determination: March 2013

54

State Implementation Plan (SIP)

- ❑ U.S. EPA set 8-hour Ozone Standard of 0.075 ppm in 2008
- ❑ Expect to submit SIP for the 8-hour Ozone Standard in 2015

55

Low Vapor Pressure Volatile Organic Compound (LVP-VOC) Research

56

LVP-VOC Research: Background

- ❑ Compounds currently exempt from compliance with VOC standards
- ❑ South Coast AQMP measure called for research to determine if criteria should be modified
 - Initial evaporation study concluded many are volatile
- ❑ Measure was rescinded, however AQMD sending letter urging ARB to conduct further research

57

LVP-VOC Research

- ❑ ARB is committed to additional research to investigate air quality impacts associated with use of LVP-VOCs
- ❑ LVP-VOC project included in the list of projects for the 2013/2014 Research Plan
- ❑ Received three proposals from UC investigators
- ❑ Costs larger than expected

58

LVP-VOC Scope of Work

- ❑ Investigate ambient rate of volatilization of LVP-VOCs as pure compounds and in formulated products
- ❑ Conduct chamber studies to investigate O₃ and PM impacts of LVP-VOCs
- ❑ Investigate environmental fate of LVP-VOCs when they are disposed down the drain

59

2013-2014 Research Process

- ✓ Jan. 31: Draft proposals due from submitters
- ✓ Feb. 1: ARB review team chair (Dr. Jin Xu) receives draft proposals
- ✓ Feb. 15: Review team meets to discuss and select proposal to recommend
 - ❑ 2nd half of Feb: Upper management makes final selections
 - ❑ End of Feb: ARB contacts prospective contractors and request full proposals.

60

2013-2014 Research Process (Cont.)

- ❑ Late Feb/early March: Research Plan released to public.
- ❑ March: Board approves Research Plan
- ❑ April or May: Research Screening Committee reviews full proposals
- ❑ May or June: Board approves all proposals
- ❑ July: Contracts executed as soon as possible on or after this date

61

Research Division Contacts

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- ❑ Dr. Eileen McCauley, emccaule@arb.ca.gov, 916-323-1534

62

Proposed Changes To ARB Test Method 310

Proposed Changes to Method 310

- Section 3: Consumer Products Testing Procedure
 - Elimination of Section 3.6.3
- Section 4.2.3: For Fabric Softener-Single Use Dryer Products
 - Total Grams VOC per sheet will be modified to include water and exempt analytes
 - Total Grams VOC per Sheet = $(TV-A-H-EL) \times WS$
 - Total Grams VOC per Sheet with LVP = $[(1-H) \times (1-LVP)-EL] \times WS$

Proposed Changes to Method 310 (Cont.)

- ❑ Section 5: Testing to Determine ROC's in Aerosol Coating Products
 - Proposed Analytical Approach for Aerosol Coatings
 - Samples analyzed according to Method 310
 - Addition of a modified SAS07
 - Additional liquid fraction analyses:
 - C6 to C10+ Aromatics by Modified ASTM D5443-04
 - C5 to C10 Aliphatic Hydrocarbons by Highly Modified ASTM D5443-04

65

Schedule

- ❑ Asking for comments on proposal by March 12, 2013
 - Send Comments to:
 - Irina Malkina imalkina@arb.ca.gov
- ❑ Potential Workshop in early April
- ❑ Board Meeting July 26, 2013, Sacramento
 - 45-Day Notice June 7, 2013

66