California Environmental Protection Agency
AIR RESOURCES BOARD

2001 Architectural Coatings Survey

Draft Report

April 2003

State of California
California Environmental Protection Agency
Air Resources Board

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This report has been reviewed and approved for publication by the Air Resources Board (ARB, Board). Approval does not signify that the contents reflect the views and policies of the ARB, nor does mention of any company constitute endorsement. This report is a direct reflection of the California sales data (for calendar year 2000) submitted by the companies that responded to the "ARB Architectural Coatings Survey" conducted in 2001.

Acknowledgements

The Air Resources Board would like to thank the companies that responded to our 2001 survey. (See Chapter 2 for a list of survey respondents.)

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APCD	Air Pollution Control District
AQMD	Air Quality Management District
ARB, Board	Air Resources Board
ASTM	American Society for Testing and Materials
Cal/EPA	California Environmental Protection Agency
CAS#	Chemical Abstract Service number
MIR	Maximum Incremental Reactivity
ORGSOL	Organic Solvent Regulation Study Group
PD	Protected Data
QDPSU	Quick Dry Primer Sealer Undercoater
U.S. EPA	United States Environmental Protection Agency
SB	Solvent-borne
SCM	Suggested Control Measure
SWA	Sales-weighted Average
VOC	Volatile Organic Compound
WB	Water-borne

Chapter 1 -- Introduction and Background

This report presents results from the 2001 Architectural Coatings Survey conducted by the California Air Resources Board (ARB or Board) for coatings sold in California during 2000. This is the seventh survey of this type conducted by the ARB for the purpose of estimating emissions from architectural coatings. For purposes of this survey, architectural coatings are defined as follows:

> **"Architectural Coating:** A coating to be applied to stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. Coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles, and adhesives are not considered architectural coatings."

Architectural coatings do not include aerosol coating products.

Historically, the ARB has conducted architectural coating surveys every four or five years. Previous surveys were conducted in 1976, 1981, 1985, 1989, 1993, and 1998. The information collected in the surveys is used to help the ARB and local air pollution control districts (APCDs) or air quality management districts (AQMDs) track the volatile organic compound (VOC) emissions from architectural coatings. The surveys are also used in the development of regulations or rules to reduce the VOC emissions from these products.

The local districts have the primary responsibility for control of air pollution from stationary sources, such as the application of coatings. The local districts develop, adopt, and enforce rules and regulations under their jurisdiction to achieve and maintain the state and federal ambient air quality standards. The local districts have regulated architectural coatings in California since the 1970s.

The ARB's role over the years has been to provide technical assistance to the districts in the form of industry surveys and research. To track the emission contributions of architectural coatings, an inventory was created that is based on the surveys. The ARB has also provided regulatory and policy guidance through the development of a suggested control measure (SCM) for architectural coatings, that was first adopted in 1977, and was amended in 1985, 1989, and 2000.

The 2001 Architectural Coatings Survey

In July 2001, the ARB mailed survey questionnaires to more than 700 companies that potentially sold architectural coating products in California in 2000. Roughly half of the companies did not submit data for the following reasons: they did not manufacture architectural coatings; they did not have any sales of architectural coatings in California during 2000; or their sales were being reported by another company. A total of 182 companies submitted data, and approximately one-quarter of the companies surveyed did not respond. This represents an increase when compared to the previous four ARB surveys (conducted in 1998, 1993, 1989, 1985), that had an average of 150 companies responding with data. Information about the companies reporting is presented in Chapter 2.

The 2001 Architectural Coatings survey requested 2000 California sales information for 51 coating categories. For each of the coating categories, the survey collected the following information:

- sales in gallons, broken down by sales in small containers (sizes of 1 quart or less) and large containers (greater than 1 quart);
- substrate description;
- type of application (interior/exterior/dual);
- vehicle technology (solvent-borne or water-borne);
- resin type;
- component description (single- or multi-component);
- coating density;
- weight percent for solids, volatiles, water, and exempt compounds;
- volume percent for solids, water, and exempt compounds;
- VOC content;
- method for VOC determination (U.S. EPA Method 24 or formulation data); and
- volatile ingredients.

A copy of the survey questionnaire is available in the Appendix. Some manufacturers considered the data provided in the 2001 Architectural Coatings Survey to be trade secret and confidential. To address this concern, but still allow the publishing of survey results, the ARB implemented the historical practice of concealing all sales data values that did not represent at least three companies, otherwise known as the "Three Company Rule." In addition, this report contains summarized survey data, rather than lists of individual survey responses to further protect confidentiality. Every effort was made to reveal as much of the survey data as possible without compromising the "Three Company Rule." However, instances did arise where it was necessary to conceal certain portions of the survey results. Throughout this report the term "Protected Data" (or PD) is used to reflect that compliance with the "Three Company Rule" could not be satisfied and the data were concealed.

The 2001 survey responses represent about 108 million gallons of architectural coatings sold in California in 2000, with 84% of that volume coming from water-borne products and 16% from solvent-borne products. Emissions from these coatings are approximately 43,300 tons of VOC per year or about 119 tons per day as an annual average. Water-borne

products contribute 44% of these emissions, while the solvent-borne products contribute 56%. If emissions from solvent-borne thinning and cleanup products are included (assumed to be one pint per gallon of solvent-borne coating), the average annual emissions are approximately 138 tons per day, with 38% of the emissions contributed by water-borne products and 62% coming from solvent-borne products. More detailed information on sales and emissions data is presented in Chapters 3 and 5, respectively.

Information on VOC content was also collected for all 51 coating categories. Values for VOC content summarized in this report were determined by calculating the sales-weighted average and are available in Chapter 4. The VOC content values appear as VOC Actual and VOC Regulatory. VOC Actual, also know as Material VOC, is a ratio of the weight of volatiles (minus the weight of water and exempt VOCs) per a given volume of coating. VOC Actual is the value used to determine emissions.

The VOC content limit or standard codified in architectural coating regulations is commonly known as VOC Regulatory. VOC Regulatory is a ratio of the weight of VOCs per a given volume of coating with water and exempt VOCs subtracted from both the numerator (weight) and denominator (volume). The original rationale behind the VOC Regulatory value was to reflect the relationship of coverage to total solids content and to provide an equivalent basis for comparing the polluting portion of solvent-borne and water-borne coatings. Also, based on industry comments, it was believed that the VOC Regulatory approach would prohibit coating manufacturers from simply diluting a coating with water in order to meet standards specified in coating regulations.

A new element of the 2001 Architectural Coatings Survey was the collection of complete volume percent and weight percent data. These data included all of the parameters that are used when calculating VOC Actual and VOC Regulatory. Collection of this information greatly improved ARB's ability to verify reported VOC content values. Chapter 8 contains sales-weighted average values for volume and weight percent data for all survey categories.

Two additional new elements in the 2001 survey involved substrate and resin data. If a coating product was designed for a specific substrate(s), survey respondents were asked to list all of the applicable substrates. This type of data was targeted for the following categories: Floor, Industrial Maintenance, Primer/Sealer/Undercoater, Quick Dry Primer/Sealer/Undercoater, Specialty Primer/Sealer/Undercoater, Stains, and Waterproofing Sealers. However, some survey respondents provided substrate data for other categories as well. Resin data were gathered for all 51 coating categories. Chapter 9 contains a summary of substrate and resin information.

The 2001 Architectural Coatings Survey included the collection of ingredient data for the volatile components of the coating (VOCs, exempt compounds, and water). Speciated data were not collected for the solids portion of the coatings. Chapter 10 contains more information regarding the ingredient data.

The final chapter, Chapter 11, compares the results from ARB's 1998 Architectural Coatings Survey (1996 sales data) with the results of this survey (2000 sales data.)

Chapter 2 -- Companies

The 2001 survey was sent to more than 700 companies that potentially sold architectural coating products in California in 2000. Roughly half of the companies did not submit data for the following reasons: they did not manufacture architectural coatings; they did not have any sales of architectural coatings in California during 2000; or their sales were to be reported by another company. A total of 182 companies submitted data and approximately one-quarter of the companies surveyed did not respond. This represents an increase when compared to the previous four ARB surveys (conducted in 1998, 1993, 1989, 1985), that had an average of 150 companies responding with data.

This chapter includes the following data summaries:

Table 2-1: *Survey Respondents*

Table 2-2: *Top 10 Manufacturers (based on sales volume, but sorted alphabetically)*

Figure 2-1: *Top 10 Manufacturers*

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Table 2-1: ***Survey Respondents***

Count	Company Name	Count	Company Name
1	3M	41	Dunn-Edwards Corporation
2	A.W. Chesterton Company	42	E. I. du Pont de Nemours & Co.
3	AC Products, Inc.	43	Eco Paint
4	Ace Hardware Corporation	44	Edoco
5	Acrymax Technologies, Inc.	45	Ellis Paint Company
6	Addiment Incorporated	46	Ennis Paint
7	Akzo Nobel	47	EPMAR Corporation
8	Aluminum Coating Manufacturer, Inc.	48	Euclid Chemical Co., The
9	Amazon Environmental, Inc.	49	Everest Coatings Inc.
10	American Paint Co.	50	Evr-Gard Coatings
11	American Polymer	51	Farwest Paint Mfg. Co.
12	Ameron International Corporation	52	Fields Company, LLC
13	Amteco, Inc.	53	Flame Seal Products, Inc.
14	Armstrong-Clark Co., The	54	Flamort Company, Inc.
15	Basic Coatings, Inc.	55	Flood Company, The
16	Behr Process Corporation	56	Frazee Industries
17	Benjamin Moore & Co.	57	Freecom, Inc.
18	BonaKemi USA, Inc.	58	Futura Coatings, Inc.
19	Brewer Company, The	59	Gaco Western, Inc.
20	Cal Western Paints, Inc.	60	GAF Materials Corporation
21	Carboline Company	61	Gardner Gibson
22	Cardinal Industrial Finishes	62	Garland Company, Inc., The
23	Catalina Industries, Inc.	63	Gavlon Industries Inc.
24	CGI, Inc.	64	Gemini Industries, Inc.
25	Coatings Resource Corporation	65	Genesis Coatings Resource
26	Color Wheel Paint Co., Inc.	66	Glaze 'N Seal Products
27	Conspec	67	Glidden Company (dba: ICI Paints NA)
28	Continental Products Company, The	68	Glitsa American, Inc.
29	Contract Coatings Corp.	69	Gloucester Co., Inc.
30	Coronado Paint Company	70	Golden Artist Colors, Inc.
31	Crossfield Products Corp.	71	Golden Pacific
32	Crown Technology, LLC	72	Griggs Paint
33	Daly's Inc	73	HARCO Chemical Coatings, Inc.
34	Dampney Company, Inc.	74	Hasco Lakfabrieken BV (Fine Paints of Europe)
35	Davlin Coatings, Inc.	75	Hempel Coatings USA
36	Dayton Superior	76	Henry Company
37	Deft, Inc.	77	Hill Brothers Chemical Co.
38	Degussa Construction Chemicals, Inc.	78	Hillyard Industries, Inc.
39	Dow Corning Corporation	79	Imperbel America Corporation
40	Duckback Products Inc.	80	INSL-X Products Corp

Table 2-1: ***Survey Respondents (continued)***

Count	Company Name	Count	Company Name
81	ITW Devcon	121	Pride Paint Company
82	ITW Philadelphia Resins	122	PROSOCO, Inc.
83	Jasco Chemical Corp	123	R.J. McGlennon Co., Inc.
84	Jones-Blair Company	124	Reilly Industries, Inc - Lone Star Refinery
85	Jotun Paints Inc	125	Rockwood Pigments
86	Karnak Corp.	126	Rodda Paint Company
87	Kelley Technical Coatings	127	Rust-Oleum Corporation
88	Kelly-Moore Paint Company, Inc.	128	Samuel Cabot, Inc.
89	Klinger Paint	129	San Luis Paints
90	Koch Materials Company	130	Sauereisen Inc.
91	Koppers Industries, Inc.	131	Scotch Paint Corp.
92	KST Coatings Manufacturing, Inc.	132	Seal-Krete, Inc.
93	L&M Construction Chemicals, Inc	133	SEM Products, Inc.
94	Lenmar	134	Seymour of Sycamore Inc.
95	Leslie's Poolmart	135	Sheffield Bronze Paint
96	Life Paint Corporation	136	Sherwin-Williams Company, The
97	Lion Oil Company	137	Sierra Corporation
98	Master Coating Technologies	138	Sigma Coatings USA B.V.
99	Masterchem Industries Inc.	139	Sika Corporation
100	Meredith, Inc.	140	Silvertown Products, Inc.
101	Messmer's Inc.	141	Simpson Coatings Group Inc.
102	Milamar Coatings LLC	142	SINAK Corporation
103	Minuteman International, Inc.	143	Smiland Paint Company
104	Mule-Hide Products Co., Inc.	144	Southwest Distributing Co., Inc.
105	Multicolor Specialties, Inc.	145	Southwestern Petroleum
106	NCH Corporation	146	Specialty Coatings & Chems Inc.
107	NCP Coatings, Inc.	147	Spectra-Tone Paint Corp.
108	Norfolk Corporation dba ZRC Worldwide	148	SR Products
109	Nox-Crete of Nebraska, Inc.	149	Star Bronze Company, Inc.
110	OKON, Inc.	150	Steelcote Mfg. Co.
111	One Shot, LLC	151	Stoncor Group, Inc.
112	Parks Corporation	152	Superior Environmental Products, Inc.
113	Performance Coatings Inc.	153	Surface Protection Industries, Inc.
114	Pervo Paint Company	154	Symons
115	Plasite	155	Synkoloid Company, The
116	Poly-Carb, Inc.	156	T.J. Ronan Paint Corp.
117	Polyurea Coating Systems, Inc.	157	TAMKO Roofing Products, Inc.
118	PPG Industries, Inc.	158	Tennant Co.
119	Preserva Products, Ltd.	159	Texas Refinery Corp.
120	Preservo Paint & Coatings	160	Textured Coatings of America, Inc.

Table 2-1: ***Survey Respondents (continued)***

Count	Company Name	Count	Company Name
161	TMT Pathway LLC	172	Vista Paint Corporation
162	Tnemec Company, Inc.	173	W.P. Hickman Systems, Inc.
163	Tremco Incorporated	174	W.R. Grace & Co.-Conn.
164	Triangle Coatings, Inc.	175	W.R. Meadows, Inc.
165	Trinity Coatings Co.	176	Wasser High Tech Coatings
166	Tropical Asphalt L.L.C.	177	Waterlox Coatings Corporation
167	TruServ Corporation	178	Western Colloid S.C. Inc.
168	United Coatings	179	William Zinsser & Co.
169	United Gilsonite Laboratories, Inc.	180	Wilshire Paint Company, Inc.
170	Valspar Corporation	181	XIM Products, Inc.
171	Vanex, Inc.	182	Yenkin-Majestic Paint Corporation

Table 2-2: ***Top 10 Manufacturers (based on sales volume, but sorted alphabetically)***

Company Name
Behr Process Corporation
Dunn-Edwards Corporation
Frazee Industries
Glidden Company (dba: ICI Paints NA)
Henry Company
Kelly-Moore Paint Company, Inc.
Sherwin-Williams Company, The
Smiland Paint Company
TMT Pathway LLC
Vista Paint Corporation

Figure 2-1
Top 10 Manufacturers

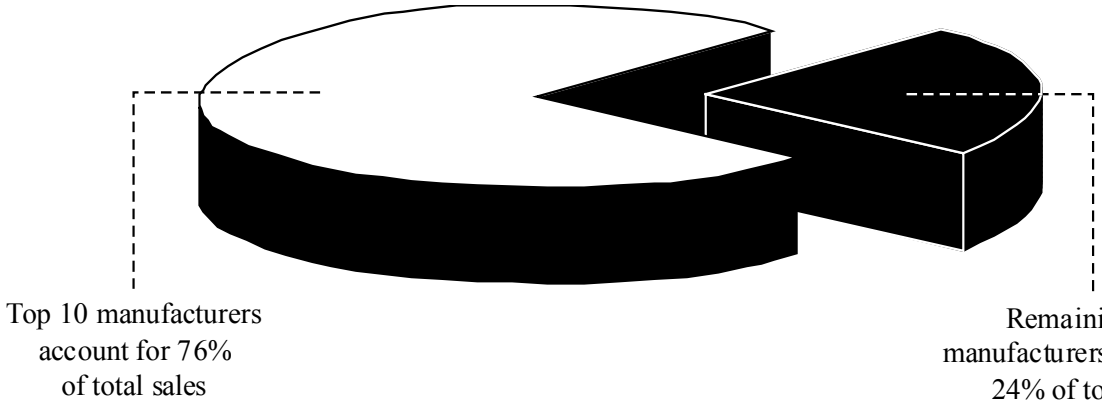


Figure 2-2
Survey Respondents' Gross Earnings

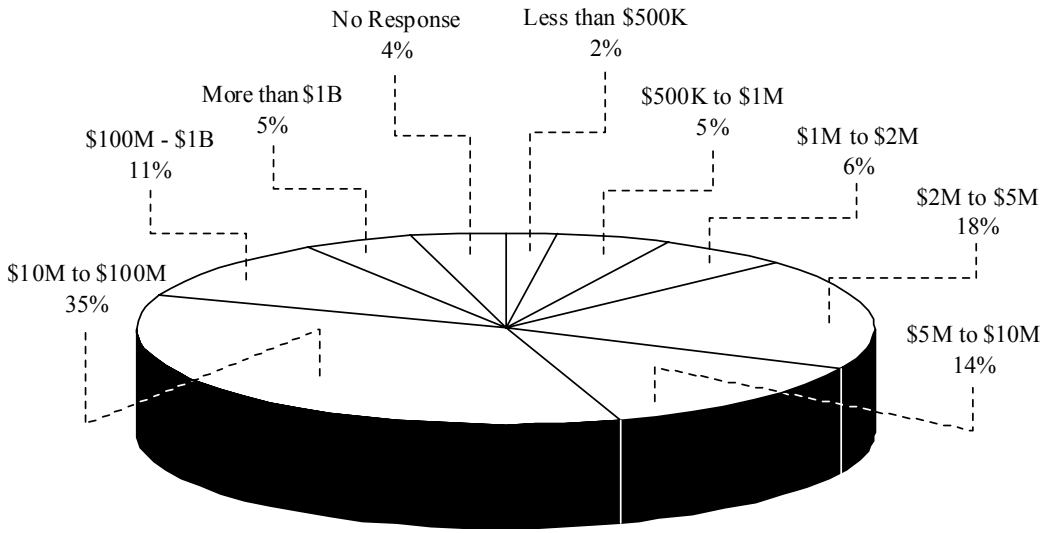
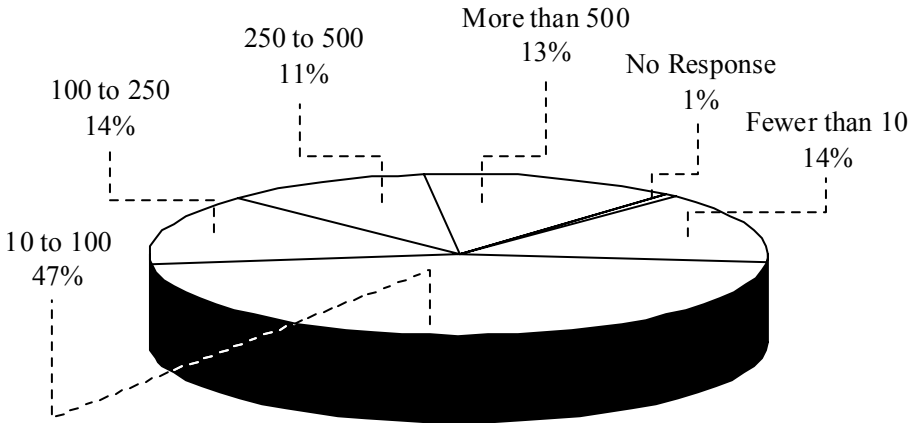
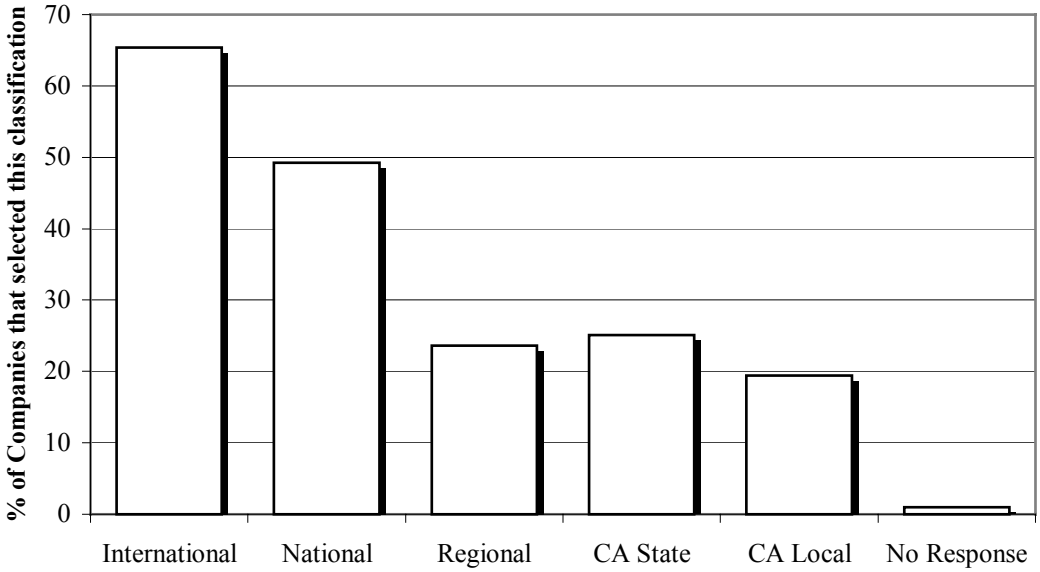


Figure 2-3
Survey Respondents' Number of Employees



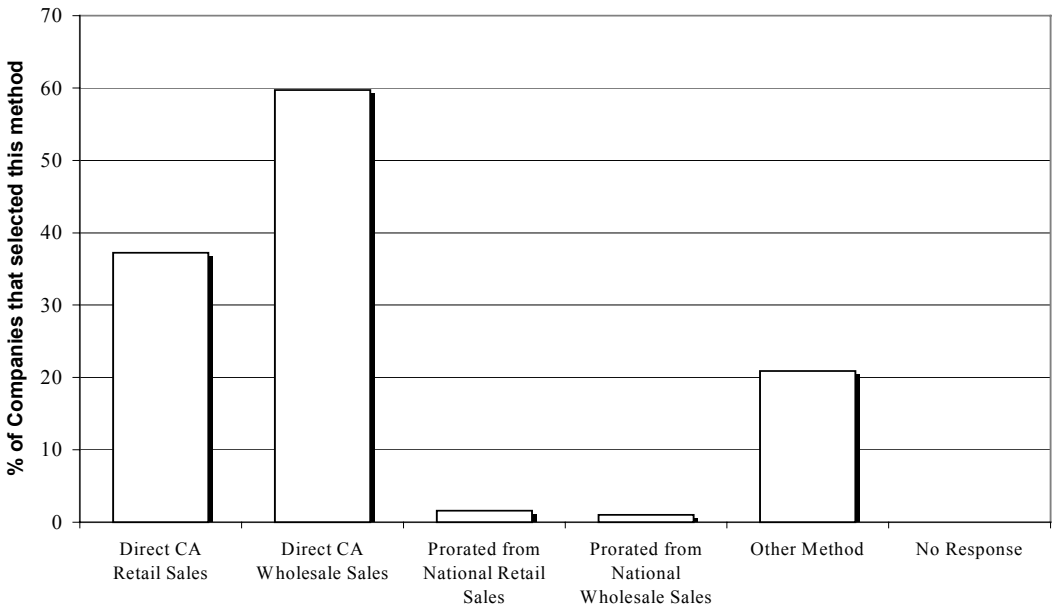
The 2001 survey collected data on marketing classification. Survey respondents were allowed to select multiple classifications (e.g., international and regional) and 37% of the companies reported more than one classification. Figure 2-4 illustrates the percentage of companies that selected a particular marketing classification. Please note that the total percentage is greater than 100%, because companies could select multiple classifications.

Figure 2-4
Survey Respondents' Marketing Classifications



A new type of data that was collected for the 2001 survey was information on the methods that were used to determine the sales of architectural coatings in California. Survey respondents were allowed to select multiple methods (e.g., direct California wholesale and Other) and 25% of the companies reported more than one method. Figure 2-5 illustrates the percentage of companies that selected a particular method for determining California sales. Please note that the total percentage is greater than 100%, because companies could select multiple methods.

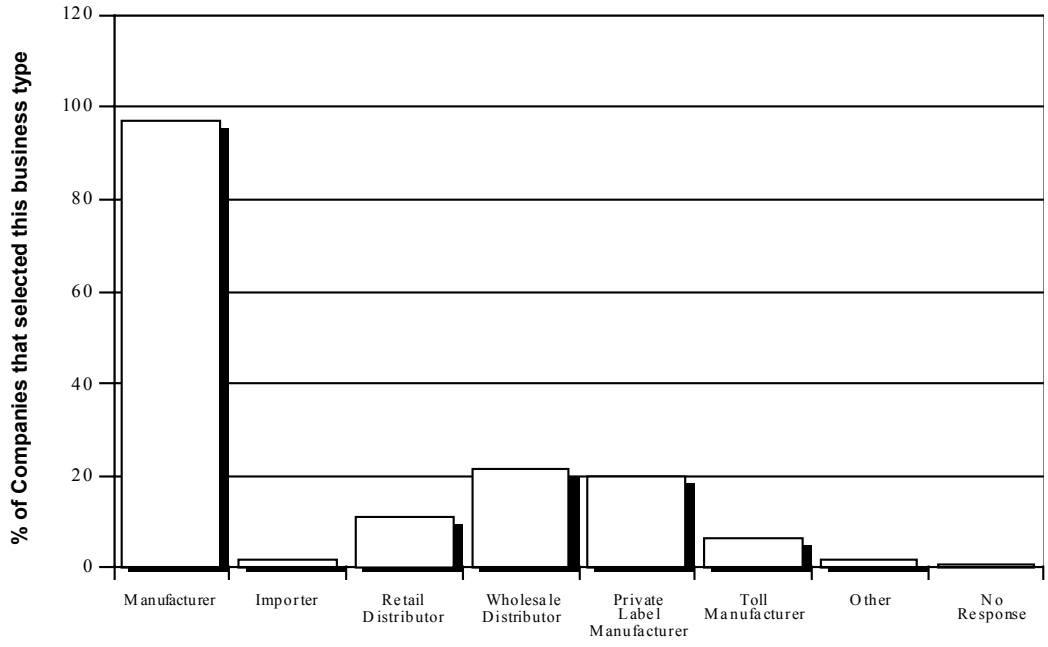
Figure 2-5
Method for Determining California Sales



Note: Under "Other Method" of determining sales, companies generally reported slight variations of the standard methods based on retail and wholesale sales. In addition, some companies based their sales on manufacturing production data or direct sales to the end user.

The survey gathered data on the type of business (e.g., manufacturer, wholesale distributor, etc.). Survey respondents were allowed to select multiple descriptions for their business type and 34% of the companies reported more than one type. Figure 2-6 illustrates the percentage of companies that selected a particular business type. Please note that the total percentage is greater than 100%, because companies could select multiple types.

Figure 2-6
Type of Business



Chapter 3 -- Sales

The 2001 survey responses represent approximately 108 million gallons of architectural coatings sold in California in 2000. To determine the accuracy of these sales figures, we consulted the U.S. Census Bureau's Current Industrial Reports for Paint and Allied Products for calendar year 2000. This report includes nationwide data for shipments of the following categories: architectural coatings; industrial new construction and maintenance paints; and traffic marking paints. Total nationwide shipments in 2000 for these three categories are approximately 727 million gallons, which is actually a decline from the 1996 value. Since California represents 12% of the national population, we assumed that California shipments were approximately equal to 12% of the nationwide total for the above-listed categories. We then compared the census data to the sales reported in our survey and found that our survey total is actually greater than the estimate based on census data. Therefore, we feel confident that the survey captured the California sales information adequately.

This chapter includes the following data summaries:

Table 3-1: *Sales by Category (sorted by category)*

Table 3-2: *Sales by Category (sorted by volume in descending order)*

Table 3-3: *Sales by Category (based on container size)*

Figure 3-1: *Solvent-borne and Water-borne Sales*

Figure 3-2: *Top 10 Coating Categories*

Figure 3-3: *Sales by Container Size*

Table 3-1 lists total sales for coating categories, as well as sub-totals for solvent-borne and water-borne sales in each category. In addition, the table contains a percentage breakdown for recommended exposure (i.e., interior, exterior, or dual exposure). The stratification between solvent-borne and water-borne coatings is graphically illustrated in Figure 3-1, while Figure 3-2 highlights the top ten coating categories, based on sales volume.

Table 3-1: *Sales by Category*

	2000 Sales Including Quarts (gallons)							
Coating Category	**Total**	**Solvent-borne**	**Water-borne**	**% SB**	**% WB**	**% Int**	**% Ext**	**% Dual**
Antenna	PD	PD	PD	PD	PD	0	100	0
Antifouling	NA	NA	NA	NA	NA			
Bituminous Roof	3,245,397	1,608,033	1,637,364	50	50	0	100	0
Bituminous Roof Primer	170,520	69,993	100,527	41	59	0	94	6
Bond Breakers	93,896	0	93,896	0	100	0	94	6
Clear Brushing Lacquer	PD	PD	0	100	0	100	0	0
Concrete Curing Compounds	692,419	32,395	660,024	5	95	0	27	73
Dry Fog	489,295	243,047	246,248	50	50	98	0	2
Faux Finishing	173,737	6,948	166,789	4	96	100	0	0
Fire Resistive	PD	0	PD	0	100	0	0	100
Fire Retardant - Clear	PD	0	PD	0	100	1	28	71
Fire Retardant - Opaque	PD	PD	26,690	PD	PD	70	29	1
Flat	37,066,471	17,987	37,048,485	0	100	45	36	20
Floor	1,425,064	149,939	1,275,125	11	89	29	10	61
Flow	PD	0	PD	0	100	0	100	0
Form Release Compounds	255,724	223,634	32,090	87	13	0	29	71
Graphic Arts	26,389	13,667	12,722	52	48	3	36	61
High Temperature	PD	18,621	PD	PD	PD	1	7	92
Industrial Maintenance	5,016,777	4,390,310	626,468	88	12	6	23	71
Lacquers	463,443	374,503	88,940	81	19	68	30	2
Low Solids	13,413	0	13,413	0	100	3	97	0
Magnesite Cement	PD	PD	0	100	0	0	100	0
Mastic Texture	628,590	210,143	418,447	33	67	2	93	4
Metallic Pigmented	625,944	513,541	112,402	82	18	1	95	4
Multi-Color	PD	PD	7,517	PD	PD	100	0	0
Nonflat - High Gloss	2,055,746	615,083	1,440,663	30	70	39	4	57
Nonflat - Low Gloss	6,992,762	64,953	6,927,809	1	99	49	24	27
Nonflat - Medium Gloss	24,255,441	567,173	23,688,268	2	98	67	10	23
Other	1,510,316	15,971	1,494,345	1	99	0	98	1
Pre-Treatment Wash Primer	75,342	4,188	71,154	6	94	12	0	88
Primer, Sealer, & Undercoater	8,442,084	1,385,606	7,056,478	16	84	47	22	31
Quick Dry Enamel	PD	607,387	PD	PD	PD	30	8	62
Quick Dry Primer, Sealer, & Undercoater	1,660,227	1,259,524	400,703	76	24	38	3	59
Recycled	323,216	0	323,216	0	100	0	22	78
Roof	1,139,209	89,448	1,049,761	8	92	0	97	3
Rust Preventative	209,899	166,748	43,151	79	21	0	7	93
Sanding Sealers	28,268	20,452	7,816	72	28	97	0	3
Shellacs - Clear	PD	PD	0	100	0	100	0	0
Shellacs - Opaque	PD	PD	0	100	0	100	0	0
Specialty Primer, Sealer, and Undercoater	376,521	21,461	355,060	6	94	7	0	93
Stains - Clear/Semitransparent	2,175,666	1,694,011	481,655	78	22	21	56	23

Table 3-1: ***Sales by Category***

Coating Category	2000 Sales Including Quarts (gallons)							
	Total	Solvent-borne	Water-borne	% SB	% WB	% Int	% Ext	% Dual
Stains - Opaque	1,087,373	224,925	862,448	21	79	0	94	6
Swimming Pool	22,086	12,399	9,687	56	44	0	8	92
Swimming Pool Repair and Maintenance	15,266	15,266	0	100	0	0	21	79
Temperature Indicator Safety	NA	NA	NA	NA	NA			
Traffic Marking	3,338,918	799,677	2,539,241	24	76	0	32	68
Varnishes - Clear	1,087,930	715,187	372,743	66	34	58	7	35
Varnishes - Semitransparent	61,505	58,300	3,205	95	5	97	1	2
Waterproofing Concrete/Masonry Sealers	724,572	230,625	493,947	32	68	0	49	51
Waterproofing Sealers	1,000,959	447,545	553,414	45	55	0	69	30
Wood Preservatives	177,444	166,982	10,462	94	6	0	100	0
TOTAL:	**108,035,871**	**17,264,365**	**90,771,505**					

"NA": *No sales were reported for this category.*

"PD": *Protected data (fewer than three companies reported sales).*

Notes on specific coating categories:

Concrete Curing Compounds: Table 3-1 lists 0% of sales volume for Concrete Curing Compounds that are intended for "Interior" applications. This would seem to indicate that there were no sales of interior products, which may seem to be a discrepancy because summary VOC data are provided in Chapter 4 for interior products. There actually was a small quantity of product sold for use on interior concrete flooring, but the percentage value rounds off to 0%.

Pre-treatment Wash Primer and Specialty Primer, Sealer, Undercoater: Table 3-1 lists 0% of sales volume for the Pre-treatment Wash Primer and Specialty Primer, Sealer, Undercoaters categories that are intended for "Exterior" applications. This would seem to indicate that there were no sales of exterior products, which may appear as a discrepancy because summary VOC data are provided in Chapter 4 for exterior products. There actually was a small quantity of these products sold for exterior use, but the percentage value rounds off to 0%.

Swimming Pool and Swimming Pool Repair and Maintenance: A high percentage of the swimming pool coatings are designated as being intended for Dual (Interior/Exterior) applications, rather than just exterior as would be expected. Some of the product literature for swimming pool coatings mentions their application for indoor pools. One manufacturer indicated that water-borne coatings are preferred for indoor pools, but epoxy coatings may be used for indoor pools to provide greater durability.

Traffic Marking: A high percentage of the traffic marking coatings are designated as being intended for Dual (Interior/Exterior) applications, rather than just exterior as would be expected. Some of the product literature for traffic coatings mentions applications for marking lines in warehouses. Although some of the product literature did not specifically mention interior applications, it is possible that Traffic coatings could be used for both interior and exterior applications.

Table 3-2 illustrates the ranking of coating categories, based on sales volumes. This table does not include data for coating categories that had protected sales data.

Table 3-2: *Sales by Category* *(sorted by volume in descending order)*

	2000 Sales (gallons)
Coating Category	**Total**
Flat	37,066,471
Nonflat - Medium Gloss	24,255,441
Primer, Sealer, & Undercoater	8,442,084
Nonflat - Low Gloss	6,992,762
Industrial Maintenance	5,016,777
Traffic Marking	3,338,918
Bituminous Roof	3,245,397
Stains - Clear/Semitransparent	2,175,666
Nonflat - High Gloss	2,055,746
Quick Dry Primer, Sealer, & Undercoater	1,660,227
Other	1,510,316
Floor	1,425,064
Roof	1,139,209
Varnishes - Clear	1,087,930
Stains - Opaque	1,087,373
Waterproofing Sealers	1,000,959
Waterproofing Concrete/Masonry Sealers	724,572
Concrete Curing Compounds	692,419
Mastic Texture	628,590
Metallic Pigmented	625,944
Dry Fog	489,295
Lacquers	463,443
Specialty Primer, Sealer, and Undercoater	376,521
Recycled	323,216
Form Release Compounds	255,724
Rust Preventative	209,899
Wood Preservatives	177,444
Faux Finishing	173,737
Bituminous Roof Primer	170,520
Bond Breakers	93,896
Pre-Treatment Wash Primer	75,342
Varnishes - Semitransparent	61,505
Sanding Sealers	28,268
Graphic Arts	26,389
Swimming Pool	22,086
Swimming Pool Repair and Maintenance	15,266
Low Solids	13,413

The sales volumes in this table include sales of small containers (1 quart or less).
This table does not include data for coating categories that had protected sales data.
The "Other" coating category consists primarily of bituminous driveway sealers.

Table 3-3: ***Sales by Category (based on container size)***

Coating Category	Total	Small Containers (<= 1 quart)	Large Containers (> 1 quart)	% Small Containers
Antenna	PD	PD	PD	PD
Antifouling	NA	NA	NA	NA
Bituminous Roof	3,245,397	5,403	3,239,994	0.2%
Bituminous Roof Primer	170,520	0	170,520	0.0%
Bond Breakers	93,896	0	93,896	0.0%
Clear Brushing Lacquer	PD	PD	PD	PD
Concrete Curing Compounds	692,419	134	692,285	0.0%
Dry Fog	489,295	0	489,295	0.0%
Faux Finishing	173,737	44,788	128,949	25.8%
Fire Resistive	PD	PD	PD	PD
Fire Retardant – Clear	PD	PD	PD	PD
Fire Retardant – Opaque	PD	PD	PD	PD
Flat	37,066,471	420,197	36,646,274	1.1%
Floor	1,425,064	21,942	1,403,122	1.5%
Flow	PD	PD	PD	PD
Form Release Compounds	255,724	0	255,724	0.0%
Graphic Arts	26,389	6,476	19,913	24.5%
High Temperature	PD	PD	PD	PD
Industrial Maintenance	5,016,777	220,640	4,796,137	4.4%
Lacquers	463,443	20,170	443,273	4.4%
Low Solids	13,413	129	13,284	1.0%
Magnesite Cement	PD	PD	PD	PD
Mastic Texture	628,590	5	628,585	0.0%
Metallic Pigmented	625,944	12,912	613,031	2.1%
Multi-Color	PD	PD	PD	PD
Nonflat - Low Gloss	6,992,762	147,875	6,844,887	2.1%
Nonflat - Medium Gloss	24,255,441	642,622	23,612,820	2.6%
Nonflat - High Gloss	2,055,746	147,545	1,908,200	7.2%
Pre-Treatment Wash Primer	75,342	49,922	25,420	66.3%
Primer, Sealer, and Undercoater	8,442,084	186,126	8,255,958	2.2%
Quick Dry Enamel	PD	PD	PD	PD
Quick Dry Primer, Sealer, and Undercoater	1,660,227	48,888	1,611,339	2.9%
Recycled	323,216	0	323,216	0.0%
Roof	1,139,209	2,485	1,136,724	0.2%
Rust Preventative	209,899	29,377	180,522	14.0%
Sanding Sealers	28,268	12,170	16,098	43.1%
Shellacs - Clear	PD	PD	PD	PD
Shellacs - Opaque	PD	PD	PD	PD
Specialty Primer, Sealer, and Undercoater	376,521	7,334	369,187	1.9%
Stains - Clear/Semitransparent	2,175,666	438,768	1,736,899	20.2%
Stains - Opaque	1,087,373	8,034	1,079,339	0.7%
Swimming Pool	22,086	251	21,835	1.1%
Swimming Pool Repair and Maintenance	15,266	220	15,046	1.4%
Temperature Indicator Safety	NA	NA	NA	NA
Traffic Marking	3,338,918	151	3,338,767	0.0%

Table 3-3: ***Sales by Category (based on container size)***

Coating Category	Total	Small Containers (<= 1 quart)	Large Containers (> 1 quart)	% Small Containers
Varnishes - Clear	1,087,930	425,229	662,701	39.1%
Varnishes - Semitransparent	61,505	59,721	1,784	97.1%
Waterproofing Sealers	1,000,959	10,976	989,983	1.1%
Waterproofing Concrete/Masonry Sealers	724,572	7,896	716,676	1.1%
Wood Preservatives	177,444	12,494	164,950	7.0%
Other	1,510,316	4,765	1,505,551	0.3%
TOTAL:	**108,035,871**	**3,051,585**	**104,984,286**	**2.8%**

"NA": *No sales were reported for this category.*

"PD": *Protected data (to be consistent with the protected data in Table 3-1).*

Figure 3-1
Water-borne and Solvent-borne Sales

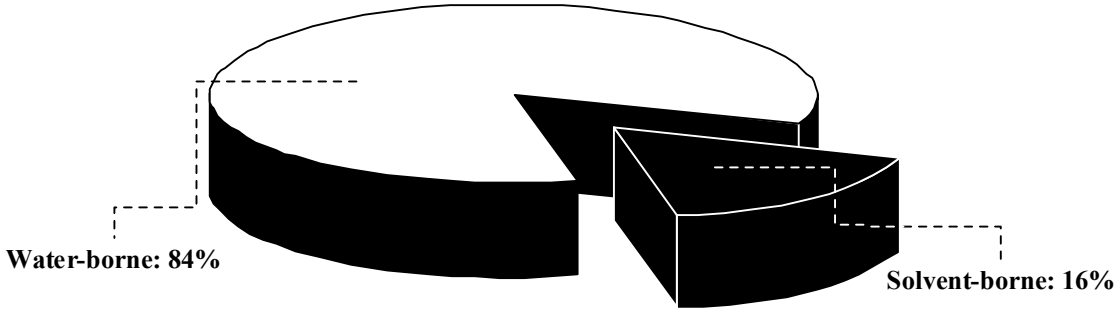
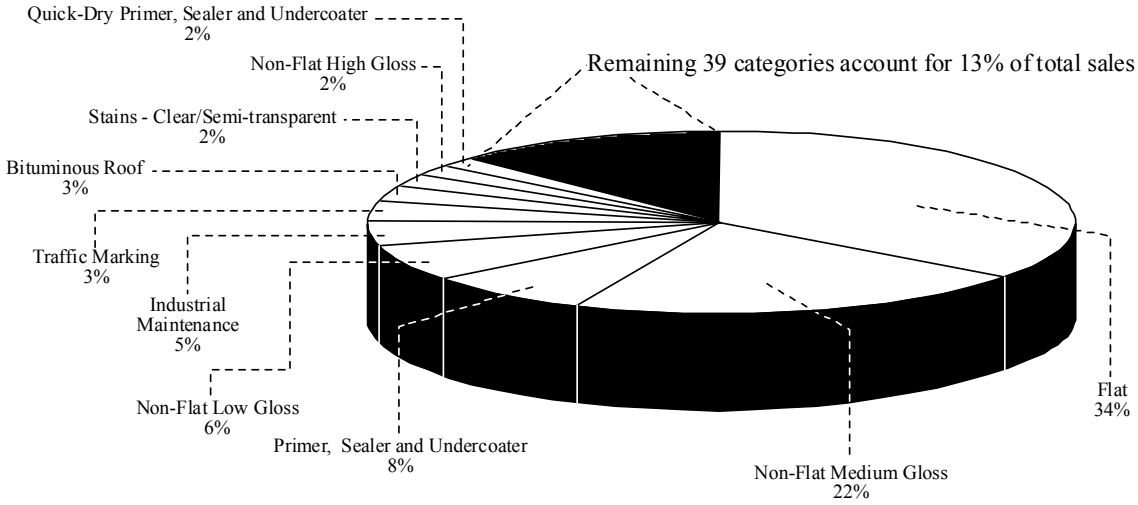


Figure 3-2
Top 10 Sales Categories



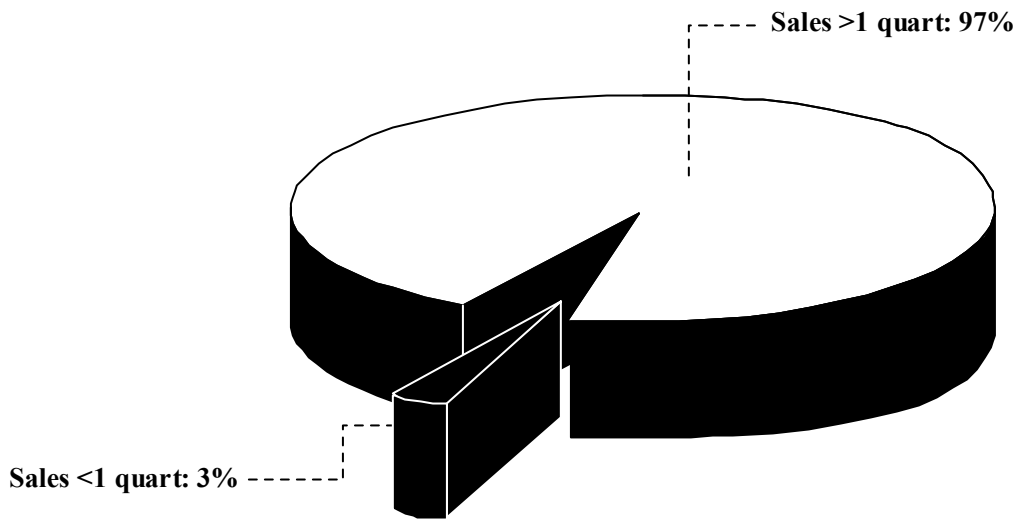
Top 10 categories account for 87% of total sales.

Figure 3-3 illustrates the sales quantities for the following two container sizes:

- Large Containers - Greater than one quart (e.g., 1-gallon or 5-gallon)
- Small Containers - 1 quart or less

The percentage of sales of small containers decreased in 2001 survey, as compared to the 1998 survey.

Figure 3-3
Sales by Container Size



Chapter 4 -- VOC Contents and VOC Distribution Histograms

The 2001 survey collected data on VOC Regulatory and VOC Actual values. The VOC could either be based on formulation data or U. S. EPA Method 24 laboratory results. Most survey respondents relied on formulation data to determine VOC content. A new feature in the 2001 survey involved collection of data for the physical parameters that were used to calculate the VOC values (e.g. weight percent solids, etc.) ARB staff were then able to verify whether the reported parameters were consistent with the calculated VOC content, using the following equations:

$$VOC_{Actual} = \frac{W_{vm} - W_w - W_e}{V_c}$$

(Also known as Material VOC)

$$VOC_{Regulatory} = \frac{W_{vm} - W_w - W_e}{V_c - V_w - V_e}$$

(Also known as Coating VOC)

$$VOC_{Regulatory\ (Low\ Solids)} = \frac{W_{vm} - W_w - W_e}{V_c}$$

Where:

W_{vm} = Total weight of volatile materials (VOC + water + exempt compounds) in the coating, in grams
W_w = Weight of water in the coating, in grams
W_e = Weight of exempt compounds in the coating, in grams
V_c = Total volume of the coating, in liters
V_w = Volume of water in the coating, in liters
V_e = Volume of exempt compounds in the coating, in liters

This chapter contains data on sales-weighted average VOC contents, that were calculated for each category using the following equation:

$$SWA = \frac{((Value_1 \times Sales_1) + (Value_2 \times Sales_2) + (Value_n \times Sales_n))}{(Sales_1 + Sales_2 + Sales_n)}$$

Where:

$Value_{(1,2,...n)}$ = Coating characteristic values (e.g., VOC Actual, VOC Regulatory, etc.) for products 1,2,...n
$Sales_{(1,2,...n)}$ = Sales for products 1,2,...n

This chapter includes the following data summaries:

Table 4-1: *VOC Contents*

Figures 4-1 to 4-49: *VOC Distribution Histograms*

Sales of small containers (one quart or less) were included when calculating the sales-weighted average VOC contents in Table 4-1. In most categories, the VOC contents for water-borne coatings are substantially less than the value for solvent-borne coatings. However, there are some water-borne coatings that have a relatively high VOC value. This is due to the fact that some water-borne coatings can still contain an appreciable amount of organic solvent. It is also a result of the methods that manufacturers used to determine whether a coating was water-borne or solvent-borne. Some manufacturers chose to classify coatings based on the percentage of water in the coating. Other manufacturers classified coatings based on whether the coating equipment was cleaned with water or an organic solvent. If a coating contained a relatively large amount of organic solvent, but it could be cleaned with water, it could be classified as water-borne and the VOC value could seem to be higher than expected for a typical water-borne coating.

It should be noted that the "Other" category consists primarily of driveway sealers that have zero grams/liter of VOCs; therefore, the sales-weighted average for the entire "Other" category is very low.

Table 4-1: *VOC Contents*

	SWA VOC Regulatory (g/l)			SWA VOC Actual (g/l)		SWA VOC Regulatory (g/l)		
Coating Category	**All**	**SB**	**WB**	**SB**	**WB**	**Int**	**Ext**	**Dual**
Antenna	433	452	280	452	136	NA	433	NA
Antifouling	NA	NA	NA	NA	NA	NA	NA	NA
Bituminous Roof	120	240	2	234	1	NA	120	NA
Bituminous Roof Primer	211	391	85	391	46	NA	224	0
Bond Breakers	244	NA	244	NA	64	NA	238	344
Clear Brushing Lacquer	667	667	NA	667	NA	667	NA	NA
Concrete Curing Compounds	145	350	135	221	38	631	217	119
Dry Fog	248	346	151	307	92	246	86	369
Faux Finishing	261	404	255	404	96	261	NA	NA
Fire Resistive	45	NA	45	NA	24	NA	NA	45
Fire Retardant - Clear	4	NA	4	NA	2	0	6	3
Fire Retardant - Opaque	94	257	80	257	33	79	123	460
Flat	98	367	98	364	40	102	93	98
Floor	101	139	96	138	44	36	167	120
Flow	412	NA	412	NA	233	NA	412	NA
Form Release Compounds	213	238	41	237	14	NA	237	203
Graphic Arts	274	413	125	413	53	450	287	259
High Temperature	401	401	261	383	120	652	469	394
Industrial Maintenance	301	319	180	318	90	337	306	296
Lacquers	555	622	270	561	116	532	629	281
Low Solids	59	NA	59	NA	59	13	60	NA
Magnesite Cement	443	443	NA	307	NA	NA	443	NA
Mastic Texture	133	229	85	189	47	61	140	26
Metallic Pigmented	409	469	134	469	51	399	410	377
Multi-Color	227	526	224	323	83	227	NA	NA

Table 4-1: *VOC Contents*

	SWA VOC Regulatory (g/l)			SWA VOC Actual (g/l)		SWA VOC Regulatory (g/l)		
Coating Category	**All**	**SB**	**WB**	**SB**	**WB**	**Int**	**Ext**	**Dual**
Nonflat - High Gloss	243	339	202	337	90	251	233	238
Nonflat - Low Gloss	129	291	127	290	53	132	115	136
Nonflat - Medium Gloss	180	329	176	327	69	184	179	169
Other	1	117	0	115	0	226	0	58
Pre-Treatment Wash Primer	252	486	238	489	94	71	707	277
Primer, Sealer, and Undercoater	154	341	117	332	43	142	180	152
Quick Dry Enamel	358	361	234	356	109	380	399	342
Quick Dry Primer, Sealer, and Undercoater	364	434	146	433	58	439	322	319
Recycled	204	NA	204	NA	89	NA	283	181
Roof	68	211	56	209	30	NA	67	108
Rust Preventative	339	381	177	379	57	NA	347	338
Sanding Sealers	471	557	245	556	79	474	NA	362
Shellacs - Clear	600	600	NA	572	NA	600	NA	NA
Shellacs - Opaque	538	538	NA	504	NA	538	NA	NA
Specialty Primer, Sealer, and Undercoater	120	400	103	400	52	223	337	111
Stains - Clear/Semitransparent	349	387	215	387	73	454	327	308
Stains - Opaque	180	331	141	330	52	454	178	220
Swimming Pool	274	321	215	321	91	NA	196	281
Swimming Pool Repair and Maintenance	573	573	NA	571	NA	NA	578	572
Temperature Indicator Safety	NA	NA	NA	NA	NA	NA	NA	NA
Traffic Marking	116	103	120	82	79	97	64	141
Varnishes - Clear	375	432	266	431	119	407	356	327
Varnishes - Semitransparent	431	439	270	439	100	431	447	396
Waterproofing Concrete/Masonry Sealers	209	428	107	400	50	137	92	322
Waterproofing Sealers	251	334	184	318	41	567	269	209
Wood Preservatives	345	356	164	356	42	NA	345	NA

SB = Solvent-borne
WB = Water-borne
Int = Interior Exposure
Ext = Exterior Exposure
Dual = Interior and Exterior Exposure
NA = Not applicable. No coatings were reported in this category.
Sales of small containers (one quart or less) were included when calculating the sales-weighted average VOC contents.

Notes on specific coating categories:

Floor: We compared the reported VOC values to the calculated values that were based on formulation data for the coating (e.g., weight percent volatiles, volume percent solids, etc.) For the "Floor" category, there was a discrepancy in the overall sales-weighted averages for reported VOC and calculated VOC. This is due to the fact that a significant volume of the coatings that were sold in this category were multi-components that had reported VOC values that were based on Method 24 lab tests, rather than formulation data. For some multi-component coatings, Method 24 results can vary significantly from

formulation data. In addition, some multi-component Floor coatings may have the correct reported VOC (as-mixed), but the calculated VOC, based on formulation data for a particular component, does not correspond to the as-mixed VOC. The VOC values noted for Floor are the reported values.

The sales-weighted average VOC Regulatory value for solvent-borne Floor coatings is only slightly higher than the value for water-borne Floor coatings. The VOC value for solvent-borne coatings is not much higher than that for water-borne coatings, because the highest sales volumes for solvent-borne Floor coatings correspond to low-VOC epoxy formulations.

Flow: The sales-weighted average VOC Regulatory value for water-borne Flow coatings seems high. There is only one coating product in this category and the volatile portion of the coating contains more than 50% water, which justifies its classification as a water-borne coating. However, the coating also contains a significant percentage of organic solvent, which is the reason for the high VOC Regulatory value.

Traffic Marking: The sales-weighted average VOC Regulatory value for solvent-borne coatings is slightly lower than the value for water-borne coatings. The solvent-borne group includes coatings that contain 100% solids and have zero VOC values. Three of the top 5 sales volumes for solvent-borne Traffic coatings are for 100% solids products. Therefore, the VOC Regulatory value for solvent-borne coatings is low.

Sales have also been summarized based on their VOC content, in 50-gram/liter increments, to illustrate which VOC ranges have the highest sales volumes. Figures 4-4 through 4-52 contain charts of the sales (including small containers) for each category in 50-gram/liter increments. To protect the confidentiality of the data, we used the "Three Company Rule" when determining whether to display data in a given range. In those cases where fewer than three companies had sales in a given VOC range, data are not displayed.

Figures 4-1 to 4-49

VOC Distribution Histograms

Figure 4-1
Antenna

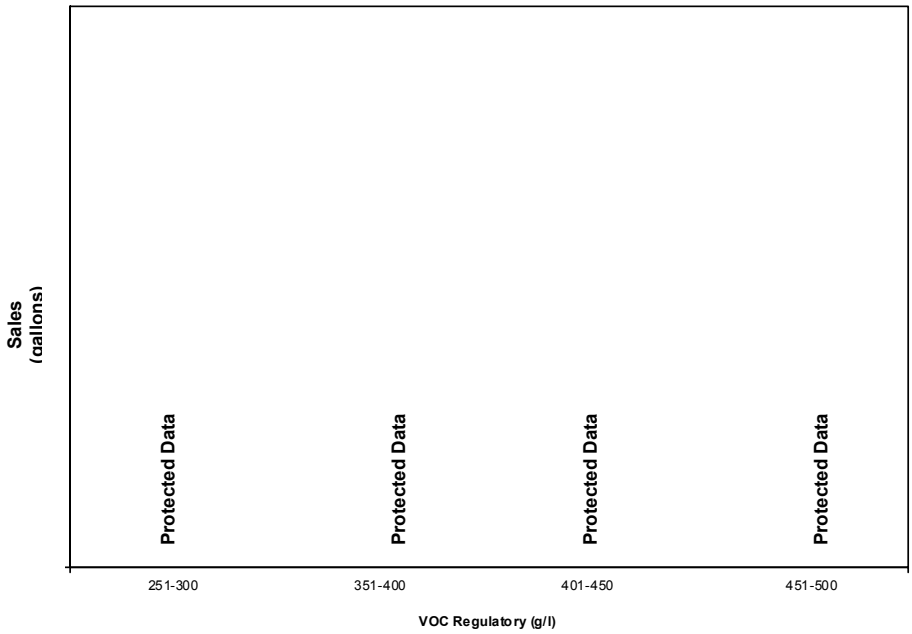


Figure 4-2
Bituminous Roof

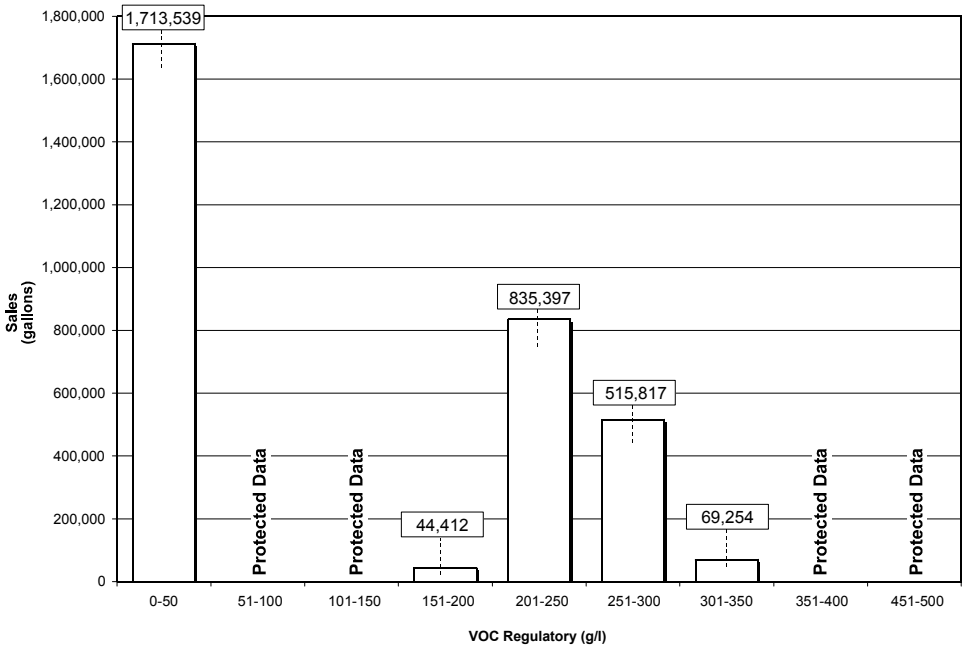
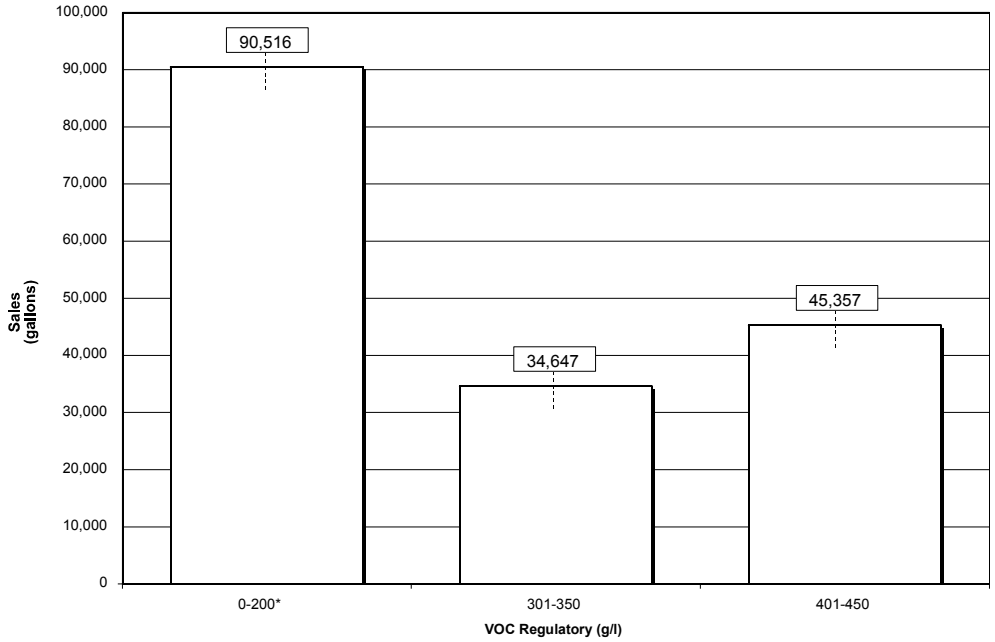


Figure 4-3
Bituminous Roof Primer



*This volume range was extended to allow for the display of this chart that would have not been included otherwise under the "Three Company Rule".

Figure 4-4
Bond Breakers

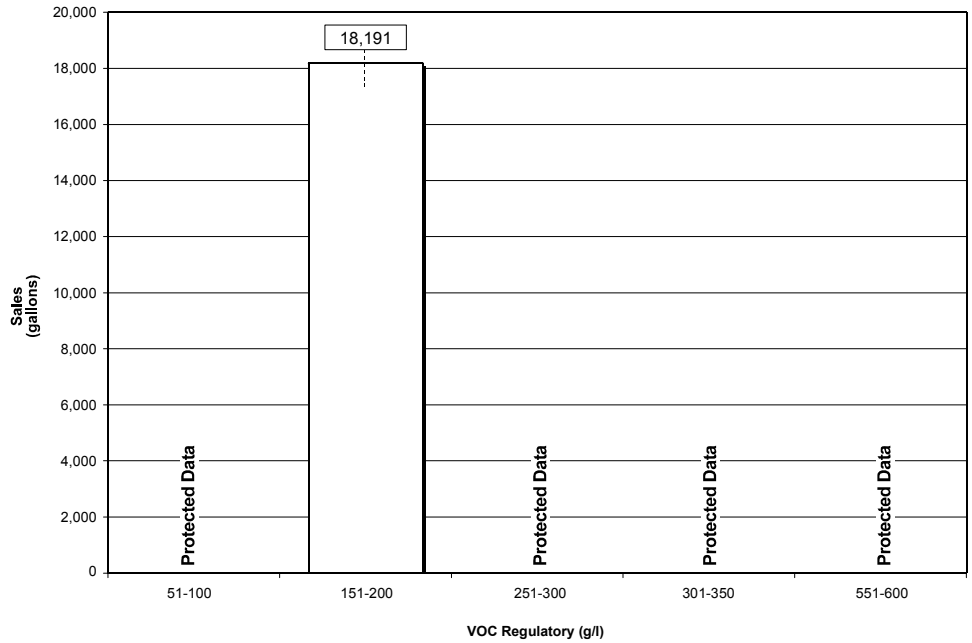


Figure 4-5
Clear Brushing Lacquer

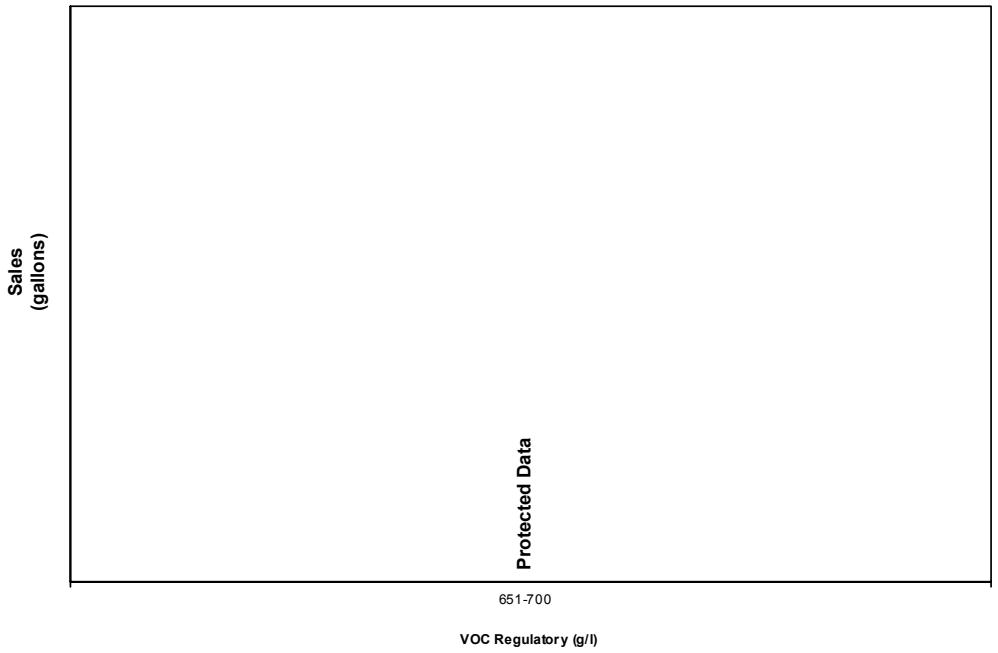


Figure 4-6
Concrete Curing Compounds

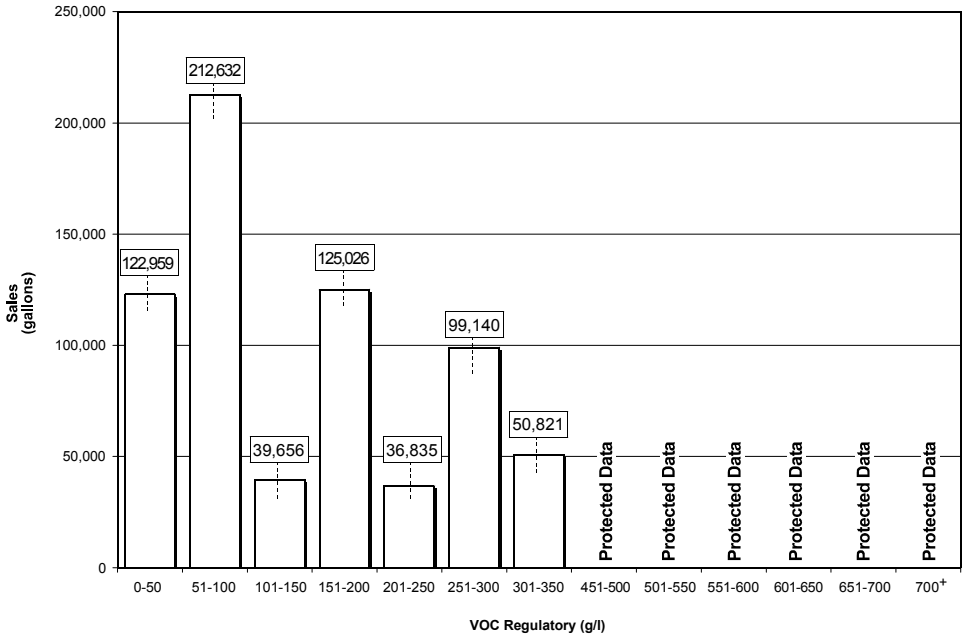


Figure 4-7:
Dry Fog

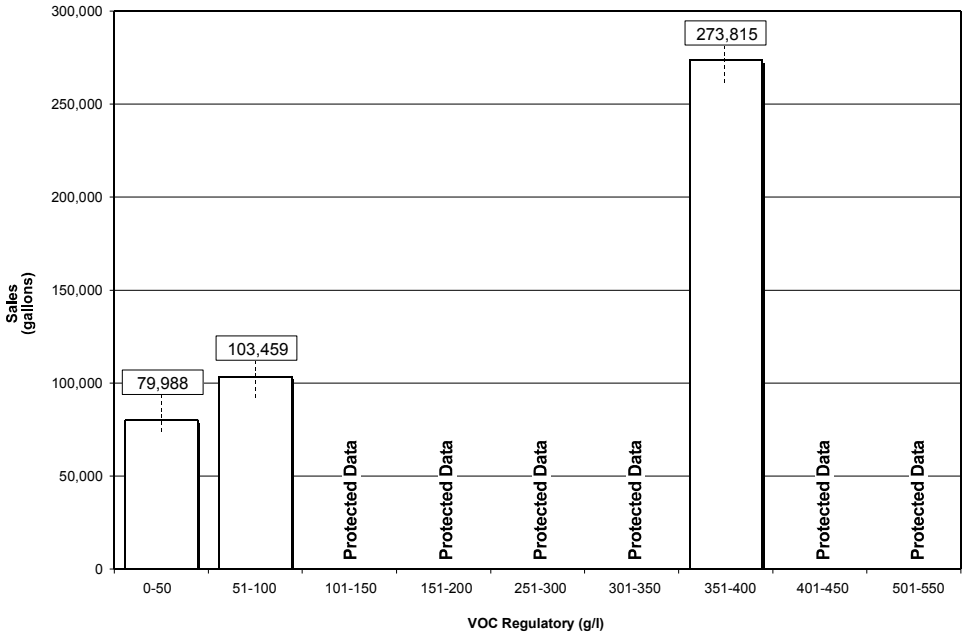


Figure 4-8
Faux Finishing

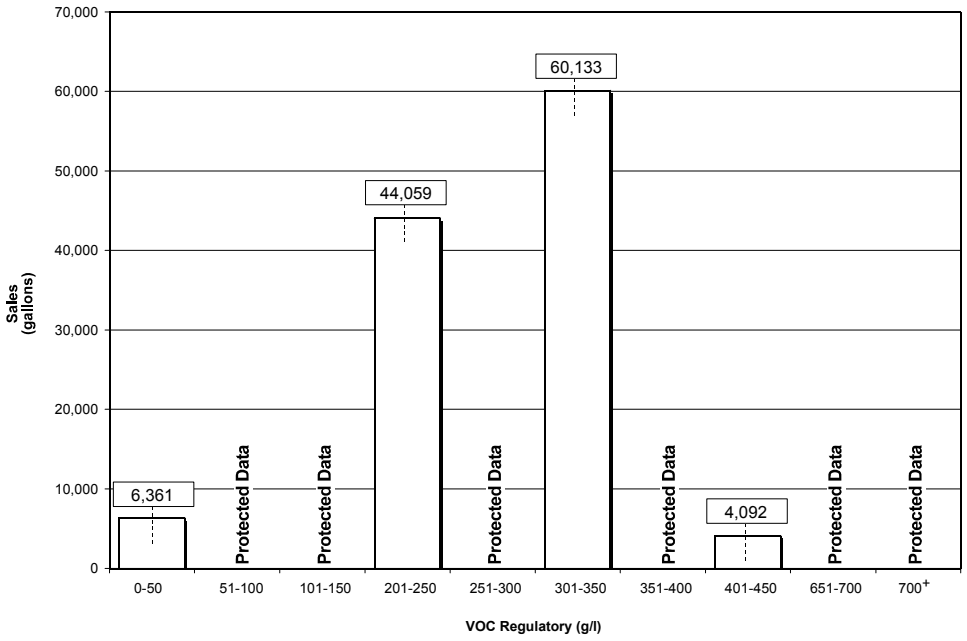


Figure 4-9:
Fire Resistive

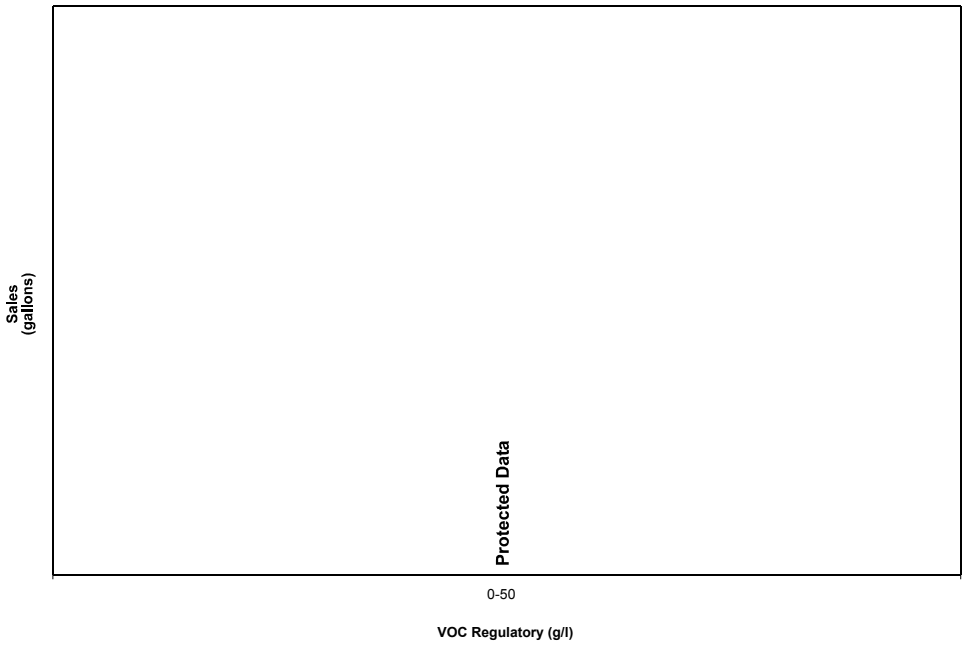


Figure 4-10
Fire Retardant – Clear

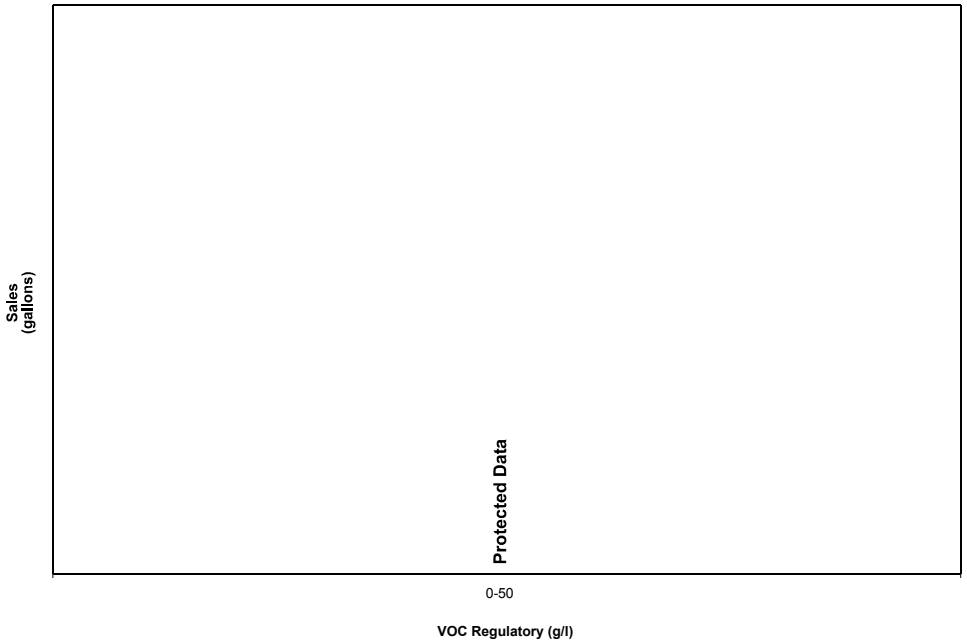


Figure 4-11:
Fire Retardant – Opaque

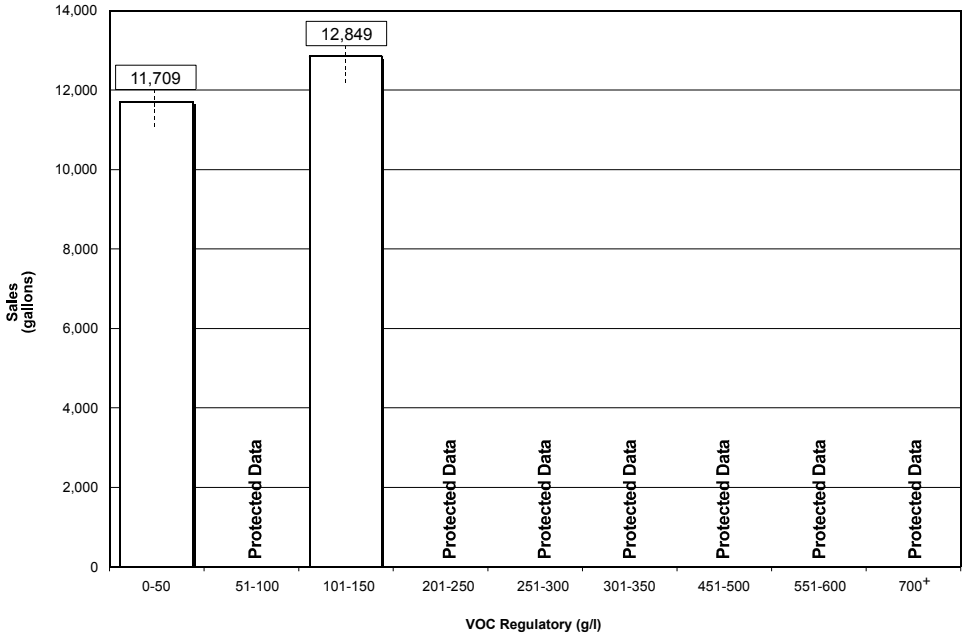


Figure 4-12
Flat

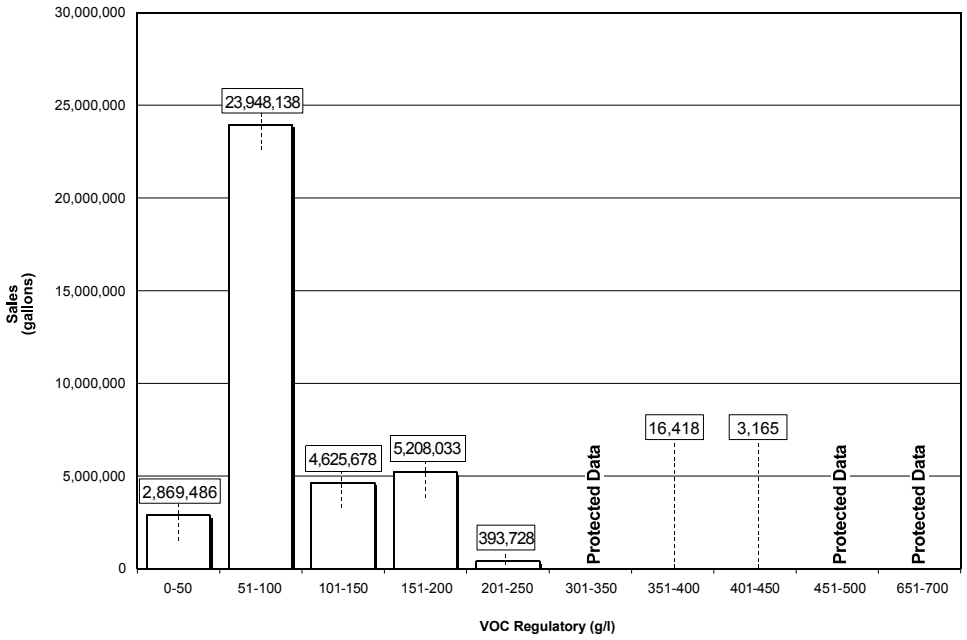


Figure 4-13
Floor

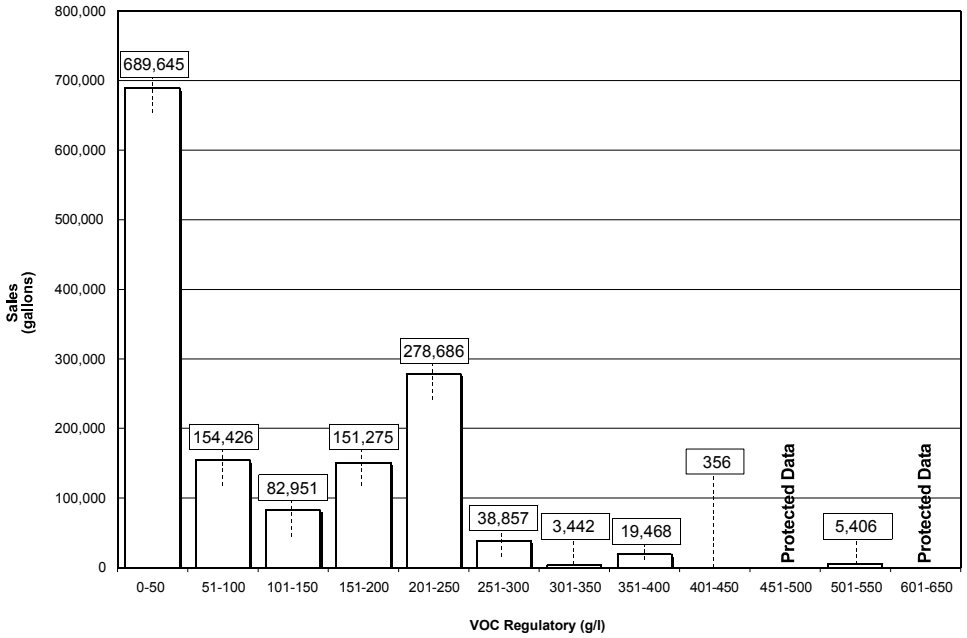


Figure 4-14
Flow

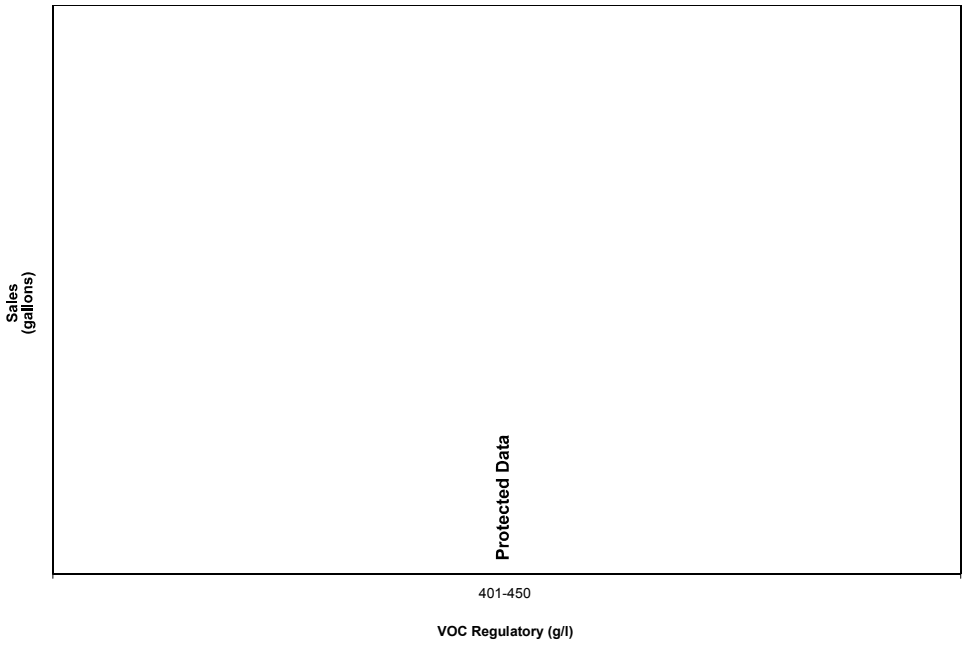


Figure 4-15
Form Release Compounds

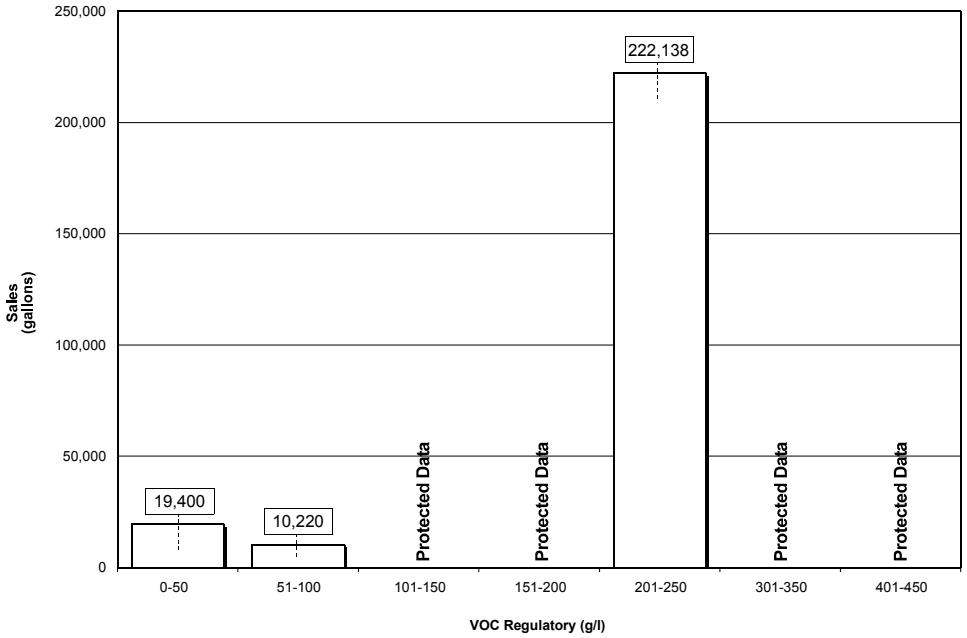


Figure 4-16
Graphic Arts

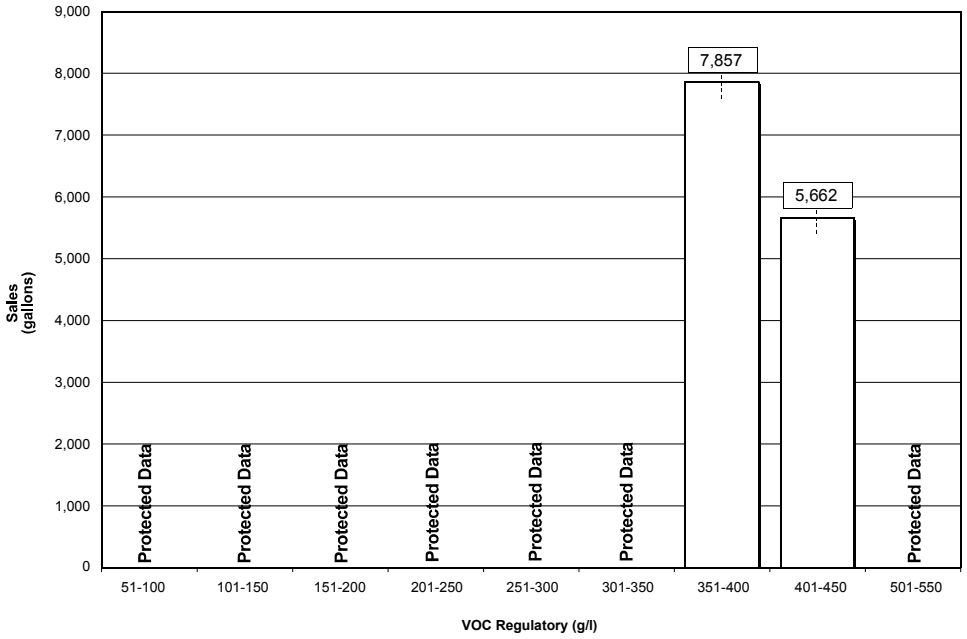


Figure 4-17
High Temperature

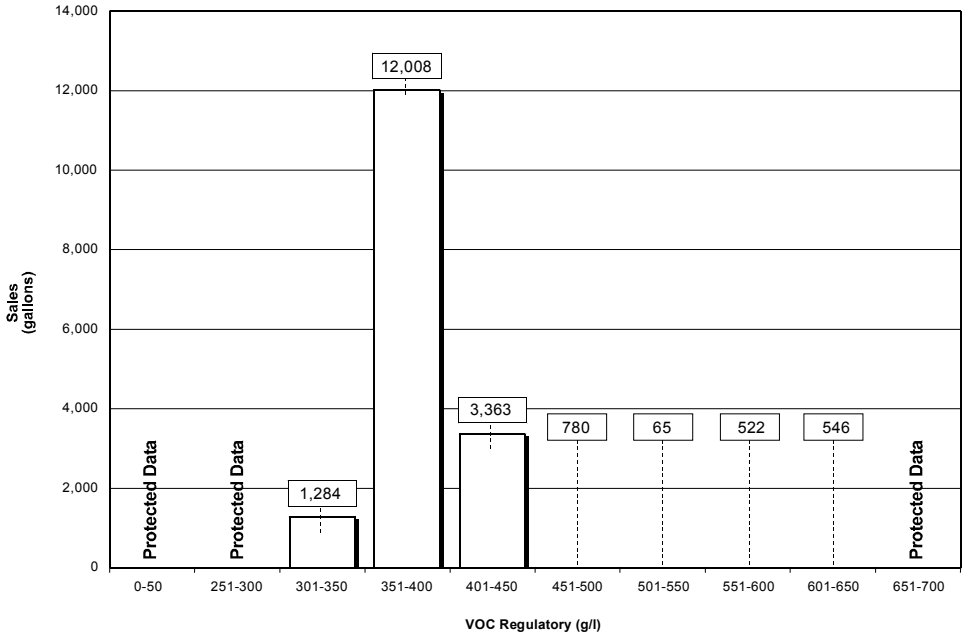


Figure 4-18
Industrial Maintenance

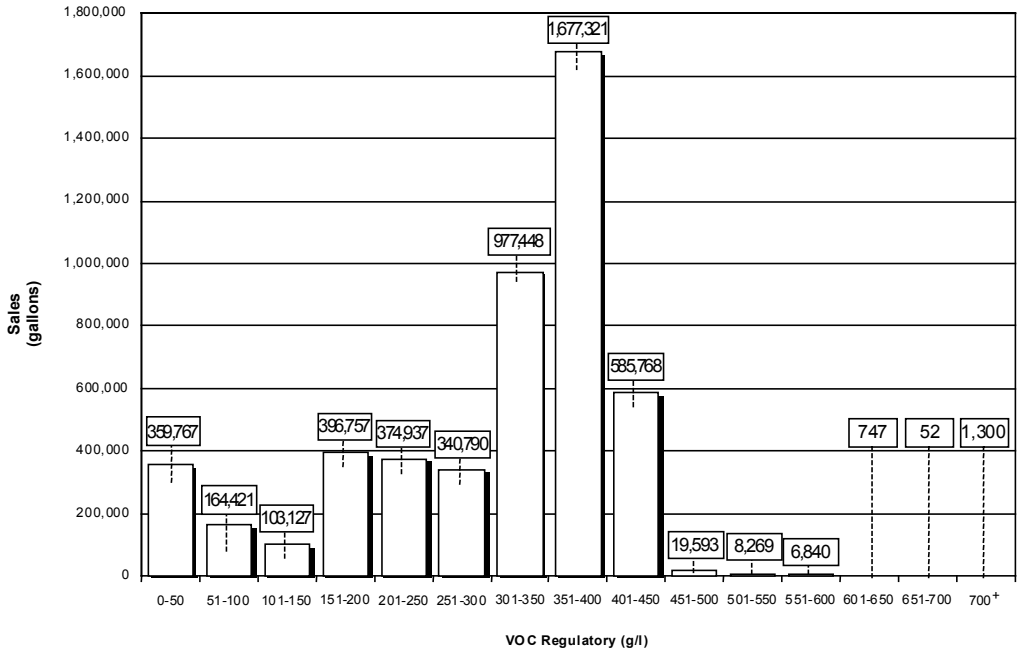


Figure 4-19
Lacquers

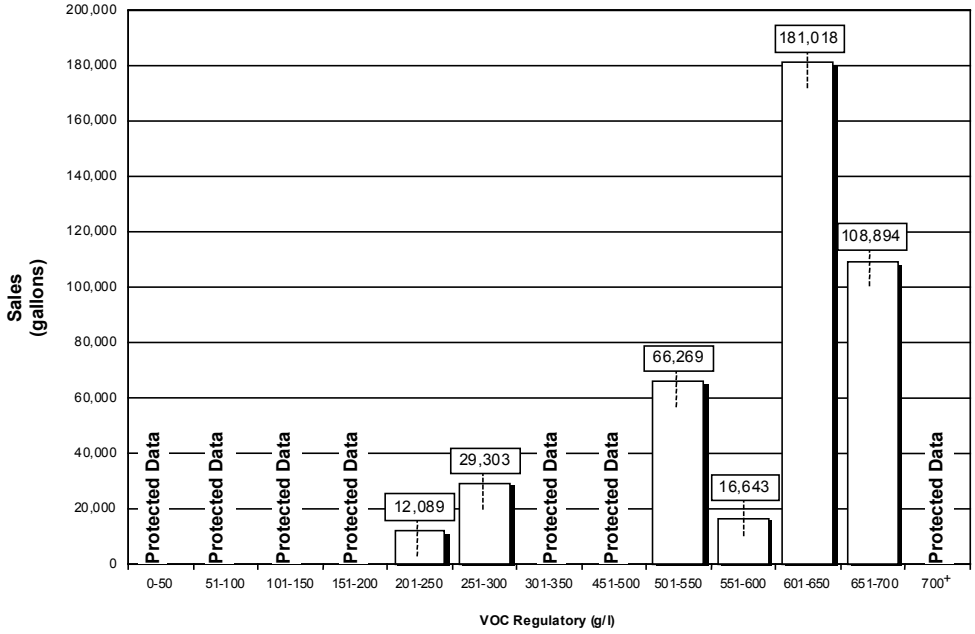


Figure 4-20
Low Solids

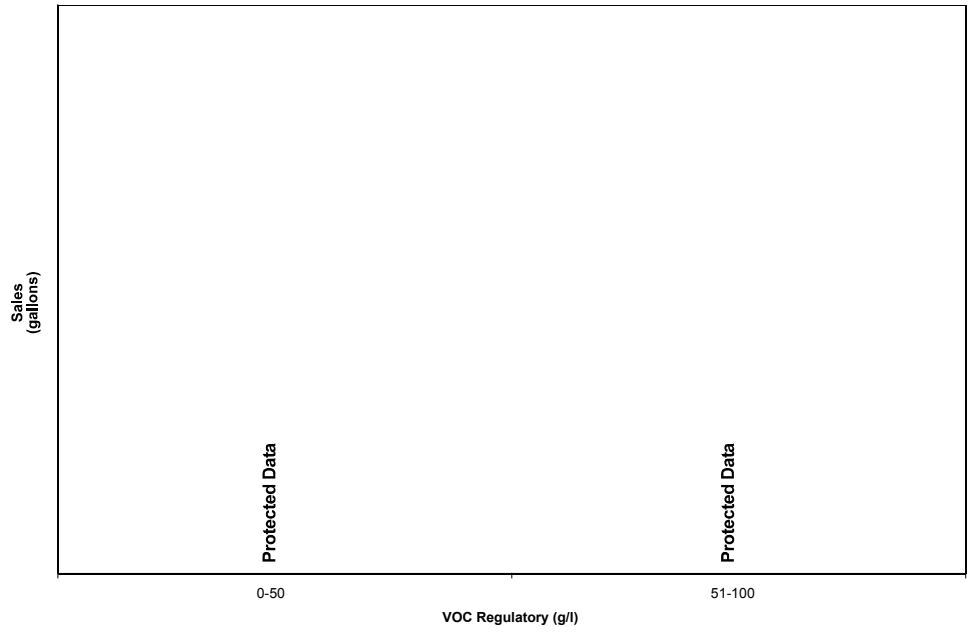


Figure 4-21
Magnesite Cement

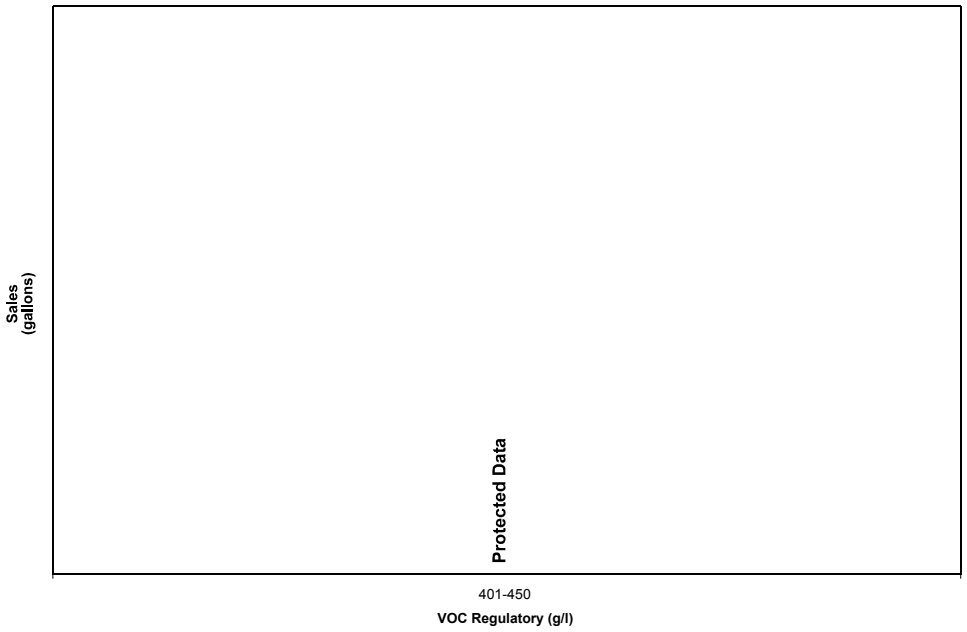


Figure 4-22
Mastic Texture

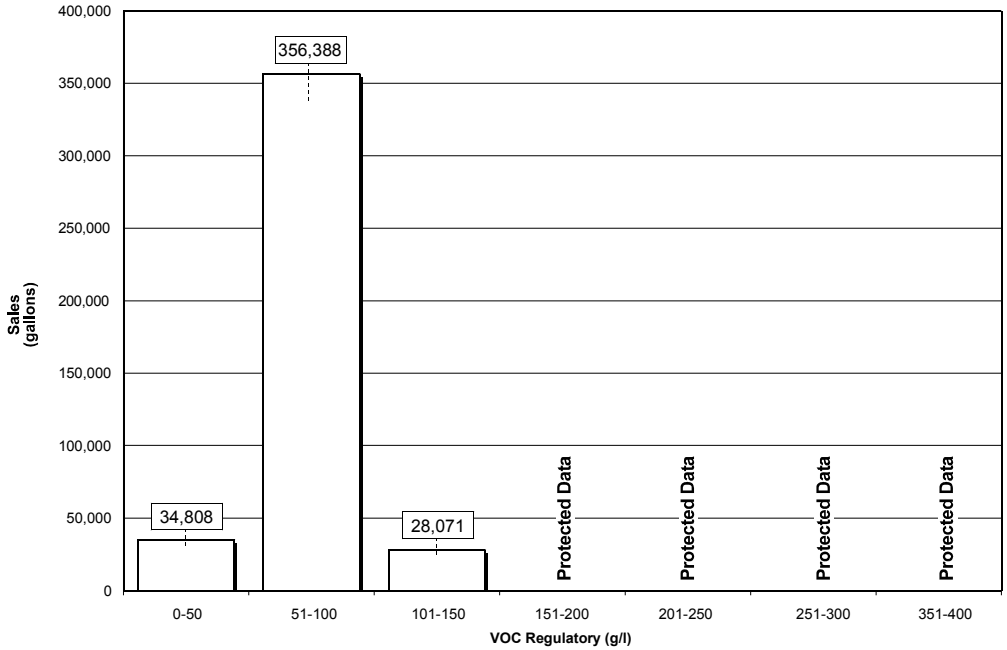


Figure 4-23
Metallic Pigmented

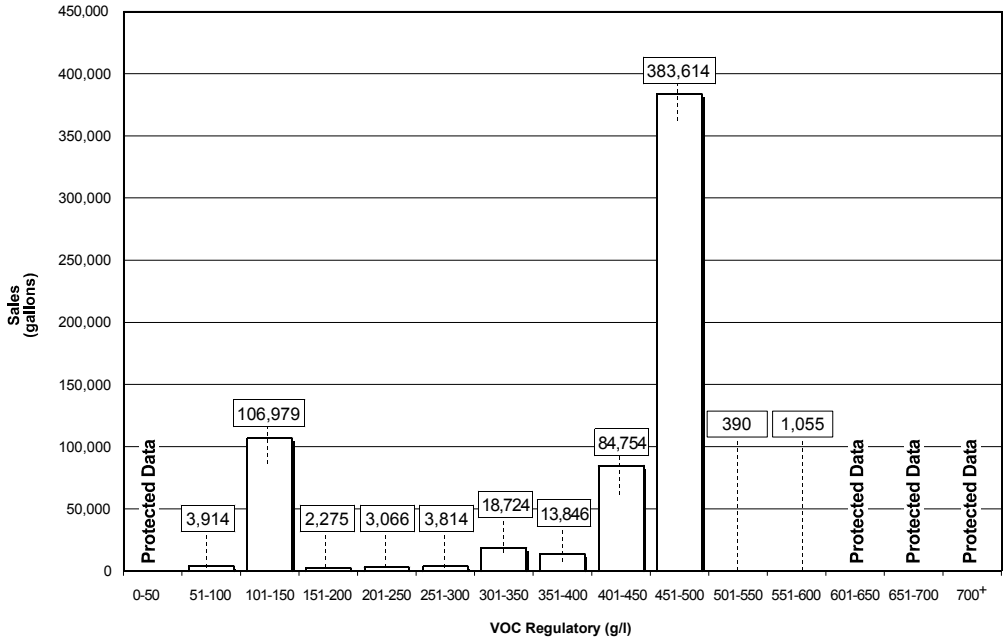


Figure 4-24
Multi-Color

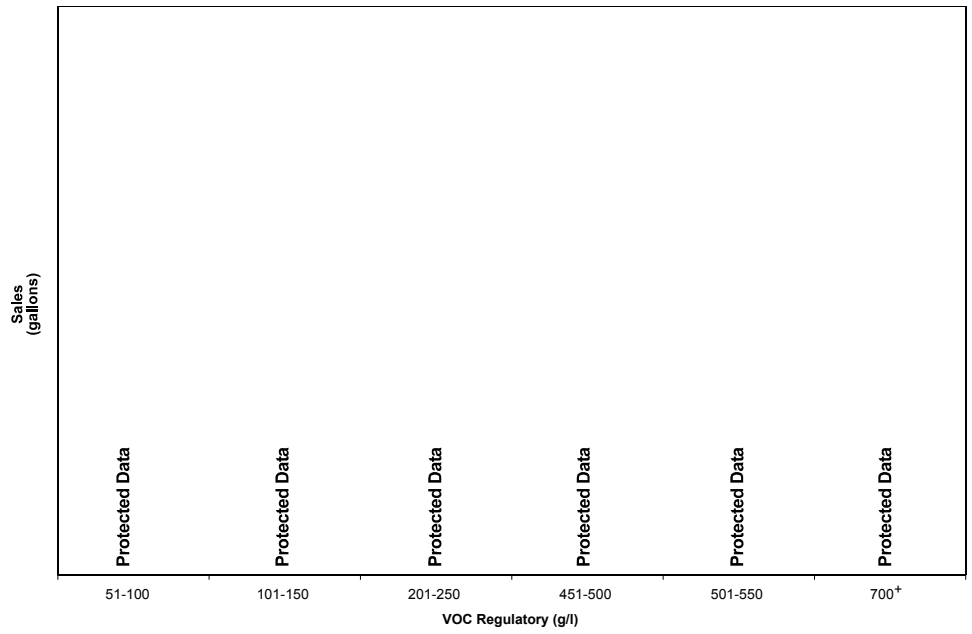


Figure 4-25
Nonflat – High Gloss

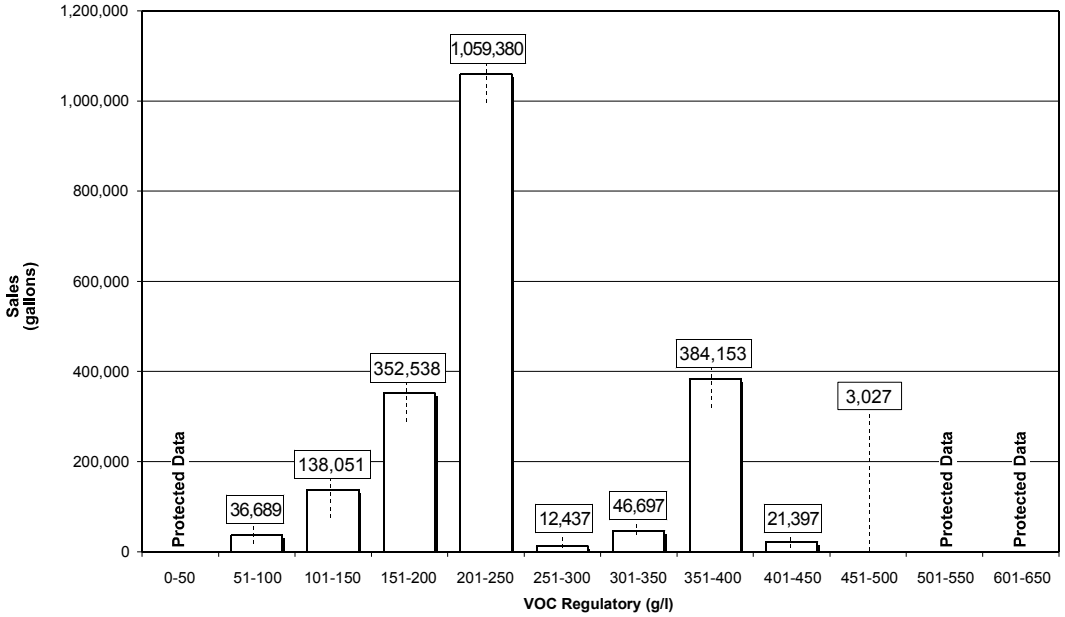


Figure 4-26
Nonflat – Low Gloss

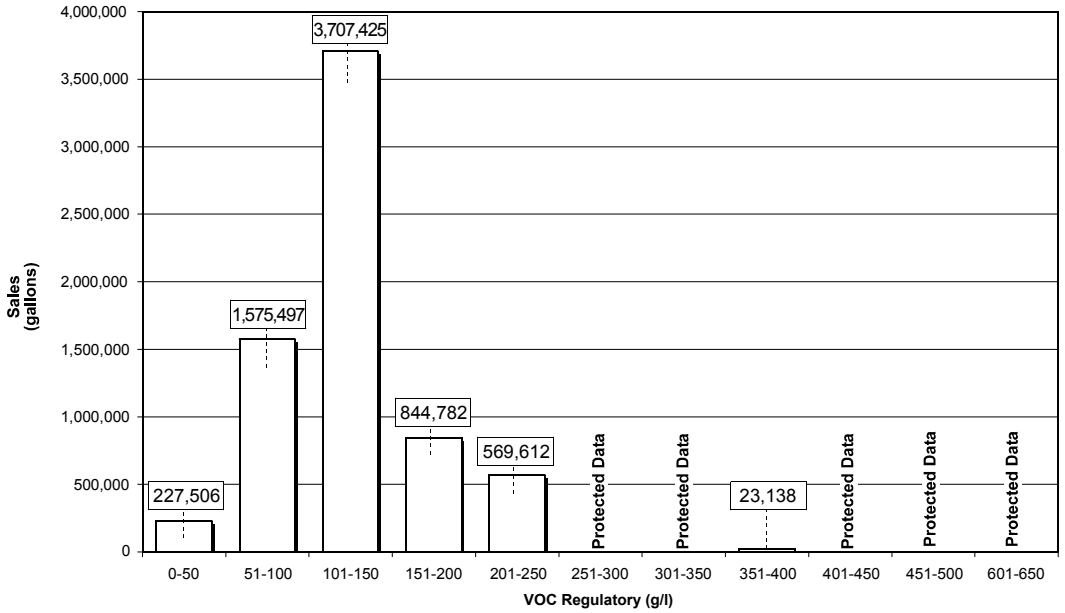


Figure 4-27
Nonflat – Medium Gloss

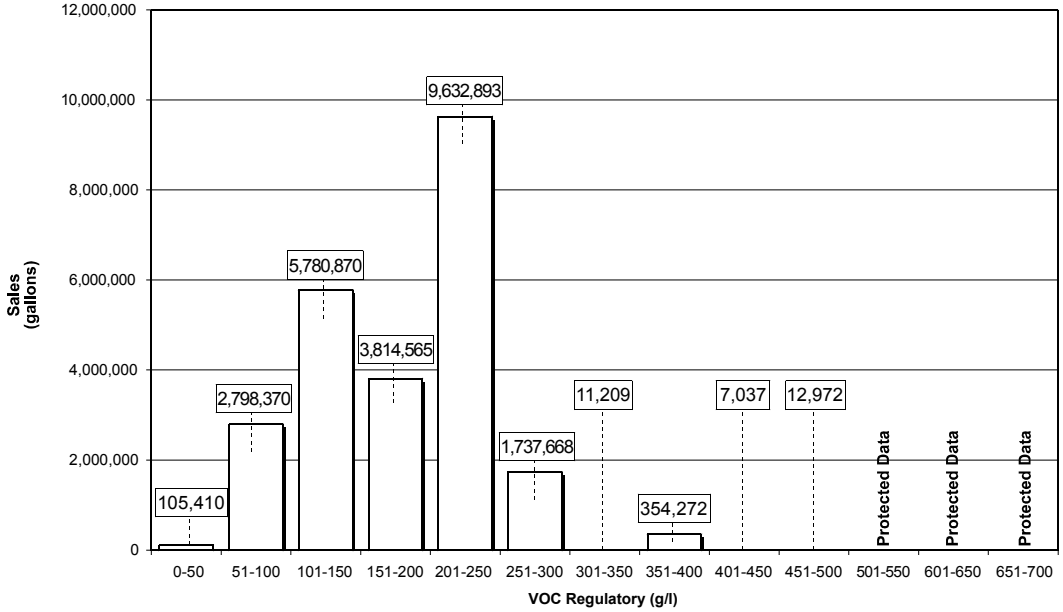


Figure 4-28
Other

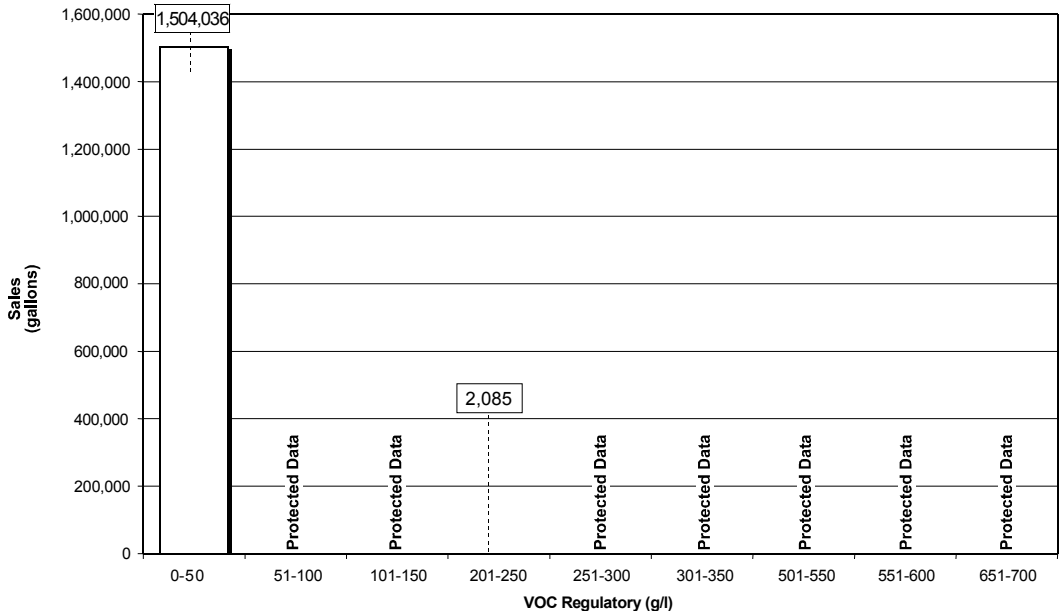


Figure 4-29
Pre-Treatment Wash Primer

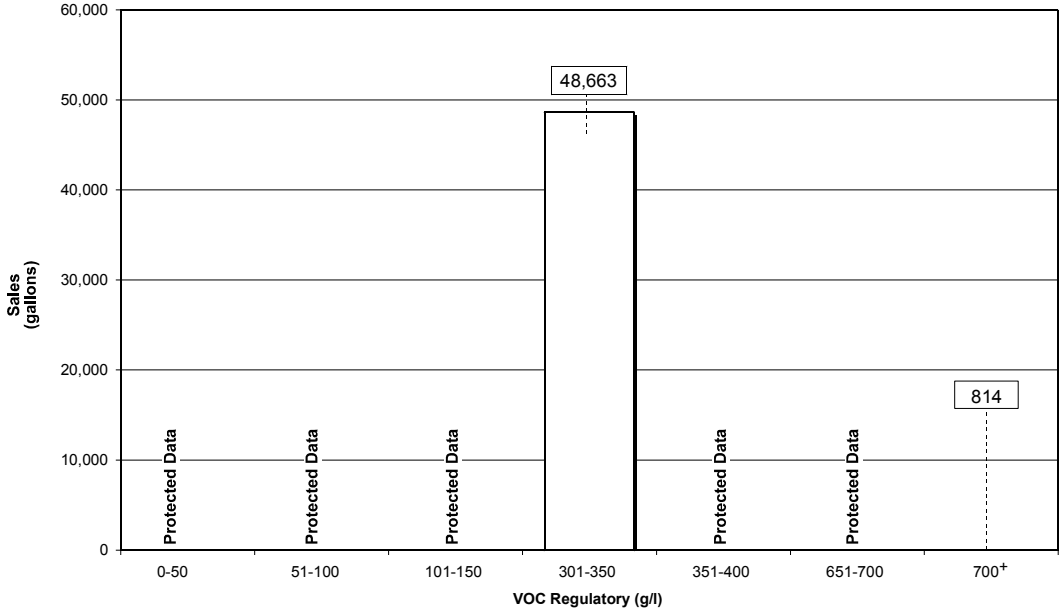


Figure 4-30
Primer, Sealer and Undercoater

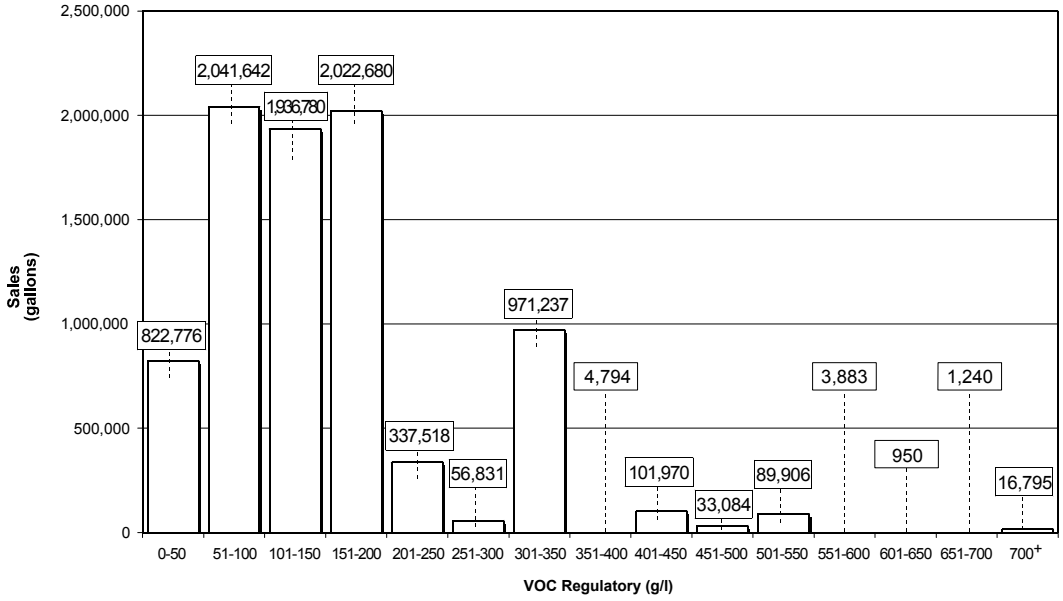


Figure 4-31
Quick Dry Enamel

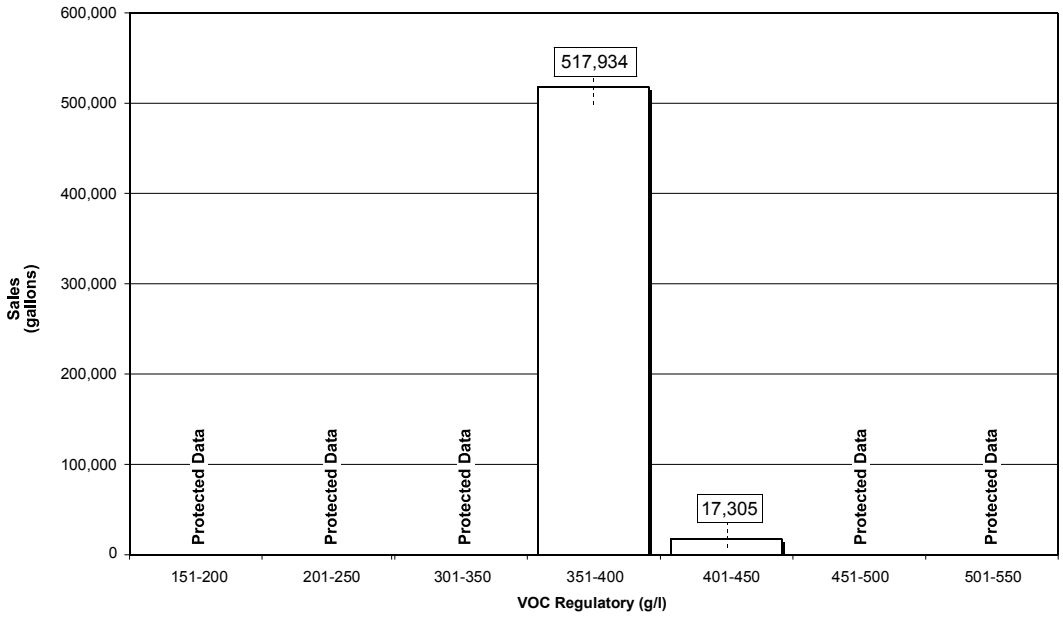


Figure 4-32
Quick Dry Primer, Sealer and Undercoater

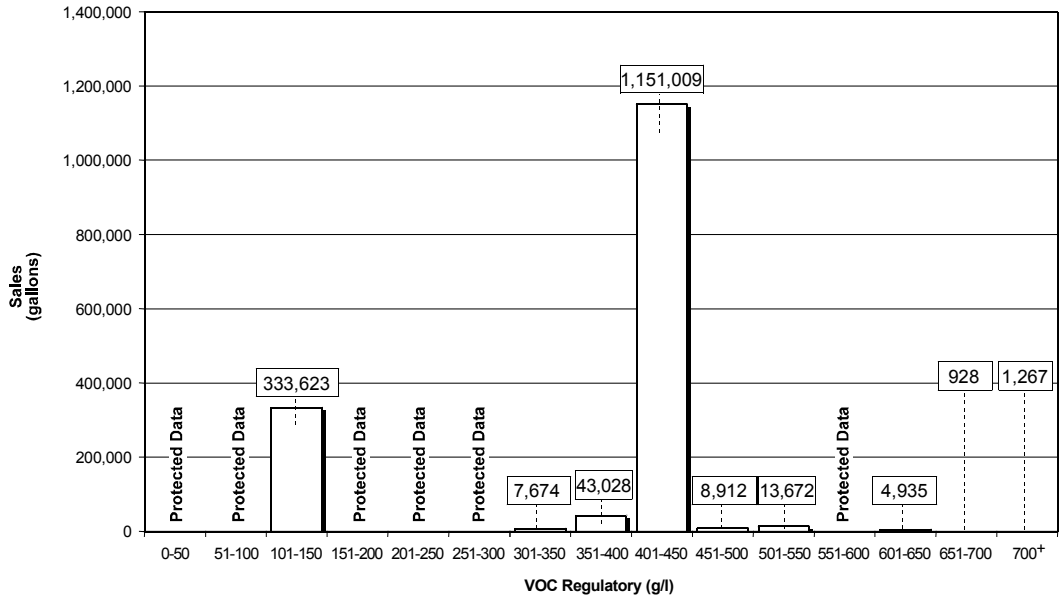


Figure 4-33
Recycled

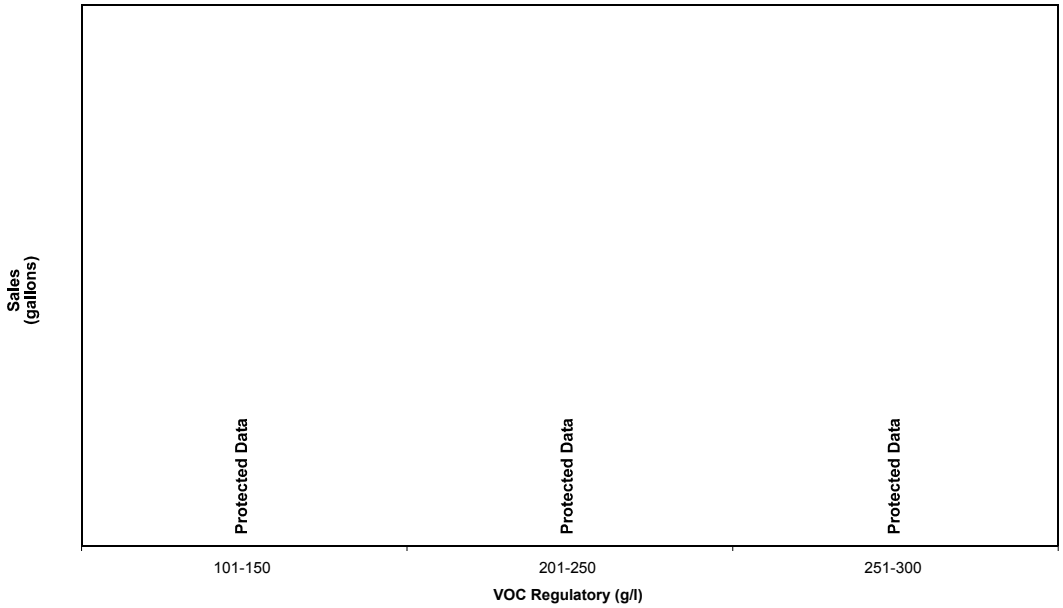


Figure 4-34
Roof

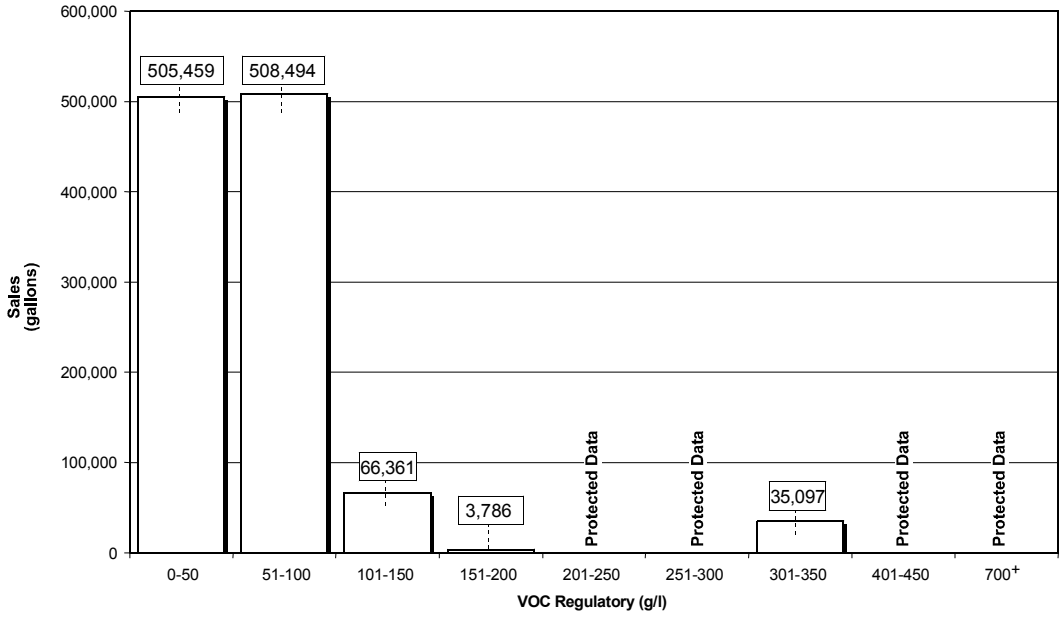


Figure 4-35
Rust Preventative

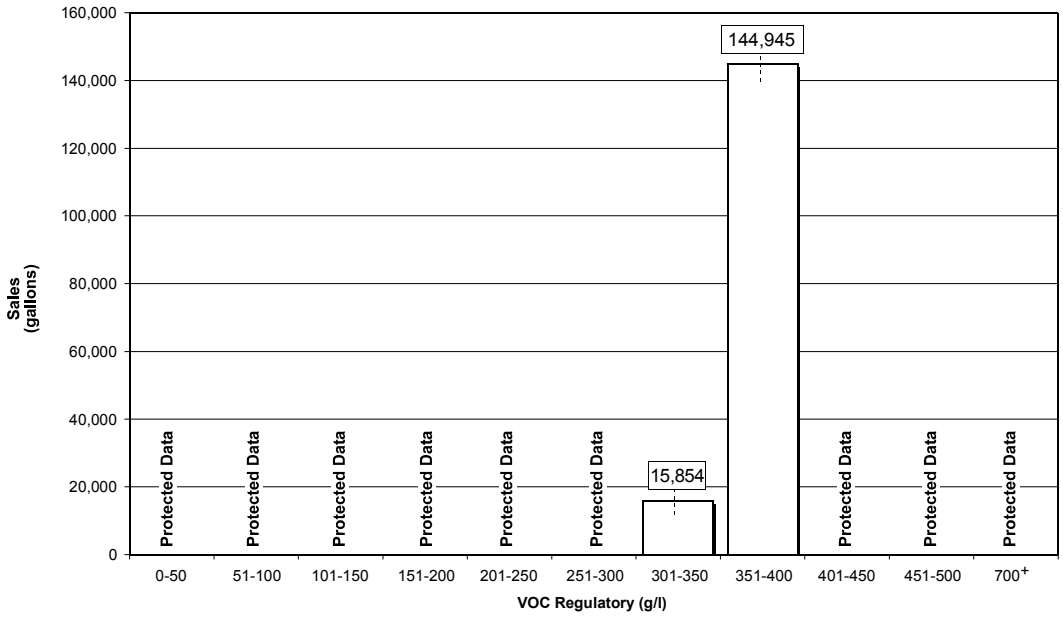


Figure 4-36
Sanding Sealers

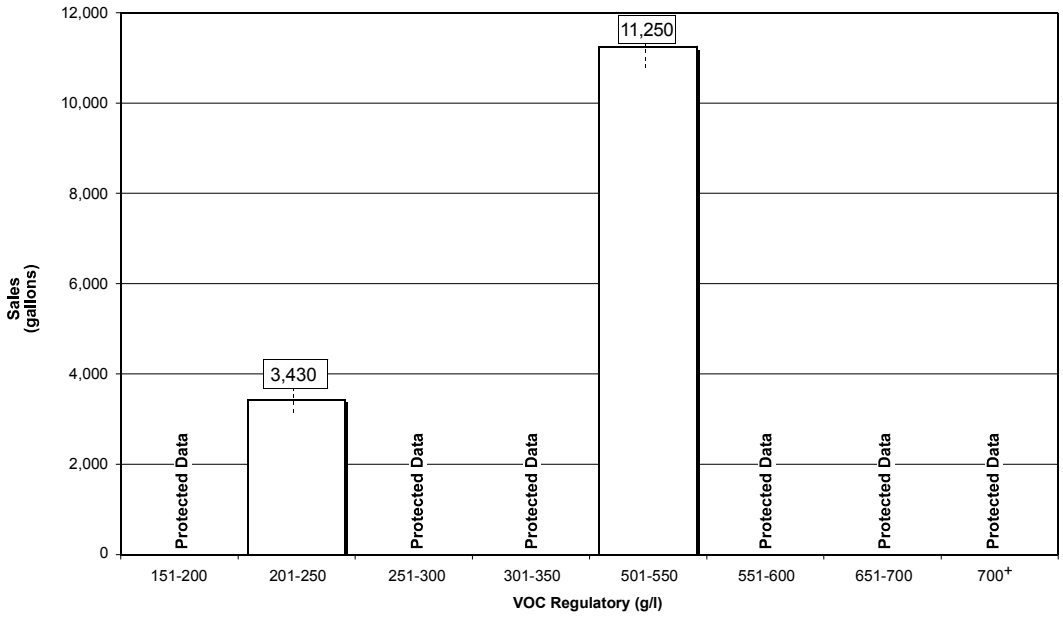


Figure 4-37
Shellacs – Clear

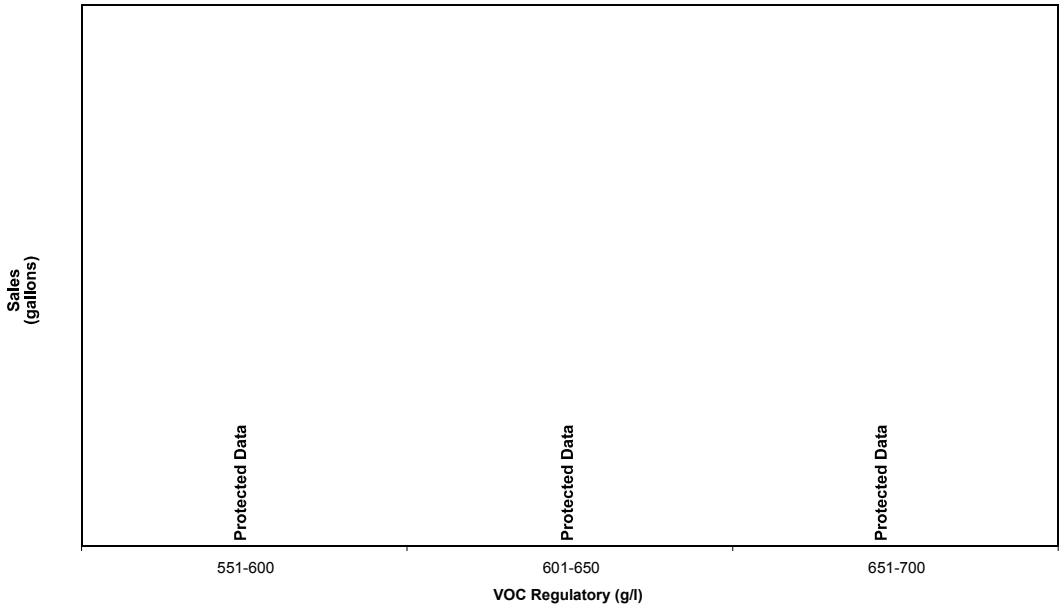


Figure 4-38
Shellacs – Opaque

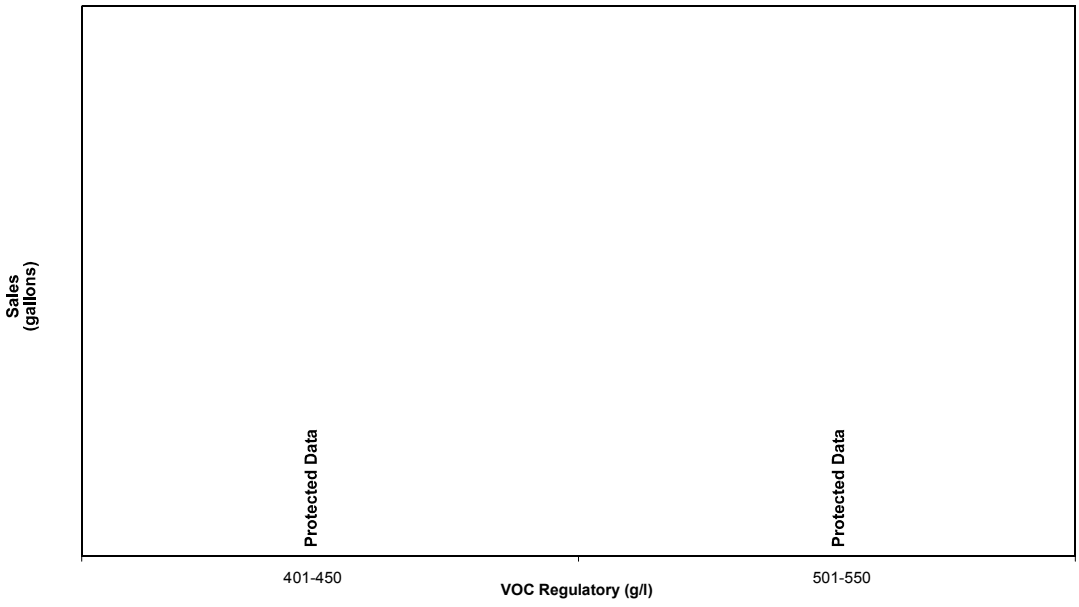


Figure 4-39
Specialty Primer, Sealer and Undercoater

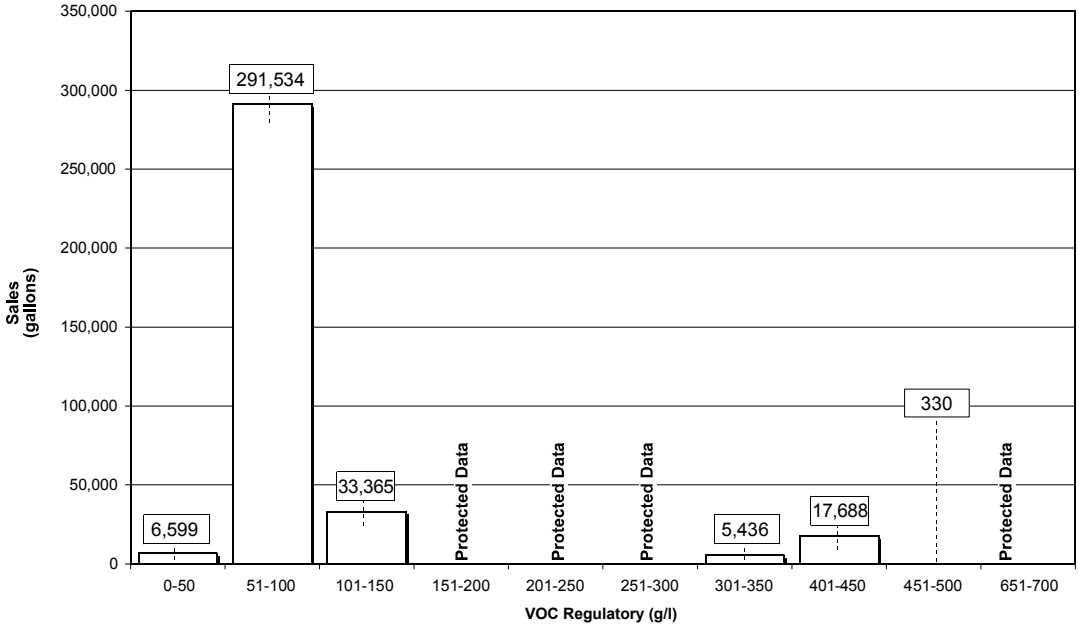


Figure 4-40
Stains – Clear/Semitransparent

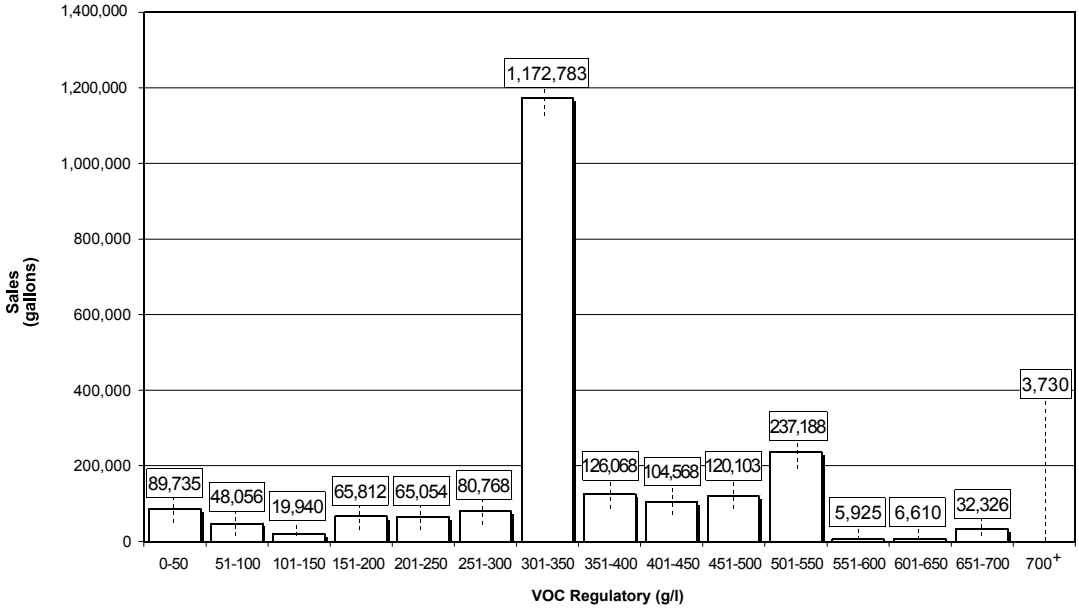


Figure 4-41
Stains – Opaque

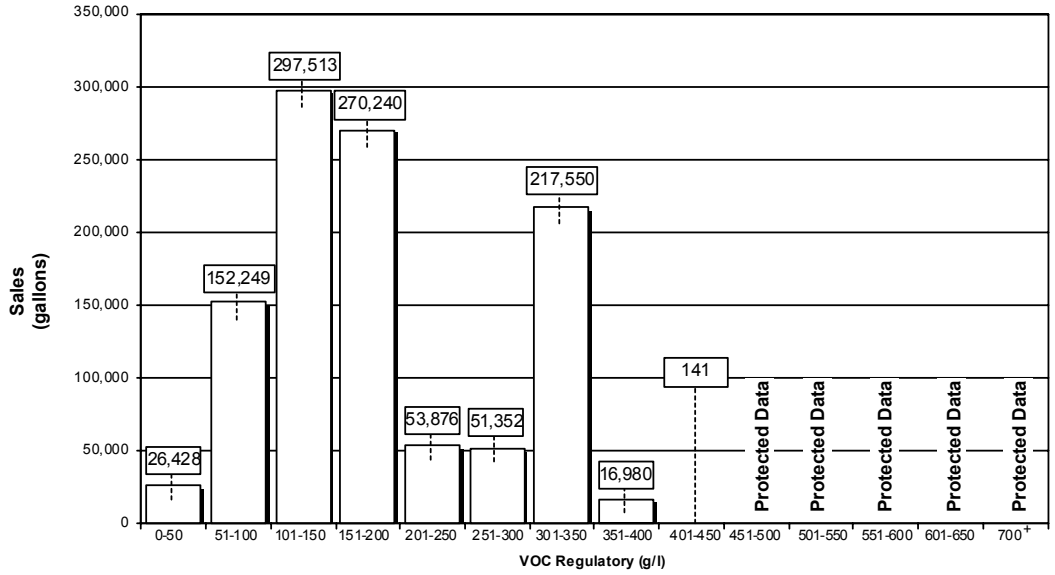


Figure 4-42
Swimming Pool

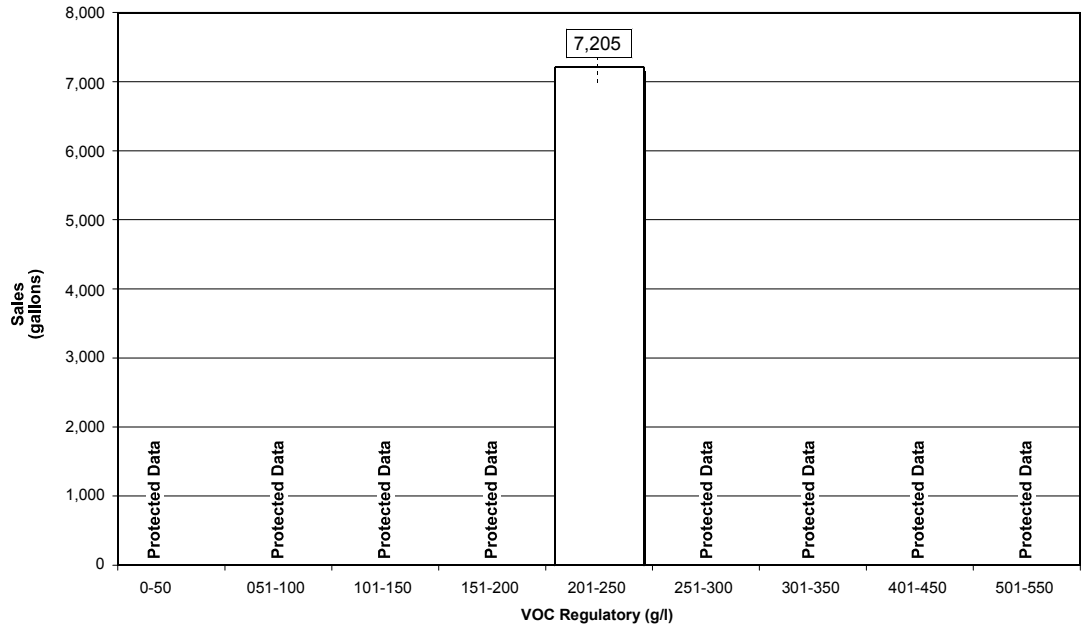


Figure 4-43
Swimming Pool Repair and Maintenance

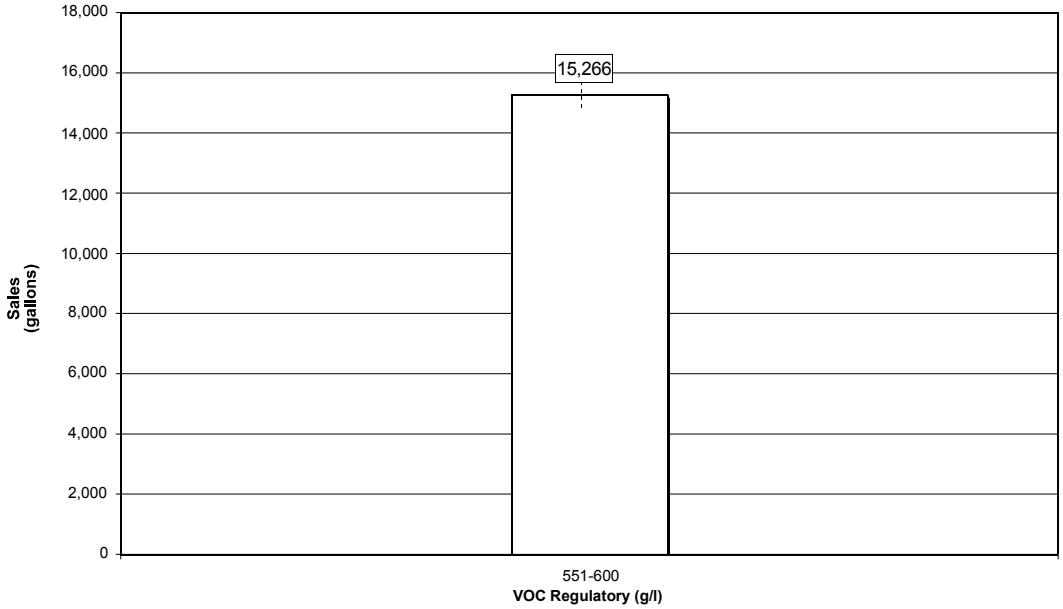


Figure 4-44
Traffic Marking

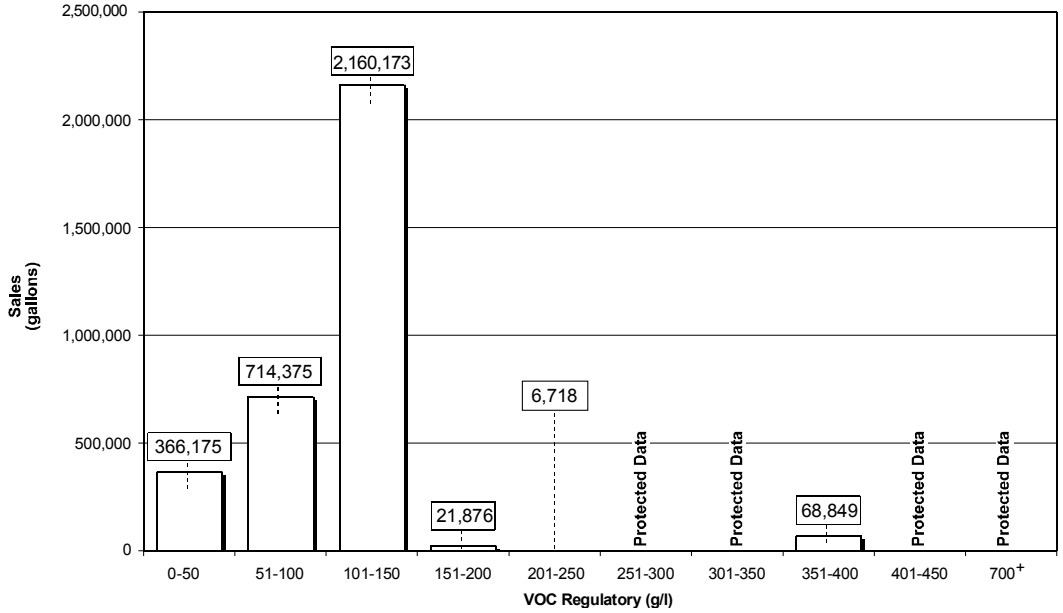


Figure 4-45
Varnishes – Clear

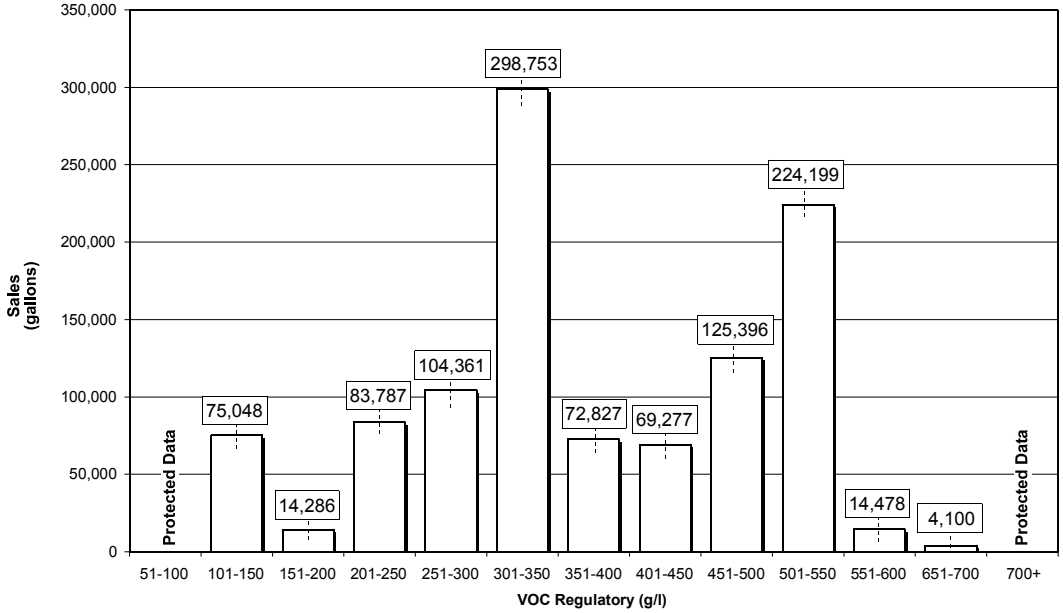


Figure 4-46
Varnishes – Semitransparent

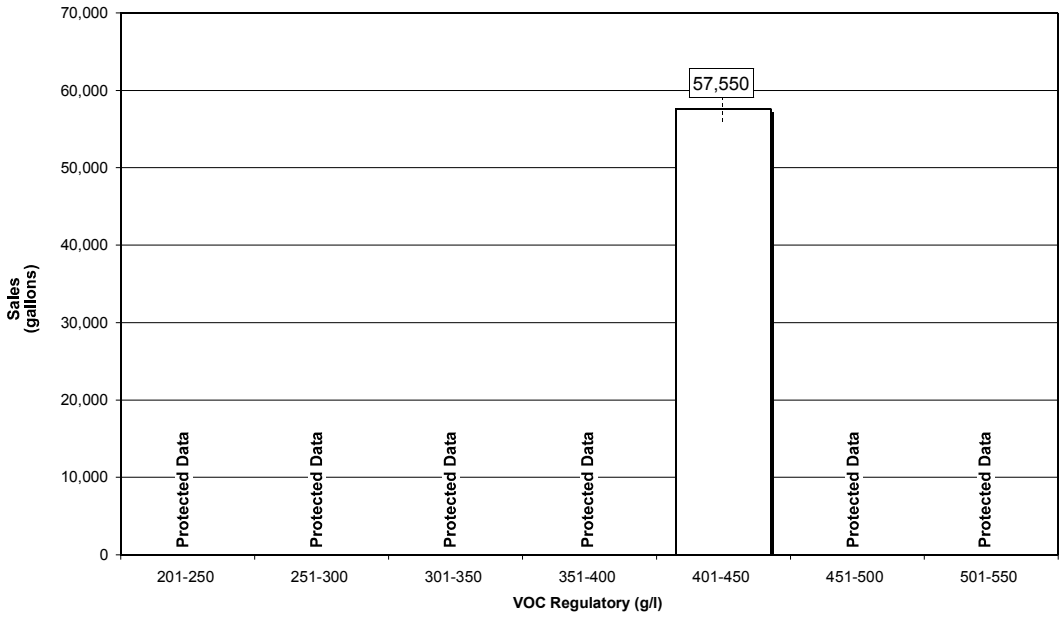


Figure 4-47
Waterproofing Concrete/Masonry Sealers

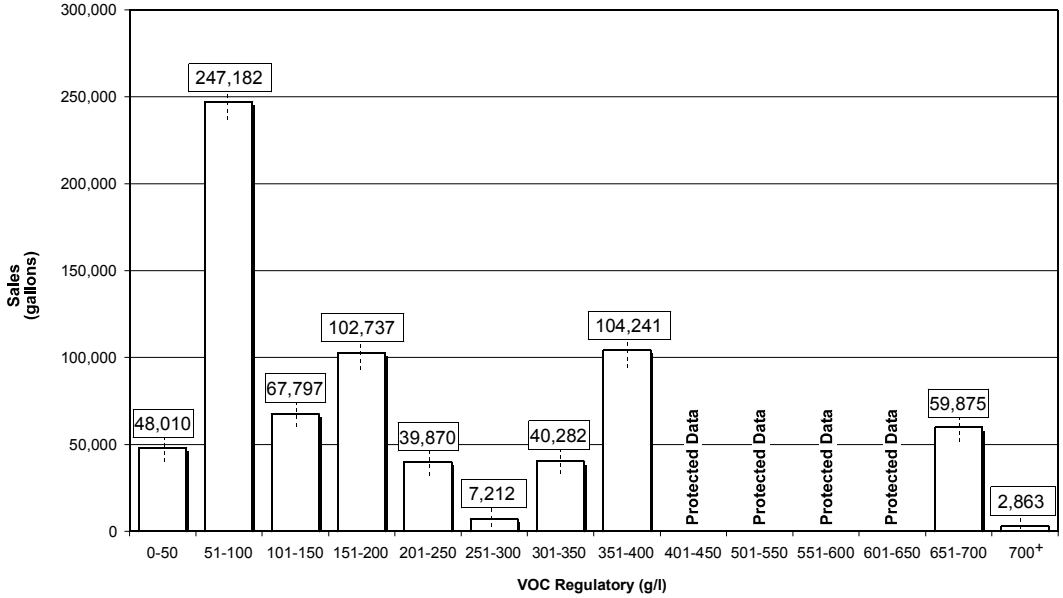


Figure 4-48
Waterproofing Sealers

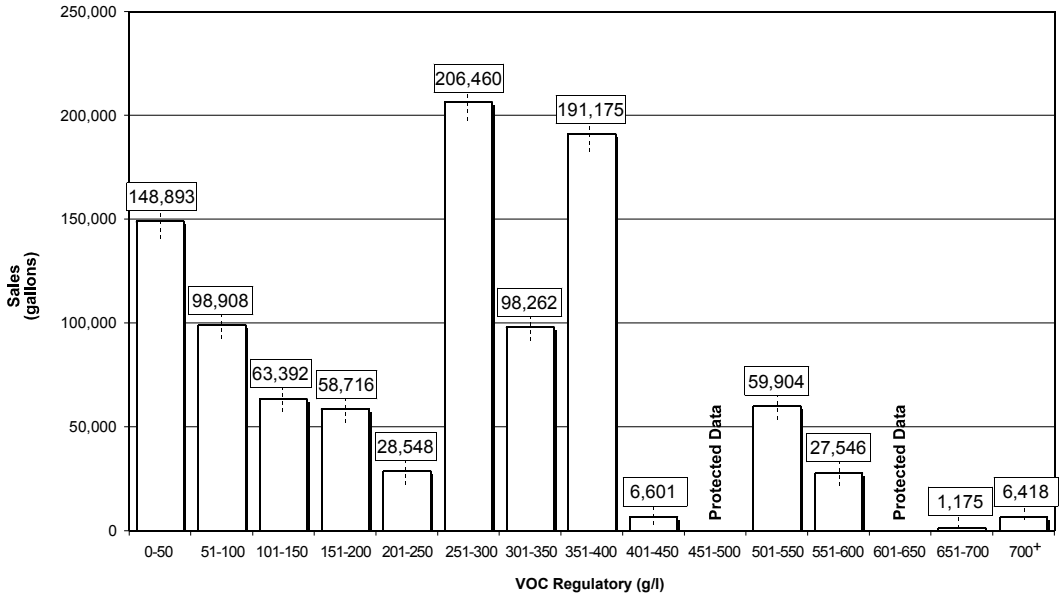
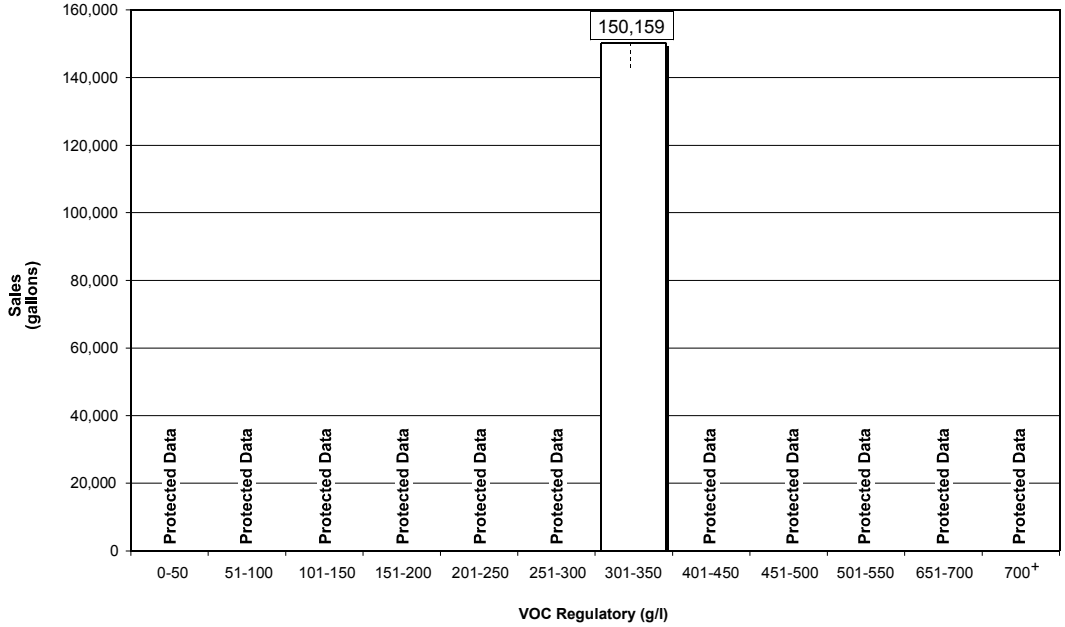


Figure 4-49
Wood Preservatives



Chapter 5 – VOC Emissions

The 2001 survey collected data on VOC Actual values, which were then used to estimate VOC emissions from architectural coatings in calendar year 2000. VOC emissions were estimated using the following equation:

[VOC Emissions, tons/yr] = [VOC Actual, lb/gal][Sales, gals/yr]*[1 ton/2000 lbs]*

Estimated emissions from architectural coatings were approximately 43,096 tons/yr or 118 tons/day, based on survey data. These quantities include emissions from small containers (1 quart or less), but they do not include emissions from thinning and cleanup associated with solvent-borne coatings.

Thinning and cleanup emissions were estimated by assuming that one pint of solvent (average density = 6.4 lb/gal) is used for each gallon of solvent-borne coating. The equation is provided below:

$$Thinning/Cleanup\ Emissions, \frac{tons}{day} = \left[Sales, \frac{gals\ coating}{yr}\right] * \left[\frac{1\ pint\ solvent}{gal\ coating}\right] * \left[\frac{1\ gal\ solvent}{8\ pints\ solvent}\right] * \left[\frac{6.4\ lbs}{gal\ solvent}\right] * \left[\frac{1\ ton}{2000\ lbs}\right] * \left[\frac{1\ yr}{365\ days}\right]$$

Total estimated emissions from thinning and cleanup solvents are approximately 18.9 tons/day. This quantity includes solvents used to clean solvent-borne coatings in small containers (1 quart or less.)

ARB has been re-evaluating the method used for estimating thinning and cleanup emissions and we have a current project under contract to investigate this issue. Preliminary information indicates that some solvents may be used to clean up equipment that is used to apply water-borne coatings. After the contract work is complete, ARB's emissions inventory data for thinning and cleanup will be adjusted accordingly.

This chapter includes the following data summaries:

Table 5-1: *VOC Emissions (sorted by category)*

Table 5-2: *VOC Emissions (sorted by emissions in descending order, excluding thinning and cleanup)*

Figure 5-1: *Solvent-borne and Water-borne Emissions*

Figure 5-2: *Top 10 Emission Categories*

Table 5-1 lists VOC emissions for each coating category, as well as subtotals for solvent-borne and water-borne emissions in each category. The breakdown between solvent-borne and water-borne emission data is graphically illustrated in Figure 5-1, while Figure 5-2 is a chart that highlights the top ten coating categories, based on VOC emissions.

Table 5-1: ***VOC Emissions (sorted by category)***

	VOC Emissions (tons/year)				
Coating Category	**SB**	**WB**	**Total (w/o thinning & cleanup)**	**Thinning & Cleanup**	**Total (including thinning & cleanup)**
Antenna	0.5	0.0	0.6	0.1	0.7
Antifouling	NA	NA	NA	NA	NA
Bituminous Roof	1,570.2	9.1	1,579.3	643.2	2,222.5
Bituminous Roof Primer	114.0	19.3	133.3	28.0	161.3
Bond Breakers	0.0	25.0	25.0	0.0	25.0
Clear Brushing Lacquer	192.8	0.0	192.8	27.8	220.6
Concrete Curing Compounds	29.8	105.6	135.4	13.0	148.3
Dry Fog	310.7	93.9	404.6	97.2	501.8
Faux Finishing	11.7	66.9	78.6	2.8	81.4
Fire Resistive	0.0	0.1	0.1	0.0	0.1
Fire Retardant – Clear	0.0	0.0	0.0	0.0	0.0
Fire Retardant – Opaque	2.5	3.7	6.2	0.9	7.2
Flat	27.3	6,118.4	6,145.7	7.2	6,152.9
Floor	86.5	231.6	318.1	60.0	378.1
Flow	0.0	0.5	0.5	0.0	0.5
Form Release Compounds	221.0	1.8	222.9	89.5	312.3
Graphic Arts	23.5	2.8	26.3	5.5	31.8
High Temperature	29.7	0.0	29.7	7.4	37.2
Industrial Maintenance	5,810.4	235.4	6,045.8	1756.1	7,801.9
Lacquers	876.0	42.9	918.9	149.8	1,068.7
Low Solids	0.0	3.3	3.3	0.0	3.3
Magnesite Cement	42.1	0.0	42.1	13.2	55.3
Mastic Texture	165.2	82.4	247.6	84.1	331.7
Metallic Pigmented	1,003.2	23.7	1,026.9	205.4	1,232.3
Multi-Color	0.1	2.6	2.7	0.0	2.7
Nonflat – High Gloss	863.0	539.4	1,402.3	246.0	1,648.4
Nonflat – Low Gloss	78.4	1,516.6	1,595.0	26.0	1,621.0
Nonflat – Medium Gloss	772.4	6,825.7	7,598.1	226.9	7,824.9
Other	7.6	0.1	7.7	6.4	14.1
Pre-Treatment Wash Primer	8.5	27.9	36.4	1.7	38.1
Primer, Sealer, and Undercoater	1,913.4	1,275.2	3,188.6	554.2	3,742.8
Quick Dry Enamel	901.7	7.4	909.1	243.0	1,152.0
Quick Dry Primer, Sealer, and Undercoater	2,270.5	96.7	2,367.2	503.8	2,871.0
Recycled	0.0	0.0	0.0	0.0	0.0
Roof	77.9	131.6	209.6	35.8	245.4
Rust Preventative	263.4	10.2	273.6	66.7	340.3
Sanding Sealers	47.4	2.6	50.0	8.2	58.2
Shellacs – Clear	38.6	0.0	38.6	6.5	45.1
Shellacs – Opaque	183.5	0.0	183.5	35.0	218.5
Specialty Primer, Sealer, and Undercoater	35.8	76.3	112.1	8.6	120.6

Table 5-1: *VOC Emissions (sorted by category)*

Coating Category	VOC Emissions (tons/year)				
	SB	WB	Total (w/o thinning & cleanup)	Thinning & Cleanup	Total (including thinning & cleanup)
Stains – Clear/Semitransparent	2,729.6	145.9	2,875.5	677.6	3,553.1
Stains – Opaque	309.5	188.1	497.5	90.0	587.5
Swimming Pool	16.6	3.7	20.2	5.0	25.2
Swimming Pool Repair and Maintenance	36.3	0.0	36.3	6.1	42.4
Temperature Indicator Safety	NA	NA	NA	NA	NA
Traffic Marking	273.4	834.2	1,107.7	319.9	1,427.6
Varnishes – Clear	1,285.8	184.4	1,470.2	286.1	1,756.3
Varnishes – Semitransparent	106.7	1.3	108.1	23.3	131.4
Waterproofing Concrete/Masonry Sealers	384.4	102.4	486.8	92.3	579.0
Waterproofing Sealers	592.4	94.0	686.4	179.0	865.4
Wood Preservatives	247.6	1.8	249.4	66.8	316.2
TOTALS (tons/year)	**23,961.9**	**19,134.4**	**43,096.3**	**6,905.7**	**50,002.1**
TOTALS (tons/day)	**65.6**	**52.4**	**118.1**	**18.9**	**137.0**

NA = Not applicable. No coatings were reported in this category.
This table includes VOC emissions from small containers (1 quart or less).
For Recycled coatings, emissions are zero because it is assumed that the emissions should be associated with the sales of the original product, prior to recycling.

Table 5-2: *VOC Emissions (sorted by emissions in descending order, excluding thinning and cleanup)*

Coating Category	VOC Emissions (tons/year)				
	SB	WB	Total (w/o thinning & cleanup)	Thinning & Cleanup	Total (including thinning & cleanup)
Nonflat - Medium Gloss	772.4	6,825.7	7,598.1	226.9	7,824.9
Flat	27.3	6,118.4	6,145.7	7.2	6,152.9
Industrial Maintenance	5,810.4	235.4	6,045.8	1756.1	7,801.9
Primer, Sealer, and Undercoater	1,913.4	1,275.2	3,188.6	554.2	3,742.8
Stains - Clear/Semitransparent	2,729.6	145.9	2,875.5	677.6	3,553.1
Quick Dry Primer, Sealer, and Undercoater	2,270.5	96.7	2,367.2	503.8	2,871.0
Nonflat - Low Gloss	78.4	1,516.6	1,595.0	26.0	1,621.0
Bituminous Roof	1,570.2	9.1	1,579.3	643.2	2,222.5
Varnishes - Clear	1,285.8	184.4	1,470.2	286.1	1,756.3
Nonflat - High Gloss	863.0	539.4	1,402.3	246.0	1,648.4
Traffic Marking	273.4	834.2	1,107.7	319.9	1,427.6
Metallic Pigmented	1,003.2	23.7	1,026.9	205.4	1,232.3
Lacquers	876.0	42.9	918.9	149.8	1,068.7
Quick Dry Enamel	901.7	7.4	909.1	243.0	1,152.0
Waterproofing Sealers	592.4	94.0	686.4	179.0	865.4
Stains - Opaque	309.5	188.1	497.5	90.0	587.5
Waterproofing Concrete/Masonry Sealers	384.4	102.4	486.8	92.3	579.0
Dry Fog	310.7	93.9	404.6	97.2	501.8

Table 5-2: *VOC Emissions*
(sorted by emissions in descending order, excluding thinning and cleanup)

Coating Category	VOC Emissions (tons/year)				
	SB	WB	Total (w/o thinning & cleanup)	Thinning & Cleanup	Total (including thinning & cleanup)
Floor	86.5	231.6	318.1	60.0	378.1
Rust Preventative	263.4	10.2	273.6	66.7	340.3
Wood Preservatives	247.6	1.8	249.4	66.8	316.2
Mastic Texture	165.2	82.4	247.6	84.1	331.7
Form Release Compounds	221.0	1.8	222.9	89.5	312.3
Roof	77.9	131.6	209.6	35.8	245.4
Clear Brushing Lacquer	192.8	0.0	192.8	27.8	220.6
Shellacs - Opaque	183.5	0.0	183.5	35.0	218.5
Concrete Curing Compounds	29.8	105.6	135.4	13.0	148.3
Bituminous Roof Primer	114.0	19.3	133.3	28.0	161.3
Specialty Primer, Sealer, and Undercoater	35.8	76.3	112.1	8.6	120.6
Varnishes - Semitransparent	106.7	1.3	108.1	23.3	131.4
Faux Finishing	11.7	66.9	78.6	2.8	81.4
Sanding Sealers	47.4	2.6	50.0	8.2	58.2
Magnesite Cement	42.1	0.0	42.1	13.2	55.3
Shellacs - Clear	38.6	0.0	38.6	6.5	45.1
Pre-Treatment Wash Primer	8.5	27.9	36.4	1.7	38.1
Swimming Pool Repair and Maintenance	36.3	0.0	36.3	6.1	42.4
High Temperature	29.7	0.0	29.7	7.4	37.2
Graphic Arts	23.5	2.8	26.3	5.5	31.8
Bond Breakers	0.0	25.0	25.0	0.0	25.0
Swimming Pool	16.6	3.7	20.2	5.0	25.2
Other	7.6	0.1	7.7	6.4	14.1
Fire Retardant - Opaque	2.5	3.7	6.2	0.9	7.2
Low Solids	0.0	3.3	3.3	0.0	3.3
Multi-Color	0.1	2.6	2.7	0.0	2.7
Antenna	0.5	0.0	0.6	0.1	0.7
Flow	0.0	0.5	0.5	0.0	0.5
Fire Resistive	0.0	0.1	0.1	0.0	0.1
Fire Retardant - Clear	0.0	0.0	0.0	0.0	0.0
Recycled	0.0	0.0	0.0	0.0	0.0
Antifouling	NA	NA	NA	NA	NA
Temperature Indicator Safety	NA	NA	NA	NA	NA
TOTALS (tons/year)	**23,961.9**	**19,134.4**	**43,096.3**	**6,905.7**	**50,002.1**
TOTALS (tons/day)	**65.6**	**52.4**	**118.1**	**18.9**	**137.0**

NA = Not applicable. No coatings were reported in this category.
This table includes VOC emissions from small containers (1 quart or less).
For Recycled coatings, emissions are zero because it is assumed that the emissions should be associated with the sales of the original product, prior to recycling.

Figure 5-1
Water-borne and Solvent-borne Emissions
(Without Thinning and Cleanup)

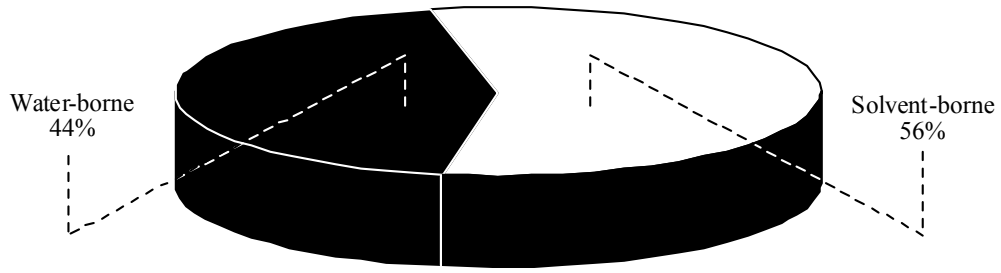
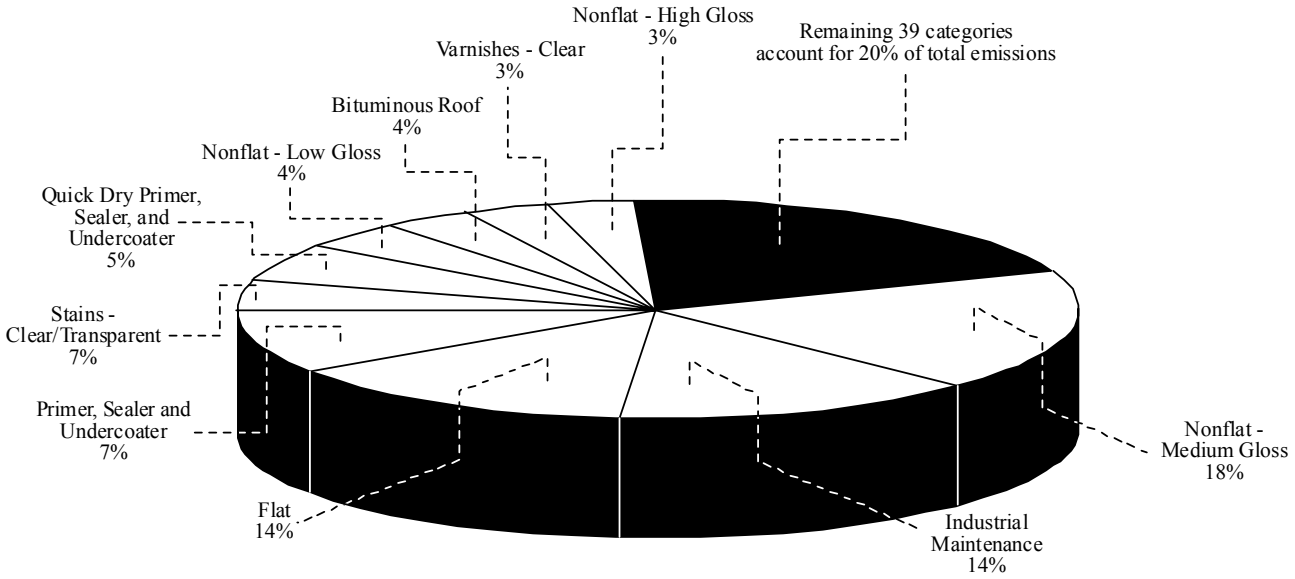


Figure 5-2
Top 10 Emission Categories



Top 10 categories account for 80% of total emissions.

Chapter 6 -- Complying Marketshares

In June 2000, the ARB adopted a Suggested Control Measure (SCM) for Architectural Coatings. To date, 18 local air districts have adopted this SCM, with VOC limits taking effect in 2003 and 2004. Data from the 2001 survey were analyzed to determine what percentage of coating sales volumes would comply with the VOC limits in the SCM. When conducting this analysis, we did not include the sales of small containers (i.e., one quart or less), because the SCM contains an exemption from VOC limits for small containers.

When developing the SCM, ARB staff identified the percent complying marketshare based on data from the 1998 architectural coating survey. These data were compared to the data from the 2001 survey, as part of a technology assessment for several categories. In most cases, the percent complying marketshare from the 2001 survey had improved, when compared to the percent from the 1998 survey data. However, there were a few categories where the complying marketshare declined noticeably, as discussed later in this chapter.

This chapter includes the following data summaries:

Table 6-1*: 2001 Survey Complying Marketshares*

Coating Category	VOC Limit	Total No. of Products	No. of Complying Products	% of Complying Products	Total Sales (gals)	Sales of Complying Products (gals)	% of Complying Sales
Antenna	530	6	6	100%	PD	PD	100%
Bituminous Roof	300	193	165	85%	3,239,994	3,156,045	97%
Bituminous Roof Primer	350	28	14	50%	170,520	125,163	73%
Bond Breakers	350	11	10	91%	93,896	89,936	96%
Clear Brushing Lacquer	680	3	3	100%	PD	PD	100%
Concrete Curing Compounds	350	108	100	93%	692,285	686,935	99%
Dry Fog	400	89	86	97%	489,295	486,448	99%
Faux Finishing	350	78	41	53%	128,949	128,718	100%
Fire Resistive	350	2	2	100%	PD	PD	100%
Fire Retardant - Clear	650	9	9	100%	PD	PD	100%
Fire Retardant - Opaque	350	20	17	85%	PD	PD	99%
Flat	100	3546	2519	71%	36,646,274	26,585,267	73%
Floor	250	715	540	76%	1,403,122	1,338,891	95%
Flow	420	1	1	100%	PD	PD	100%
Form Release Compounds	250	33	29	88%	255,724	255,208	100%
Graphic Arts	500	117	102	87%	19,913	19,788	99%
High Temperature	420	93	60	65%	PD	PD	90%
Industrial Maintenance	250	3835	1201	31%	4,796,137	1,385,614	29%
Lacquers	550	438	126	29%	443,273	135,807	31%
Low Solids	120	4	4	100%	13,284	13,284	100%
Magnesite Cement	450	18	18	100%	PD	PD	100%
Mastic Texture	300	62	61	98%	628,585	584,515	93%
Metallic Pigmented	500	166	155	93%	613,031	611,521	100%
Multi-Color	250	17	6	35%	PD	PD	78%
Nonflat - High Gloss	250	850	505	59%	1,908,200	1,487,408	78%
Nonflat - Low Gloss	150	1380	961	70%	6,844,887	5,419,910	79%
Nonflat - Medium Gloss	150	2583	1250	48%	23,612,820	8,558,711	36%
Other	100	53	38	72%	1,505,551	1,501,057	100%
Pre-Treatment Wash Primer	420	21	15	71%	25,420	23,802	94%
Primer, Sealer, and Undercoater	200	913	541	59%	8,255,958	6,739,719	82%
Quick Dry Enamel	250	166	62	37%	PD	PD	12%
Quick Dry Primer, Sealer, & Undercoater	200	121	28	23%	1,611,339	361,287	22%
Recycled	250	6	4	67%	323,216	264,382	82%
Roof	250	177	156	88%	1,136,724	1,093,979	96%
Rust Preventative	400	81	74	91%	180,522	178,700	99%

Table 6-1*: 2001 Survey Complying Marketshares*

Coating Category	VOC Limit	Total No. of Products	No. of Complying Products	% of Complying Products	Total Sales (gals)	Sales of Complying Products (gals)	% of Complying Sales
Sanding Sealers	350	40	18	45%	16,098	6,853	43%
Shellacs - Clear	730	9	9	100%	PD	PD	100%
Shellacs - Opaque	550	3	3	100%	PD	PD	100%
Specialty Primer, Sealer, & Undercoater	350	46	30	65%	369,187	352,121	95%
Stains - Clear/Semitransparent	250	1175	138	12%	1,736,899	285,155	16%
Stains - Opaque	250	568	322	57%	1,079,339	799,004	74%
Swimming Pool	340	32	28	88%	21,835	20,263	93%
Swimming Pool Repair & Maintenance	340	7	0	0%	15,046	0	0%
Traffic Marking	150	270	211	78%	3,338,767	3,240,573	97%
Varnishes - Clear	350	416	178	43%	662,701	546,831	83%
Varnishes - Semitransparent	350	13	6	46%	1,784	1,571	88%
Waterproofing Concrete/Masonry Sealers	400	135	121	90%	716,676	652,427	91%
Waterproofing Sealers	250	226	106	47%	989,983	394,161	40%
Wood Preservatives	350	96	66	69%	164,950	148,315	90%
TOTALS =		**18,979**	**10,145**		**104,984,286**	**67,978,827**	

1. "PD": Protected Data – Fewer than three companies reported sales.
2. %Complying Marketshare represents the percent (by sales volume in gallons) that complied with the SCM VOC limits.
3. Sales of exempt small containers (1 quart or less) were not included when determining complying marketshare.
4. For the "Other" category, the VOC Limit varies according to the gloss level of the coating. Therefore, we used the minimum possible VOC Limit of 100 g/l to estimate complying marketshare.
5. "Swimming Pool Repair and Maintenance" coatings can be replaced by coatings in the "Swimming Pool" category.

Table 6-2: *1998 Survey Complying Marketshares*

Coating Category	VOC Limit (g/l)	Total No. of Products	No. of Complying Products	% of Complying Products	Total Sales (gals)	Sales of Complying Products (gals)	% of Complying Sales
Anti-Fouling	400	9	9	100%	PD	PD	100%
Bituminous	300	149	108	72%	4,900,891	4,801,393	98%
Bond Breakers	350	2	1	50%	PD	PD	100%
Concrete Curing Compounds	350	47	36	77%	411,118	390,963	95%
Dry Fog	400	43	38	88%	184,178	177,273	96%
Fire Retardant: Clear	650	4	4	100%	PD	PD	100%
Fire Retardant: Opaque	350	57	53	93%	56,209	56,103	100%
Flats	100	2233	1046	47%	30,815,848	14,971,503	49%
Floor	250	549	357	65%	1,070,555	915,561	86%

Table 6-2: ***1998 Survey Complying Marketshares***

Coating Category	VOC Limit (g/l)	Total No. of Products	No. of Complying Products	% of Complying Products	Total Sales (gals)	Sales of Complying Products (gals)	% of Complying Sales
Form Release Compounds	250	13	6	46%	82,856	81,213	98%
Graphic Arts (Sign)	500	108	18	17%	40,284	32,764	81%
High Temperature	420	87	52	60%	19,495	11,914	61%
Industrial Maintenance	250	2794	958	34%	3,913,586	1,020,755	26%
Lacquer: Clear	550	297	86	29%	445,714	38,503	9%
Lacquer: Opaque	550	104	51	49%	206,449	52,899	26%
Low Solids	120	3	3	100%	PD	PD	100%
Magnesite Cement	450	4	2	50%	30,221	85	0%
Mastic Texture	300	56	56	100%	299,356	299,356	100%
Metallic Pigmented	500	114	95	83%	387,152	384,176	99%
Multi-Color	250	21	13	62%	40,152	26,459	66%
Nonflats: High Gloss	250	738	313	42%	1,883,455	1,570,506	83%
Nonflats: Low Gloss	150	805	456	57%	4,225,851	3,230,437	76%
Nonflats: Medium Gloss	150	1942	772	40%	14,690,271	8,605,359	59%
Other	100	224	52	23%	PD	PD	33%
Pre-Treatment Wash Primers	420	30	21	70%	71,505	70,881	99%
Primers, Sealers, &Undercoaters	200	859	431	50%	5,990,728	4,445,820	74%
Quick Dry: Enamels	250	153	1	1%	866,471	145	0%
Quick Dry: Primers, Sealers, & Undercoaters	200	150	19	13%	1,818,863	628,082	35%
Roof	250	175	127	73%	PD	PD	98%
Rust Preventative	400	24	15	63%	50,869	28,185	55%
Sanding Sealers	350	31	5	16%	112,000	3,519	3%
Shellacs: Clear	730	10	10	100%	PD	PD	100%
Shellacs: Opaque	550	2	2	100%	PD	PD	100%
Stains: Clear/Semitransparent	250	765	106	14%	1,072,188	199,480	19%
Stains: Opaque	250	401	219	55%	1,479,434	1,303,340	88%
Swimming Pool	340	18	8	44%	3,492	1,490	43%
Swimming Pool Repair	340	6	0	0%	12,474	0	0%
Traffic	150	158	104	66%	2,874,307	1,531,912	53%
Varnish: Clear	350	286	142	50%	299,347	237,875	79%
Varnish: Semitransparent	350	15	11	73%	70,113	69,882	100%
Waterproofing Sealers	250	175	95	54%	1,059,376	134,788	13%
Wood Preservatives	350	62	51	82%	PD	PD	87%
TOTALS =		**13,723**	**5,952**		**83,135,869**	**48,730,495**	

1. "PD": Protected Data – Fewer than three companies reported sales.

2. In some categories, the percentage of complying sales is 100%, but the percentage of complying products is less than 100%. In these cases, the actual percentage of complying sales volume is slightly less than 100%, but the number has been rounded up to 100%.
3. Sales of exempt small containers (1 quart or less) were not included when determining complying marketshare. Therefore, the values in this table may differ slightly from the values in the ARB's "Staff Report for the Proposed Suggested Control Measure for Architectural Coatings" (June 2000).

Some coating category names from the 1998 survey were not used in the 2001 survey. During development of the 2000 SCM, ARB staff found that certain categories could be combined with other product categories. For sake of comparison, Table 6-3 displays the 1998 survey categories that were incorporated into a 2001 category. In some cases, several 1998 categories were combined when calculating a complying marketshare to compare to the 2001 data.

Table 6-3: ***Comparison of Category Names in the 1998 and 2001 Surveys***

1998 Category Name	2001 Category Name
Anti-Graffiti	Industrial Maintenance
Bituminous	Bituminous Roof
Chalkboard Resurfacers	Other
Extreme High Durability	Industrial Maintenance
Heat Reactive	Industrial Maintenance
Nuclear	Industrial Maintenance
Repair and Maintenance Thermoplastic	Industrial Maintenance
Sealers	Primers, Sealers, Undercoaters
Stains: Clear	Stains: Clear/Semitransparent
Stains: Semitransparent	Stains: Clear/Semitransparent
Stains: Low Solids	Low Solids
Thermoplastic Rubber and Mastics	Roof
Waterproofing Sealers: Clear	Waterproofing Sealers
Waterproofing Sealers: Opaque	Waterproofing Sealers
Wood Preservatives: Low Solids	Low Solids
Wood Preservatives: Below Ground	Wood Preservatives
Wood Preservatives: Clear	Wood Preservatives
Wood Preservatives: Opaque	Wood Preservatives
Wood Preservatives: Semitransparent	Wood Preservatives

Figures 6-1 through 6-4 contain comparisons of the complying marketshares for the 1998 and 2001 surveys. The 2001 survey contained some categories that were not included in the 1998 survey (e.g., Faux Finishing). In these cases, there are no diamonds on the figures for the 1998 data. In 1998, no data were submitted for Anti-fouling coatings. Therefore, no bar is shown in Figure 6-1 for that category.

Data from Nonflat – Low Gloss and Nonflat – Medium Gloss were combined to be consistent with the SCM "Nonflat" category, that includes Low Gloss and Medium Gloss coatings. Similarly, data from Stains – Clear/Semitransparent and Stains – Opaque were combined under "Stains". Data from Varnishes – Clear and Varnishes – Semitransparent were combined under "Varnishes".

Figure 6-1:
Comparison of Complying Marketshares
2001 vs. 1998 (Part I)

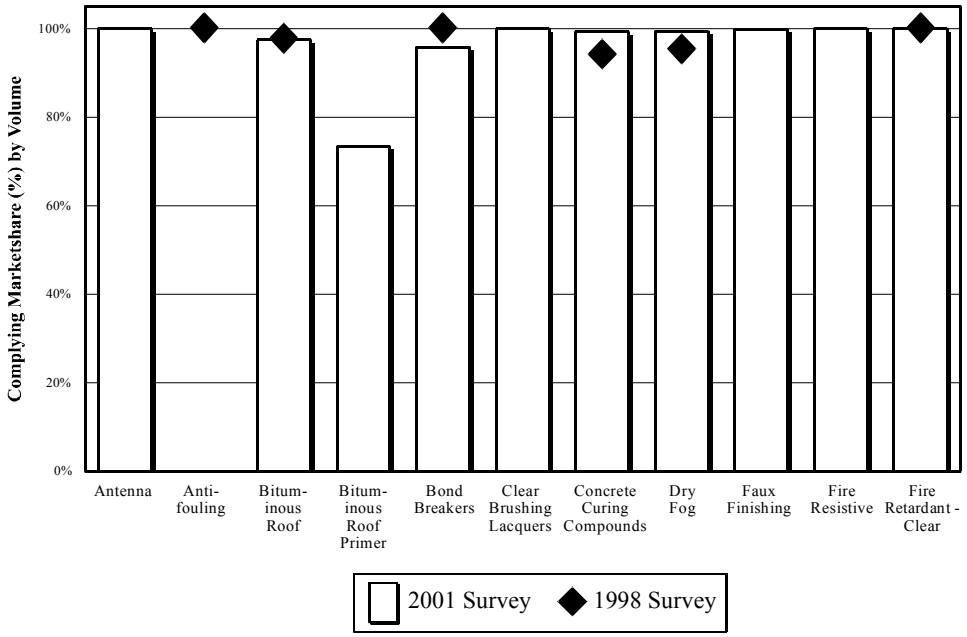


Figure 6-2:
Comparison of Complying Marketshares
2001 vs. 1998 (Part II)

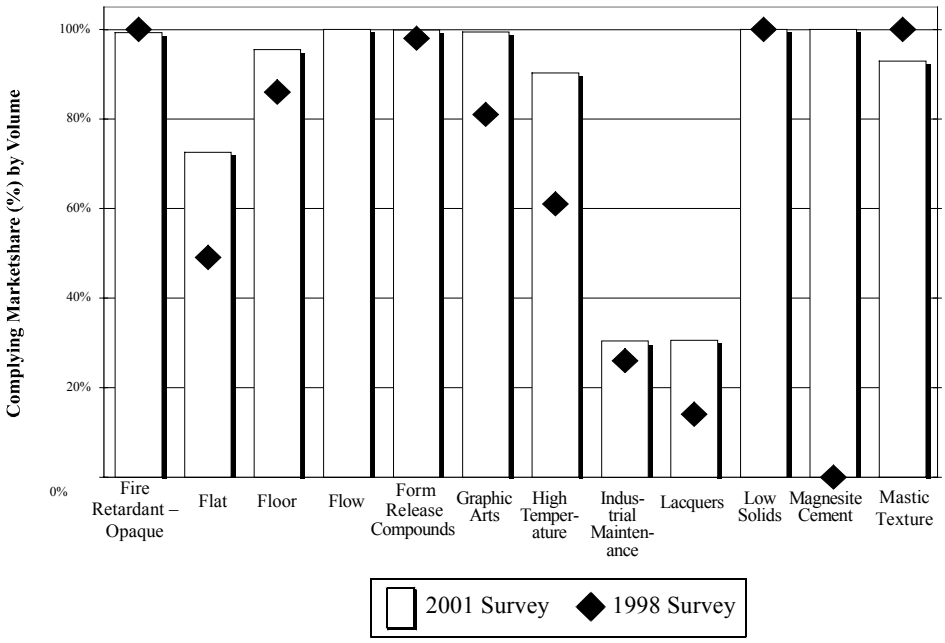


Figure 6-3:
Comparison of Complying Marketshares
2001 vs. 1998 (Part III)

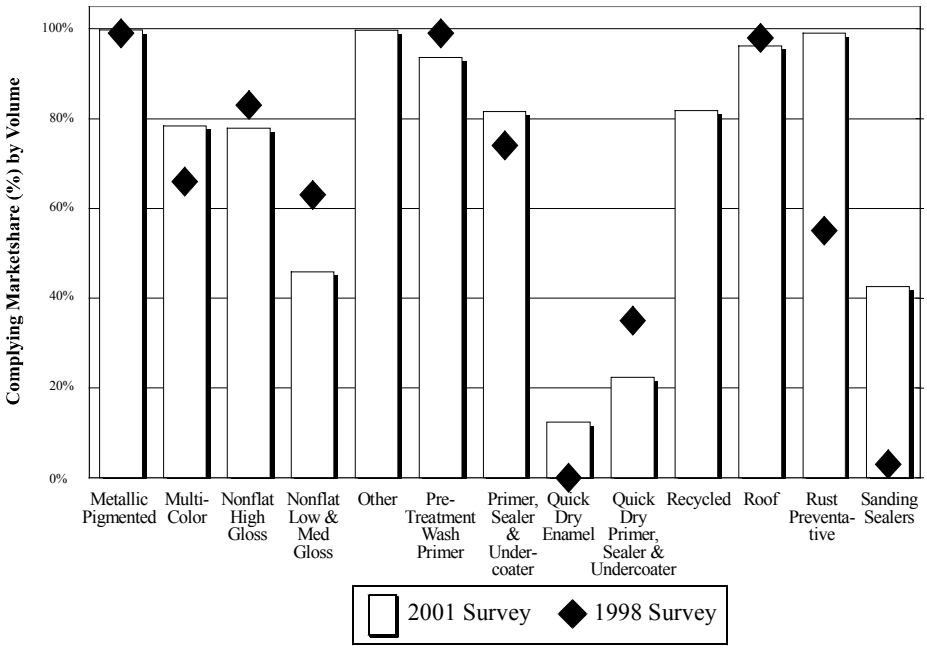
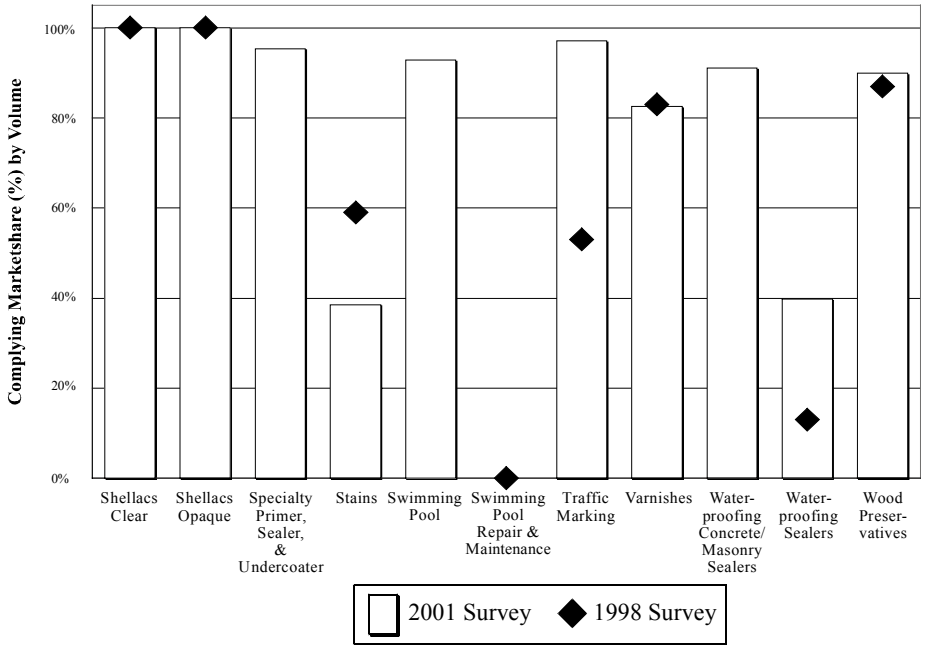


Figure 6-4:
Comparison of Complying Marketshares
2001 vs. 1998 (Part IV)



For most categories, the complying marketshare improved from the 1998 survey to the 2001 survey. However, there were some categories that experienced noticeable declines of more than 5%. The Nonflat category (which includes Low Gloss and Medium Gloss coatings) had a complying marketshare of 63% in the 1998 survey, but this value dropped to 46% in the 2001 survey. The decline in complying marketshare appears to be due to a large increase in sales of high VOC products from a single manufacturer. This manufacturer sold a coating product which represented more than 15% of the volume in this category and had a VOC value that was slightly higher than 200 g/l. In addition, three of the five top manufacturers in the Nonflat category reported increases in their sales-weighted average VOC values, as compared to the data reported in 1998.

The Quick Dry Primer Sealer Undercoater (QDPSU) category had a complying marketshare of 35% in the 1998 survey, which dropped to 22% in the 2001 survey. The decline in complying marketshare appears to be due to a change in the types of coatings sold by the primary manufacturer in this category. In the 1998 survey, the largest manufacturer in this category produced mostly water-borne QDPSUs. In the 2001 survey, this manufacturer produced primarily solvent-borne QDPSUs, which resulted in an increase of the sales-weighted average VOC value and a decrease in complying marketshare.

In the Stains category (that includes Clear, Semitransparent, and Opaque Stains) compliance declined from 59% in 1998 to 39% in 2001. This was due primarily to an increase of sales of non-complying, solvent-borne, clear/semitransparent stains. A combination of increasing sales of previously reported non-complying products, and the introduction of new non-complying products, accounts for this increase. New non-complying products account for more than 25% of the non-complying clear/semitransparent stains volume.

Chapter 7 -- Cumulative Percent Graphs of Complying Marketshares

The following cumulative percent graphs were generated for each of the 49 coatings categories with reported sales to depict the percent of market volume complying with the SCM. These graphs were provided to complement the VOC distribution histograms in Chapter 4, especially in categories where the histograms have large areas of "Protected Data". The dotted line on the graphs denotes the SCM VOC limit for each coating category. The sales volumes represented by these graphs include small containers (1 quart or less.)

This chapter includes the following data summaries:

Figure 7-1 through Figure 7-49: *Cumulative Percent Graphs of Complying Marketshares*

Figure 7-1
Antenna

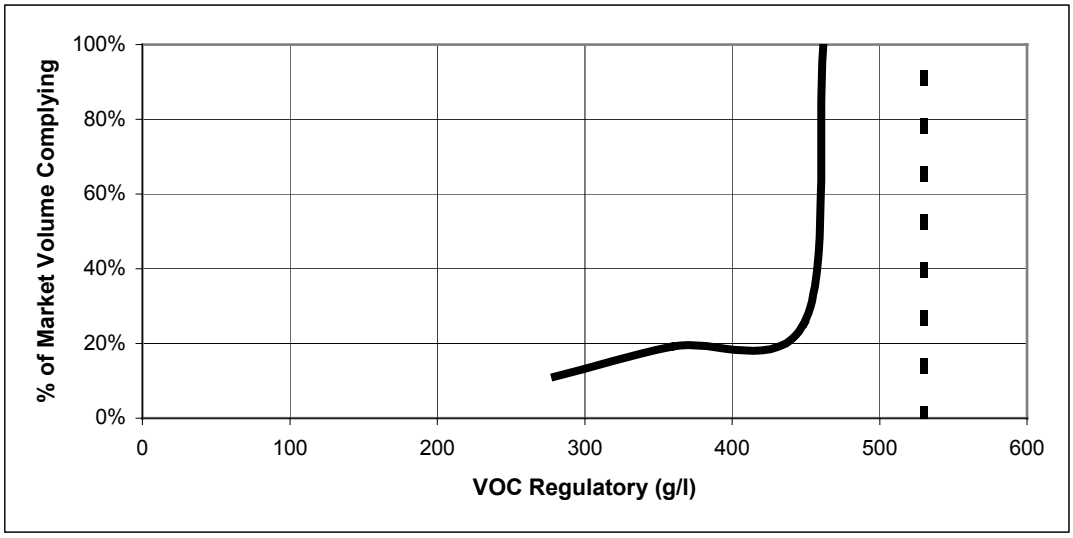


Figure 7-2
Bituminous Roof

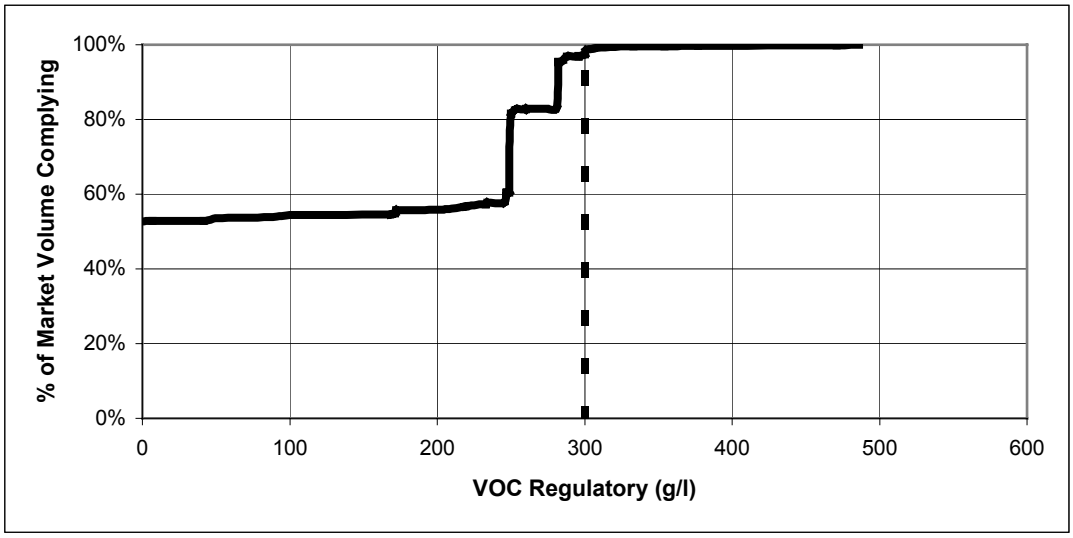


Figure 7-3
Bituminous Roof Primer

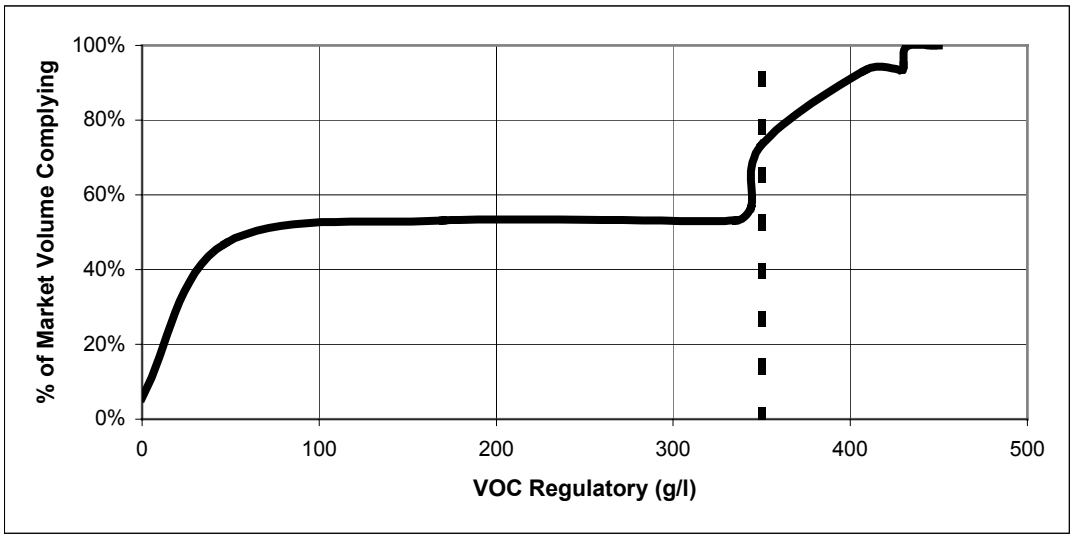


Figure 7-4
Bond Breakers

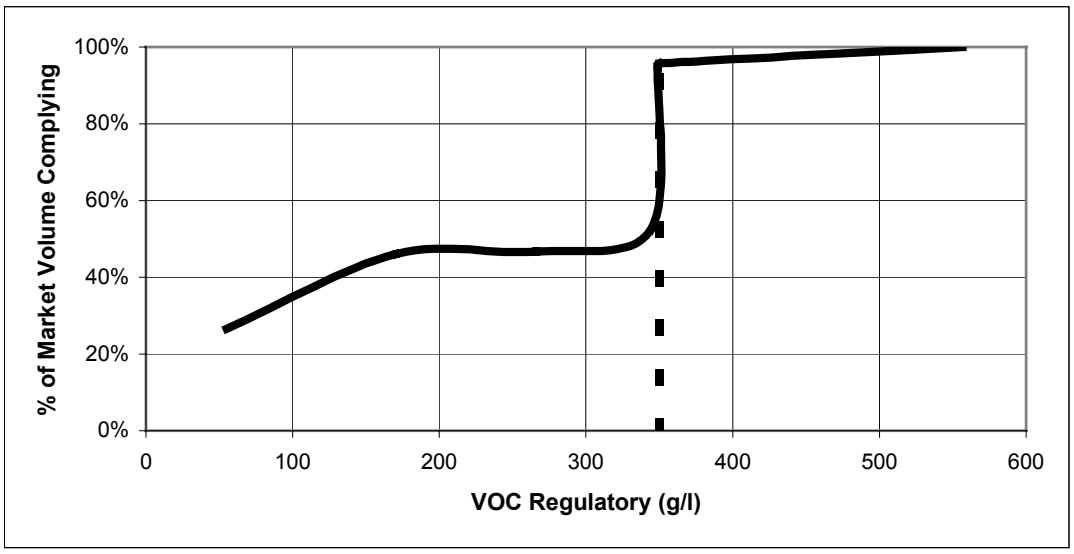


Figure 7-5
Clear Brushing Lacquer

In this category, 100% of the product sold had a VOC Regulatory content of 667 grams/liter. This complies with the VOC Limit of 680 grams/liter.

Figure 7-6
Concrete Curing Compounds

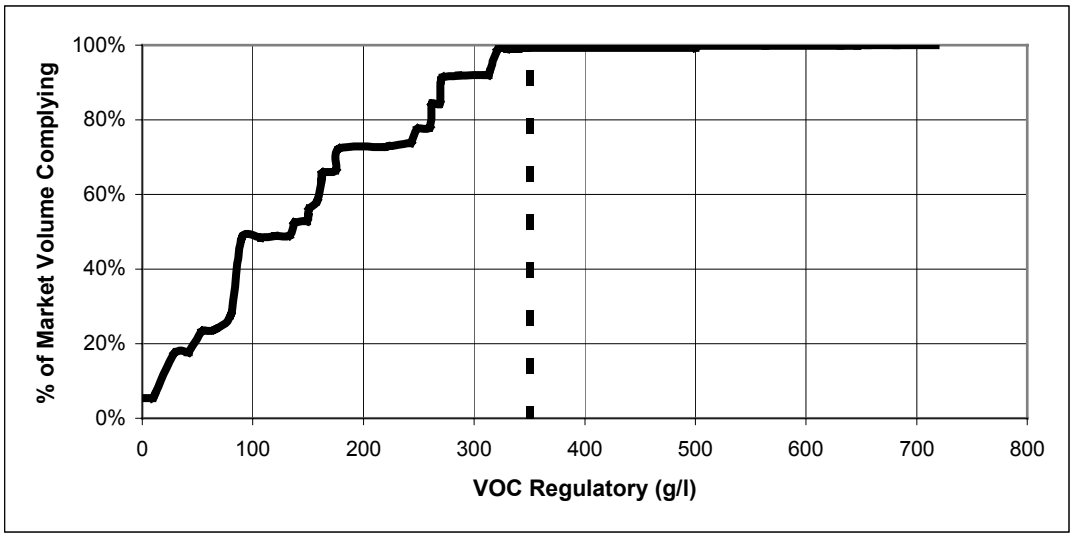


Figure 7-7
Dry Fog

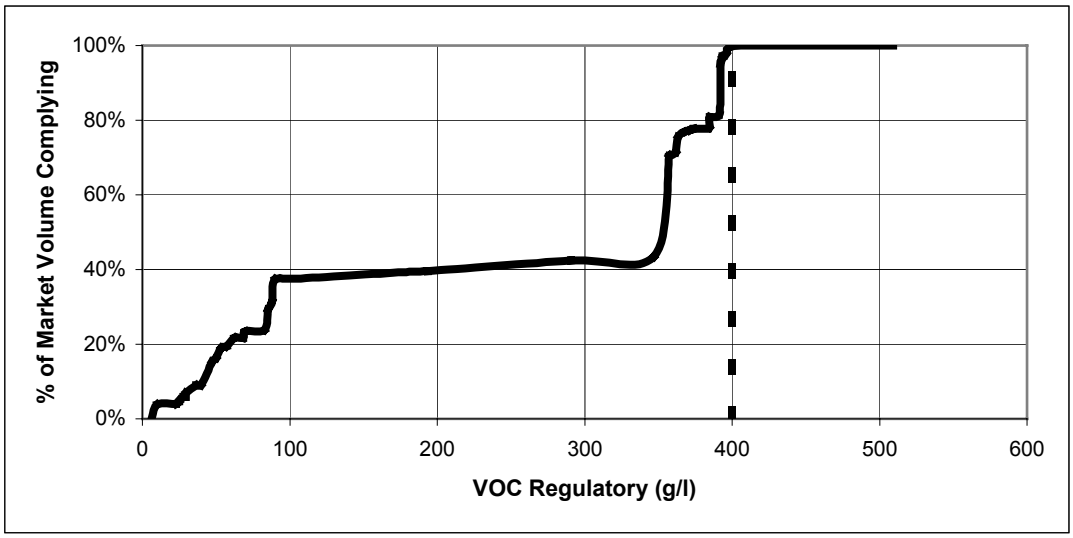


Figure 7-8
Faux Finishing

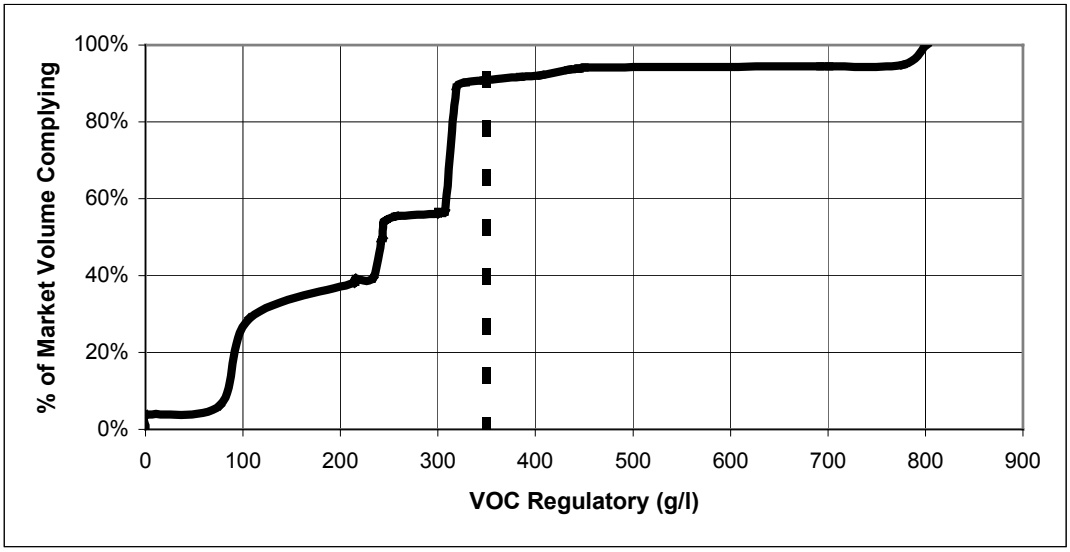


Figure 7-9
Fire Resistive

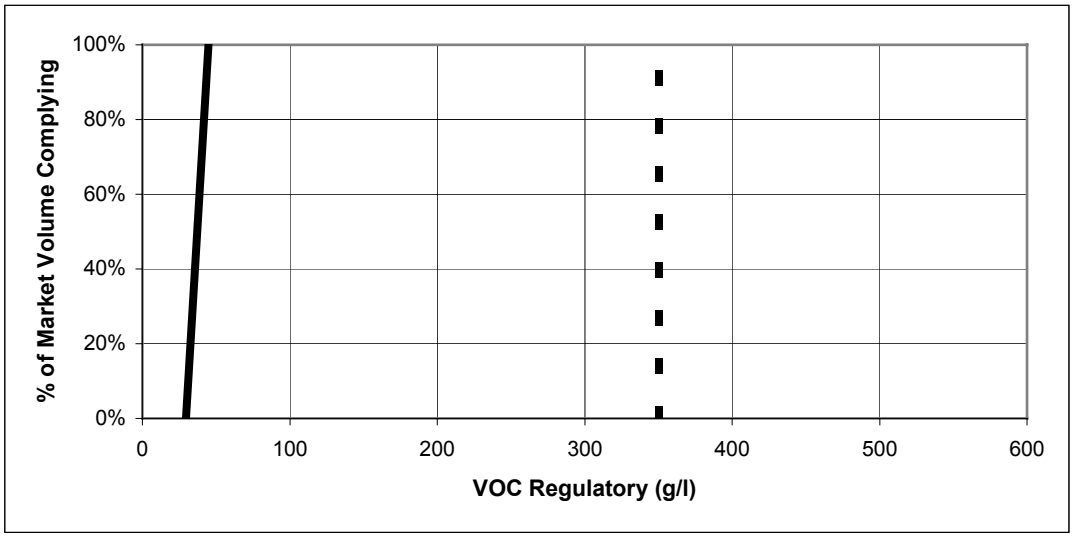


Figure 7-10
Fire Retardant – Clear

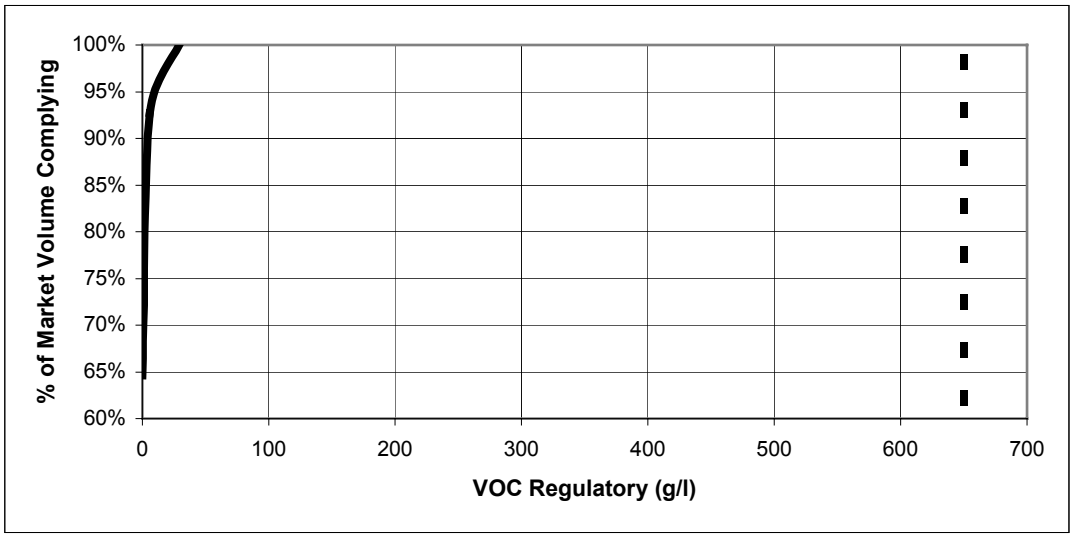


Figure 7-11
Fire Retardant – Opaque

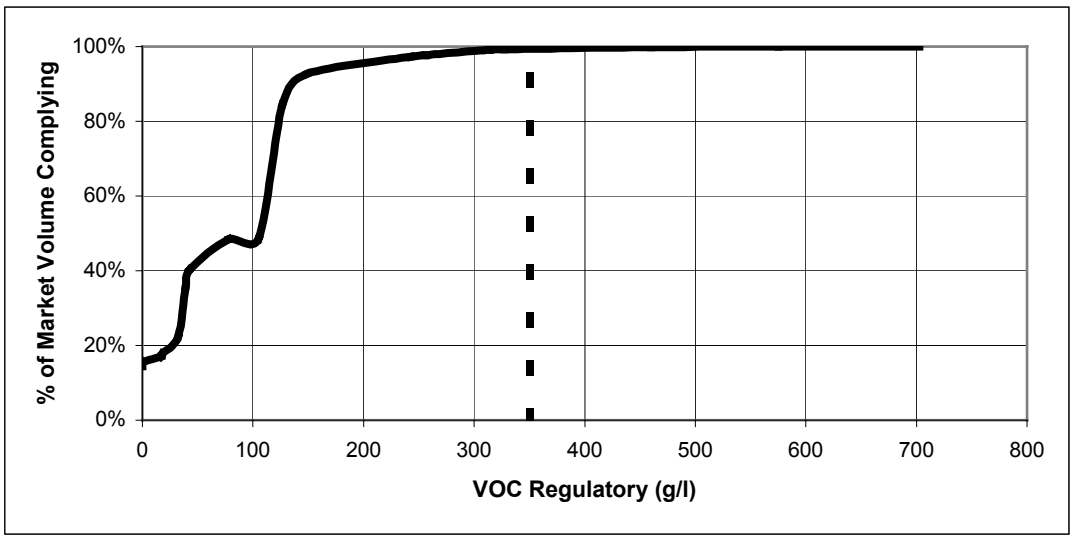


Figure 7-12
Flat

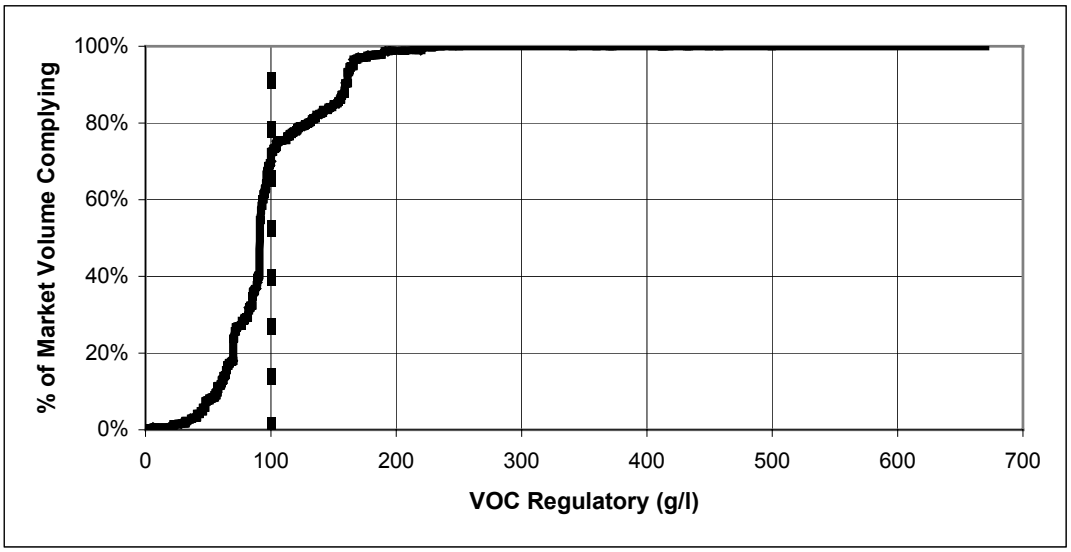


Figure 7-13
Floor

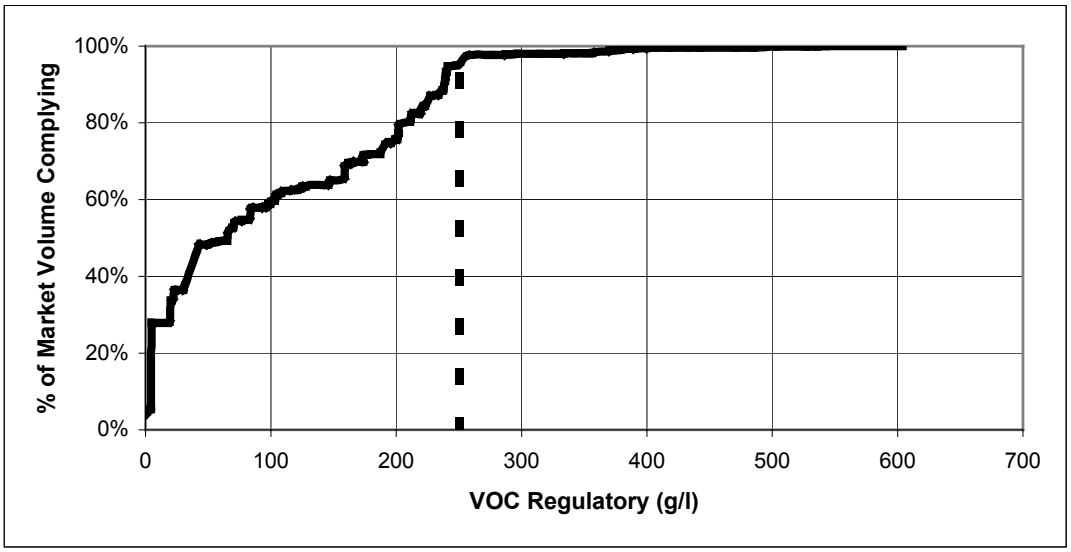


Figure 7-14
Flow

In this category, 100% of the product sold had a VOC Regulatory content of 412 grams/liter. This complies with the VOC Limit of 420 grams/liter.

Figure 7-15
Form Release Compounds

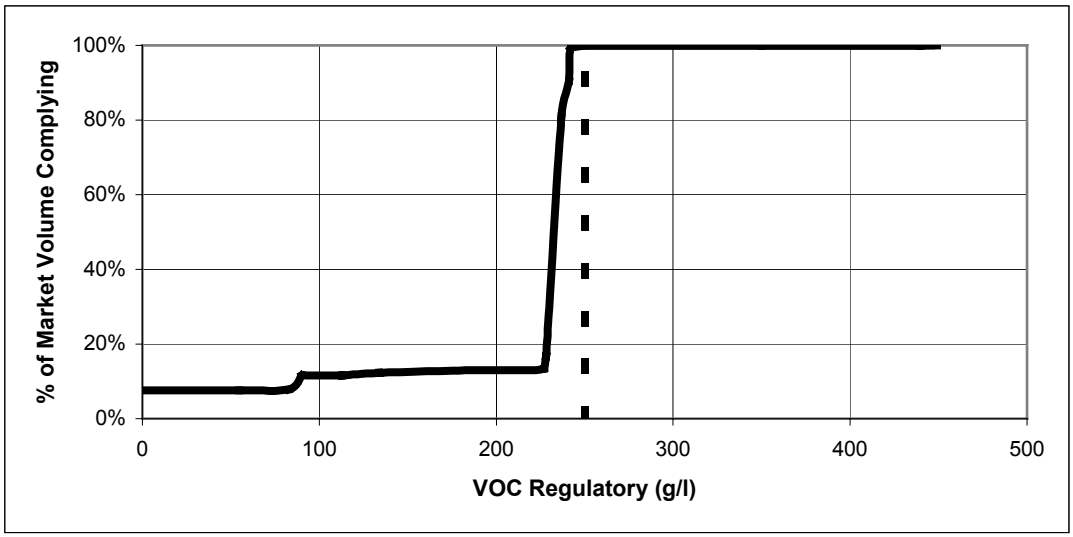


Figure 7-16
Graphic Arts

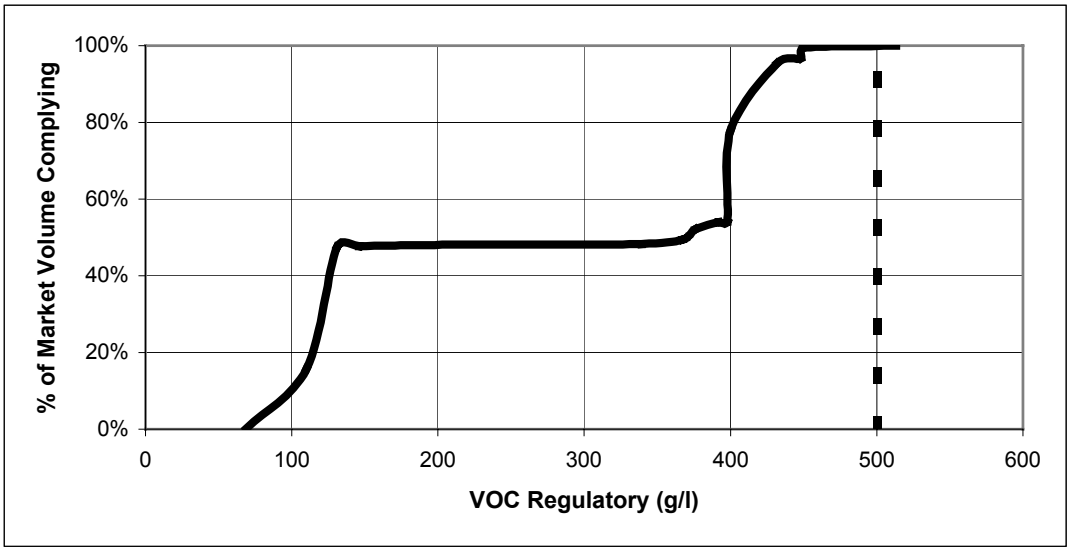


Figure 7-17
High Temperature

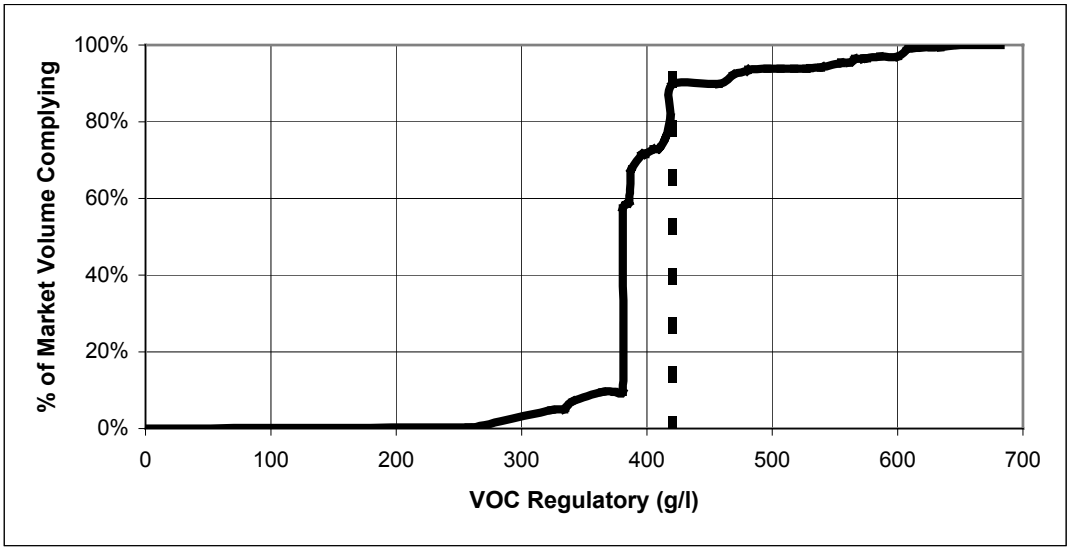


Figure 7-18
Industrial Maintenance

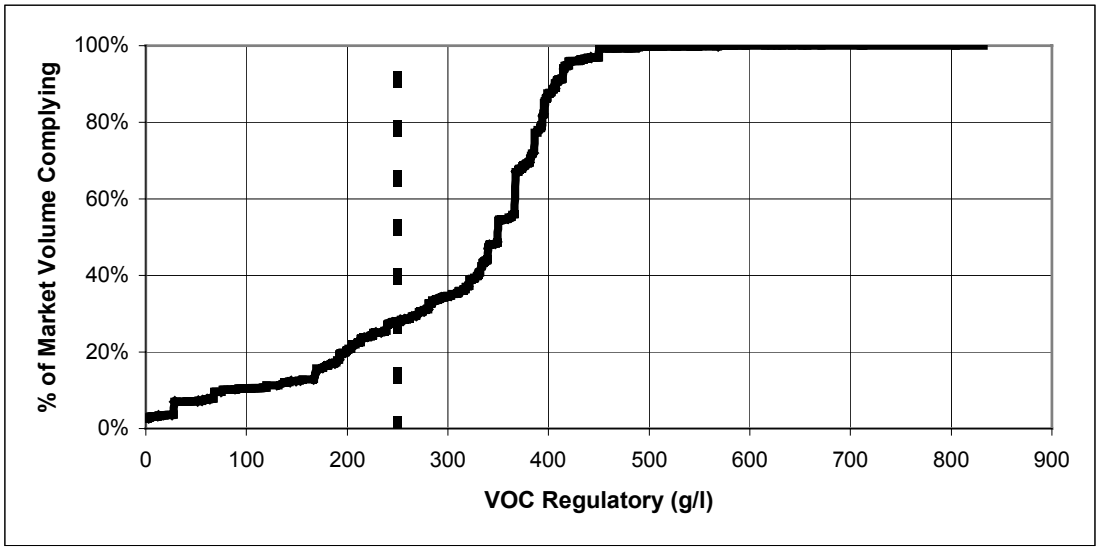


Figure 7-19
Lacquers

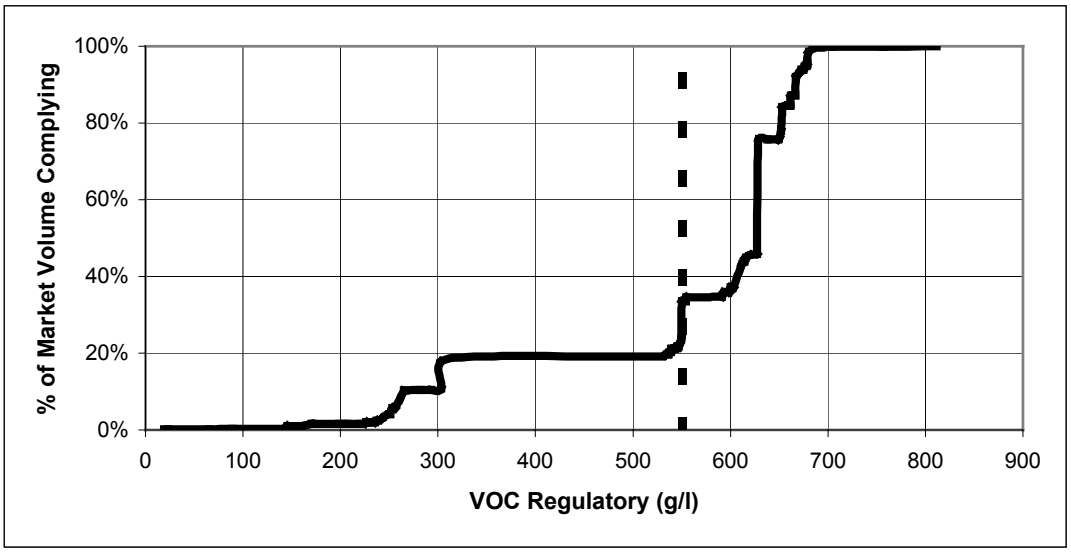


Figure 7-20
Low Solids

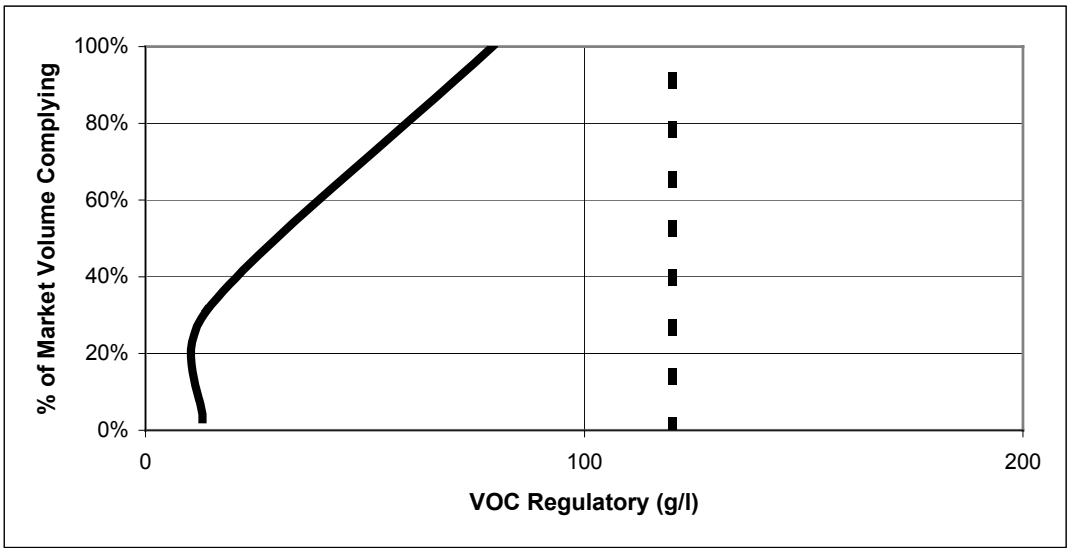


Figure 7-21
Magnesite Cement

In this category, 100% of the product sold had a VOC Regulatory content of 443 grams/liter. This complies with the VOC Limit of 450 grams/liter.

Figure 7-22
Mastic Texture

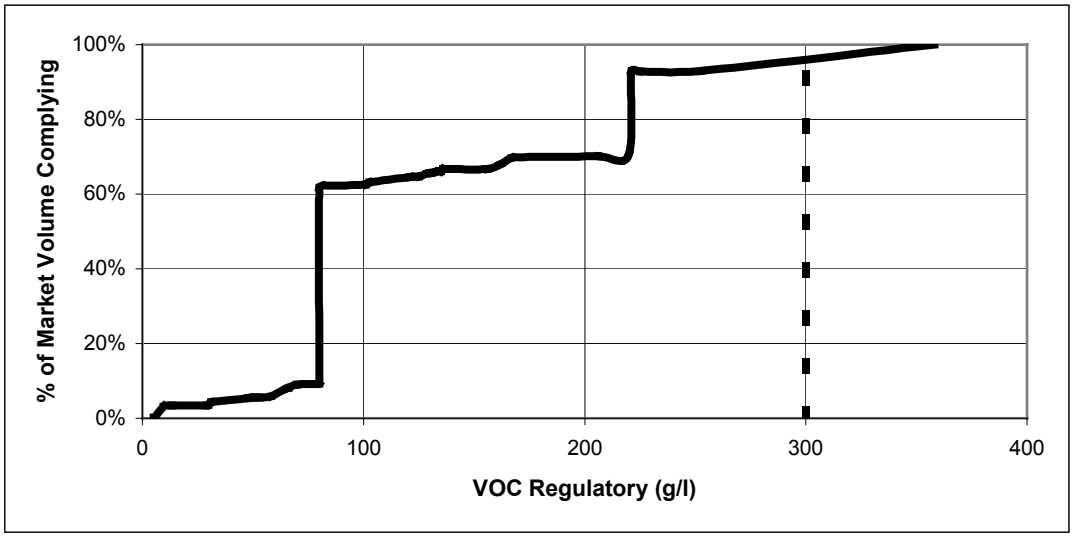


Figure 7-23
Metallic Pigmented

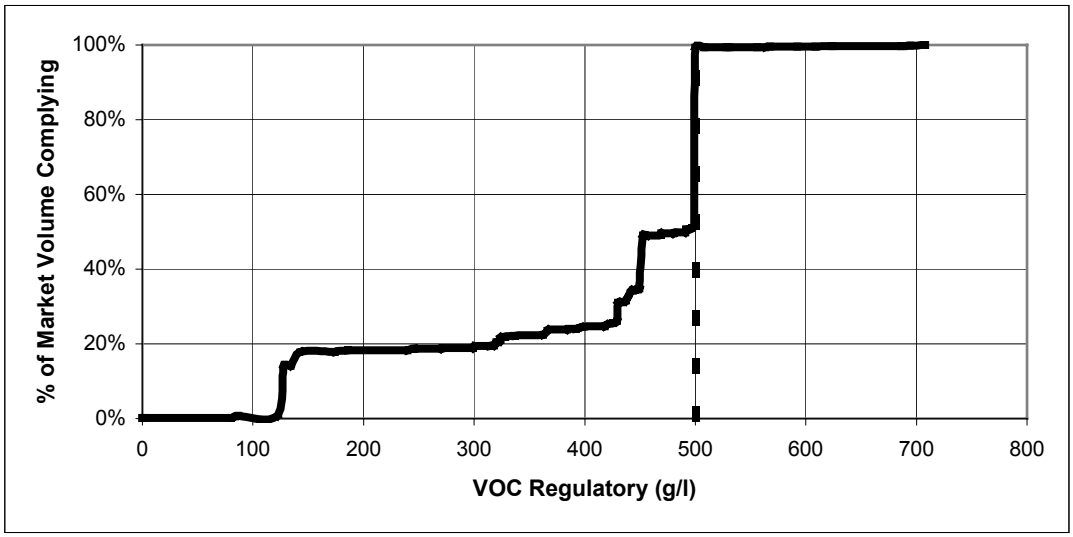


Figure 7-24
Multi-Color

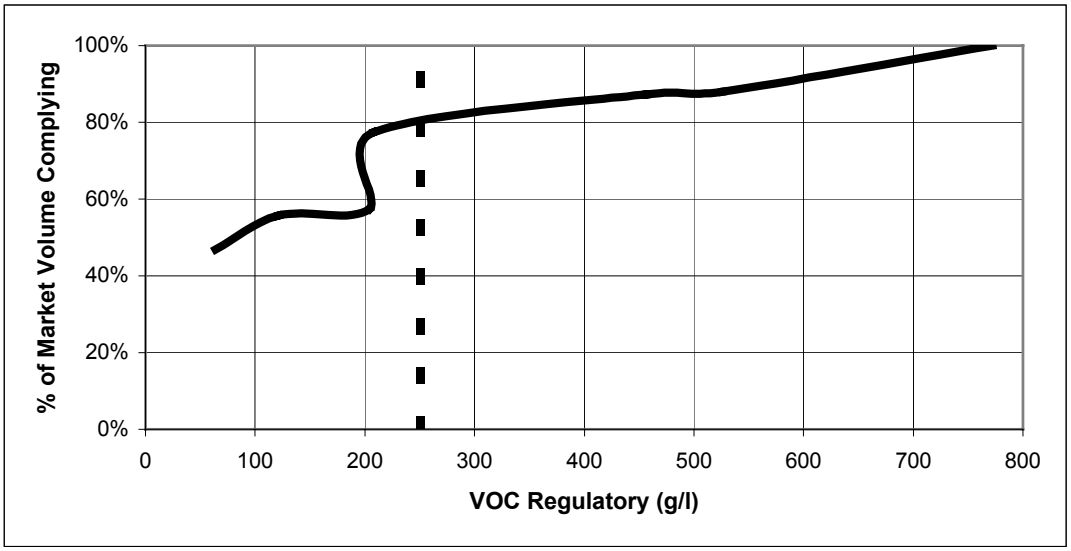


Figure 7-25
Nonflat - High Gloss

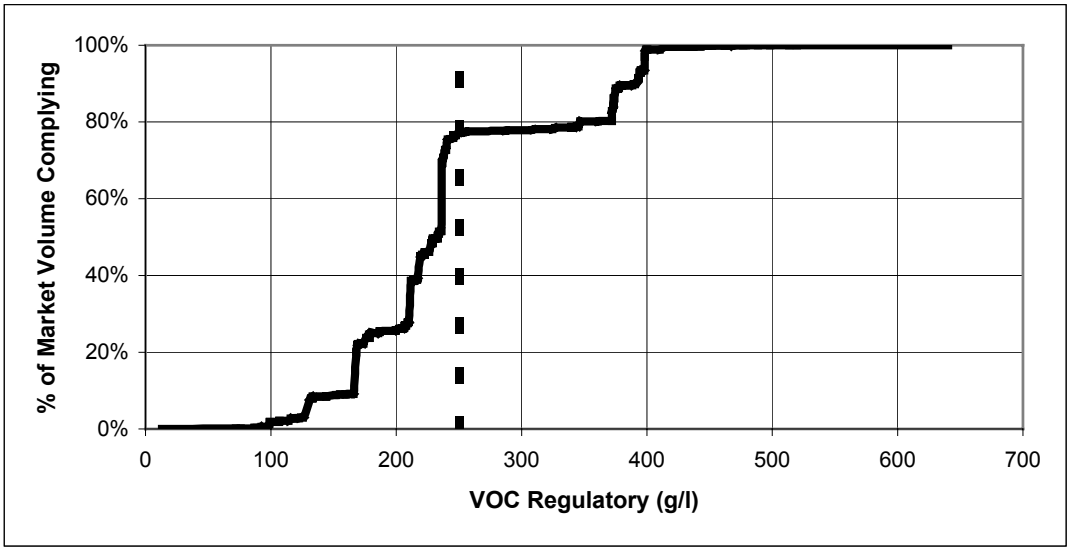


Figure 7-26
Nonflat - Low Gloss

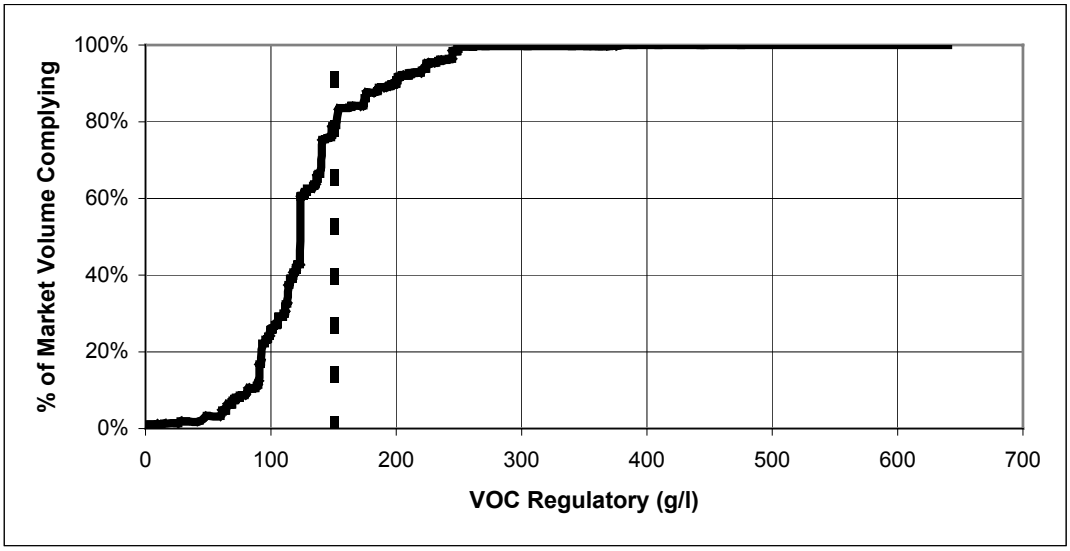


Figure 7-27
Nonflat - Medium Gloss

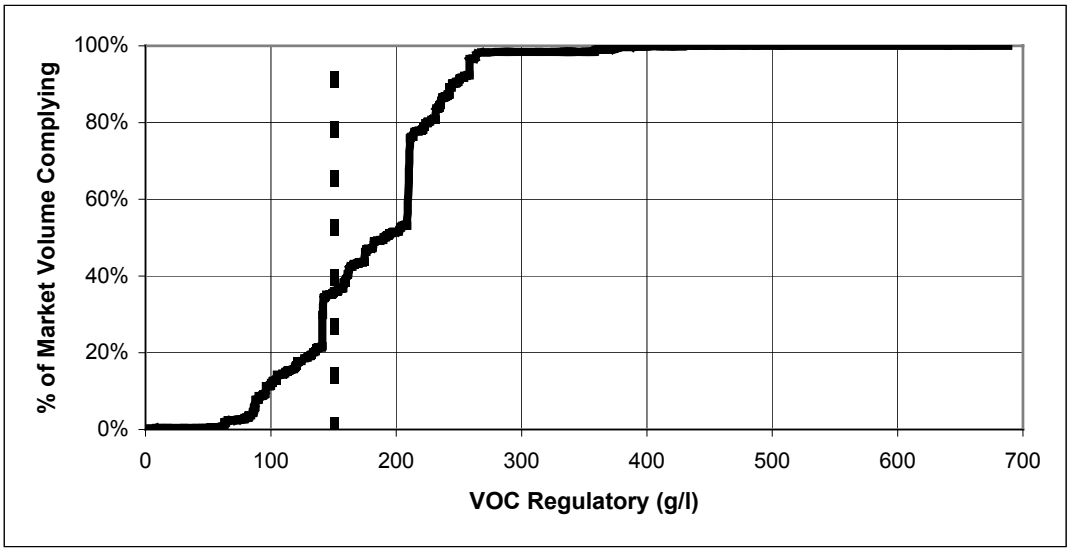


Figure 7-28
Other

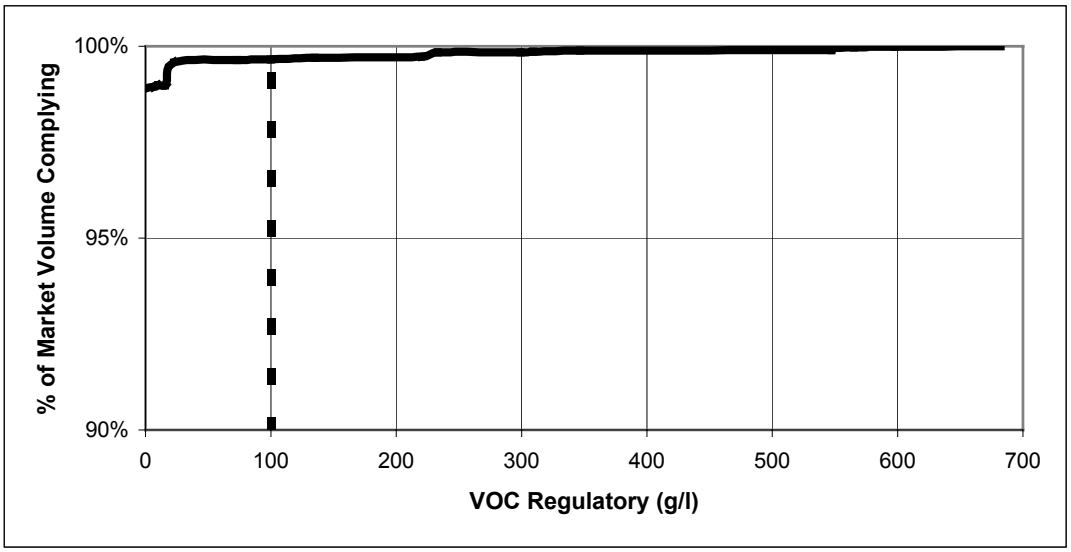


Figure 7-29
Pre-Treatment Wash Primer

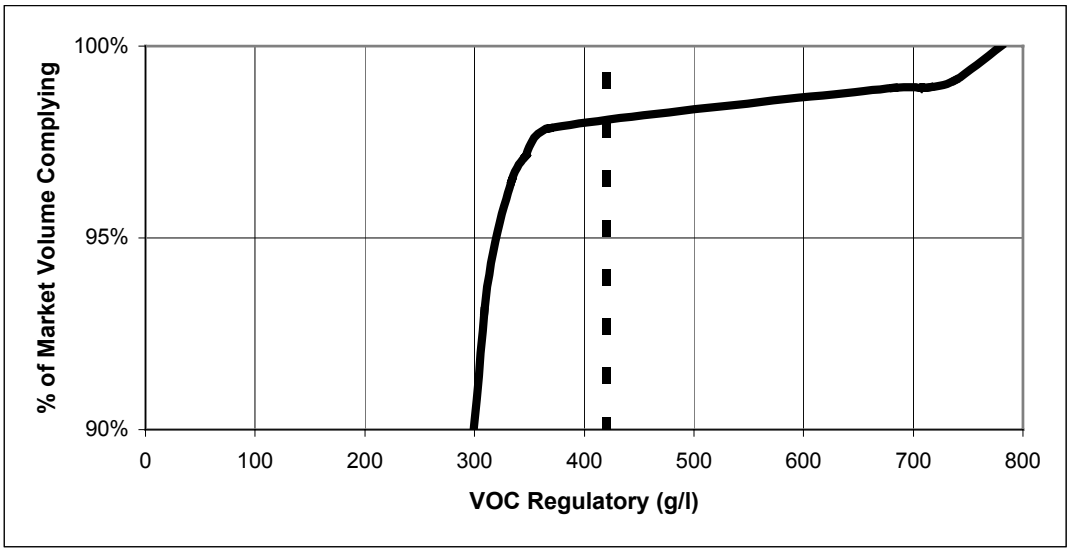


Figure 7-30
Primer, Sealer and Undercoater

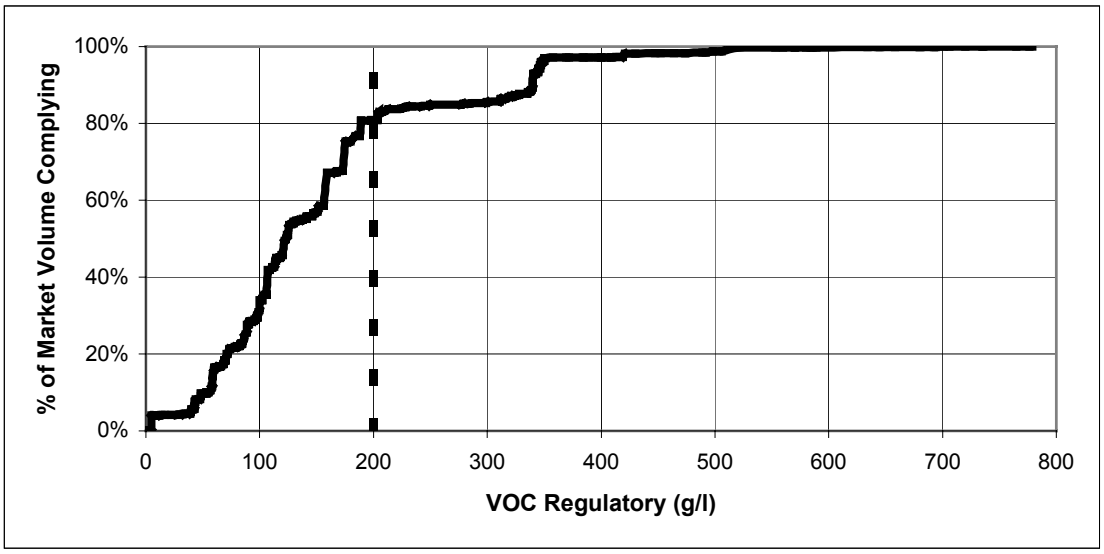


Figure 7-31
Quick Dry Enamel

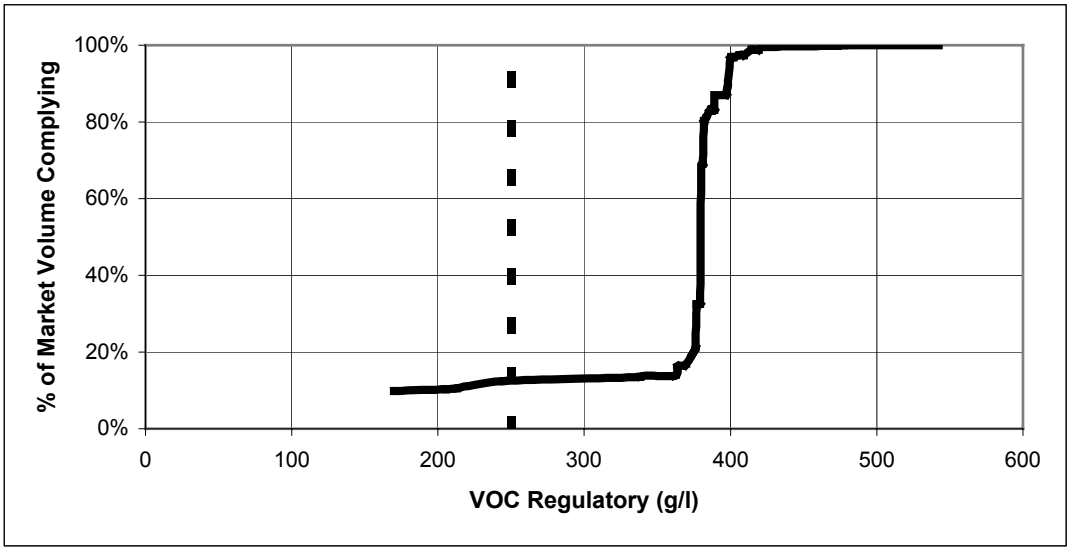


Figure 7-32
Quick Dry Primer, Sealer and Undercoater

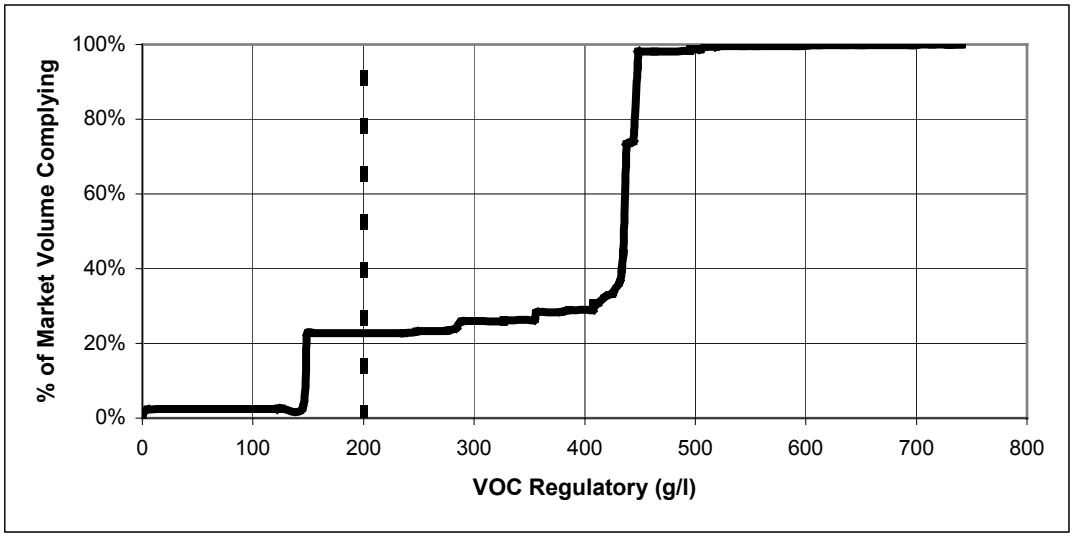


Figure 7-33
Recycled

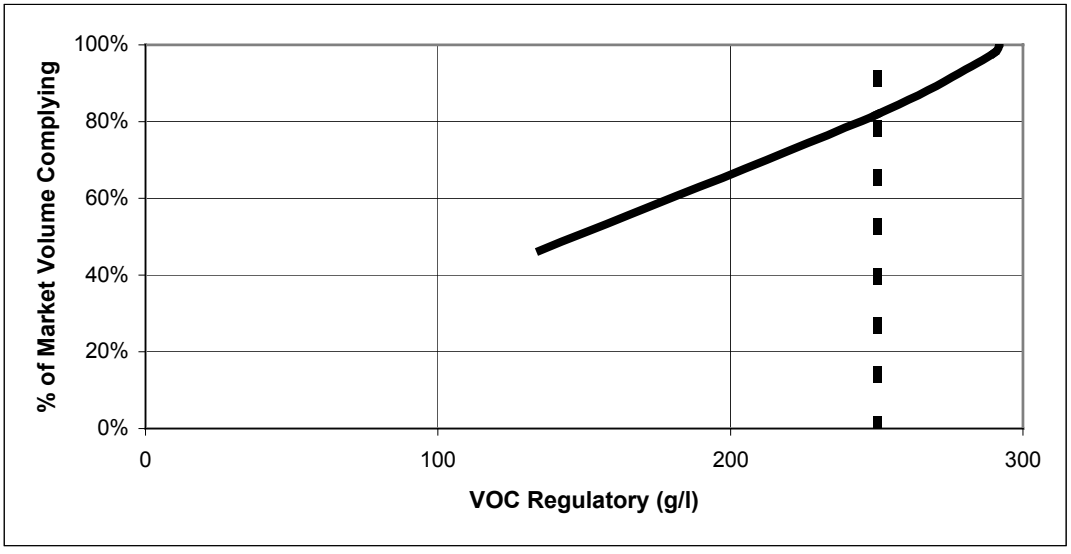


Figure 7-34
Roof

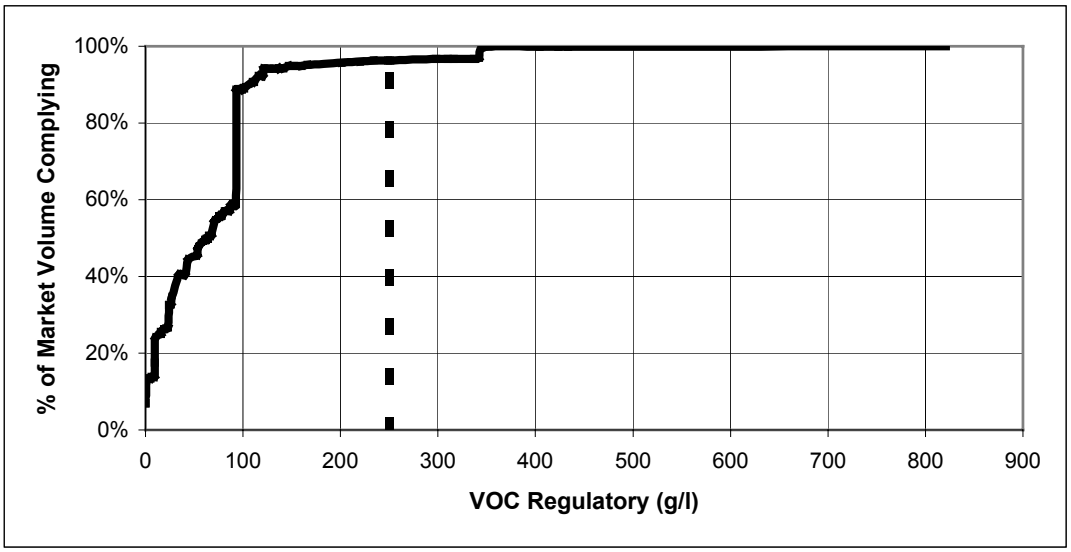


Figure 7-35
Rust Preventative

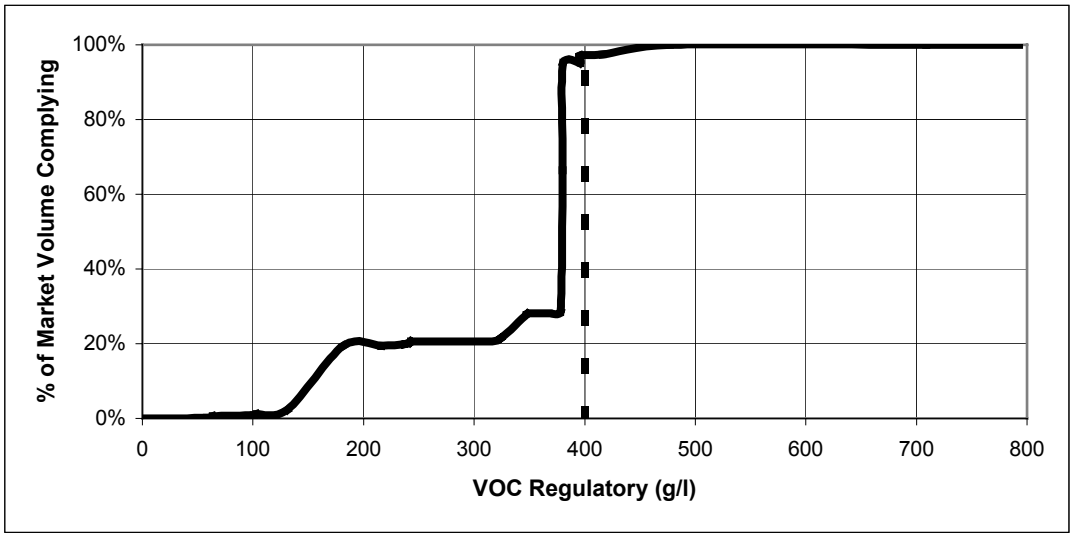


Figure 7-36
Sanding Sealers

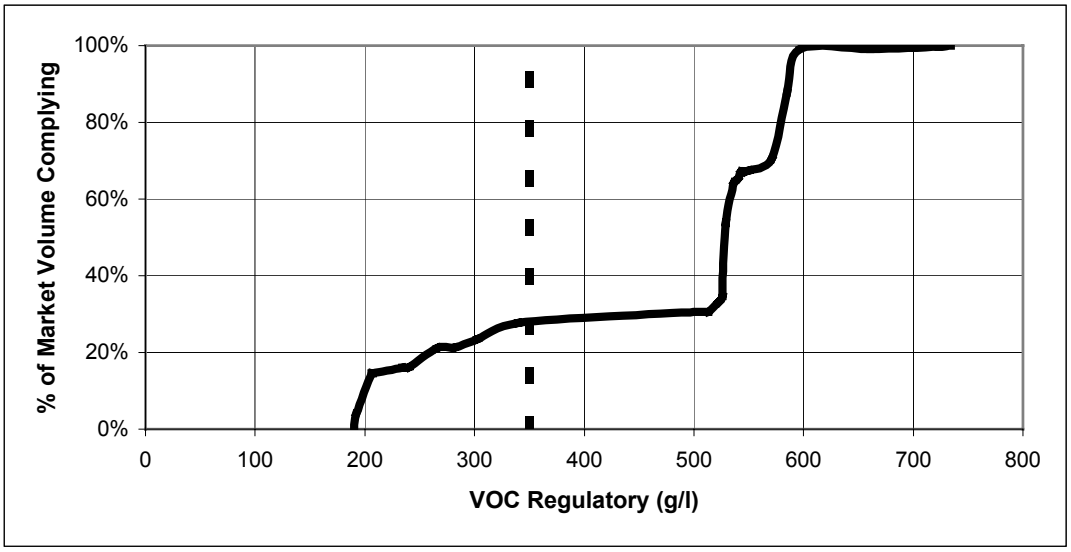


Figure 7-37
Shellacs - Clear

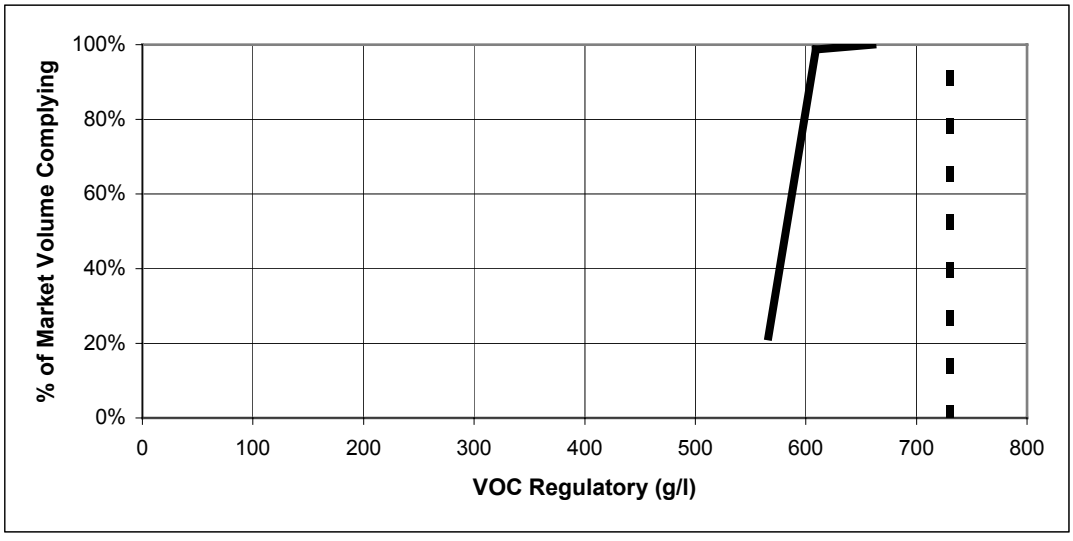


Figure 7-38
Shellacs - Opaque

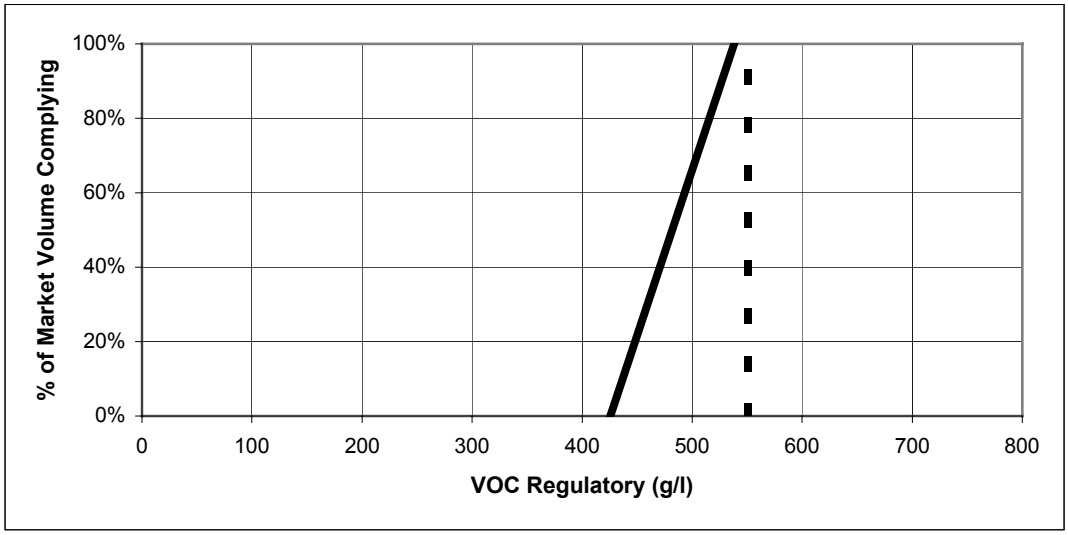


Figure 7-39
Specialty Primer, Sealer and Undercoater

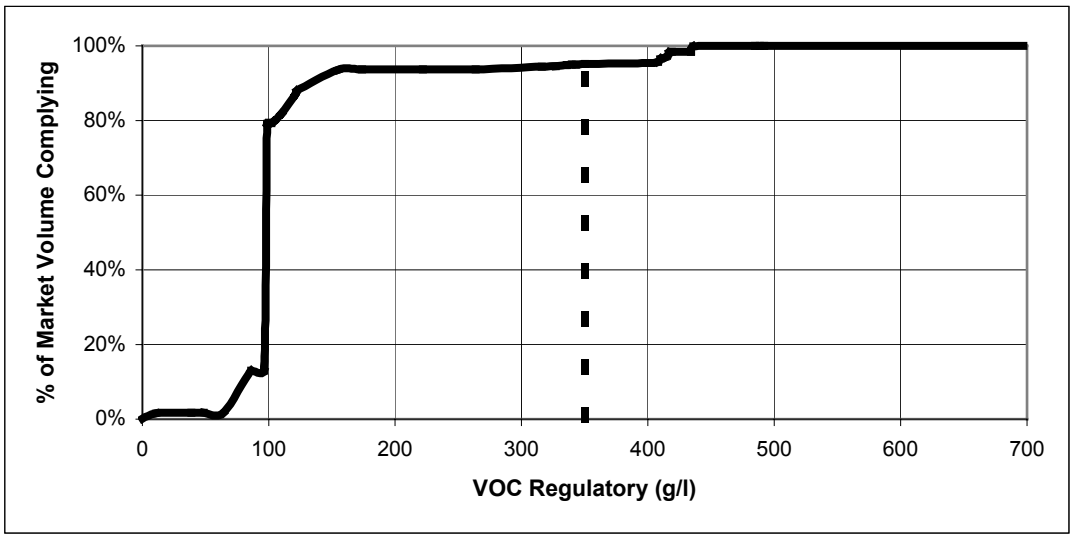


Figure 7-40
Stains – Clear/Semitransparent

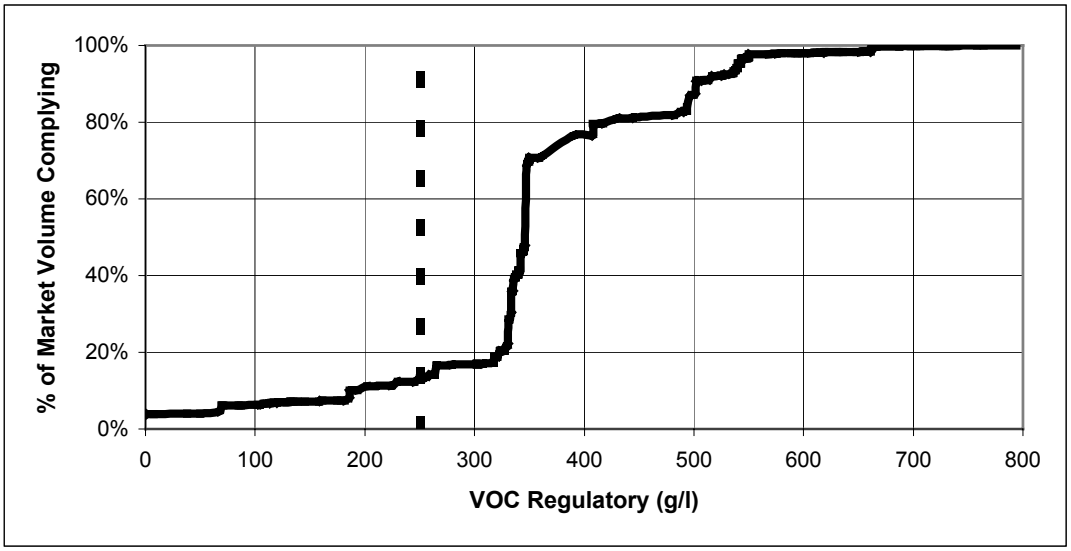


Figure 7-41
Stains - Opaque

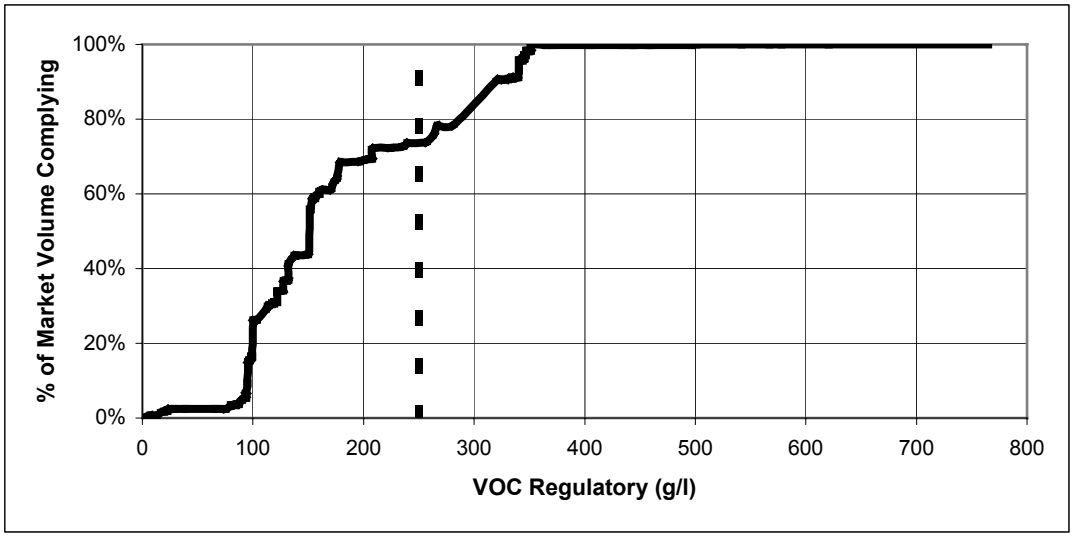


Figure 7-42
Swimming Pool

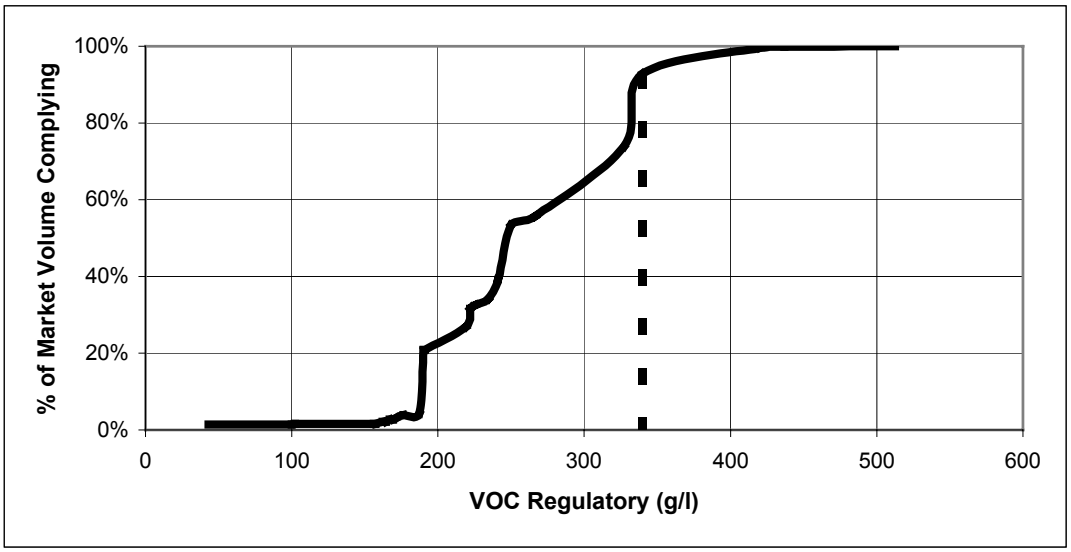


Figure 7-43
Swimming Pool Repair and Maintenance

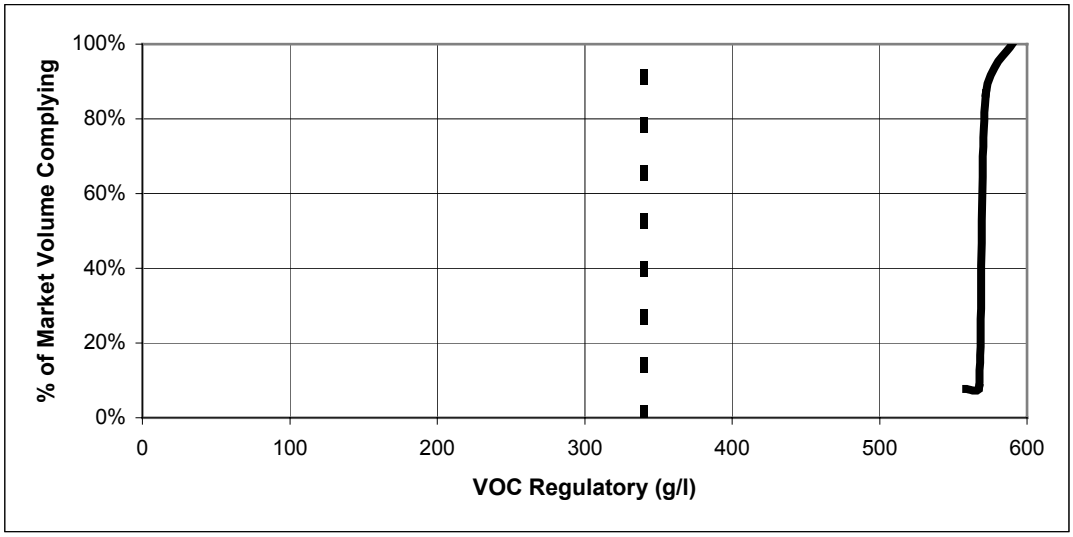


Figure 7-44
Traffic Marking

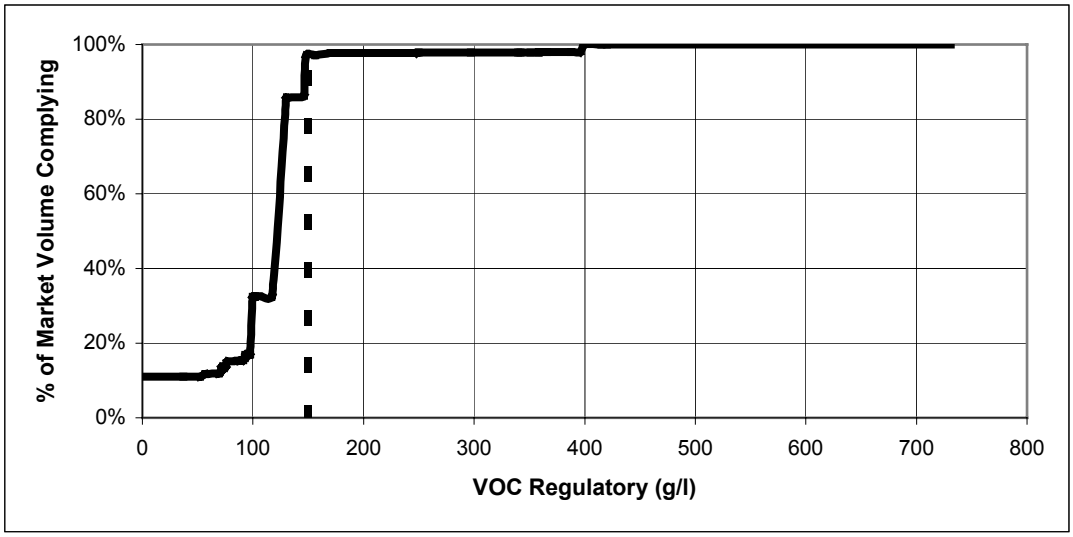


Figure 7-45
Varnishes - Clear

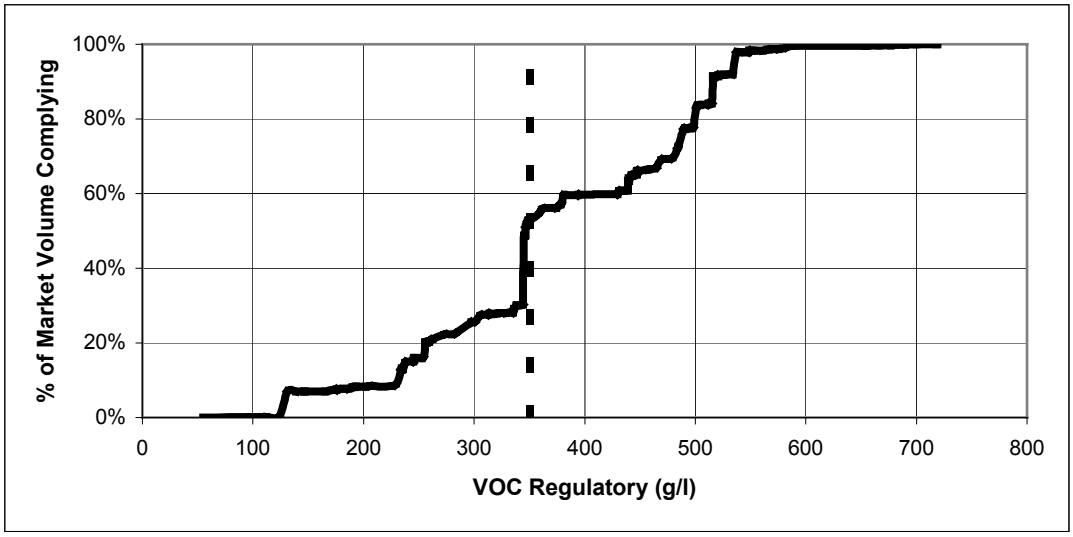


Figure 7-46
Varnishes – Semitransparent

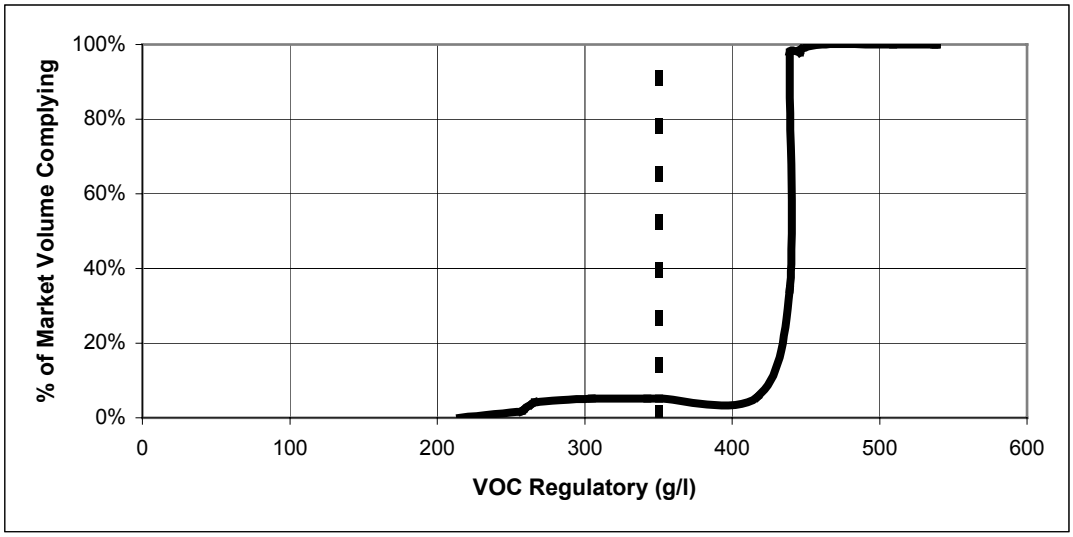


Figure 7-47
Waterproofing Concrete/Masonry Sealers

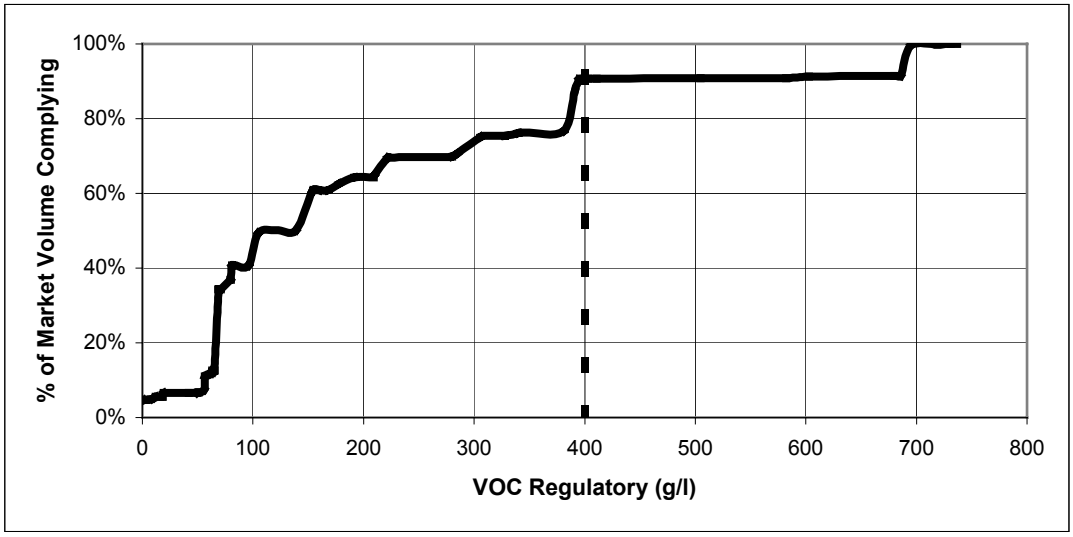


Figure 7-48
Waterproofing Sealers

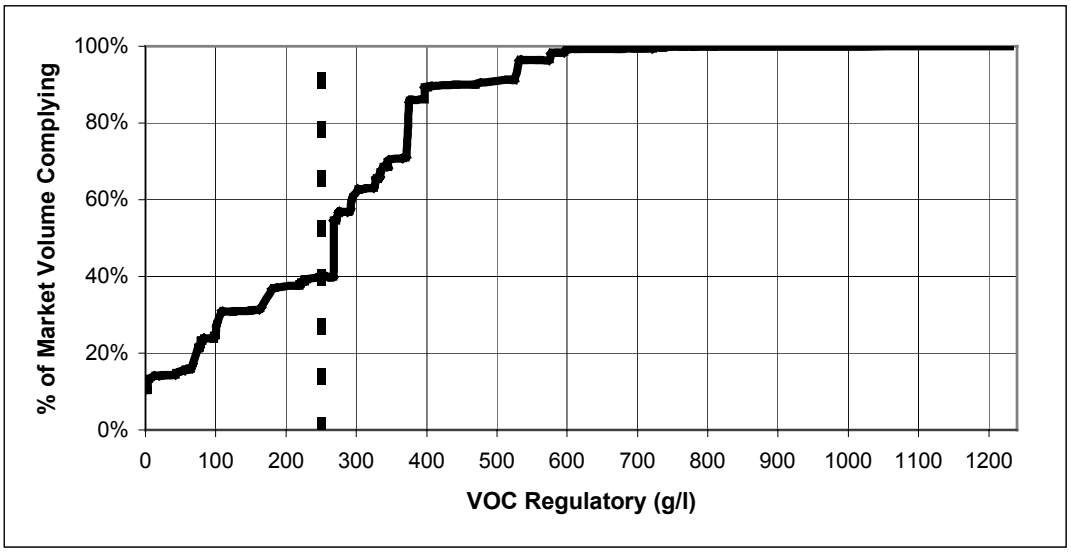
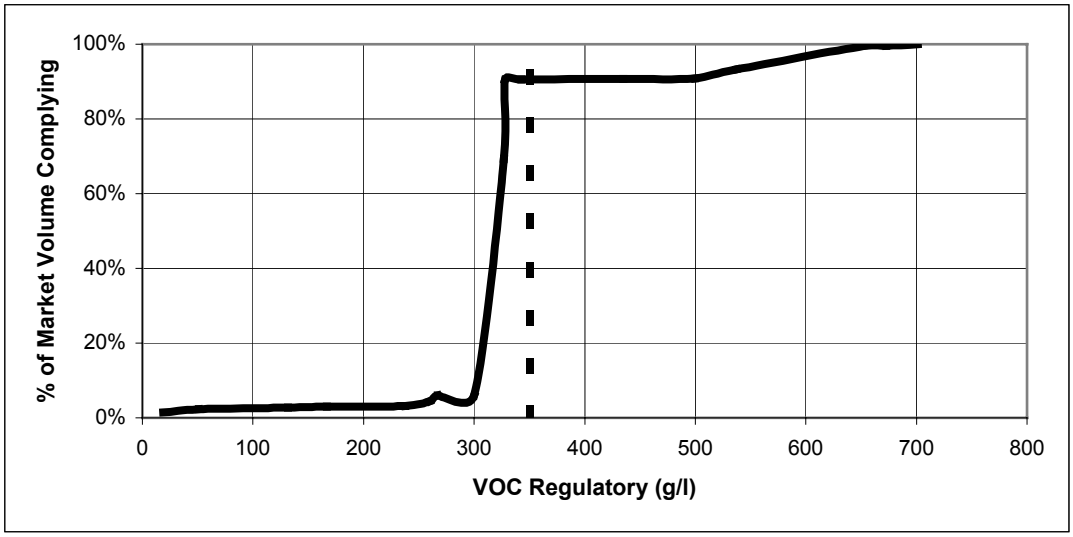


Figure 7-49
Wood Preservatives



Chapter 8 -- Volume Percents, Weight Percents, & Densities

The 1998 survey gathered data on the percent by volume of solids and the coating density. The 2001 survey expanded this effort to include the following physical parameter data:

- Solids Percent by Weight
- Volatiles Percent by Weight
- Water Percent by Weight
- Exempt Compounds Percent by Weight
- Solids Percent by Volume
- Water Percent by Volume
- Exempt Compounds Percent by Volume
- Coating Density

These data made it possible to verify the reported VOC values that were calculated using the above-listed parameters. Since most survey respondents calculated their VOCs, rather than using Method 24 results, gathering the physical parameter data greatly improved our ability to ensure the quality of the VOC values.

This chapter includes the following data summaries:

Table 8-1: *Sales-Weighted Average Volume Percents (Solids, Water, Exempts)*

Table 8-2: *Sales-Weighted Average Weight Percents (Solids, Volatiles, Water, Exempts)*

Table 8-3: *Sales-Weighted Average Coating Densities*

Table 8-1 contains the sales-weighted average (SWA) values for volume percentages in each category, broken down by solvent-borne (SB) and water-borne (WB) coatings. Table 8-2 contains SWA weight percentages and Table 8-3 contains SWA coating densities. Sales of small containers were included when calculating the SWA values in these tables. A small number of manufacturers reported sales data, but provided no data on certain physical parameters (e.g, volume percentages). The sales associated with these null values were not included when calculating the SWA values for these tables. This was done to ensure that the numbers were not artificially lowered by inclusion of null values.

Table 8-1*: Sales-Weighted Average Volume Percents (Solids, Water, Exempts)*

Coating Category	SWA Volume % Solids		SWA Volume % Water		SWA Volume % Exempt Cmpds.	
	SB	WB	SB	WB	SB	WB
Antenna	45	39	0	51	0	0
Antifouling	NA	NA	NA	NA	NA	NA
Bituminous Roof	70	48	2	52	0	0
Bituminous Roof Primer	56	55	0	41	0	0
Bond Breakers	NA	14	NA	78	NA	0
Clear Brushing Lacquer	19	NA	0	NA	0	NA
Concrete Curing Compounds	39	21	34	75	4	0
Dry Fog	45	37	11	51	0	0
Faux Finishing	47	28	0	63	0	0
Fire Resistive	NA	51	NA	47	NA	0
Fire Retardant - Clear	NA	30	NA	64	NA	0
Fire Retardant - Opaque	70	38	0	55	0	0
Flat	52	36	1	60	1	0
Floor	83	58	0	34	0	0
Flow	NA	30	NA	45	NA	0
Form Release Compounds	74	20	0	78	0	0
Graphic Arts	48	38	0	58	0	0
High Temperature	49	32	0	55	5	0
Industrial Maintenance	60	44	1	47	0	0
Lacquers	22	31	0	57	11	0
Low Solids	NA	8	NA	86	NA	0
Magnesite Cement	34	NA	0	NA	31	NA
Mastic Texture	54	51	20	45	0	0
Metallic Pigmented	44	31	0	63	0	0
Multi-Color	19	23	39	69	0	0
Nonflat - High Gloss	56	35	0	56	1	0
Nonflat - Low Gloss	62	36	1	59	0	0
Nonflat - Medium Gloss	58	32	1	61	0	0
Other	86	34	0	66	0	0
Pre-Treatment Wash Primer	37	31	1	63	0	0
Primer, Sealer, & Undercoater	52	36	6	59	0	0

Table 8-1*: Sales-Weighted Average Volume Percents (Solids, Water, Exempts)*

Coating Category	SWA Volume % Solids		SWA Volume % Water		SWA Volume % Exempt Cmpds.	
	SB	WB	SB	WB	SB	WB
Quick Dry Enamel	52	35	3	53	0	0
Quick Dry Primer, Sealer, & Undercoater	43	35	0	59	0	0
Recycled	NA	33	NA	31	NA	0
Roof	75	45	0	48	0	0
Rust Preventative	52	41	0	68	0	0
Sanding Sealers	30	26	0	66	0	0
Shellacs - Clear	23	NA	4	NA	0	NA
Shellacs - Opaque	30	NA	6	NA	0	NA
Specialty Primer, Sealer, & Undercoater	48	46	0	49	0	0
Stains - Clear/Semitransparent	49	23	0	69	0	0
Stains - Opaque	56	32	0	63	0	0
Swimming Pool	62	33	0	57	0	0
Swimming Pool Repair and Maintenance	34	NA	0	NA	1	NA
Temperature Indicator Safety	NA	NA	NA	NA	NA	NA
Traffic Marking	74	58	0	33	16	0
Varnishes - Clear	45	29	0	58	0	0
Varnishes - Semitransparent	43	27	0	63	0	0
Waterproofing Concrete/Masonry Sealers	42	40	0	53	7	0
Waterproofing Sealers	57	23	2	72	5	0
Wood Preservatives	56	11	0	84	0	0

"NA": No sales were reported in this subcategory.
Sales of small containers were included when calculating the SWA values in this table.

Notes on specific coating categories:

Concrete Curing Compounds: The sales-weighted average Volume % Water seems high for solvent-borne Concrete Curing Compounds. The highest sales volume of solvent-borne Concrete Curing Compounds is attributable to a product that contains a fairly high weight percentage of water and a smaller weight percentage of organic solvent. In many cases, coatings that have a volatile content that is more than 50% water would be classified as water-borne. However, another criterion is the type of cleanup solvent that is used. For solvent-borne Concrete Curing Compounds, the high-volume product is cleaned up with mineral spirits or petroleum distillates. Therefore, it can be classified as a solvent-borne coating, regardless of the high water content.

Mastic Texture: The sales-weighted average Volume % Water seems high for solvent-borne Mastic Texture coatings. The highest sales volumes of solvent-borne Mastic Texture coatings are attributable to a family of products that contain a fairly high weight percentage of water and a smaller weight percentage of organic solvent. In many cases, coatings that have a volatile content that is more than 50% water would be classified as water-borne. However, another criterion is the type of cleanup solvent that is used. A

major manufacturer of these products has previously commented that this high-volume family of products is cleaned up with solvent. Therefore, they can be classified as solvent-borne coatings, regardless of the high water content.

Multi-Color: The sales-weighted average Volume % Water seems high for solvent-borne Multi-Color coatings. The highest sales volume of solvent-borne Multi-Color coatings is attributable to a product that contains a high weight percentage of volatile compounds, with approximately equal portions of water and organic solvent. Since the weight percentage of organic solvent is fairly high, this product can be classified as solvent-borne.

Table 8-2: ***Sales-Weighted Average Weight Percents (Solids, Volatiles, Water, Exempts)***

	SWA Weight % Solids		SWA Weight % Volatiles		SWA Weight % Water		SWA Weight % Exempt Cmpds.	
Coating Category	**SB**	**WB**	**SB**	**WB**	**SB**	**WB**	**SB**	**WB**
Antenna	68	52	32	48	0	37	0	0
Antifouling	NA	NA	NA	NA	NA	NA	NA	NA
Bituminous Roof	75	51	25	49	2	49	0	0
Bituminous Roof Primer	59	55	41	45	0	41	0	0
Bond Breakers	NA	14	NA	86	NA	80	NA	0
Clear Brushing Lacquer	26	NA	74	NA	0	NA	0	NA
Concrete Curing Compounds	39	22	61	78	34	74	4	0
Dry Fog	71	56	29	44	8	38	0	0
Faux Finishing	67	36	33	64	0	56	0	0
Fire Resistive	NA	60	NA	40	NA	38	NA	0
Fire Retardant - Clear	NA	45	NA	55	NA	54	NA	0
Fire Retardant - Opaque	79	57	21	43	0	40	0	0
Flat	74	53	26	47	0	44	0	0
Floor	87	64	13	36	0	29	0	0
Flow	NA	45	NA	55	NA	36	NA	0
Form Release Compounds	72	18	28	82	0	81	0	0
Graphic Arts	61	52	37	48	0	44	0	0
High Temperature	64	45	36	55	0	45	4	0
Industrial Maintenance	73	55	27	45	1	38	0	0
Lacquers	35	34	65	66	0	55	9	0
Low Solids	NA	9	NA	91	NA	85	NA	0
Magnesite Cement	47	NA	53	NA	0	NA	24	NA
Mastic Texture	63	61	37	39	18	35	0	0
Metallic Pigmented	57	39	43	61	0	57	0	0
Multi-Color	29	34	71	66	38	58	0	0
Nonflat - High Gloss	70	46	30	54	0	46	1	0
Nonflat - Low Gloss	77	49	23	51	1	47	0	0
Nonflat - Medium Gloss	73	44	27	56	1	50	0	0
Other	89	45	11	55	0	55	0	0
Pre-Treatment Wash Primer	52	37	48	63	2	54	0	0
Primer, Sealer, & Undercoater	70	49	30	51	4	47	0	0
Quick Dry Enamel	68	43	32	58	2	48	0	0

Table 8-2: ***Sales-Weighted Average Weight Percents (Solids, Volatiles, Water, Exempts)***

	SWA Weight % Solids		SWA Weight % Volatiles		SWA Weight % Water		SWA Weight % Exempt Cmpds.	
Coating Category	**SB**	**WB**	**SB**	**WB**	**SB**	**WB**	**SB**	**WB**
Quick Dry Primer, Sealer, & Undercoater	65	50	35	50	0	46	0	0
Recycled	NA	45	NA	51	NA	42	NA	0
Roof	82	57	18	43	0	41	0	0
Rust Preventative	69	43	31	57	0	52	0	0
Sanding Sealers	36	27	64	73	0	65	0	0
Shellacs - Clear	31	NA	69	NA	5	NA	0	NA
Shellacs - Opaque	51	NA	47	NA	5	NA	0	NA
Specialty Primer, Sealer, & Undercoater	70	58	30	42	0	38	0	0
Stains - Clear/Semitransparent	56	27	44	73	0	66	0	0
Stains - Opaque	72	43	28	57	0	53	0	0
Swimming Pool	78	51	22	49	0	43	0	0
Swimming Pool Repair & Maintenance	49	NA	51	NA	0	NA	0	NA
Temperature Indicator Safety	NA	NA	NA	NA	NA	NA	NA	NA
Traffic Marking	86	75	14	25	0	20	9	0
Varnishes - Clear	51	31	49	69	0	58	0	0
Varnishes - Semitransparent	52	29	48	71	0	61	0	0
Waterproofing Concrete/Masonry Sealers	55	52	45	48	0	44	7	0
Waterproofing Sealers	61	25	39	75	2	71	4	0
Wood Preservatives	59	14	41	86	0	82	0	0

"NA": No sales were reported in this subcategory.
"Volatiles" includes VOCs, water, and exempt compounds.
Sales of small containers were included when calculating the SWA values in this table.

Table 8-3: ***Sales-Weighted Average Coating Densities***

Coating Category	SWA Density (lb/gal)	
	SB	**WB**
Antenna	11.7	10.2
Antifouling	NA	NA
Bituminous Roof	8.4	8.8
Bituminous Roof Primer	8.0	8.5
Bond Breakers	N/A	8.2
Clear Brushing Lacquer	7.5	N/A
Concrete Curing Compounds	8.3	8.5
Dry Fog	12.3	11.5
Faux Finishing	10.5	9.5
Fire Resistive	N/A	10.4
Fire Retardant - Clear	N/A	9.9
Fire Retardant - Opaque	10.5	11.4
Flat	12.3	11.4
Floor	10.1	10.2
Flow	N/A	10.4
Form Release Compounds	7.4	8.2

Table 8-3: *Sales-Weighted Average Coating Densities*

Coating Category	SWA Density (lb/gal)	
	SB	WB
Graphic Arts	9.3	10.9
High Temperature	9.9	10.3
Industrial Maintenance	10.6	11.1
Lacquers	8.5	8.7
Low Solids	N/A	8.4
Magnesite Cement	8.9	N/A
Mastic Texture	9.2	10.7
Metallic Pigmented	9.8	9.3
Multi-Color	8.4	8.8
Nonflat - High Gloss	10.0	10.1
Nonflat - Low Gloss	11.3	10.7
Nonflat - Medium Gloss	10.7	10.2
Other	9.8	10.0
Pre-Treatment Wash Primer	10.4	9.4
Primer, Sealer, and Undercoater	11.3	10.6
Quick Dry Enamel	9.9	9.4
Quick Dry Primer, Sealer, and Undercoater	10.7	10.7
Recycled	N/A	10.6
Roof	10.1	10.6
Rust Preventative	10.6	10.8
Sanding Sealers	7.3	8.6
Shellacs - Clear	7.4	N/A
Shellacs - Opaque	9.9	N/A
Specialty Primer, Sealer, and Undercoater	11.3	10.9
Stains - Clear/Semitransparent	7.4	9.0
Stains - Opaque	10.4	10.1
Swimming Pool	12.2	11.3
Swimming Pool Repair and Maintenance	9.5	N/A
Temperature Indicator Safety	N/A	N/A
Traffic Marking	14.1	13.6
Varnishes - Clear	7.5	8.7
Varnishes - Semitransparent	7.6	8.6
Waterproofing Concrete/Masonry Sealers	10.0	10.9
Waterproofing Sealers	8.4	9.4
Wood Preservatives	7.3	8.5

"NA": No sales were reported in this subcategory.
Sales of small containers were included when calculating the SWA values in this table.

Chapter 9 -- Substrate and Resin Information

During the development of the SCM, ARB staff used manufacturer product data sheets to evaluate whether a particular coating could meet a given VOC limit and be suitable for a desired substrate. To further improve on this type of analysis, the 2001 survey gathered data on the types of substrates that were recommended for a particular product. For certain targeted categories, survey respondents were required to report all of the recommended substrates. For the other categories, submittal of substrate information was optional. In addition to substrate information, the survey collected data on resin types and number of components (i.e., single-component or multi-component) for all of the coating categories.

This chapter includes the following data summaries:

Table 9-1: *Relative Fraction for Each Substrate Type*

Table 9-2: *Volume Percent for Each Resin Type*

Table 9-3: *Resin Mixtures*

Table 9-4: *Single-Component/Multi-Component Breakdown*

Table 9-1 illustrates the types of substrates that were reported for various coating categories, based on the VOC Regulatory value. For example, in a given 50 gram/liter VOC range, most of the reported coatings in a category may be suitable for all substrates. However, in another 50 gram/liter VOC range for that same category, the recommended substrates may be limited to a few main areas. Differences in formulation between lower-VOC and higher-VOC coatings may result in differences for the recommended substrates.

Table 9-1 lists the relative fractions, rather than the volume percents, for each applicable VOC range in each category. Since survey respondents could select multiple substrate codes for a single product, it was not possible to calculate a straight percentage of coating volume that would be associated with a single substrate. Theoretically, 100% of the sales volume for a given product could be used on any one of the recommended substrates. If it is assumed that 100% of the sales could be associated with each substrate, the total sales values, based on all possible substrates, would be greater than the actual sales totals. Therefore, we used a "Relative Fraction" calculation method, as described below:

1. Assign all products to a 50 gram/liter VOC Range and identify all of the substrates reported for that product.
2. Identify the sales volume for a given product and assign 100% of this volume to all of the reported substrates.
3. Add up all of the sales volumes in a given VOC range to get a [VOC Range Subtotal]. (Please note that this subtotal will be greater than the actual sales total, because a product can be counted multiple times if it has multiple substrates.)
4. Add up all the sales volumes for each substrate category in a given VOC range to get the [Substrate Subtotal] for all reported substrates in a given VOC range.
5. Calculate the "Relative Fraction" by dividing the [Substrate Subtotal] by the [VOC Range Subtotal].

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
Antenna																				
251-300 g/l												1.00								
351-400 g/l												1.00								
401-450 g/l												1.00								
451-500 g/l														1.00						
Bituminous Roof																				
0-50 g/l	0.85			0.12	0.01							0.02			0.01					0.00
51-100 g/l				1.00																
101-150 g/l	0.03			0.97																
151-200 g/l		0.70			0.01															0.29
201-250 g/l		0.09		0.79	0.01							0.08			0.01					0.01
251-300 g/l	0.71	0.02		0.19	0.00							0.07			0.00					0.00
301-350 g/l		0.03		0.21	0.22															0.54
351-400 g/l		0.86			0.14															
451-500 g/l				0.52																0.48
Bituminous Roof Primer																				
0-50 g/l	0.09	0.03		0.88																
151-200 g/l				0.50								0.50								
301-350 g/l	0.70			0.15								0.15								0.00
401-450 g/l	0.00	0.18		0.78	0.01							0.01			0.01					0.01
Bond Breakers																				
51-100 g/l										1.00										
151-200 g/l										1.00										
251-300 g/l										1.00										
301-350 g/l	0.11									0.89										
551-600 g/l										1.00										
Clear Brushing Lacquer																				
651-700 g/l																1.00				
Concrete Curing Compounds																				
0-50 g/l	0.11				0.17					0.72										
51-100 g/l					0.19					0.81										
101-150 g/l	0.07				0.22					0.70										

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
151-200 g/l					0.46					0.54										
201-250 g/l					0.29					0.71										
251-300 g/l					0.97					0.03										
301-350 g/l	0.06				0.13					0.81										
451-500 g/l					1.00															
501-550 g/l										1.00										
551-600 g/l	1.00																			
601-650 g/l	0.40				0.60															
651-700 g/l	0.01				0.99															
700 g/l +	1.00																			
Dry Fog																				
0-50 g/l		0.19	0.02		0.20						0.20	0.20			0.20					
51-100 g/l	0.15	0.01			0.25						0.25	0.09			0.25					
101-150 g/l	1.00																			
151-200 g/l	0.11		0.89																	
251-300 g/l		1.00																		
301-350 g/l	1.00																			
351-400 g/l	0.17	0.14		0.01	0.17						0.17	0.17			0.17					
401-450 g/l		1.00																		
501-550 g/l	1.00																			
Faux Finishing																				
0-50 g/l	0.67	0.11			0.07						0.07				0.07					
51-100 g/l		1.00																		
101-150 g/l	0.02				0.33						0.33				0.33					
201-250 g/l	0.20	0.07	0.00		0.17						0.19	0.17			0.17			0.01		
251-300 g/l		0.24									0.38				0.38					
301-350 g/l		0.88									0.06			0.01	0.04					
351-400 g/l											0.50			0.50						
401-450 g/l	0.09	0.52									0.19			0.13				0.06		
651-700 g/l																				1.00
700 g/l +		0.93																		0.07
Fire Resistive																				
0-50 g/l	1.00																			

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
Fire Retardant - Clear																				
0-50 g/l		0.07		0.28																0.65
Fire Retardant - Opaque																				
0-50 g/l		0.40	0.14												0.45					
51-100 g/l					0.33						0.33				0.33					
101-150 g/l			0.81	0.18	0.00						0.00				0.00					
201-250 g/l		1.00																		
251-300 g/l										0.33				0.33					0.33	
301-350 g/l		0.01								0.33				0.33					0.33	
451-500 g/l		1.00																		
551-600 g/l		1.00																		
700 g/l +		1.00																		
Flat																				
0-50 g/l	0.01	0.06	0.09	0.00	0.19	0.01	0.01		0.01	0.08	0.25	0.08	0.00		0.11	0.00		0.08	0.00	0.00
51-100 g/l	0.01	0.25	0.00	0.00	0.19	0.01	0.03		0.03	0.04	0.13	0.07	0.00	0.01	0.15	0.01	0.00	0.06	0.00	0.00
101-150 g/l	0.01	0.09	0.02		0.21	0.02	0.06	0.00	0.05	0.06	0.16	0.10		0.00	0.16	0.02		0.03	0.00	0.00
151-200 g/l	0.00	0.26	0.03	0.02	0.07	0.01	0.03		0.02	0.03	0.30	0.06			0.09	0.01		0.04	0.00	0.01
201-250 g/l	0.00	0.06	0.23		0.00	0.00	0.23	0.00	0.00	0.00	0.23	0.00			0.00			0.23		
301-350 g/l					0.25						0.25	0.25			0.25					
351-400 g/l	0.00	0.00			0.33						0.33				0.33					
401-450 g/l					0.13		0.02		0.02	0.02	0.15	0.05			0.57	0.02		0.02		
451-500 g/l		0.00			0.25						0.25	0.25			0.25					
651-700 g/l																				1.00
Floor																				
0-50 g/l				0.02	0.81	0.01			0.04	0.08			0.01		0.02			0.00	0.00	
51-100 g/l		0.00		0.02	0.21				0.09	0.21		0.16	0.03		0.29					
101-150 g/l		0.05		0.02	0.38					0.08		0.02	0.02	0.01	0.34	0.04		0.04	0.01	0.00
151-200 g/l		0.17			0.22					0.20		0.02	0.01		0.08	0.14		0.14	0.01	0.00
201-250 g/l		0.36			0.36	0.00	0.00	0.00		0.08		0.02	0.01	0.06	0.06				0.06	
251-300 g/l					0.90					0.09					0.01					
301-350 g/l					0.59					0.26		0.07			0.07					
351-400 g/l		0.02			0.39					0.02		0.19	0.07		0.14	0.17				
401-450 g/l		0.70			0.23										0.07					

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
451-500 g/l					0.10					0.23		0.10	0.23		0.23	0.10				
501-550 g/l		0.35								0.11		0.11			0.11			0.32		
601-650 g/l					1.00															
Flow																				
401-450 g/l													1.00							
Form Release Compounds																				
0-50 g/l															1.00					
51-100 g/l	0.03				0.00								0.48		0.01				0.48	
101-150 g/l													0.50						0.50	
151-200 g/l										1.00										
201-250 g/l												0.01			0.65	0.35				
301-350 g/l	1.00																			
401-450 g/l												0.27		0.45	0.27					
Graphic Arts																				
51-100 g/l		1.00																		
101-150 g/l		0.67																		0.33
151-200 g/l						0.33	0.33										0.33			
201-250 g/l						0.33	0.33										0.33			
251-300 g/l						0.33	0.33										0.33			
301-350 g/l						0.33	0.33										0.33			
351-400 g/l						0.03	0.03					0.30			0.27	0.03	0.03		0.03	0.27
401-450 g/l				0.28		0.02	0.02									0.04	0.02	0.04	0.28	0.28
501-550 g/l						0.33	0.33										0.33			
High Temperature																				
0-50 g/l													1.00							
251-300 g/l												1.00								
301-350 g/l												0.03	0.97							
351-400 g/l					0.32						0.32	0.05			0.00			0.32		
401-450 g/l					0.01						0.01	0.82	0.16		0.01					
451-500 g/l					0.06							0.34	0.54							0.06
501-550 g/l					0.04							0.96								
551-600 g/l		0.04			0.00							0.16	0.80							
601-650 g/l													1.00							

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
651-700 g/l													0.50	0.50						
Industrial Maintenance																				
0-50 g/l		0.06			0.38	0.00	0.03		0.02	0.08	0.01	0.07	0.19	0.00	0.13				0.00	0.02
51-100 g/l		0.02		0.00	0.11		0.01		0.46	0.02	0.01	0.20	0.12		0.01				0.04	0.00
101-150 g/l		0.00			0.28	0.02	0.00	0.00	0.00	0.13		0.21	0.14	0.01	0.12			0.01	0.01	0.05
151-200 g/l		0.01			0.14	0.00	0.02			0.15	0.08	0.38	0.04		0.09			0.01		0.09
201-250 g/l		0.01			0.26	0.00	0.00			0.02	0.09	0.23	0.12	0.00	0.07			0.00	0.15	0.06
251-300 g/l		0.00			0.10	0.00	0.00			0.20	0.07	0.33	0.24	0.00	0.04					
301-350 g/l		0.02	0.00		0.12	0.13	0.00			0.01	0.03	0.28	0.18	0.02	0.20			0.01	0.00	0.00
351-400 g/l		0.20	0.00		0.19	0.00	0.00		0.00	0.02	0.17	0.18	0.05	0.00	0.14	0.00		0.05	0.00	
401-450 g/l		0.18	0.00		0.13	0.01	0.01		0.01	0.01	0.08	0.24	0.18	0.00	0.15	0.00	0.00	0.00	0.00	0.00
451-500 g/l		0.01	0.02		0.10	0.00	0.00		0.00	0.05	0.05	0.53	0.16		0.07					
501-550 g/l		0.09	0.00		0.30	0.00				0.00	0.00	0.58	0.01		0.00					
551-600 g/l		0.04			0.01					0.14		0.07	0.73	0.00	0.00					
601-650 g/l		0.61								0.36		0.01	0.02							
651-700 g/l			0.23		0.23					0.03	0.23	0.07			0.23					
700 g/l +					0.01							0.43	0.56							
Lacquers																				
0-50 g/l					0.33						0.33				0.33					
51-100 g/l					0.33						0.33				0.33					
101-150 g/l					0.33						0.33				0.33					
151-200 g/l					0.33						0.33				0.33					
201-250 g/l					0.31						0.31				0.37	0.01		0.01		
251-300 g/l		0.01			0.28						0.12	0.16			0.43					
301-350 g/l	0.03															0.73	0.12	0.12		
451-500 g/l																1.00				
501-550 g/l															0.76	0.24				
551-600 g/l												0.00			0.35	0.65				
601-650 g/l										0.00		0.00			0.02	0.37	0.30	0.00	0.30	
651-700 g/l															0.58	0.42				
700 g/l +												0.04			0.04	0.93				
Low Solids																				
0-50 g/l															0.91			0.09		

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
51-100 g/l	1.00																			
Magnesite Cement																				
401-450 g/l										1.00										
Mastic Texture																				
0-50 g/l		0.22			0.72		0.02			0.01					0.03					
51-100 g/l	0.00	0.93			0.02				0.01			0.04								
101-150 g/l					0.07	0.18	0.18	0.18	0.18	0.20										
151-200 g/l					1.00															
201-250 g/l					0.01				0.99											
251-300 g/l		1.00																		
351-400 g/l									1.00											
Metallic Pigmented																				
0-50 g/l												0.63	0.38							
51-100 g/l				0.20	0.02							0.56		0.21	0.02					
101-150 g/l	0.64			0.18							0.01	0.18	0.00							
151-200 g/l	1.00												0.00							
201-250 g/l	0.01												0.99							
251-300 g/l	0.21	0.01										0.09	0.68							
301-350 g/l	0.00	0.00			0.11								0.78	0.11						
351-400 g/l	0.54			0.02	0.02						0.02	0.37	0.02	0.02						
401-450 g/l		0.01		0.46	0.03		0.01					0.44	0.00	0.04	0.01					0.01
451-500 g/l	0.64	0.00		0.16	0.01					0.00		0.17	0.01		0.01					
501-550 g/l				0.49	0.12							0.12	0.16		0.12					
551-600 g/l	0.47												0.28		0.25					
601-650 g/l													1.00							
651-700 g/l		0.97											0.03							
700 g/l +												1.00								
Multi-Color																				
51-100 g/l											1.00									
101-150 g/l											1.00									
201-250 g/l		1.00																		
451-500 g/l		1.00																		
501-550 g/l		1.00																		

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
700 g/l +											0.50					0.50				
Nonflat - High Gloss																				
0-50 g/l					0.33						0.33				0.33					
51-100 g/l		0.34			0.19						0.23	0.05			0.05			0.14		
101-150 g/l	0.01	0.45	0.00		0.07	0.00	0.04		0.04	0.04	0.10	0.06	0.02		0.01	0.04		0.10		
151-200 g/l	0.03	0.13			0.01		0.00		0.01	0.01	0.69	0.02	0.08		0.02	0.00		0.00		
201-250 g/l	0.02	0.18	0.00		0.05		0.07		0.08	0.08	0.16	0.15	0.00		0.08	0.06		0.07		0.00
251-300 g/l		0.03			0.28	0.00				0.00	0.31	0.06			0.31			0.01		
301-350 g/l		0.00			0.25	0.00	0.00		0.00	0.00	0.26	0.18	0.00		0.29			0.00		
351-400 g/l	0.01	0.03			0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.18	0.00	0.00	0.16	0.01		0.11	0.00	0.00
401-450 g/l	0.02	0.00			0.04		0.02		0.02	0.02	0.08	0.59			0.16	0.02		0.02		
451-500 g/l	0.01				0.01		0.07		0.07	0.07	0.14	0.14			0.07	0.07		0.07		0.27
501-550 g/l	0.04											0.48			0.48					
601-650 g/l															1.00					
Nonflat - Low Gloss																				
0-50 g/l	0.02	0.43	0.05		0.15				0.00		0.14	0.00		0.00	0.15			0.05		0.00
51-100 g/l	0.00	0.11	0.01	0.01	0.25	0.00	0.00	0.00	0.01	0.00	0.21	0.04		0.09	0.22	0.00	0.00	0.04		
101-150 g/l	0.02	0.38	0.00	0.00	0.10	0.00	0.03		0.03	0.03	0.16	0.08		0.00	0.07	0.03	0.00	0.07	0.00	0.01
151-200 g/l		0.04	0.01	0.00	0.15						0.29	0.10	0.01	0.00	0.30			0.07	0.03	0.01
201-250 g/l		0.03	0.10		0.10	0.00	0.10		0.00		0.28	0.08		0.00	0.17	0.00		0.13		
251-300 g/l					0.32						0.33	0.02			0.02			0.32		
301-350 g/l					0.11						0.45				0.45					
351-400 g/l		0.72	0.00		0.07						0.07	0.00	0.02	0.02	0.00			0.09		
401-450 g/l					0.17						0.17	0.17			0.48					
451-500 g/l																				
601-650 g/l															1.00					
Nonflat - Medium Gloss																				
0-50 g/l	0.01	0.31	0.00		0.15		0.03		0.03	0.05	0.21	0.01			0.05			0.15		0.01
51-100 g/l	0.07	0.09	0.01	0.00	0.15	0.00	0.05		0.05	0.05	0.20	0.09		0.01	0.07	0.05		0.12		
101-150 g/l	0.01	0.18	0.00		0.18		0.01		0.01	0.02	0.21	0.11	0.00	0.01	0.13	0.01		0.12		0.00
151-200 g/l	0.00	0.06	0.03		0.16	0.00	0.03		0.00	0.00	0.32	0.10	0.00	0.00	0.14	0.00	0.00	0.14		0.01
201-250 g/l	0.00	0.42	0.05		0.06		0.03		0.00	0.00	0.19	0.05	0.00		0.16	0.00	0.02	0.02		0.00
251-300 g/l		0.95			0.01	0.00	0.00		0.00		0.01	0.01	0.00		0.01			0.01		

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
301-350 g/l			0.00		0.02			0.04	0.04		0.13	0.02	0.19	0.10	0.30	0.00		0.16		
351-400 g/l	0.00	0.01	0.00		0.27						0.25	0.16		0.00	0.18	0.00		0.12		0.00
401-450 g/l	0.00	0.06			0.01		0.11		0.11	0.11	0.12	0.12	0.03	0.03	0.04	0.11		0.14		
451-500 g/l		0.60					0.06		0.06	0.06	0.06	0.06				0.06		0.06		
501-550 g/l							0.14		0.14	0.14	0.14	0.14				0.14		0.14		
601-650 g/l															1.00					
651-700 g/l	0.77	0.23																		
Other																				
0-50 g/l	0.71			0.28	0.01					0.00		0.00	0.00	0.00	0.00					0.00
51-100 g/l		0.11			0.30							0.30			0.30					
101-150 g/l					1.00															
201-250 g/l					1.00															
251-300 g/l					1.00															
301-350 g/l	0.04				0.96															
501-550 g/l															1.00					
551-600 g/l					0.37															0.63
651-700 g/l															1.00					
Pre-Treatment Wash Primer																				
0-50 g/l															1.00					
51-100 g/l											1.00		0.00							
101-150 g/l												1.00								
301-350 g/l		1.00																		
351-400 g/l													1.00							
651-700 g/l												1.00								
700 g/l +												0.00	0.18	0.81						0.00
Primer, Sealer, and Undercoater																				
0-50 g/l		0.19	0.00	0.00	0.51		0.02		0.01	0.01	0.13	0.00			0.14	0.00	0.00		0.00	0.00
51-100 g/l		0.04	0.06		0.22	0.00	0.00		0.01	0.05	0.39	0.03	0.00	0.06	0.11	0.02		0.00	0.01	
101-150 g/l		0.35	0.03	0.00	0.20		0.02		0.02	0.02	0.13	0.05		0.05	0.12	0.00	0.00	0.00	0.00	0.00
151-200 g/l		0.24	0.08	0.00	0.02		0.00		0.00	0.00	0.40	0.05	0.00	0.00	0.13	0.02	0.02		0.02	
201-250 g/l		0.00	0.10		0.07	0.02	0.02		0.02	0.00	0.52	0.02	0.03		0.14	0.03	0.02	0.00	0.00	0.00
251-300 g/l		0.06		0.01	0.03		0.01		0.01	0.01	0.00	0.00	0.09	0.09	0.11	0.39	0.17	0.01		
301-350 g/l		0.05	0.03	0.03	0.14	0.00	0.00	0.00	0.00	0.00	0.11	0.06	0.03	0.03	0.43	0.04	0.02	0.01	0.01	

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
351-400 g/l		0.66	0.00							0.06	0.12	0.11			0.05					
401-450 g/l			0.01	0.00	0.23	0.01					0.26	0.24	0.00	0.00	0.26					
451-500 g/l					0.02	0.01	0.01		0.01	0.01	0.00	0.94	0.00		0.00					
501-550 g/l												0.09	0.04		0.00	0.87				
551-600 g/l		0.24			0.01	0.36				0.02	0.01	0.36			0.01					
601-650 g/l					0.02									0.01						0.97
651-700 g/l		0.94			0.01	0.02						0.02		0.00						
700 g/l +			0.00		0.00	0.15						0.16		0.03	0.01	0.65				0.00
Quick Dry Enamel																				
151-200 g/l											0.50				0.50					
201-250 g/l		1.00																		
301-350 g/l					0.25						0.25	0.25			0.25					
351-400 g/l	0.07	0.10			0.19						0.19	0.20	0.00		0.19	0.03		0.03		
401-450 g/l		0.06			0.11						0.11	0.28	0.17		0.28					
451-500 g/l	1.00																			
501-550 g/l													1.00							
Quick Dry Primer, Sealer, and Undercoater																				
0-50 g/l		0.95			0.05															
51-100 g/l					1.00															
101-150 g/l		0.97		0.00	0.02						0.01	0.00			0.01					
151-200 g/l					0.92							0.08								
201-250 g/l												0.98			0.02					
251-300 g/l												0.34	0.00			0.65				
301-350 g/l										0.09	0.20	0.42	0.09		0.20					
351-400 g/l		0.69	0.07		0.15						0.03	0.02			0.03	0.00				
401-450 g/l		0.64	0.02	0.02	0.04				0.00	0.00	0.10	0.02		0.02	0.14					
451-500 g/l										0.00	0.32		0.05	0.31	0.31	0.00				
501-550 g/l					0.00					0.02			0.01			0.97				
551-600 g/l																0.81				0.19
601-650 g/l				0.00									0.04		0.95	0.00	0.00	0.00		
651-700 g/l					0.06							0.91				0.01	0.01	0.01		
700 g/l +					0.16							0.55			0.00	0.10	0.10	0.10		

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
Recycled																				
101-150 g/l	1.00																			
201-250 g/l	0.12	0.88																		
251-300 g/l					0.12	0.88														
Roof																				
0-50 g/l	0.09	0.13		0.24	0.06							0.01		0.20	0.01				0.09	0.18
51-100 g/l	0.56	0.09		0.08	0.04	0.03				0.01		0.07		0.04	0.03				0.04	0.01
101-150 g/l	0.02	0.23								0.20		0.01	0.00		0.20					0.33
151-200 g/l				0.56								0.01		0.43						
201-250 g/l	0.25									0.28										0.47
251-300 g/l	0.90			0.05								0.05								
301-350 g/l	0.87			0.03								0.03								0.06
401-450 g/l		0.07		0.93																
700 g/l +																				1.00
Rust Preventative																				
0-50 g/l										1.00										
51-100 g/l												1.00								
101-150 g/l												1.00								
151-200 g/l												1.00								
201-250 g/l												1.00								
251-300 g/l												1.00								
301-350 g/l												0.12	0.88	0.00						
351-400 g/l						0.13	0.13	0.13	0.13			0.13	0.10					0.13	0.13	
401-450 g/l													1.00							
451-500 g/l						0.14	0.14	0.14	0.14			0.14						0.14	0.14	
700 g/l +													0.02	0.98						
Sanding Sealers																				
151-200 g/l															0.15	0.85				
201-250 g/l															0.12	0.88				
251-300 g/l															0.95	0.05				
301-350 g/l															0.14	0.29	0.29	0.29		
501-550 g/l															0.39	0.47	0.07	0.07		
551-600 g/l															0.29	0.35		0.35		

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
651-700 g/l																1.00				
700 g/l +	0.27														0.73					
Shellacs - Clear																				
551-600 g/l																0.33		0.33	0.33	
601-650 g/l																0.33		0.33	0.33	
651-700 g/l																1.00				
Shellacs - Opaque																				
401-450 g/l					0.33								0.33		0.33					
501-550 g/l																0.33		0.33	0.33	
Specialty Primer, Sealer, and Undercoater																				
0-50 g/l		0.06						0.75			0.05	0.05	0.04		0.05					
51-100 g/l					0.26						0.26	0.00		0.21	0.26					
101-150 g/l		0.03	0.19		0.23						0.24				0.31					
151-200 g/l		0.93		0.02	0.02						0.02					0.02				
201-250 g/l					0.20						0.20	0.20			0.20					0.20
251-300 g/l													1.00							
301-350 g/l		0.79	0.10												0.11					
401-450 g/l		0.71			0.01						0.05	0.01		0.01	0.23					
451-500 g/l		0.82											0.18							
651-700 g/l										1.00										
Stains - Clear/Semitransparent																				
0-50 g/l		0.00			0.91							0.00			0.04	0.02	0.02			
51-100 g/l															1.00	0.00				
101-150 g/l												0.00			0.74	0.26				
151-200 g/l															0.03	0.88	0.08	0.01		
201-250 g/l					0.15										0.21	0.22	0.22	0.21		
251-300 g/l												0.03			0.05	0.86	0.06		0.00	
301-350 g/l		0.00													0.09	0.41	0.36	0.15	0.00	
351-400 g/l															1.00					
401-450 g/l															0.03	0.60	0.19		0.18	
451-500 g/l		0.00													0.05	0.95				
501-550 g/l		0.00			0.00										0.22	0.65	0.12	0.00	0.00	
551-600 g/l		0.01													0.11	0.46	0.21		0.21	

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
601-650 g/l		0.01													0.48	0.38	0.07	0.06		
651-700 g/l		0.01													0.89	0.10	0.00		0.00	
700 g/l +															0.55	0.28	0.09		0.09	
Stains - Opaque																				
0-50 g/l					0.03										0.97					
51-100 g/l					0.03							0.03			0.88	0.03	0.03	0.01		
101-150 g/l		0.01			0.08							0.00		0.07	0.81	0.01	0.01		0.01	
151-200 g/l					0.04										0.46	0.32	0.14	0.04		
201-250 g/l				0.15	0.62										0.21	0.01	0.01	0.00	0.00	
251-300 g/l		0.01		0.05	0.05										0.89					
301-350 g/l		0.04			0.00								0.01		0.91	0.01	0.01		0.01	
351-400 g/l															1.00					
401-450 g/l															0.45	0.28	0.28			
451-500 g/l													0.24		0.05	0.24	0.24		0.24	
501-550 g/l					0.01								0.25			0.25	0.25		0.25	
551-600 g/l					1.00															
601-650 g/l					1.00															
700 g/l +																1.00				
Swimming Pool																				
0-50 g/l																				1.00
51-100 g/l																				1.00
101-150 g/l																				1.00
151-200 g/l					0.86															0.14
201-250 g/l					0.92															0.08
251-300 g/l																				1.00
301-350 g/l					1.00															
401-450 g/l					0.97															0.03
501-550 g/l	1.00																			
Swimming Pool Repair and Maintenance																				
551-600 g/l					1.00															0.00
Traffic Marking																				
0-50 g/l				0.60	0.40					0.00										
51-100 g/l		0.01		0.48	0.50	0.00				0.01										

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
101-150 g/l				0.50	0.50					0.00										
151-200 g/l				0.50	0.02					0.00										0.48
201-250 g/l				0.50	0.49	0.00		0.00		0.00										
251-300 g/l				0.50	0.50															
301-350 g/l				0.50	0.50															
351-400 g/l				0.50	0.49	0.00		0.00		0.01										
401-450 g/l				0.50	0.50															
700 g/l +				1.00																
Varnishes - Clear																				
51-100 g/l		0.13														0.29	0.29	0.29		
101-150 g/l		0.94			0.02						0.01	0.01			0.01	0.00		0.00		
151-200 g/l	0.39	0.23													0.32			0.06		0.00
201-250 g/l	0.00	0.04									0.00	0.00			0.00	0.35	0.23	0.36		0.01
251-300 g/l		0.06													0.14	0.30		0.50		
301-350 g/l	0.01	0.00			0.00										0.06	0.36	0.28	0.29		0.00
351-400 g/l	0.01														0.00	0.84		0.15		
401-450 g/l	0.03														0.19	0.74	0.04	0.01		
451-500 g/l	0.03														0.01	0.69	0.13	0.14		
501-550 g/l	0.01														0.01	0.75		0.23	0.00	
551-600 g/l	0.01	0.28													0.01	0.45	0.07	0.11	0.07	
651-700 g/l	0.18	0.12													0.70					
700 g/l +															1.00					
Varnishes - Semitransparent																				
201-250 g/l																1.00				
251-300 g/l															1.00					
301-350 g/l						0.48									0.48	0.05				
351-400 g/l																1.00				
401-450 g/l	0.00														0.00	1.00				
451-500 g/l															1.00					
501-550 g/l															0.64	0.36				
Waterproofing Concrete/Masonry Sealers																				
0-50 g/l		0.04			0.80					0.09	0.02	0.02			0.02					
51-100 g/l	0.00	0.04			0.93					0.00					0.03					

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
101-150 g/l		0.07				0.00				0.92	0.00									
151-200 g/l					0.87					0.12						0.00	0.00		0.01	
201-250 g/l					0.13					0.87										
251-300 g/l					1.00															
301-350 g/l		0.00		0.02	0.87					0.02				0.02		0.02	0.02		0.02	
351-400 g/l		0.00			1.00															
401-450 g/l					1.00															
501-550 g/l					1.00															
551-600 g/l																				
601-650 g/l				0.25	0.25											0.25	0.25			
651-700 g/l					1.00															
700 g/l +					1.00															
Waterproofing Sealers																				
0-50 g/l		0.16		0.00	0.57	0.00		0.00	0.00	0.10		0.00	0.07		0.01	0.00	0.00		0.07	
51-100 g/l		0.06			0.59	0.00	0.09		0.04	0.17						0.02	0.02		0.00	
101-150 g/l		0.53			0.44										0.03	0.00	0.00			
151-200 g/l					0.08					0.45					0.03				0.45	
201-250 g/l		0.03			0.37					0.12			0.00		0.18	0.09	0.09		0.11	
251-300 g/l				0.33	0.02	0.04	0.04		0.04	0.28									0.24	
301-350 g/l		0.00			0.34		0.00								0.36	0.15	0.15			
351-400 g/l		0.70			0.21	0.00				0.00					0.03	0.02	0.02		0.02	
401-450 g/l					0.37										0.63					
451-500 g/l					1.00															
501-550 g/l					0.73	0.00				0.00						0.13	0.13			
551-600 g/l		0.49			0.22					0.00					0.29	0.00	0.00		0.00	
601-650 g/l															1.00					
651-700 g/l					0.12										0.87	0.00	0.00		0.00	
700 g/l +					0.98			0.00		0.01					0.01					
Wood Preservatives																				
0-50 g/l																0.50	0.50			
51-100 g/l																0.50	0.50			
101-150 g/l																0.50	0.50			
151-200 g/l																0.50	0.50			

Table 9-1: *Relative Fraction for Each Substrate Type*

					Concrete, Stone, Masonry, etc.							Metal			Wood					
	Blank/ Unknown *	*All Substrates*	*Acoustic Materials*	*Asphalt*	*All Concrete*	*Brick*	*Cinder Block*	*Stone*	*Stucco*	*Tilt*	*Drywall*	*All Metal*	*Ferrous*	*Non-Ferrous*	*All Wood*	*No Paint, Smooth*	*No Paint, Rough*	*Painted*	*Plywood*	*Other* **
201-250 g/l															1.00					
251-300 g/l	0.01														0.99					
301-350 g/l															0.13	0.44	0.38		0.06	
401-450 g/l																	1.00			
451-500 g/l																0.50	0.50			
501-550 g/l															1.00					
651-700 g/l																0.50	0.50			
700 g/l +															1.00					

* Blank/Unknown: The 2001 Survey package requested substrate data for all coating categories, but it was only a required piece of data for the following categories: Floor; Industrial Maintenance; Primer/Sealer/Undercoater; Quick Dry Primer/Sealer/Undercoater; Specialty Primer/Sealer/Undercoater; Stains - Clear/Semitransparent; Stains - Opaque; and Waterproofing Sealers. For these required categories, a blank entry was assumed to mean that the product was appropriate for all substrates. For all of the other optional categories, a blank could either mean that they chose not to report the recommended substrates or it could mean that they intended to recommend the product for all substrates. Since this was not clear, we consider blank entries for the optional categories to be unknown.

** The "Other" substrate category includes items such as foam insulation, vinyl, roof surfaces, and swimming pool surfaces.

The data in this table include sales from small containers (1 quart or less).

Table 9-2 lists the volume percent of coating associated with a given resin type, for each applicable VOC range. If none of the listed resin types was appropriate, survey respondents were asked to report "Other" and provide a description. These descriptions are provided in the table as well.

Table 9-2: ***Volume Percent for Each Resin Type***

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
Antenna																					
251-300 g/l								100%													
351-400 g/l																100%					
401-450 g/l				100%																	
451-500 g/l				100%																	
Bituminous Roof																					
000-050 g/l	6%														4%	1%				89%	Asphalt, Bitumen, Coal Tar
051-100 g/l	23%																			77%	Asphalt
101-150 g/l															97%					3%	Bitumen
151-200 g/l	1%					70%														29%	Asphalt, Bitumen
201-250 g/l	34%																			66%	Asphalt, Bitumen, Coal Tar, Styrene Butadiene
251-300 g/l	7%																			93%	Asphalt, Bitumen, Coal Tar, Styrene Butadiene
301-350 g/l	43%																			57%	Asphalt, Bituminous
351-400 g/l	14%																			86%	Bituminous
451-500 g/l																				100%	Asphalt
Bituminous Roof Primer																					
000-050 g/l	12%																			88%	Asphalt, Acrylic
151-200 g/l																				100%	Asphalt, Styrene Butadiene
301-350 g/l																				100%	Asphalt, Coal Tar
401-450 g/l	75%																			25%	Asphalt, Bituminous
Bond Breakers																					
051-100 g/l																				100%	Paraffin Wax
151-200 g/l																				100%	Polybutene, Hydrocarbon

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
251-300 g/l																				100%	Polybutene, Hydrocarbon
301-350 g/l									89%											11%	Hydrocarbon
551-600 g/l									100%												
Clear Brushing Lacquer																					
651-700 g/l						100%															
Concrete Curing Compounds																					
000-050 g/l	6%		3%									0%		8%						82%	Wax, Sodium Silicate, Hydrocarbon, Siliconate, Lignosulfonate, Calcium Nitrate
051-100 g/l		2%		67%																31%	Hydrocarbon, Wax
101-150 g/l		16%	84%																	0%	
151-200 g/l		31%	23%	42%																4%	Hydrocarbon, Wax
201-250 g/l			26%	71%																3%	Styrene Acrylate
251-300 g/l			4%																	96%	Hydrocarbon
301-350 g/l		9%	1%												81%					10%	Hydrocarbon, Polystyrene
451-500 g/l	100%																				
501-550 g/l										100%											
551-600 g/l	100%																				
601-650 g/l		60%	40%																		
651-700 g/l			100%																		
700 g/l +		100%																			
Dry Fog																					
000-050 g/l			59%		3%													21%	17%		
051-100 g/l		39%	21%																40%		
101-150 g/l			100%																		
151-200 g/l		89%																	11%		
251-300 g/l				100%																	
301-350 g/l				100%																	
351-400 g/l				60%				1%										37%		2%	Not provided

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
401-450 g/l				100%																	
501-550 g/l																		100%			
Faux Finishing																					
000-050 g/l		13%																	87%		
051-100 g/l		100%																			
101-150 g/l																			100%		
201-250 g/l		1%	43%																56%		
251-300 g/l			38%											62%							
301-350 g/l		93%		6%																1%	Not provided
351-400 g/l				100%																	
401-450 g/l				100%																	
651-700 g/l			100%																		
700 g/l +		93%	7%																		
Fire Resistive																					
000-050 g/l			100%																		
Fire Retardant - Clear																					
000-050 g/l					7%															93%	Ethylene Vinyl Acetate Copolymer
Fire Retardant - Opaque																					
000-050 g/l		33%	15%									35%				2%			14%		
051-100 g/l																			100%		
101-150 g/l		81%	19%																0%		
201-250 g/l																100%					
251-300 g/l																100%					
301-350 g/l																100%					
451-500 g/l	100%																				
551-600 g/l																100%					
700 g/l +	100%																				
Flat																					
000-050 g/l	1%	4%	6%			0%		0%				23%					0%		66%	1%	Vinyl Acetate Ethylene; Inorganic
051-100 g/l	0%	17%	16%		21%							1%			0%				45%		
101-150 g/l	0%	10%	22%									1%	1%				0%		67%		

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
151-200 g/l	3%	11%	6%									30%							51%	0%	Acrylic and PVA
201-250 g/l			21%	0%								0%							78%		
301-350 g/l				100%																	
351-400 g/l			1%	99%																	
401-450 g/l				23%								77%									
451-500 g/l				100%																	
651-700 g/l				100%																	
Floor																					
000-050 g/l		5%	0%		66%			18%								9%			0%	2%	Sodium Silicate
051-100 g/l		30%	43%					22%								4%	0%		1%		
101-150 g/l		66%	15%					2%				0%				14%			2%		
151-200 g/l		10%	83%					3%								4%					
201-250 g/l	0%	84%	1%					3%								7%			4%	0%	Polyester Polyurethane
251-300 g/l		87%		1%				9%								1%				2%	Polyester Polyurethane
301-350 g/l		69%		1%				0%			30%										
351-400 g/l				72%				6%			4%					18%					
401-450 g/l				83%				0%								17%					
451-500 g/l				31%							69%										
501-550 g/l		45%		14%												41%					
601-650 g/l																				100%	Epoxy Ester
Flow																					
401-450 g/l				100%																	
Form Release Compounds																					
000-050 g/l	100%																			0%	Soybean Oil
051-100 g/l			0%						93%											7%	Paraffin Wax
101-150 g/l									100%												
151-200 g/l																				100%	Form Oil
201-250 g/l	67%								1%											32%	Paraffin Oil; Naphthenic Oil
301-350 g/l																				100%	Not provided
401-450 g/l									100%												

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
Graphic Arts																					
051-100 g/l			100%																		
101-150 g/l		67%	33%																		
151-200 g/l		100%																			
201-250 g/l		100%																			
251-300 g/l		100%																			
301-350 g/l				100%																	
351-400 g/l		89%		11%																	
401-450 g/l				87%												13%					
501-550 g/l				100%																	
High Temperature																					
000-050 g/l				100%																	
251-300 g/l								78%						22%							
301-350 g/l								3%						86%						10%	Silicate
351-400 g/l		0%		86%										12%		1%					
401-450 g/l		0%		0%										93%		6%					
451-500 g/l				3%										91%						6%	Silicone Modified Alkyd
501-550 g/l				40%										42%						18%	Silicone Alkyd
551-600 g/l				0%										94%						6%	
601-650 g/l														82%						18%	Vinyl Toluene Modified Alkyd
651-700 g/l														100%							
Industrial Maintenance																					
000-050 g/l		4%	1%	0%	1%			45%			0%		0%			29%				20%	Isocyanate; Polyurea; Silicate; Vinyl Ester
051-100 g/l		55%	20%	0%				4%								9%			0%	12%	Polyamide; Vinyl Ester; Wax
101-150 g/l		6%	34%					48%			0%	0%		6%		4%				1%	Isocyanate; Polyether Polyol/ Polyol Curative; Polyethylene/ Paraffin Wax
151-200 g/l		8%	38%	22%				26%		0%	0%			0%		4%			0%	2%	Polyamide; Polyether Polyol

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
201-250 g/l		11%	29%	2%				27%						0%		31%				1%	Acrylic Polyurethane; Coal Tar Epoxy; Polyamide; Polyester Polyurethane
251-300 g/l		0%	0%	9%				62%		0%						25%				3%	Acrylic Polyurethane; Aliphatic Urethane; Bitumen; Coal Tar Epoxy; Isocyanate
301-350 g/l	14%	1%	3%	30%	1%			10%	0%	0%			0%			31%		0%	0%	9%	Asphalt; Coal Tar; Coal Tar Epoxy; Hydrocarbon; Polyamide; Silicate; Silicone Modified Alkyd
351-400 g/l		1%	1%	90%				4%			0%			0%		5%		0%		1%	Acrylic Polyurethane; Bitumen; Polyamide
401-450 g/l		3%		78%	0%	0%	0%	2%		0%						10%		5%	0%	0%	Butyl Rubber; Hydrocarbon
451-500 g/l		0%		17%				11%		2%						70%		0%			
501-550 g/l		38%		3%				3%		0%						12%				45%	Ethyl Silicate; Isocyanate; Polyamide; Styrene/ Peroxide
551-600 g/l				1%				69%			7%			2%		15%				6%	Ethyl Silicate
601-650 g/l								36%			1%					61%				2%	Fluoropolymer; Vinyl Acetate
651-700 g/l				23%				8%								69%					
700 g/l +			6%													51%				43%	Acid Solution; Polyvinyl Butyral
Lacquers																					
000-050 g/l		100%																			
051-100 g/l		100%																			
101-150 g/l		100%																			
151-200 g/l		100%																			
201-250 g/l		72%	28%																		
251-300 g/l		46%	54%																		
301-350 g/l		100%																			

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
451-500 g/l						100%															
501-550 g/l						100%															
551-600 g/l			0%			100%															
601-650 g/l		0%				100%															
651-700 g/l						100%														0%	Not provided
700 g/l +			4%			96%															
Low Solids																					
000-050 g/l			9%	91%																	
051-100 g/l																100%					
Magnesite Cement																					
401-450 g/l		100%																			
Mastic Texture																					
000-050 g/l		14%	1%					1%								56%			27%		
051-100 g/l		2%	92%												1%				4%	0%	Ethylene Vinyl Acetate Copolymer
101-150 g/l		1%	88%													11%					
151-200 g/l		100%																			
201-250 g/l		1%		99%																	
251-300 g/l			100%																		
351-400 g/l				100%																	
Metallic Pigmented																					
000-050 g/l																				100%	Inorganic Zinc
051-100 g/l			2%					73%												25%	Asphalt
101-150 g/l								0%											1%	99%	Acrylic/ Poly; Asphalt
151-200 g/l			87%					13%													
201-250 g/l		90%						10%													
251-300 g/l		1%						75%								21%				2%	Ethyl Silicate
301-350 g/l					4%			2%								44%				50%	Ethyl Silicate; Silicate
351-400 g/l				4%				27%												69%	Asphalt; Inorganic Zinc; Acrylic Polyurethane

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
401-450 g/l				0%				1%	2%							1%				96%	Asphalt; Ethyl Silicate; Hydrocarbon; Inorganic Zinc; Polystyrene
451-500 g/l				1%				0%	0%					1%						97%	Asphalt; Vegetable Oil; Ethyl Silicate; Inorganic Zinc; Polystyrene; Silicate
501-550 g/l									15%					21%					64%		
551-600 g/l				33%				1%			63%									2%	Silicate
601-650 g/l				58%					42%												
651-700 g/l			97%																	3%	Ethyl Silicate
700 g/l +		100%																			
Multi-Color																					
051-100 g/l			100%																		
101-150 g/l																			100%		
201-250 g/l			8%													92%					
451-500 g/l																			100%		
501-550 g/l																		100%			
700 g/l +				100%																	
Nonflat - Low Gloss																					
000-050 g/l		22%	3%											3%					71%	1%	Vinyl Acetate Ethylene
051-100 g/l		17%	19%	1%								0%					2%		61%		
101-150 g/l		10%	13%		33%										0%				43%	0%	Acrylic/Poly
151-200 g/l		29%	6%									0%							65%		
201-250 g/l		34%	5%	7%															54%		
251-300 g/l		5%	0%																95%		
301-350 g/l				100%																	
351-400 g/l				100%																	
401-450 g/l				36%												64%					
451-500 g/l		100%																			
601-650 g/l																100%					

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
Nonflat - Medium Gloss																					
000-050 g/l	41%	29%	3%											2%					19%	6%	Acrylic/ Poly; Silicate; Vinyl Acetate Ethylene
051-100 g/l		15%	13%	0%				0%				1%					0%		70%		
101-150 g/l		15%	8%		33%							1%							42%		
151-200 g/l		22%	4%					0%				0%							74%		
201-250 g/l		19%	14%	1%							0%					0%			66%		
251-300 g/l		93%	1%	6%								1%				0%					
301-350 g/l		53%		47%							1%										
351-400 g/l		0%		99%															1%		
401-450 g/l			22%	65%												13%					
451-500 g/l		91%		9%																	
501-550 g/l				100%																	
601-650 g/l																100%					
651-700 g/l				23%																77%	Polyvinylidine Fluoride
Nonflat - High Gloss																					
000-050 g/l		100%																			
051-100 g/l		9%	60%																31%		
101-150 g/l		70%	11%		0%														19%	0%	Acrylic Epoxy
151-200 g/l		14%	6%	8%															72%	0%	Not provided
201-250 g/l		49%	37%	13%				0%			2%								0%		
251-300 g/l		47%	9%	43%																1%	Acrylic Epoxy
301-350 g/l		13%	1%	86%	0%																
351-400 g/l				100%							0%					0%					
401-450 g/l				16%												84%					
451-500 g/l		1%		35%												64%					
501-550 g/l		93%		7%																	
601-650 g/l																100%					
Other																					
000-050 g/l	1%		0%					0%											0%	98%	Asphalt; Coal Tar; Fatty Alcohol; Sodium Silicate

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
051-100 g/l		27%						73%													
101-150 g/l																				100%	Fatty Alcohol
201-250 g/l								82%												18%	Fatty Alcohol
251-300 g/l	100%																				
301-350 g/l				96%																4%	Neoprene
501-550 g/l									100%												
551-600 g/l			100%																		
651-700 g/l									100%												
Pre-Treatment Wash Primer																					
000-050 g/l		100%																			
051-100 g/l			100%																	0%	No Resin
101-150 g/l			100%																		
301-350 g/l	1%	94%		5%																	
351-400 g/l																				100%	No Resin
651-700 g/l																				100%	Polyvinyl Butyral
700 g/l +																			0%	100%	No Resin; Butyral Vinyl
Primer, Sealer, and Undercoater																					
000-050 g/l	0%	21%	11%		48%			0%				0%		0%	0%				19%	0%	Ethylene Vinyl Acetate Copolymer
051-100 g/l		10%	19%	0%	2%			7%				0%			1%	0%			60%		
101-150 g/l		17%	72%		1%			1%				1%			0%				9%	0%	Acrylic Epoxy
151-200 g/l	15%	10%	17%	0%	30%			0%				0%			0%		0%		28%	0%	Styrene Acrylic Copolymer
201-250 g/l		67%	10%	4%				0%						1%					17%	1%	Urethane/ Acrylic
251-300 g/l		2%	2%	92%				2%	2%							0%					
301-350 g/l		0%	1%	80%				1%	10%	3%				0%		0%			3%	0%	Epoxy Ester; Phenolic Alkyd
351-400 g/l			0%	94%				6%													
401-450 g/l				98%				2%													
451-500 g/l			2%	98%				0%													
501-550 g/l	4%			9%												87%					
551-600 g/l		1%		1%				0%								60%				38%	Synthetic Polymer
601-650 g/l	1%	2%														97%					

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
651-700 g/l		1%					96%							2%		0%				0%	Polyvinylidine Fluoride
700 g/l +		3%		1%	0%				77%					4%		15%					
Quick Dry Enamel																					
151-200 g/l				100%																	
201-250 g/l			100%																		
301-350 g/l				100%																	
351-400 g/l				100%																	
401-450 g/l				100%																	
451-500 g/l																		100%			
501-550 g/l				100%																	
Quick Dry Primer, Sealer, and Undercoater																					
000-050 g/l			100%																		
051-100 g/l			100%																		
101-150 g/l		0%	99%	1%															0%		
151-200 g/l		86%	6%													8%					
201-250 g/l			2%															98%			
251-300 g/l				26%														9%	65%		
301-350 g/l	11%			37%												52%					
351-400 g/l		13%		81%						0%									5%		
401-450 g/l	0%		2%	87%				0%							0%			11%			
451-500 g/l				99%														1%			
501-550 g/l		0%		1%				2%		5%						92%		0%			
551-600 g/l				81%																19%	Styrene – Ethylene – Butylene
601-650 g/l				4%												95%				0%	Styrene – Ethylene – Butylene
651-700 g/l				1%				93%							6%						
700 g/l +				12%				68%							19%						
Recycled																					
101-150 g/l	100%																				
201-250 g/l	12%																			88%	Mixture
251-300 g/l		100%																			

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copolymer	Alkyd	Amines Amides	Cellulosic	Chlorinated Rubber	Epoxy	Oleoresin	Phenolic	Polyester	Polyvinyl Acetate	Shellac	Silicone Silane Siloxane	Styrene Butadiene	Urethane Polyurethane	Polyvinyl Chloride	Vinyl Toluene	Vinyl Acrylic Copolymer	Other	Description of "Other" Resin Type
Roof																					
000-050 g/l		38%	56%													1%				5%	Ethylene Vinyl Acetate Copolymer; Heavy Petroleum Distillate (Grease); Polyurea
051-100 g/l		76%	15%																6%	3%	Ethylene Vinyl Acetate Copolymer
101-150 g/l	0%	4%	56%												29%	9%			0%		
151-200 g/l		78%	22%																		
201-250 g/l														25%		75%					
251-300 g/l														95%						5%	Styrene – Ethylene – Butylene
301-350 g/l														90%		6%				4%	Styrene – Ethylene – Butylene; Butyl Rubber
401-450 g/l	6%			1%																93%	Asphalt
700 g/l +																100%					
Rust Preventative																					
000-050 g/l	100%																				
051-100 g/l		100%																			
101-150 g/l			33%																67%		
151-200 g/l				100%																	
201-250 g/l		2%	98%																		
251-300 g/l				100%																	
301-350 g/l			1%	99%																0%	Acrylic Latex/ Polyurethane
351-400 g/l				100%																	
401-450 g/l				100%																	
451-500 g/l				100%																	
700 g/l +		98%																		2%	Modified Metal Alkyl Sulfonate
Sanding Sealers																					
151-200 g/l		15%	85%																		
201-250 g/l			88%													1%			11%		

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
251-300 g/l		5%														95%					
301-350 g/l		100%																			
501-550 g/l	8%			69%												0%		22%		1%	Vinyl Solvent Soluble
551-600 g/l				45%												55%					
651-700 g/l				100%																	
700 g/l +		27%																		73%	Vinyl solvent soluble
Shellacs - Clear																					
551-600 g/l													100%								
601-650 g/l													100%								
651-700 g/l													100%								
Shellacs - Opaque																					
401-450 g/l													100%								
501-550 g/l													100%								
Specialty Primer, Sealer, and Undercoater																					
000-050 g/l		7%	88%					5%													
051-100 g/l		15%	85%												0%						
101-150 g/l		95%	5%																		
151-200 g/l		98%		2%																	
201-250 g/l		100%																			
251-300 g/l								100%													
301-350 g/l				48%												52%					
401-450 g/l	16%		29%	12%														42%	1%		
451-500 g/l										18%			82%								
651-700 g/l																				100%	Phenoxy
Stains - Clear/Semitransparent																					
000-050 g/l		0%		9%					1%										1%	88%	No Resin
051-100 g/l		30%	70%	0%																	
101-150 g/l		73%	1%	25%															1%		
151-200 g/l			8%	4%								87%								1%	Acrylic/ Water Reducible Oil
201-250 g/l		27%	0%	4%															0%	69%	Acrylic/ Water Reducible Oil; Vegetable Oil

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
251-300 g/l		85%	9%	4%															2%		
301-350 g/l		1%	7%	27%					35%							1%				30%	Linseed Oil; Linseed/ Tung Oil; Oil; Polyolefin; Vegetable Oil
351-400 g/l				100%					0%												
401-450 g/l		0%	61%	36%					0%											3%	Linseed Oil
451-500 g/l				35%					65%											0%	Linseed Oil; Oil
501-550 g/l		0%		56%					36%					0%		1%				6%	Linseed Oil; Oil
551-600 g/l				100%																	
601-650 g/l				96%					3%											1%	Oil
651-700 g/l				100%												0%					
700 g/l +		0%		38%		11%														52%	Linseed Oil
Stains - Opaque																					
000-050 g/l		27%	3%																70%		
051-100 g/l		29%	44%																27%		
101-150 g/l		26%	62%	0%															12%		
151-200 g/l		45%	12%									42%								0%	Vegetable Oil
201-250 g/l		67%	18%	3%															12%		
251-300 g/l			5%	1%								47%							46%		
301-350 g/l		0%	0%	12%					23%			1%				0%				64%	Hydrocarbon; Linseed Oil
351-400 g/l		0%		100%																	
401-450 g/l				100%																	
451-500 g/l				88%																12%	Linseed Oil
501-550 g/l		5%		95%																	
551-600 g/l		100%																			
601-650 g/l			100%																		
700 g/l +				100%																	
Swimming Pool																					
000-050 g/l								100%													
051-100 g/l		100%																			
101-150 g/l		100%																			
151-200 g/l		1%	86%					13%													

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
201-250 g/l		5%	44%					51%													
251-300 g/l								100%													
301-350 g/l								100%													
401-450 g/l								100%													
501-550 g/l		100%																			
Swimming Pool Repair and Maintenance																					
551-600 g/l							100%														
Traffic Marking																					
000-050 g/l		0%		84%					16%												
051-100 g/l		83%	10%	0%								0%							7%	0%	Not provided
101-150 g/l		1%	82%									0%						17%			
151-200 g/l			4%																96%		
201-250 g/l		6%	1%	93%																	
251-300 g/l				100%																	
301-350 g/l				32%					68%												
351-400 g/l			0%	3%														97%			
401-450 g/l				100%																	
700 g/l +				100%																	
Varnishes - Clear																					
051-100 g/l		31%	69%																		
101-150 g/l		1%	99%													1%					
151-200 g/l			4%	66%												7%			23%		
201-250 g/l		1%	69%													29%					
251-300 g/l		3%	3%					30%								64%					
301-350 g/l		0%	7%	8%					1%	2%						83%					
351-400 g/l		0%	33%	2%						1%						50%				14%	Urethane/ Acrylic
401-450 g/l				24%					1%	4%						70%			1%		
451-500 g/l			24%	1%												75%					
501-550 g/l				23%					0%	0%						77%		0%	0%	0%	Epoxy Ester
551-600 g/l		37%		30%												32%			1%		
651-700 g/l		12%				18%														70%	Urea – Formaldeyde and Melamine – Formaldehyde

Table 9-2: *Volume Percent for Each Resin Type*

Range	No Response	Acrylic	Acrylic Copoly-mer	Alkyd	Amines Amides	Cellu-losic	Chlori-nated Rubber	Epoxy	Oleo-resin	Phe-nolic	Poly-ester	Poly-vinyl Acetate	Shellac	Silicone Silane Silox-ane	Styrene Buta-diene	Ure-thane Poly-ure-thane	Poly-vinyl Chlor-ide	Vinyl Toluene	Vinyl Acrylic Copoly-mer	Other	Description of "Other" Resin Type
700 g/l +																				100%	Urea – Formaldeyde and Melamine – Formaldehyde
Varnishes - Semitransparent																					
201-250 g/l			100%																		
251-300 g/l		100%																			
301-350 g/l			9%													91%					
351-400 g/l			100%																		
401-450 g/l				100%												0%					
451-500 g/l																100%					
501-550 g/l				100%																	
Waterproofing Sealers																					
000-050 g/l	0%	36%	3%											47%						14%	Sodium Silicate; Magnesium Silicofluoride; Fluoropolymer
051-100 g/l	1%	79%	9%											1%		0%			0%	10%	Asphalt; Siliconate
101-150 g/l		44%	55%											1%						0%	Metal Complex
151-200 g/l		9%														91%					
201-250 g/l		39%		14%										5%	20%	22%				0%	Not provided
251-300 g/l		73%	0%											1%		11%				15%	Asphalt
301-350 g/l	0%	5%		17%					2%					24%						52%	Linseed Oil; Styrene Acrylic
351-400 g/l		17%												2%		1%				80%	Hydrocarbon; No Resin
401-450 g/l				63%										37%							
451-500 g/l	0%													100%							
501-550 g/l		14%		1%										0%	84%						
551-600 g/l				0%					1%					28%					1%	70%	Hydrocarbon; Linseed Oil
601-650 g/l										100%											
651-700 g/l																				100%	Hydrocarbon; Wax; Polybutene Hydrocarbon
700 g/l +	0%	0%												99%						1%	Hydrocarbon

In some cases, resin mixtures were reported, as noted below. If more than one resin type was reported, the first resin type was entered into the database for tabulation purposes and additional resin types were recorded in comment fields.

Table 9-3: *Resin Mixtures*

Coating Category	Reported Resin Mixtures
Fire Resistive	Acrylic Copolymer/Polyvinyl Acetate
Fire Retardant – Opaque	Acrylic/Polyvinyl Chloride/Vinyl Acrylic Copolymer
Flat	Acrylic Copolymer/Vinyl Acrylic Copolymer Vinyl Acrylic Copolymer /Alkyd Acrylic/Polyvinyl Acetate Styrene Butadiene/Vinyl Acrylic Copolymer Acrylic Copolymer/Vinyl Acrylic Copolymer
Floor	Epoxy/Amines Amides Acrylic/Urethane Polyurethane Acrylic/Acrylic Copolymer Polyester/Urethane Polyurethane
Graphic Arts	Acrylic/Vinyl Acrylic Copolymer Acrylic/Alkyd
High Temperature	Alkyd/Silicone Silane Siloxane
Industrial Maintenance	Epoxy/Amines Amides Urethane Polyurethane/Polyether Polyol Oleoresin/Phenolic Alkyd/Phenolic/Urethane Polyurethane Alkyd/Polyester Alkyd/Silicone Silane Siloxane Alkyd/Polyester Polyester/Urethane Polyurethane
Lacquer	Acrylic/Urethane Polyurethane
Mastic Texture	Acrylic/Polyvinyl Acetate
Metallic Pigmented	Amines Amides/Epoxy Alkyd/Polyester Oleoresin/Phenolic Oleoresin/Hydrocarbon Alkyd/Silicone Silane Siloxane
Nonflat Low Gloss	Vinyl Acrylic Copolymer/Acrylic Acrylic/Acrylic Copolymer/Urethane Polyurethane Acrylic Copolymer/Polyvinyl Acetate Acrylic Copolymer/Vinyl Acrylic Copolymer
Nonflat Medium Gloss	Vinyl Acrylic Copolymer/Acrylic Acrylic Copolymer/Vinyl Acrylic Copolymer Polyvinyl Acetate/Acrylic Copolymer Alkyd/Polyester/Urethane Polyurethane
Nonflat High Gloss	Amines Amides/Epoxy Vinyl Acrylic Copolymer/Acrylic Alkyd/Polyester/Urethane Polyurethane Polyester/Urethane Polyurethane Alkyd/Urethane Polyurethane
Other	Acrylic Copolymer/Asphalt Oleoresin/Urethane Polyurethane Acrylic Copolymer/Urethane Polyurethane
Primer Sealer Undercoater	Amines Amides/Epoxy Acrylic/Vinyl Acrylic Copolymer Acrylic/Acrylic Copolymer Epoxy/Acrylic; Acrylic Copolymer/Epoxy Acrylic/Epoxy/Vinyl Acrylic Copolymer

Table 9-3: *Resin Mixtures*

Coating Category	Reported Resin Mixtures
	Acrylic Copolymer/Vinyl Acrylic Copolymer Acrylic Copolymer/Alkyd/Vinyl Acrylic Copolymer Acrylic/Epoxy/Silicone Silane Siloxane/Urethane Polyurethane Acrylic/Polyvinyl Acetate Epoxy/Vinyl Acrylic Copolymer Alkyd/Oleoresin Acrylic Copolymer/Oleoresin Alkyd/Epoxy Alkyd/Linseed Oil Acrylic/Alkyd
Quick Dry Primer Sealer Undercoater	Styrene Butadiene/Hydrocarbon Alkyd/Urethane Polyurethane Alkyd/Vinyl Toluene
Recycled	Acrylic/Acrylic Copolymer/Vinyl Acrylic Copolymer
Roof	Urethane Polyurethane/Amine/Polyol
Rust Preventative	Alkyd/Phenolic; Alkyd/Polyester/Urethane Polyurethane
Sanding Sealers	Alkyd/Urethane Polyurethane
Specialty Primer Sealer Undercoater	Acrylic/Styrene Butadiene
Stains - Clear/Semitransparent	Acrylic/Polyvinyl Acetate Acrylic Copolymer/Alkyd Polyvinyl Acetate/Alkyd Acrylic/Oleoresin Alkyd/Acrylic Vinyl Acrylic Copolymer/Alkyd Acrylic/Urethane Polyurethane Alkyd/Linseed Oil Alkyd/Oil Acrylic/Acrylic Copolymer Alkyd/Urethane Polyurethane Alkyd/Oleoresin Oleoresin/Phenolic
Stains - Opaque	Acrylic Copolymer/Alkyd Vinyl Acrylic Copolymer/Alkyd Acrylic/Alkyd Polyvinyl Acetate/Alkyd Alkyd/Linseed Oil
Swimming Pool	Epoxy/Amines Amides
Traffic Marking	Acrylic/Vinyl Acrylic Copolymer
Varnishes - Clear	Acrylic/Vinyl Acrylic Copolymer Acrylic/Urethane Polyurethane Acrylic Copolymer/Urethane Polyurethane Alkyd/Oleoresin Alkyd/Urethane Polyurethane Alkyd/Polyester/Urethane Polyurethane Oleoresin/Phenolic Alkyd/Phenolic Oleoresin/Urethane Polyurethane
Varnishes - Semitransparent	Acrylic/Urethane Polyurethane Alkyd/Oleoresin Alkyd/Urethane Polyurethane

Table 9-3: *Resin Mixtures*

Coating Category	Reported Resin Mixtures
Waterproofing Sealers	Acrylic Copolymer/Silicone Silane Siloxane Acrylic/Urethane Polyurethane Alkyd/Oleoresin Vinyl Acrylic Copolymer/Hydrocarbon Oleoresin/Urethane Polyurethane
Waterproofing Concrete/Masonry Sealers	Acrylic/Polyvinyl Acetate/Vinyl Acrylic Copolymer

Table 9-4 lists the volume percent of coating for single-component and multi-component formulations. Single-component coatings are those that are "ready-to-use" from the can, while multi-component coatings require that two or more materials be mixed to catalyze or activate the coating prior to use.

Table 9-4: *Single-Component/Multi-Component Breakdown*

Coating Category	Total		Solvent-Borne		Water-Borne	
	% Single	% Multi	% Single	% Multi	% Single	% Multi
Antenna	81%	19%	91%	9%	0%	100%
Bituminous Roof	99%	1%	98%	2%	100%	0%
Bituminous Roof Primer	100%	0%	100%	0%	100%	0%
Bond Breakers	100%	0%	0%	0%	100%	0%
Clear Brushing Lacquer	100%	0%	100%	0%	0%	0%
Concrete Curing Compounds	100%	0%	100%	0%	100%	0%
Dry Fog	100%	0%	100%	0%	100%	0%
Faux Finishing	100%	0%	100%	0%	100%	0%
Fire Resistive	100%	0%	0%	0%	100%	0%
Fire Retardant - Clear	93%	7%	0%	0%	93%	7%
Fire Retardant - Opaque	93%	7%	12%	88%	100%	0%
Flat	100%	0%	100%	0%	100%	0%
Floor	57%	43%	31%	69%	60%	40%
Flow	100%	0%	0%	0%	100%	0%
Form Release Compounds	100%	0%	100%	0%	100%	0%
Graphic Arts	100%	0%	100%	0%	100%	0%
High Temperature	97%	3%	97%	3%	100%	0%
Industrial Maintenance	76%	24%	75%	25%	85%	15%
Lacquers	100%	0%	100%	0%	100%	0%
Low Solids	100%	0%	0%	0%	100%	0%
Magnesite Cement	100%	0%	100%	0%	0%	0%
Mastic Texture	97%	3%	91%	9%	100%	0%
Metallic Pigmented	94%	6%	93%	7%	96%	4%
Multi-Color	100%	0%	100%	0%	100%	0%
Nonflat - Low Gloss	100%	0%	100%	0%	100%	0%
Nonflat - Medium Gloss	100%	0%	100%	0%	100%	0%
Nonflat - High Gloss	99%	1%	97%	3%	100%	0%
Pre-Treatment Wash Primer	98%	2%	61%	39%	100%	0%
Primer, Sealer, and Undercoater	94%	6%	99%	1%	93%	7%
Quick Dry Enamel	100%	0%	100%	0%	100%	0%

Table 9-4: *Single-Component/Multi-Component Breakdown*

Coating Category	Total		Solvent-Borne		Water-Borne	
	% Single	% Multi	% Single	% Multi	% Single	% Multi
Quick Dry Primer, Sealer, and Undercoater	100%	0%	100%	0%	100%	0%
Recycled	100%	0%	0%	0%	100%	0%
Roof	98%	2%	77%	23%	100%	0%
Rust Preventative	100%	0%	100%	0%	100%	0%
Sanding Sealers	85%	15%	79%	21%	100%	0%
Shellacs - Clear	100%	0%	100%	0%	0%	0%
Shellacs - Opaque	100%	0%	100%	0%	0%	0%
Specialty Primer, Sealer, and Undercoater	100%	0%	97%	3%	100%	0%
Stains - Clear/Semitransparent	93%	7%	91%	9%	100%	0%
Stains - Opaque	95%	5%	95%	5%	95%	5%
Swimming Pool	33%	67%	0%	100%	75%	25%
Swimming Pool Repair and Maintenance	100%	0%	100%	0%	0%	0%
Traffic Marking	100%	0%	100%	0%	100%	0%
Varnishes - Clear	92%	8%	100%	0%	78%	22%
Varnishes - Semitransparent	100%	0%	100%	0%	100%	0%
Waterproofing Sealers	92%	8%	89%	11%	95%	5%
Waterproofing Concrete/Masonry Sealers	94%	6%	83%	17%	100%	0%
Wood Preservatives	100%	0%	100%	0%	100%	0%
Other	100%	0%	79%	21%	100%	0%
Totals:	**97%**	**3%**	**89%**	**11%**	**99%**	**1%**

This table contains percentages based on sales volume.
The data in this table include sales of small containers (1 quart or less).

Subtotals:	Solvent-Borne Single-Component Sales (gals):	15,615,409
	Solvent-Borne Multi-Component Sales (gals):	1,648,956
	Water-Borne Single-Component Sales (gals):	89,538,863
	Water-Borne Multi-Component Sales (gals):	1,232,642
	Grand Total (gals):	**108,035,871**

Chapter 10 -- Ingredients

The 2001 survey gathered speciation data for all volatile ingredients (VOCs, exempt compounds, and water). Data were collected for all volatile ingredients that amounted to at least 0.1% (by weight) of each coating. These will be used to update ARB's speciation profiles for architectural coatings. It will also be used when ARB staff evaluate the feasibility of a reactivity-based regulation. The quantity of VOC ingredients summarized in this chapter is very close to the quantity of VOC emissions calculated in Chapter 5. This indicates that there is good correlation between the speciated ingredient data and the reported VOC Actual values.

To evaluate the reactivity of architectural coatings, we will use the Maximum Incremental Reactivity (MIR) scale, developed by Dr. William Carter[1]. The MIR values quantify the potential for a chemical to form ozone. For each coating category, we will develop a profile of the volatile ingredients that are present, including exempt compounds. In one approach, which was used in the ARB's aerosol coatings regulation, we would then use the MIR values for specific volatile ingredients to develop a product-weighted MIR for a coating category, as shown in the example below:

Ingredient	**CAS #**	**Weight Fraction**	**MIR Value (g O_3/g product)**	**Weighted Reactivity**
1,2-Propanediol	57-55-6	4%	2.74	0.110
2,2,4-Trimethyl-1,3-Pentanediol Monoisobutyrate	25265-77-4	2%	0.88	0.018
2-(2-Butoxyethoxy)-Ethanol	112-34-5	4%	2.87	0.115
2-(2-Methoxyethoxy)-Ethanol	111-77-3	3%	2.88	0.086
Water	7732-18-5	54%	0	0
Solids		33%	0	0
		100%		0.329
Product-Weighted MIR = 0.329 grams ozone/gram product				

Some members of the architectural coatings industry have indicated that they do not believe this approach, although appropriate for aerosol coatings, is suitable for architectural coatings. We will be working with the industry and local air districts as we consider methods to evaluate a reactivity-based control measure for architectural coatings.

Petroleum distillates comprise a significant quantity of the VOCs in architectural coatings. Since petroleum distillates are complex mixtures of individual organic compounds, it is necessary to use a different approach when assigning MIR values to these mixtures. For ARB's aerosol coatings regulation, petroleum distillates were assigned to various "bins", based on the boiling point range, aromatic content, and type

[1] William P.L. Carter, Ph.D.; Research Chemist; Air Pollution Research Center and College of Engineering, Center for Environmental Research and Technology; University of California, Riverside, CA See also: http://pah.cert.ucr.edu/~carter

of hydrocarbon (e.g., normal, cyclic, or isoparaffinic). All petroleum distillates that were grouped in a given "bin" were assigned a MIR value. The 2001 architectural coating survey requested available data on bin numbers, but only a small number of survey respondents provided bin information. Most survey respondents provided a generic name (e.g., mineral spirits) and a Chemical Abstract Service number (CAS#.) Unfortunately, this information is not sufficient to assign a bin number, because several bin numbers can apply to a given CAS#. Therefore, ARB staff requested some follow-up information from manufacturers that reported petroleum distillates, but that didn't provide bin numbers. Specifically, we asked for one of the following: Bin Number; or ASTM Designation; or Product Name and Supplier/Manufacturer Name. If survey respondents can not provide a bin number, ARB staff will contact the supplier or manufacturer to identify the most appropriate bin for a given petroleum distillate product. This process is ongoing; therefore, this report does not contain the complete results of the reactivity analysis for petroleum distillates, or for architectural coatings in general. ARB is currently funding a research project that will improve the MIR data for select petroleum distillates, and the 2001 survey data will be used to identify materials of greatest interest.

This chapter includes the following data summaries:

Table 10-1: *VOC Ingredients (sorted by CAS #) – Solvent-borne Coatings*

Table 10-2: *VOC Ingredients (sorted by CAS #) – Water-borne Coatings*

Table 10-3: *VOC Ingredients (sorted by Weight) - Solvent-borne Coatings*

Table 10-4: *VOC Ingredients (sorted by Weight) – Water-borne Coatings*

Table 10-5: *Exempt Compounds (sorted by CAS#) - Solvent-borne Coatings*

Table 10-6: *Exempt Compounds (sorted by CAS#) – Water-borne Coatings*

Table 10-7: *Petroleum Distillates Only & Bin Numbers (sorted by CAS#)*

Tables 10-1 through 10-4 list the quantities of reported ingredients that are classified as VOCs, grouped by solvent-borne and water-borne coatings. Tables 10-5 and 10-6 display exempt compound totals for solvent-borne and water-borne coatings. A small number of survey respondents also reported solid components in their coatings, but these data are not summarized here because they aren't representative. Table 10-7 displays the petroleum distillates reported, and corresponding Bin numbers reported thus far.

Table 10-1: ***VOC Ingredients (sorted by CAS#) – Solvent-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
0	Alcohols	118
0	Aromatics-u	5
0	Cycloparaffins and aromatics NOS	3
0	Glycol Ethers	19,611
0	Mixed light aromatics NOS	22,371
0	Naphtha	50,499
0	Residual Monomer(s)	4
9981	Aggregated VOCs < 0.1%	356,833
9985	Other VOC	671
9991	Proprietary VOC	4,566
50000	Formaldehyde	242
56235	Carbon Tetrachloride	105
57556	Propylene Glycol	5,244
64175	Ethanol	481,995
64197	Acetic Acid	134
67561	Methanol	144,224
67630	Isopropanol	278,420
67685	Dimethylsulfoxide	240
71238	n-Propyl Alcohol	561
71363	n-Butanol	220,681
71410	1-Pentanol	3,678
71432	Benzene	155
75310	Isopropylamine	0
78104	Ethyl Silicate	3,978
78591	Isophorone	87
78831	1-Propanol, 2-Methyl-	59,495
78842	Isobutyraldehyde	179
78922	Butyl Alcohol, Sec-	88
78933	Methyl Ethyl Ketone	238,085
79243	Nitroethane	3,179
80057	Bisphenol-A	2
80159	Cumene Hydroperoxide	76
80626	Methyl Methacrylate	447
84742	Dibutyl Phthalate	19
90120	1-Methylnaphthalene	8,253
90722	Tris(dimethylaminomethyl)phenol	30
91087	Toluene-2,6-diisocyanate	56
91203	Naphthalene	20,313

Table 10-1: ***VOC Ingredients (sorted by CAS#) – Solvent-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
95476	Ortho-Xylene	2,156
95636	1,2,4-Trimethylbenzene	428,550
96297	Ethyl methyl ketone oxime	91,820
96480	gamma-Butyrolactone	2,111
97643	Ethyl Lactate	0
97858	Isobutyl Isobutyrate	78,983
97869	Isobutyl Methacrylate	2
97881	Butyl Methacrylate, N-	36
98828	Cumene	18,728
100414	Ethyl Benzene	237,999
100425	Styrene	20,385
100516	Benzyl Alcohol	90,676
100527	Benzaldehyde	1
102716	Triethanolamine	263
103651	n-Propylbenzene	354
103833	Benzyldimethylamine	4
104687	2-(2-phenoxyethoxy)ethanol	9
104767	2-Ethyl-1-Hexanol	39
106423	Para-Xylene	2,359
106650	Dimethyl Succinate	5
106898	Epichlorohydrin	4,322
107153	Ethylenediamine	144
107211	Ethylene Glycol	1,496
107415	2-Methyl-2,4-pentanediol	81
107879	2-Pentanone	73,237
107982	Propylene Glycol Monomethyl Ether	158,504
108010	N,N-Dimethylethanolamine	144
108032	1-Nitropropane	1
108101	Methyl Isobutyl Ketone	269,376
108112	Methylisobutyl Carbinol	159
108214	Isopropyl Acetate	118
108327	Propylene carbonate	12,025
108383	Meta-Xylene	5,898
108656	Propylene Glycol Monomethyl Ether Acetate	117,725
108678	Mesitylene	61,115
108838	2,6-Dimethyl-4-heptanone	3,972
108883	Toluene	853,319
108907	Phenyl Chloride	0
108930	Cyclohexanol	1,492
108941	Cyclohexanone	12,961
108952	Phenol	386
109604	n-Propyl Acetate	1,281
110123	Methyl Isoamyl Ketone	3,368
110190	Isobutyl Acetate	104,054
110430	Methyl-n-amyl Ketone	425,161
110543	Hexane	2,908

Table 10-1: ***VOC Ingredients (sorted by CAS#) – Solvent-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
110690	Butanal Oxime	0
110805	Ethoxyethanol, 2-	381
110827	Cyclohexane	1
110850	Piperazine	175
111159	Ethoxyethyl Acetate	3,542
111400	Diethylene Triamine	2
111411	Ethylenediamine, N-(2-hydroxyethyl)	0
111422	Diethanolamine	251
111466	Diethylene Glycol	73
111762	2-Butoxy Ethanol	243,089
111773	2-(2-methoxyethoxy)ethanol	3,258
112072	Butoxyethyl Acetate, 2-	15,528
112243	Triethylenetetramine	18
112276	Triethylene Glycol	0
112345	2-(2-Butoxyethoxy)ethanol	33,318
112572	Tetraethylenepentamine	136
112801	Oleic acid	99
119368	Benzoic Acid, 2-Hydroxy-, Methyl Ester	0
121437	Trimethyl Borate	15
121448	Triethylamine	60
122510	Ethyl orthoformate	7,099
122996	Phenoxyethanol, 2-	115
123422	2-Pentanone, 4-Hydroxy-4-Methyl-	1,441
123546	2,4-Pentanedione	290
123864	Butyl Acetate, 1-	511,194
124174	2-(2-butoxyethoxy)ethyl acetate	20,642
124685	2-Amino-2-methyl-1-propanol	5,440
131113	Dimethylphthalate	248
138863	Limonene	10,235
140318	n-Aminoethylpiperazine	23
141435	Ethanolamine	151
141786	Ethyl Acetate	34,962
142825	Heptane	900
149575	2-Ethylhexanoic Acid	2,040
526738	Trimethyl Benzene, 1,2,3-	69
540885	tert-Butyl acetate	154
584849	Toluene-2,4-diisocyanate	1,448
611143	Ethyltoluene, 2-	34
627930	Dimethyl adipate	1,941
628637	Amyl Acetate	4,359
646060	Dioxolane 1,3-	7
694837	1,2-Cyclohexanediamine	820
763699	Ethyl 3-ethoxypropionate	61,260
822060	Hexamethylene Diisocyanate	137
872504	1-methyl-2-pyrrolidinone	864
1067250	Propyltrimethoxysilane	955

Table 10-1: ***VOC Ingredients (sorted by CAS#) – Solvent-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
1119400	Dimethyl glutarate	5,617
1185553	Methyltrimethoxysilane	32
1330207	Xylene	1,857,072
1338245	Naphthenic Acid	13
1477550	m-Xylene-a,a-diamine	156
1569013	Propylene Glycol Monopropyl Ether	3,827
1589475	2-Methoxy-1-propanol	98
1760243	n-[3-(trimethoxysilyl)propyl]-1,2-ethananediamine	398
2426086	Butyl Glycidal Ether, N-	169
2461156	2-ethylhexyl glycidyl ether	2,199
2530838	3-Glycidoxypropyltrimethoxysilane	60
2551137	Trimethyl Benzene (mixed Isomers)	17
2807309	2-Propoxyethanol	28,161
2855132	Isophorone diamine	32
2943751	Triethoxyoctylsilane	405
3146850	2-Ethylhexoate	71
5124301	Methylene-bis(4-cyclohexylisocyanate)	205
5131668	1-butoxy-2-propanol	127
5989275	D-limonene	1,556
6846500	Propanoic acid, 2-methyl-, 2,2-dimethyl-1-(1-methylethyl)-1,3-propanediyl ester	2,709
7397628	Butyl glycolate	307
7705148	Cyclohexene, 1-methyl-4-(1-methylethenyl)	124
8001794	Castor Oil	32,425
8002059	Petroleum Distillate	33,603
8002093	Pine oil	2,528
8007247	Cashew nutshell liquid	0
8008206	Kerosene	394,377
8012951	Mineral Oil	27
8030306	Naphtha	56
8032324	Petroleum ether	310,733
8052411	Mineral Spirits	32
8052412	Ashland Mineral Spirits 66	1,088
8052413	Stoddard Solvent	17,391,429
9016879	Polymethylene polyphenyl isocyanate	99
9046100	Polyoxypropylene Diamine	53
10215302	2-Propoxy-1-Propanol	2
15821837	2-Butoxy-1-Propanol	5
15956588	Manganese 2-Ethylhexanoate	1
17689779	Ethyltriacetoxysilane	132
19549805	4,6-Dimethyl-2-heptanone	620
21564170	Thiocyanic acid (2-benzoathiazolythio)methyl ester	3,473
22984549	Methyltris(ethylmethylketoxime)silane	17,855
24800440	Tripropylene glycol	0
25013154	Vinyl Toluene	3,288
25265718	Dipropylene Glycol	1,066

Table 10-1: ***VOC Ingredients (sorted by CAS#) – Solvent-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
25265774	2,2,4-Trimethyl-1,3-Pentanediol Isobutyrate	54,321
25322694	Polypropylene glycol	27,722
25340174	Diethyl Benzene	85
25498491	Tripropylene glycol methyl ether	9,572
25550145	Ethylmethylbenzene	7,541
25551137	Trimethyl Benzene (mixed isomers)	58,758
26471625	Toluenediisocyanate(mixed Isomers)	5
26530201	2-n-Octyl-4-isothiazolin-3-one	217
26761400	1,2-benzenedicarboxylic acid diisodecyl ester	155,148
26761455	Neodecanoic Acid, Oxiranylmethyl Ester	2,234
27646806	2(Methylamino)-2-methyl-1-propanol	9
28804888	Dimethylnaphthalene	12,380
29387868	Butoxy Propanol	420
29911271	Dipropylene Glycol Monopropyl Ether	0
29911282	2-Propanol, 1-(2-butoxy-1-methylethoxy)-	12
34590948	dipropylene glycol methyl ether	13,780
37449197	Manganese Isooctanoate	144
41556267	Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidinyl)ester	61
52125538	Propylene Glycol Monoethyl Ether	170
57018527	Propylene Glycol t-Butyl Ether	1,015
61788769	Chlorafin	1,915
64475850	Mineral Spirits	42,814
64741419	Heavy straight-run naphtha	363,060
64741442	Straight-run middle distillate	225,689
64741657	Petroleum naphtha, heavy alkylate	1,075,674
64741668	Naphtha, Petroleum	300
64741851	Paraffinic Naphthenic Solvent	16,452
64742105	Residual Oil Solvent Extract	25,661
64742467	Petroleum distillates, hydrotreated middle	2,731
64742478	Distillate(petroleum), hydrotreated light	1,656,441
64742489	Hydrotreated Heavy Naphtha	640,041
64742490	Naphtha, Petroleum, Hydrotreated Light	56,185
64742525	Hydrotreated heavy naphthenic distillate	62,659
64742536	Hydrotreated light naphthenic distillate	224,183
64742650	FisherBrand 19, Pump Oil	956
64742821	Hydrodesulfurized Heavy Naphtha	20,695
64742887	Medium aliphatic solvent naphtha	9,656,889
64742898	VM&P Naphtha	2,401,294
64742945	Heavy aromatic naphtha solvent	30,347
64742956	Aromatic 100	2,652,267
64742967	Solvent naphtha, petroleum, heavy aliph.	60,142
65996794	Coal Tar Distillate	300
68476302	Fuel oil no. 2	177,595
68515446	1,2-Benzenedicarboxylic Acid, Diheptyl Ester, Branched and Linear	15

Table 10-1: ***VOC Ingredients (sorted by CAS#) – Solvent-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
68515491	1,2-benzenedicarboxylic acid, di-c9-11-branched alkyl esters, c10-rich	10
68648873	Benzene, c10-16-alkyl derivs.	1,085
68920069	Hydrocarbons, C7-C9	17,972
68956569	Terpenes	0
70657704	2-Methoxy-1-propanol acetate	28
74630992	Vanadium 2-Ethylhexanoate	24
82919377	Methyl-(1,2,2,6,6-Pentamethyl-4-Piperidinyl)-Sebacate	20
83817725	Di (ethylmethylketoxime) methoxy methyl silane	3,664
88230357	Oxohexyl Acetate	37,019
88917220	Dipropylene Glycol Methyl Ether Acetate	4,242
90438792	Oxo-Heptyl Acetate	1,485
108419325	Oxo-octyl Acetate	6
232268654	2-hydroxyethyl ethers of cashew	10
	Solvent-borne Subtotal (lbs) =	**45,878,859**

Sales of exempt small containers (1 quart or less) were included when calculating ingredient quantities.

Table 10-2: ***VOC Ingredients (sorted by CAS#) – Water-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
0	Aromatics-u	5
0	Glycol Ethers	72,295
0	Petroleum Hydrocarbon	46,883
0	Residual Monomer(s)	9,573
9981	Aggregated VOCs < 0.1%	1,078,986
9985	Other VOC	86
9991	Proprietary VOC	7
50000	Formaldehyde	2,066
57556	Propylene Glycol	7,341,058
64175	Ethanol	14,119
64197	Acetic Acid	1,499
67561	Methanol	1,141,220
67630	Isopropanol	53,387
67685	Dimethylsulfoxide	19,031
71363	n-Butanol	3,227
71432	Benzene	17
75070	Acetaldehyde	7,236
75650	Butyl Alcohol, Tert	99
75912	Tert-Butyl Hydroperoxide	31
78104	Ethyl Silicate	9
78513	Tri(butyl cellosolve) phosphate	254
78831	1-Propanol, 2-Methyl-	1,124
78922	Butyl Alcohol, Sec-	8,037
78933	Methyl Ethyl Ketone	190
78966	1-Amino-2-Propanol	22

Table 10-2: ***VOC Ingredients (sorted by CAS#) – Water-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
79107	Acrylic Acid	44
79243	Nitroethane	306
80626	Methyl Methacrylate	1,590
84742	Dibutyl Phthalate	5,626
85687	Benzyl Butyl Phthalate	27,881
91203	Naphthalene	40
95476	Ortho-Xylene	1
95636	1,2,4-Trimethylbenzene	15,099
96059	Allyl Methacrylate	0
96297	Ethyl methyl ketone oxime	3,354
96480	gamma-Butyrolactone	2,791
98000	Furfuryl mercaptan	36
98828	Cumene	360
100414	Ethyl Benzene	2,231
100425	Styrene	4,576
100447	Benzyl Chloride	5
100516	Benzyl Alcohol	893,450
102716	Triethanolamine	4,926
103117	2-Ethylhexyl Acrylate	2,883
104687	2-(2-phenoxyethoxy)ethanol	1,619
104767	2-Ethyl-1-Hexanol	763
107153	Ethylenediamine	449
107211	Ethylene Glycol	11,435,792
107222	Glyoxal	382
107415	2-Methyl-2,4-pentanediol	6,697
107982	Propylene Glycol Monomethyl Ether	52,637
108010	N,N-Dimethylethanolamine	6,990
108032	1-Nitropropane	10,608
108101	Methyl Isobutyl Ketone	0
108327	Propylene carbonate	9
108383	Meta-Xylene	2
108656	Propylene Glycol Monomethyl Ether Acetate	717
108678	Mesitylene	4,631
108883	Toluene	10,565
108907	Phenyl Chloride	8
108941	Cyclohexanone	1,058
109897	Diethylamine	273
110805	Ethoxyethanol, 2-	3
110918	Morpholine	11,567
111273	Hexanol, N-	124
111400	Diethylene Triamine	449
111422	Diethanolamine	650
111466	Diethylene Glycol	265,651
111762	2-Butoxy Ethanol	429,641
111773	2-(2-methoxyethoxy)ethanol	266,766
111900	Ethanol, 2-(2-ethoxyethoxy)	129,554

Table 10-2: ***VOC Ingredients (sorted by CAS#) – Water-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
112072	Butoxyethyl Acetate, 2-	617
112254	Ethylene Glycol Monohexyl Ether	2
112276	Triethylene Glycol	787
112345	2-(2-Butoxyethoxy)ethanol	1,143,050
112572	Tetraethylenepentamine	449
112594	Hexyl Carbitol, N-	1,092
112801	Oleic acid	16
115968	Tris(2-Chloroethyl)Phosphate	1,140
121448	Triethylamine	10,681
122996	Phenoxyethanol, 2-	14,634
123422	2-Pentanone, 4-Hydroxy-4-Methyl-	4,268
123864	Butyl Acetate, 1-	19
124174	2-(2-butoxyethoxy)ethyl acetate	28,373
124685	2-Amino-2-methyl-1-propanol	459,007
126738	Tributyl Phosphate	11,818
138863	Limonene	7
141322	Butyl Acrylate, N-	68
141435	Ethanolamine	1,150
141786	Ethyl Acetate	10,599
143226	Triethylene Glycol Monobutyl Ether	10,715
149575	2-Ethylhexanoic Acid	577
763699	Ethyl 3-ethoxypropionate	16
770354	2-Propanol, 1-phenoxy-	12,341
828002	Dioxin (bactericide)	7
872504	1-methyl-2-pyrrolidinone	72,380
1095665	Morpholine Oleate	39
1330207	Xylene	24,467
1559359	Ethylene Glycol Mono-2-Ethyl Hexyl Ether	7,348
1559360	Diethylene Glycol Mono-2-Ethyl Hexyl Ether	934
1559371	Triethylene Glycol Mono-2-Ethyl Hexyl Ether	62
1569013	Propylene Glycol Monopropyl Ether	904
1569024	Propylene glycol monoethyl ether	143
1589475	2-Methoxy-1-propanol	0
1760243	n-[3-(trimethoxysilyl)propyl]-1,2-ethananediamine	251
2807309	2-Propoxyethanol	58,633
2943751	Triethoxyoctylsilane	21,365
3710847	Diethyl Hydroxylamine	60
4719044	Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	3,601
5131668	1-butoxy-2-propanol	38,519
5444757	2-Ethylhexyl Benzoate	8,291
6846500	Propanoic acid, 2-methyl-, 2,2-dimethyl-1-(1-methylethyl)-1,3-propanediyl ester	44
8002093	Pine oil	6,347
8042475	Petroleum Distillates	1
8052413	Stoddard Solvent	161,645

Table 10-2: ***VOC Ingredients (sorted by CAS#) – Water-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
9003138	Poly[oxy(methyl-1,2-ethanediyl)], alpha-butyl-omega-hydroxy-	988
24800440	Tripropylene glycol	3
25103097	Isooctyl thioglycolate	1
25265718	Dipropylene Glycol	44,518
25265774	2,2,4-Trimethyl-1,3-Pentanediol Isobutyrate	11,696,315
25322694	Polypropylene glycol	119
25498491	Tripropylene glycol methyl ether	4,056
25551137	Trimethyl Benzene (mixed isomers)	9,935
26172554	5-Chloro-2-methyl-4-isothiazolin-3-one	1
26530201	2-n-Octyl-4-isothiazolin-3-one	4,406
26952216	Isooctyl Alcohol	1,643
27646806	2(Methylamino)-2-methyl-1-propanol	3,629
29387868	Butoxy Propanol	225
29911271	Dipropylene Glycol Monopropyl Ether	2,791
29911282	2-Propanol, 1-(2-butoxy-1-methylethoxy)-	129,940
31637000	Isodecyl Benzoate	19
34375285	Troysan 174	2,868
34590948	dipropylene glycol methyl ether	160,204
51200874	4,4-Dimethyloxazolidine	29,815
51730940	Dipropylene glycol phenyl ether	271
52299204	2((hydroxymethyl)amino)-iso-butanol	72
56709138	Bicyclic Oxazolidine	9,482
58713216	Hexamethylenetetramine Hydrochloride	0
60864337	Benzyl ether of 1,1,3,3-tetramethylbutylphenoxypolyethoxy ethanol	822
61791126	Ethoxylated Castor Oil	6
64741419	Heavy straight-run naphtha	73,172
64741442	Straight-run middle distillate	196
64741657	Petroleum naphtha, heavy alkylate	14,787
64741884	Solvent-refined heavy paraffinic distillate	191,804
64741895	Paraffinic distillate	16,493
64742478	Distillate(petroleum), hydrotreated light	129,380
64742489	Hydrotreated Heavy Naphtha	25,223
64742525	Hydrotreated heavy naphthenic distillate	5
64742536	Hydrotreated light naphthenic distillate	15,441
64742547	hydrotreated heavy paraffinic distillate	2
64742650	FisherBrand 19, Pump Oil	983
64742821	Hydrodesulfurized Heavy Naphtha	189
64742887	Medium aliphatic solvent naphtha	527,936
64742898	VM&P Naphtha	36,909
64742945	Heavy aromatic naphtha solvent	11,057
64742956	Aromatic 100	113,682
64742959	Light Aromatic Naphtha	228
64742967	Solvent naphtha, petroleum, heavy aliph.	42
68081845	Alkyl Glycidyl Ether	18

Table 10-2: ***VOC Ingredients (sorted by CAS#) – Water-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
68476302	Fuel oil no. 2	84
68515446	1,2-Benzenedicarboxylic Acid, Diheptyl Ester, Branched and Linear	951
68990374	Carboxylic Acid	140
70657704	2-Methoxy-1-propanol acetate	2
88230357	Oxohexyl Acetate	1,865
88917220	Dipropylene Glycol Methyl Ether Acetate	32
90438792	Oxo-Heptyl Acetate	135
108419325	Oxo-octyl Acetate	531
108419358	Oxo-tridecyl Acetate	24,500
111109774	Dipropylene Glycol Dimethyl Ether	9,092
	Water-borne Subtotal (lbs) =	**38,816,741**

Sales of exempt small containers (1 quart or less) were included when calculating ingredient quantities.

Table 10-3: ***VOC Ingredients (sorted by Weight) – Solvent-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
8052413	Stoddard Solvent	17,391,429
64742887	Medium aliphatic solvent naphtha	9,656,889
64742956	Aromatic 100	2,652,267
64742898	VM&P Naphtha	2,401,294
1330207	Xylene	1,857,072
64742478	Distillate(petroleum), hydrotreated light	1,656,441
64741657	Petroleum naphtha, heavy alkylate	1,075,674
108883	Toluene	853,319
64742489	Hydrotreated Heavy Naphtha	640,041
123864	Butyl Acetate, 1-	511,194
64175	Ethanol	481,995
95636	1,2,4-Trimethylbenzene	428,550
110430	Methyl-n-amyl Ketone	425,161
8008206	Kerosene	394,377
64741419	Heavy straight-run naphtha	363,060
9981	Aggregated VOCs < 0.1%	356,833
8032324	Petroleum ether	310,733
67630	Isopropanol	278,420
108101	Methyl Isobutyl Ketone	269,376
111762	2-Butoxy Ethanol	243,089
78933	Methyl Ethyl Ketone	238,085
100414	Ethyl Benzene	237,999
64741442	Straight-run middle distillate	225,689
64742536	Hydrotreated light naphthenic distillate	224,183
71363	n-Butanol	220,681
68476302	Fuel oil no. 2	177,595
107982	Propylene Glycol Monomethyl Ether	158,504
26761400	1,2-benzenedicarboxylic acid diisodecyl ester	155,148

Table 10-3: ***VOC Ingredients (sorted by Weight) – Solvent-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
67561	Methanol	144,224
108656	Propylene Glycol Monomethyl Ether Acetate	117,725
110190	Isobutyl Acetate	104,054
96297	Ethyl methyl ketone oxime	91,820
100516	Benzyl Alcohol	90,676
97858	Isobutyl Isobutyrate	78,983
107879	2-Pentanone	73,237
64742525	Hydrotreated heavy naphthenic distillate	62,659
763699	Ethyl 3-ethoxypropionate	61,260
108678	Mesitylene	61,115
64742967	Solvent naphtha, petroleum, heavy aliph.	60,142
78831	1-Propanol, 2-Methyl-	59,495
25551137	Trimethyl Benzene (mixed isomers)	58,758
64742490	Naphtha, Petroleum, Hydrotreated Light	56,185
25265774	2,2,4-Trimethyl-1,3-Pentanediol Isobutyrate	54,321
0	Naphtha	50,499
64475850	Mineral Spirits	42,814
88230357	Oxohexyl Acetate	37,019
141786	Ethyl Acetate	34,962
8002059	Petroleum Distillate	33,603
112345	2-(2-Butoxyethoxy)ethanol	33,318
8001794	Castor Oil	32,425
64742945	Heavy aromatic naphtha solvent	30,347
2807309	2-Propoxyethanol	28,161
25322694	Polypropylene glycol	27,722
64742105	Residual Oil Solvent Extract	25,661
0	Mixed light aromatics NOS	22,371
64742821	Hydrodesulfurized Heavy Naphtha	20,695
124174	2-(2-butoxyethoxy)ethyl acetate	20,642
100425	Styrene	20,385
91203	Naphthalene	20,313
0	Glycol Ethers	19,611
98828	Cumene	18,728
68920069	Hydrocarbons, C7-C9	17,972
22984549	Methyltris(ethylmethylketoxime)silane	17,855
64741851	Paraffinic Naphthenic Solvent	16,452
112072	Butoxyethyl Acetate, 2-	15,528
34590948	dipropylene glycol methyl ether	13,780
108941	Cyclohexanone	12,961
28804888	Dimethylnaphthalene	12,380
108327	Propylene carbonate	12,025
138863	Limonene	10,235
25498491	Tripropylene glycol methyl ether	9,572
90120	1-Methylnaphthalene	8,253
25550145	Ethylmethylbenzene	7,541
122510	Ethyl orthoformate	7,099

Table 10-3: ***VOC Ingredients (sorted by Weight) – Solvent-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
108383	Meta-Xylene	5,898
1119400	Dimethyl glutarate	5,617
124685	2-Amino-2-methyl-1-propanol	5,440
57556	Propylene Glycol	5,244
9991	Proprietary VOC	4,566
628637	Amyl Acetate	4,359
106898	Epichlorohydrin	4,322
88917220	Dipropylene Glycol Methyl Ether Acetate	4,242
78104	Ethyl Silicate	3,978
108838	2,6-Dimethyl-4-heptanone	3,972
1569013	Propylene Glycol Monopropyl Ether	3,827
71410	1-Pentanol	3,678
83817725	Di (ethylmethylketoxime) methoxy methyl silane	3,664
111159	Ethoxyethyl Acetate	3,542
21564170	Thiocyanic acid (2-benzoathiazolythio)methyl ester	3,473
110123	Methyl Isoamyl Ketone	3,368
25013154	Vinyl Toluene	3,288
111773	2-(2-methoxyethoxy)ethanol	3,258
79243	Nitroethane	3,179
110543	Hexane	2,908
64742467	Petroleum distillates, hydrotreated middle	2,731
6846500	Propanoic acid, 2-methyl-, 2,2-dimethyl-1-(1-methylethyl)-1,3-propanediyl ester	2,709
8002093	Pine oil	2,528
106423	Para-Xylene	2,359
26761455	Neodecanoic Acid, Oxiranylmethyl Ester	2,234
2461156	2-ethylhexyl glycidyl ether	2,199
95476	Ortho-Xylene	2,156
96480	gamma-Butyrolactone	2,111
149575	2-Ethylhexanoic Acid	2,040
627930	Dimethyl adipate	1,941
61788769	Chlorafin	1,915
5989275	D-limonene	1,556
107211	Ethylene Glycol	1,496
108930	Cyclohexanol	1,492
90438792	Oxo-Heptyl Acetate	1,485
584849	Toluene-2,4-diisocyanate	1,448
123422	2-Pentanone, 4-Hydroxy-4-Methyl-	1,441
109604	n-Propyl Acetate	1,281
8052412	Ashland Mineral Spirits 66	1,088
68648873	Benzene, c10-16-alkyl derivs.	1,085
25265718	Dipropylene Glycol	1,066
57018527	Propylene Glycol t-Butyl Ether	1,015
64742650	FisherBrand 19, Pump Oil	956
1067250	Propyltrimethoxysilane	955
142825	Heptane	900

Table 10-3: ***VOC Ingredients (sorted by Weight) – Solvent-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
872504	1-methyl-2-pyrrolidinone	864
694837	1,2-Cyclohexanediamine	820
9985	Other VOC	671
19549805	4,6-Dimethyl-2-heptanone	620
71238	n-Propyl Alcohol	561
80626	Methyl Methacrylate	447
29387868	Butoxy Propanol	420
2943751	Triethoxyoctylsilane	405
1760243	n-[3-(trimethoxysilyl)propyl]-1,2-ethananediamine	398
108952	Phenol	386
110805	Ethoxyethanol, 2-	381
103651	n-Propylbenzene	354
7397628	Butyl glycolate	307
64741668	Naphtha, Petroleum	300
65996794	Coal Tar Distillate	300
123546	2,4-Pentanedione	290
102716	Triethanolamine	263
111422	Diethanolamine	251
131113	Dimethylphthalate	248
50000	Formaldehyde	242
67685	Dimethylsulfoxide	240
26530201	2-n-Octyl-4-isothiazolin-3-one	217
5124301	Methylene-bis(4-cyclohexylisocyanate)	205
78842	Isobutyraldehyde	179
110850	Piperazine	175
52125538	Propylene Glycol Monoethyl Ether	170
2426086	Butyl Glycidal Ether, N-	169
108112	Methylisobutyl Carbinol	159
1477550	m-Xylene-a,a-diamine	156
71432	Benzene	155
540885	tert-Butyl acetate	154
141435	Ethanolamine	151
37449197	Manganese Isooctanoate	144
107153	Ethylenediamine	144
108010	N,N-Dimethylethanolamine	144
822060	Hexamethylene Diisocyanate	137
112572	Tetraethylenepentamine	136
64197	Acetic Acid	134
17689779	Ethyltriacetoxysilane	132
5131668	1-butoxy-2-propanol	127
7705148	Cyclohexene, 1-methyl-4-(1-methylethenyl)	124
108214	Isopropyl Acetate	118
0	Alcohols	118
122996	Phenoxyethanol, 2-	115
56235	Carbon Tetrachloride	105
112801	Oleic acid	99

Table 10-3: ***VOC Ingredients (sorted by Weight) – Solvent-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
9016879	Polymethylene polyphenyl isocyanate	99
1589475	2-Methoxy-1-propanol	98
78922	Butyl Alcohol, Sec-	88
78591	Isophorone	87
25340174	Diethyl Benzene	85
107415	2-Methyl-2,4-pentanediol	81
80159	Cumene Hydroperoxide	76
111466	Diethylene Glycol	73
3146850	2-Ethylhexoate	71
526738	Trimethyl Benzene, 1,2,3-	69
41556267	Decanedioic acid bis(1,2,2,6,6-pentamethyl-4-piperidinyl)ester	61
121448	Triethylamine	60
2530838	3-Glycidoxypropyltrimethoxysilane	60
8030306	Naphtha	56
91087	Toluene-2,6-diisocyanate	56
9046100	Polyoxypropylene Diamine	53
104767	2-Ethyl-1-Hexanol	39
97881	Butyl Methacrylate, N-	36
611143	Ethyltoluene, 2-	34
8052411	Mineral Spirits	32
1185553	Methyltrimethoxysilane	32
2855132	Isophorone diamine	32
90722	Tris(dimethylaminomethyl)phenol	30
70657704	2-Methoxy-1-propanol acetate	28
8012951	Mineral Oil	27
74630992	Vanadium 2-Ethylhexanoate	24
140318	n-Aminoethylpiperazine	23
82919377	Methyl-(1,2,2,6,6-Pentamethyl-4-Piperidinyl)-Sebacate	20
84742	Dibutyl Phthalate	19
112243	Triethylenetetramine	18
2551137	Trimethyl Benzene (mixed Isomers)	17
68515446	1,2-Benzenedicarboxylic Acid, Diheptyl Ester, Branched and Linear	15
121437	Trimethyl Borate	15
1338245	Naphthenic Acid	13
29911282	2-Propanol, 1-(2-butoxy-1-methylethoxy)-	12
68515491	1,2-benzenedicarboxylic acid, di-c9-11-branched alkyl esters, c10-rich	10
232268654	2-hydroxyethyl ethers of cashew	10
104687	2-(2-phenoxyethoxy)ethanol	9
27646806	2(Methylamino)-2-methyl-1-propanol	9
646060	Dioxolane 1,3-	7
108419325	Oxo-octyl Acetate	6
106650	Dimethyl Succinate	5
26471625	Toluenediisocyanate(mixed Isomers)	5

Table 10-3: ***VOC Ingredients (sorted by Weight) – Solvent-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
15821837	2-Butoxy-1-Propanol	5
0	Aromatics-u	5
0	Residual Monomer(s)	4
103833	Benzyldimethylamine	4
0	Cycloparaffins and aromatics NOS	3
97869	Isobutyl Methacrylate	2
80057	Bisphenol-A	2
10215302	2-Propoxy-1-Propanol	2
111400	Diethylene Triamine	2
100527	Benzaldehyde	1
15956588	Manganese 2-Ethylhexanoate	1
110827	Cyclohexane	1
108032	1-Nitropropane	1
29911271	Dipropylene Glycol Monopropyl Ether	0
8007247	Cashew nutshell liquid	0
111411	Ethylenediamine, N-(2-hydroxyethyl)	0
108907	Phenyl Chloride	0
110690	Butanal Oxime	0
119368	Benzoic Acid, 2-Hydroxy-, Methyl Ester	0
68956569	Terpenes	0
75310	Isopropylamine	0
24800440	Tripropylene glycol	0
97643	Ethyl Lactate	0
112276	Triethylene Glycol	0
	Solvent-borne Subtotal (lbs) =	**45,878,859**

Sales of exempt small containers (1 quart or less) were included when calculating ingredient quantities.

Table 10-4: ***VOC Ingredients (sorted by Weight) – Water-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
25265774	2,2,4-Trimethyl-1,3-Pentanediol Isobutyrate	11,696,315
107211	Ethylene Glycol	11,435,792
57556	Propylene Glycol	7,341,058
112345	2-(2-Butoxyethoxy)ethanol	1,143,050
67561	Methanol	1,141,220
9981	Aggregated VOCs < 0.1%	1,078,986
100516	Benzyl Alcohol	893,450
64742887	Medium aliphatic solvent naphtha	527,936
124685	2-Amino-2-methyl-1-propanol	459,007
111762	2-Butoxy Ethanol	429,641
111773	2-(2-methoxyethoxy)ethanol	266,766
111466	Diethylene Glycol	265,651
64741884	Solvent-refined heavy paraffinic distillate	191,804
8052413	Stoddard Solvent	161,645

Table 10-4: ***VOC Ingredients (sorted by Weight) – Water-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
34590948	dipropylene glycol methyl ether	160,204
29911282	2-Propanol, 1-(2-butoxy-1-methylethoxy)-	129,940
111900	Ethanol, 2-(2-ethoxyethoxy)	129,554
64742478	Distillate(petroleum), hydrotreated light	129,380
64742956	Aromatic 100	113,682
64741419	Heavy straight-run naphtha	73,172
872504	1-methyl-2-pyrrolidinone	72,380
0	Glycol Ethers	72,295
2807309	2-Propoxyethanol	58,633
67630	Isopropanol	53,387
107982	Propylene Glycol Monomethyl Ether	52,637
0	Petroleum Hydrocarbon	46,883
25265718	Dipropylene Glycol	44,518
5131668	1-butoxy-2-propanol	38,519
64742898	VM&P Naphtha	36,909
51200874	4,4-Dimethyloxazolidine	29,815
124174	2-(2-butoxyethoxy)ethyl acetate	28,373
85687	Benzyl Butyl Phthalate	27,881
64742489	Hydrotreated Heavy Naphtha	25,223
108419358	Oxo-tridecyl Acetate	24,500
1330207	Xylene	24,467
2943751	Triethoxyoctylsilane	21,365
67685	Dimethylsulfoxide	19,031
64741895	Paraffinic distillate	16,493
64742536	Hydrotreated light naphthenic distillate	15,441
95636	1,2,4-Trimethylbenzene	15,099
64741657	Petroleum naphtha, heavy alkylate	14,787
122996	Phenoxyethanol, 2-	14,634
64175	Ethanol	14,119
770354	2-Propanol, 1-phenoxy-	12,341
126738	Tributyl Phosphate	11,818
110918	Morpholine	11,567
64742945	Heavy aromatic naphtha solvent	11,057
143226	Triethylene Glycol Monobutyl Ether	10,715
121448	Triethylamine	10,681
108032	1-Nitropropane	10,608
141786	Ethyl Acetate	10,599
108883	Toluene	10,565
25551137	Trimethyl Benzene (mixed isomers)	9,935
0	Residual Monomer(s)	9,573
56709138	Bicyclic Oxazolidine	9,482
111109774	Dipropylene Glycol Dimethyl Ether	9,092
5444757	2-Ethylhexyl Benzoate	8,291
78922	Butyl Alcohol, Sec-	8,037
1559359	Ethylene Glycol Mono-2-Ethyl Hexyl Ether	7,348
75070	Acetaldehyde	7,236

Table 10-4: ***VOC Ingredients (sorted by Weight) – Water-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
108010	N,N-Dimethylethanolamine	6,990
107415	2-Methyl-2,4-pentanediol	6,697
8002093	Pine oil	6,347
84742	Dibutyl Phthalate	5,626
102716	Triethanolamine	4,926
108678	Mesitylene	4,631
100425	Styrene	4,576
26530201	2-n-Octyl-4-isothiazolin-3-one	4,406
123422	2-Pentanone, 4-Hydroxy-4-Methyl-	4,268
25498491	Tripropylene glycol methyl ether	4,056
27646806	2(Methylamino)-2-methyl-1-propanol	3,629
4719044	Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	3,601
96297	Ethyl methyl ketone oxime	3,354
71363	n-Butanol	3,227
103117	2-Ethylhexyl Acrylate	2,883
34375285	Troysan 174	2,868
29911271	Dipropylene Glycol Monopropyl Ether	2,791
96480	gamma-Butyrolactone	2,791
100414	Ethyl Benzene	2,231
50000	Formaldehyde	2,066
88230357	Oxohexyl Acetate	1,865
26952216	Isooctyl Alcohol	1,643
104687	2-(2-phenoxyethoxy)ethanol	1,619
80626	Methyl Methacrylate	1,590
64197	Acetic Acid	1,499
141435	Ethanolamine	1,150
115968	Tris(2-Chloroethyl)Phosphate	1,140
78831	1-Propanol, 2-Methyl-	1,124
112594	Hexyl Carbitol, N-	1,092
108941	Cyclohexanone	1,058
9003138	Poly[oxy(methyl-1,2-ethanediyl)], alpha-butyl-omega-hydroxy-	988
64742650	FisherBrand 19, Pump Oil	983
68515446	1,2-Benzenedicarboxylic Acid, Diheptyl Ester, Branched and Linear	951
1559360	Diethylene Glycol Mono-2-Ethyl Hexyl Ether	934
1569013	Propylene Glycol Monopropyl Ether	904
60864337	Benzyl ether of 1,1,3,3-tetramethylbutylphenoxypolyethoxy ethanol	822
112276	Triethylene Glycol	787
104767	2-Ethyl-1-Hexanol	763
108656	Propylene Glycol Monomethyl Ether Acetate	717
111422	Diethanolamine	650
112072	Butoxyethyl Acetate, 2-	617
149575	2-Ethylhexanoic Acid	577
108419325	Oxo-octyl Acetate	531

Table 10-4: ***VOC Ingredients (sorted by Weight) – Water-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
112572	Tetraethylenepentamine	449
107153	Ethylenediamine	449
111400	Diethylene Triamine	449
107222	Glyoxal	382
98828	Cumene	360
79243	Nitroethane	306
109897	Diethylamine	273
51730940	Dipropylene glycol phenyl ether	271
78513	Tri(butyl cellosolve) phosphate	254
1760243	n-[3-(trimethoxysilyl)propyl]-1,2-ethananediamine	251
64742959	Light Aromatic Naphtha	228
29387868	Butoxy Propanol	225
64741442	Straight-run middle distillate	196
78933	Methyl Ethyl Ketone	190
64742821	Hydrodesulfurized Heavy Naphtha	189
1569024	Propylene glycol monoethyl ether	143
68990374	Carboxylic Acid	140
90438792	Oxo-Heptyl Acetate	135
111273	Hexanol, N-	124
25322694	Polypropylene glycol	119
75650	Butyl Alcohol, Tert	99
9985	Other VOC	86
68476302	Fuel oil no. 2	84
52299204	2((hydroxymethyl)amino)-iso-butanol	72
141322	Butyl Acrylate, N-	68
1559371	Triethylene Glycol Mono-2-Ethyl Hexyl Ether	62
3710847	Diethyl Hydroxylamine	60
6846500	Propanoic acid, 2-methyl-, 2,2-dimethyl-1-(1-methylethyl)-1,3-propanediyl ester	44
79107	Acrylic Acid	44
64742967	Solvent naphtha, petroleum, heavy aliph.	42
91203	Naphthalene	40
1095665	Morpholine Oleate	39
98000	Furfuryl mercaptan	36
88917220	Dipropylene Glycol Methyl Ether Acetate	32
75912	Tert-Butyl Hydroperoxide	31
78966	1-Amino-2-Propanol	22
123864	Butyl Acetate, 1-	19
31637000	Isodecyl Benzoate	19
68081845	Alkyl Glycidyl Ether	18
71432	Benzene	17
763699	Ethyl 3-ethoxypropionate	16
112801	Oleic acid	16
78104	Ethyl Silicate	9
108327	Propylene carbonate	9
108907	Phenyl Chloride	8

Table 10-4: ***VOC Ingredients (sorted by Weight) – Water-borne Coatings***		
CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
828002	Dioxin (bactericide)	7
138863	Limonene	7
9991	Proprietary VOC	7
61791126	Ethoxylated Castor Oil	6
0	Aromatics-u	5
100447	Benzyl Chloride	5
64742525	Hydrotreated heavy naphthenic distillate	5
24800440	Tripropylene glycol	3
110805	Ethoxyethanol, 2-	3
112254	Ethylene Glycol Monohexyl Ether	2
70657704	2-Methoxy-1-propanol acetate	2
108383	Meta-Xylene	2
64742547	hydrotreated heavy paraffinic distillate	2
26172554	5-Chloro-2-methyl-4-isothiazolin-3-one	1
25103097	Isooctyl thioglycolate	1
95476	Ortho-Xylene	1
8042475	Petroleum Distillates	1
1589475	2-Methoxy-1-propanol	0
58713216	Hexamethylenetetramine Hydrochloride	0
108101	Methyl Isobutyl Ketone	0
96059	Allyl Methacrylate	0
	Water-borne Subtotal (lbs) =	**38,816,741**

Sales of exempt small containers (1 quart or less) were included when calculating ingredient quantities.

Table 10-5: ***Exempt Compounds (sorted by CAS#) – Solvent-borne Coatings***

CAS #	**Ingredient Name**	**Sales Quantity (lbs)**
9982	Aggregated Exempt Compounds < 0.1%	12,213
67641	Acetone	1,423,625
71556	1,1,1-Trichloroethane	382
75092	Methylene Chloride	97,078
79209	Methyl Acetate	4,503
98566	4-chlorobenzotrifluoride	142,645
107517	Octamethyltrisiloxane	96
127184	Tetrachloroethylene	13,140
141628	Decamethyltetrasiloxane	637
141639	Dodecamethylpentasiloxane	318
541026	Decamethylcyclopentasiloxane	398
556672	Octamethylcyclotetrasiloxane	11,636
69430246	Dimethylcyclosiloxanes, D6 or greater	1,163
	Solvent-borne Subtotal (lbs) =	**1,707,834**

Sales of exempt small containers (1 quart or less) were included when calculating ingredient quantities.

Table 10-6: ***Exempt Compounds (sorted by CAS#) – Water-borne Coatings***

CAS #	Ingredient Name	Sales Quantity (lbs)
9982	Aggregated Exempt Compounds < 0.1%	1
67641	Acetone	652
75092	Methylene Chloride	10
541026	Decamethylcyclopentasiloxane	155
556672	Octamethylcyclotetrasiloxane	78
69430246	Dimethylcyclosiloxanes, D6 or greater	253
	Water-borne Subtotal (lbs) =	**1,150**

Sales of exempt small containers (1 quart or less) were included when calculating ingredient quantities.

Table 10-7: ***Petroleum Distillates Only & Bin Numbers (sorted by CAS#)***

CAS #	Ingredient Name	Sales Quantity (lbs)	Bin No.
0	Cycloparaffins and aromatics NOS	3	Bin 22
0	Mixed light aromatics NOS	22,371	Bin 22
0	Naphtha	33	
0	Naphtha	50,466	Bin 9
0	Petroleum Hydrocarbon	46,883	
8002059	Petroleum Distillate	33,603	
8008206	Amoco No. 1 Diesel Fuel	2,324	
8008206	Kerosene	31,300	
8008206	Kerosene	28,303	Bin 14
8008206	Petroleum Hydrocarbon	332,450	
8012951	Paraffin Oil	27	Bin 16
8030306	Naphtha	56	Bin 11
8030306	Naphtha	0	Bin 5
8032324	Benzin	3,158	
8032324	Ligroine	26	Bin 5
8032324	Petroleum ether	954	
8032324	VM&P Naphtha	38,632	
8032324	VM&P Naphtha	305	Bin 10
8032324	VM&P Naphtha	267,658	Bin 6
8042475	Mineral Oil	1	
8052411	Mineral Spirits	32	
8052412	Ashland Mineral Spirits 66	1,088	Bin 11
8052413	Aliphatic Hydrocarbons	676,390	
8052413	Aliphatic Hydrocarbons	388,436	Bin 11
8052413	Aliphatic Hydrocarbons	3,164,808	Bin 6
8052413	Aliphatic Hydrocarbons	125,147	Bin 9
8052413	Ashland Mineral Spirits 66	129,980	
8052413	Mineral Spirits	4,678,199	
8052413	Mineral Spirits	318,134	Bin 11
8052413	Mineral Spirits	1,837	Bin 12
8052413	Mineral Spirits	230,102	Bin 14
8052413	Mineral Spirits	726,289	Bin 15

Table 10-7: ***Petroleum Distillates Only & Bin Numbers (sorted by CAS#)***

CAS #	Ingredient Name	Sales Quantity (lbs)	Bin No.
8052413	Mineral Spirits	867,324	Bin 9
8052413	Mineral Spirits Rule 66 Blend	6,221	
8052413	Mineral Spirits Rule 66 Blend	17,178	Bin 11
8052413	Naphtha (300-360 F boiling range)	259,340	Bin 10
8052413	Naphtha Safety Solvent	2,688	
8052413	Odorless Mineral Spirits	89,712	
8052413	Stoddard Solvent	1,897,188	
8052413	Stoddard Solvent	1,001	Bin 1
8052413	Stoddard Solvent	616,269	Bin 10
8052413	Stoddard Solvent	98,037	Bin 11
8052413	Stoddard Solvent	1,632,577	Bin 14
8052413	Stoddard Solvent	941,001	Bin 15
8052413	Stoddard Solvent	1,591	Bin 16
8052413	Stoddard Solvent	683,626	Bin 9
64475850	Mineral Spirits	42,814	
64741419	Heavy straight-run naphtha	2,639	
64741419	Mineral Spirits	28,806	
64741419	Mineral Spirits	93,003	Bin 14
64741419	Mineral Spirits	8,451	Bin 15
64741419	Naphtha (Petroleum), Heavy Straight Run	296,134	Bin 11
64741419	Naphtha (Petroleum), Heavy Straight Run	2,350	Bin 15
64741419	Naphtha (Petroleum), Heavy Straight Run	4,849	Bin 5
64741442	Fuel Oil #2	162,750	Bin 11
64741442	Straight-run middle distillate	32,877	
64741442	Straight-run middle distillate	30,258	Bin 15
64741657	Naphtha (Petroleum), Heavy Alkylate	71,391	
64741657	Naphtha (Petroleum), Heavy Alkylate	116	Bin 10
64741657	Naphtha (Petroleum), Heavy Alkylate	280,242	Bin 11
64741657	Naphtha (Petroleum), Heavy Alkylate	3,041	Bin 12
64741657	Naphtha (Petroleum), Heavy Alkylate	509,866	Bin 15
64741657	Odorless Mineral Spirits	136	
64741657	Odorless Mineral Spirits	224,437	Bin 11
64741657	Petroleum naphtha, heavy alkylate	815	
64741657	Petroleum naphtha, heavy alkylate	2	Bin 12
64741657	Petroleum naphtha, heavy alkylate	185	Bin 23
64741657	Solvent Naphtha, Heavy	228	
64741668	Light Isoparaffinic HC Solvent	227	Bin 6
64741668	Naphtha, Petroleum, Light Alkylate	74	Bin 7
64741851	Paraffinic Naphthenic Solvent	16,452	
64741884	Mineral Oil, Paraffinic	19,559	
64741884	Solvent-refined heavy paraffinic distillate	46,852	
64741884	Solvent-refined heavy paraffinic distillate	125,392	Bin 11
64741895	Distillates, Petroleum, Solvent-Refined	9,584	
64741895	Petroleum Hydrocarbon	6,909	Bin 24
64742105	Residual Oil Solvent Extract	25,661	
64742467	Naphthenic Distillate	2,705	

Table 10-7: ***Petroleum Distillates Only & Bin Numbers (sorted by CAS#)***

CAS #	Ingredient Name	Sales Quantity (lbs)	Bin No.
64742467	Petroleum distillates, hydrotreated middle	27	
64742478	Distillate(petroleum), hydrotreated light	340,215	
64742478	Distillate(petroleum), hydrotreated light	23,684	Bin 10
64742478	Distillate(petroleum), hydrotreated light	274,056	Bin 11
64742478	Distillate(petroleum), hydrotreated light	169	Bin 14
64742478	Distillate(petroleum), hydrotreated light	502	Bin 15
64742478	Distillate(petroleum), hydrotreated light	70	Bin 6
64742478	Exxsol D60 Naphtha	4,177	Bin 11
64742478	Light Petroleum Distillate	12,883	
64742478	Light Petroleum Distillate	88,441	Bin 11
64742478	Low Aromatic Petroleum Naphtha	1	Bin 6
64742478	Mineral Spirits	28,595	
64742478	Mineral Spirits	297,109	Bin 11
64742478	Mineral Spirits	30,759	Bin 14
64742478	Mineral Spirits	144,690	Bin 6
64742478	Mineral Spirits	170	Bin 7
64742478	Mineral Spirits	1,654	Bin 9
64742478	Naphtha (petroleum), hydrotreated light	538,647	
64742489	Aliphatic Petroleum Distillate	220	
64742489	Aliphatic Petroleum Distillate	35,693	Bin 7
64742489	ExxonMobil Isopar G	7,652	Bin 7
64742489	Hydrotreated Heavy Naphtha	603,094	
64742489	Hydrotreated Heavy Naphtha	6,314	Bin 10
64742489	Hydrotreated Heavy Naphtha	0	Bin 23
64742489	Hydrotreated Heavy Naphtha	1,793	Bin 6
64742489	Mineral Spirits	580	
64742489	Mineral Spirits	5,727	Bin 15
64742489	Synthetic Isoparaffinic Hydrocarbon	923	Bin 12
64742489	Synthetic Isoparaffinic Hydrocarbon	3,268	Bin 7
64742490	Naphtha, Petroleum, Hydrotreated Light	56,185	Bin 6
64742525	Hydrotreated heavy naphthenic distillate	62,664	
64742536	Hydrotreated light naphthenic distillate	239,623	
64742547	Distillates (petroleum), hydrotreated heavy paraffinic	0	
64742547	Mineral Oil	1	
64742650	Distillates, petroleum, solvent-dewaxed heavy paraffinic	983	
64742650	Distillates, petroleum, solvent-dewaxed heavy paraffinic	956	Bin 21
64742821	Heavy Petroleum Naphtha, Hydrodesulfurized	10,720	
64742821	Heavy Petroleum Naphtha, Hydrodesulfurized	1	Bin 10
64742821	White Spirit	10,163	
64742887	Ashland 140 Solvent	3,832	
64742887	Ashland 140 Solvent	65	Bin 11
64742887	Medium aliphatic solvent naphtha	427,581	
64742887	Medium aliphatic solvent naphtha	1,964	Bin 10

Table 10-7: ***Petroleum Distillates Only & Bin Numbers (sorted by CAS#)***

CAS #	Ingredient Name	Sales Quantity (lbs)	Bin No.
64742887	Medium aliphatic solvent naphtha	2,859	Bin 15
64742887	Medium aliphatic solvent naphtha	595	Bin 22
64742887	Medium aliphatic solvent naphtha	699,897	Bin 6
64742887	Mineral Spirits	972,635	
64742887	Mineral Spirits	33,178	Bin 10
64742887	Mineral Spirits	903	Bin 11
64742887	Mineral Spirits	76,655	Bin 12
64742887	Mineral spirits	4,955,579	Bin 14
64742887	Mineral Spirits	2,001	Bin 15
64742887	Mineral Spirits	2,657	Bin 9
64742887	Mineral Spirits 140-Flash	566,171	Bin 11
64742887	Naphtha (Petroleum), Medium Aliphatic	7,603	
64742887	Naphtha (Petroleum), Medium Aliphatic	1,029,146	Bin 10
64742887	Naphtha (Petroleum), Medium Aliphatic	437,115	Bin 11
64742887	Naphtha (Petroleum), Medium Aliphatic	368	Bin 12
64742887	Naphtha (Petroleum), Medium Aliphatic	158,852	Bin 14
64742887	Shellsol 7EC	805,170	
64742898	Ashland 90 Solvent	1	
64742898	Mineral Spirits	150,936	
64742898	Naphtha (Petroleum), Light Aliphatic	167,024	
64742898	Naphtha (Petroleum), Light Aliphatic	279	Bin 10
64742898	Naphtha (Petroleum), Light Aliphatic	353,269	Bin 6
64742898	Naphtha (Petroleum), Light Aliphatic	220,192	Bin 7
64742898	VM&P Naphtha	712,779	
64742898	VM&P Naphtha	69,564	Bin 10
64742898	VM&P Naphtha	282,213	Bin 6
64742898	VM&P Naphtha	481,945	Bin 9
64742945	Aromatic 150	9,865	
64742945	Aromatic 150	757	Bin 22
64742945	Aromatic 150	12,626	Bin 23
64742945	Ashland Hi-Sol 15	112	
64742945	Ashland Hi-Sol 15	33	Bin 23
64742945	Heavy aromatic naphtha solvent	71	
64742945	Heavy aromatic naphtha solvent	17,941	Bin 23
64742956	Aromatic 100	44,101	
64742956	Aromatic 100	1,458,229	Bin 22
64742956	Aromatic Petroleum Distillate	161,340	
64742956	Aromatic Petroleum Distillate	696,439	Bin 22
64742956	Aromatic Petroleum Distillate	7,274	Bin 23
64742956	Ashland Hi-Sol 10	12,096	
64742956	Ashland Hi-Sol 10	33	Bin 22
64742956	Light Aromatic Solvent, Naphtha	80,767	
64742956	Light Aromatic Solvent, Naphtha	65,987	Bin 22
64742956	Naphtha (Petroleum), Light Aromatic	24,865	
64742956	Naphtha (Petroleum), Light Aromatic	140,353	Bin 22
64742956	Naphtha (Petroleum), Light Aromatic	74,466	Bin 23

Table 10-7: ***Petroleum Distillates Only & Bin Numbers (sorted by CAS#)***

CAS #	Ingredient Name	Sales Quantity (lbs)	Bin No.
64742959	Light Aromatic Naphtha	228	
64742967	Ashland Low Odor Base Solvent	44	Bin 11
64742967	Solvent naphtha, petroleum, heavy aliph.	2,590	
64742967	Solvent naphtha, petroleum, heavy aliph.	287	Bin 11
64742967	Solvent naphtha, petroleum, heavy aliph.	57,262	Bin 20
65996794	Coal Tar Distillate	300	
68476302	Diesel Fuel	14,307	
68476302	Diesel Fuel	13,165	Bin 19
68476302	Fuel oil no. 2	117	
68476302	Fuel oil no. 2	150,090	Bin 11
68920069	Hydrocarbons, C7-C9	17,972	Bin 9
	Petroleum Distillate Total (lbs) =	**38,980,705**	

Sales of exempt small containers (1 quart or less) were included when calculating ingredient quantities.

Chapter 11 -- 1998 / 2001 Survey Comparisons

This section compares, where possible, the data from ARB's 1998 survey of 1996 data with the 2001 survey data. Data in this chapter include sales of small containers (1 quart or less.)

For most coating categories, it was possible to make a direct comparison between the 1998 survey and the 2001 survey. However, in some cases, it was not possible to make a direct comparison because data were not available for both survey years. This may be due to the fact that a new category name was added in 2001 and there was no clear way to make a comparison with the old category names in the 1998 survey. In addition, some categories had no data reported for a particular survey year. If it was not possible to make a comparison, the category was not listed in the summary tables. Complying marketshare comparisons between the 1998 and 2001 surveys are depicted in Chapter 6.

As shown in Table 11-1, the percent change from 1996 survey data to 2000 survey data of the total volume reported represents, roughly, an annual 5% growth rate. This is significantly larger than the typical 1% to 2% annual growth expected in architectural coatings. We contacted many of the largest companies that reported a significant increase in sales from 1996 to 2000. Their explanations for the increases include:

- Increased inventory of their product at home improvement centers;
- Increase in the number of home improvement centers;
- Increased inventory of their product in California;
- Improvement in survey reporting methodology; and
- Company was awarded government contracts.

Also, as a result of our efforts to improve our mailing list, we sent surveys to and received responses from companies that had not previously been surveyed, particularly in the construction coatings and niche coating markets.

In addition, while the list of major manufacturers remains relatively constant from survey to survey, there may be previous respondents that didn't respond in a later survey, as well as new respondents. With the 2001 survey, we received responses from approximately 80 new companies, while about 40 previous participants did not respond because they no longer have California sales, or no longer market architectural coatings. The roughly 80 new respondents accounted for more than 4 million gallons, while the approximately 40 previous respondents accounted for less than 1 million gallons in 1996. This may have also accounted for a portion of the dramatic volume increase between 1996 and 2000.

This chapter includes the following data summaries:

Table 11-1: *Summary Comparison Between 2001 and 1998 Surveys*

Table 11-2: *Detailed Comparison of 1998 and 2001 Surveys - Total*

Table 11-3: *Detailed Comparison of 1998 and 2001 Surveys – Solvent-borne*

Table 11-4: *Detailed Comparison of 1998 and 2001 Surveys –Water-borne*

Table 11-1: ***Summary Comparison Between 2001 and 1998 Surveys***

	1998 Survey (1996 Sales, including quarts)		2001 Survey (2000 Sales, including quarts)		Percent Change from 1996 to 2000
Total volume reported (gals):	**87,496,000**		**108,035,871**		**23.5%**
Water-borne sales volume (gals):	71,810,000	82.0%	90,771,505	84.0%	26.4%
Solvent-borne sales volume (gals):	15,686,000	18.0%	17,264,365	16.0%	10.1%
Total Estimated Annual Average Emissions (tpd):	**117 ***		**137 ***		**17.6%**
Water-borne Emissions (tpd):	38.4	33.0%	52.4	38.3%	36.5%
Solvent-borne Emissions (tpd):	61.0	67.0%*	65.6	61.7%*	7.6%
Thinning/Cleanup Emissions (tpd):	17.2		18.9		10.0%
Volume per capita (gals per capita):	**2.7**		**3.2**		
Emissions per capita (lbs per capita):	**2.6**		**3.0**		

*Solvent-borne emissions estimates include emissions from thinning and solvent cleanup.

Table 11-2: ***Detailed Comparison of 1998 and 2001 Surveys - Total***

	Sales Volume (gallons)			*VOC Emissions (tons per year)*			*Sales-Weighted Average VOC Regulatory (g/l)*			*Sales-Weighted % by Volume Solids*		
	1998	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*
Bituminous Roof	4,919,627	3,245,397	-34%	944.4	1,579.3	67%	47	120	156%	56	59	6%
Bond Breakers	Protected	93,896		11.6	25.0	115%	345	244	-29%	11	14	30%
Concrete Curing Compounds	411,118	692,419	68%	162.7	135.4	-17%	195	145	-25%	22	22	-1%
Dry Fog	202,902	489,295	141%	173.5	404.6	133%	252	248	-2%	41	41	0%
Fire Retardant - Clear	Protected	Protected		0	0.0		22	4	-83%	42	30	-29%
Fire Retardant - Opaque	56,209	29,055	-48%	17.2	6.2	-64%	86	94	9%	59	41	-31%
Flat	31,828,705	37,066,471	16%	5310.3	6,145.7	16%	98	98	0%	35	36	3%
Floor	1,150,961	1,425,064	24%	522	318.1	-39%	157	101	-36%	55	60	9%
Form Release Compounds	83,243	255,724	207%	11.8	222.9	1789%	34	213	527%	2	67	3258%
Graphic Arts	40,366	26,389	-35%	20.2	26.3	30%	122	274	125%	62	43	-31%
High Temperature	23,014	18,632	-19%	34.9	29.7	-15%	366	401	10%	57	49	-14%
Industrial Maintenance	4,329,781	5,016,777	16%	5241.3	6045.8	15%	299	301	1%	61	58	-5%
Lacquers	669,617	463,443	-31%	1663	918.9	-45%	617	555	-10%	22	24	7%
Low Solids	Protected	13,413		3.8	3.3	-14%	67	59	-12%	8	8	-6%
Magnesite Cement	37,501	Protected		92.1	42.1	-54%	589	443	-25%	27	34	27%
Mastic Texture	299,727	628,590	110%	98	247.6	153%	118	133	13%	52	52	0%
Metallic Pigmented	392,827	625,944	59%	537.7	1,026.9	91%	358	409	14%	40	42	5%
Multi-Color	40,224	7,580	-81%	27.4	2.7	-90%	263	227	-14%	33	22	-32%
Nonflat - High Gloss	2,150,818	2,055,746	-4%	1439	1,402.3	-3%	248	243	-2%	40	41	3%
Nonflat - Low Gloss	4,475,094	6,992,762	56%	1144.8	1,595.0	39%	134	129	-4%	36	36	0%
Nonflat - Medium Gloss	15,629,792	24,255,441	55%	4476.9	7,598.1	70%	155	180	16%	37	33	-11%
Other	205,671	1,510,316	634%	196.7	7.7	-96%	239	1	-99%	54	35	-36%
Pre-Treatment Wash Primer	71,940	75,342	5%	31.3	36.4	16%	252	252	0%	49	31	-37%
Primer, Sealer, and Undercoater	6,262,877	8,442,084	35%	3054.7	3,188.5	4%	169	153	-9%	37	39	5%
Quick Dry Enamel	904,739	623,681	-31%	1485	909.1	-39%	403	358	-11%	50	51	3%
Quick Dry Primer, Sealer, & Undercoater	1,912,915	1,660,227	-13%	2172.2	2,367.2	9%	303	364	20%	44	41	-6%
Roof	Protected	1,139,209		198.4	209.6	6%	23	68	197%	45	47	5%
Rust Preventative	63,099	209,899	233%	96.6	273.6	183%	371	339	-9%	48	50	3%
Sanding Sealers	115,933	28,268	-76%	307.3	50.0	-84%	648	471	-27%	19	29	52%
Shellacs - Clear	Protected	Protected		74.9	38.6	-48%	614	600	-2%	26	23	-12%

Table 11-2: ***Detailed Comparison of 1998 and 2001 Surveys - Total***

	Sales Volume (gallons)			*VOC Emissions (tons per year)*			*Sales-Weighted Average VOC Regulatory (g/l)*			*Sales-Weighted % by Volume Solids*		
	1998	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*
Shellacs - Opaque	Protected	Protected		271.3	183.5	-32%	534	538	1%	31	30	-2%
Stains - Clear/Semitransparent	1,441,786	2,175,666	51%	2060.9	2,875.5	40%	387	349	-10%	37	43	17%
Stains - Opaque	1,519,190	1,087,373	-28%	522.2	497.5	-5%	157	180	15%	36	37	2%
Swimming Pool	3,492	22,086	532%	5.8	20.2	249%	406	274	-32%	49	50	1%
Swimming Pool Repair & Maintenance	12,774	15,266	20%	30.3	36.3	20%	569	573	1%	29	34	18%
Traffic Marking	2,883,370	3,338,918	16%	1339.7	1,107.7	-17%	154	116	-25%	58	62	6%
Varnishes - Clear	617,428	1,087,930	76%	932	1,470.2	58%	406	375	-8%	39	39	1%
Varnishes - Semitransparent	162,209	61,505	-62%	222.4	108.1	-51%	396	431	9%	38	42	10%
Waterproofing Sealers	1,070,007	1,000,959	-6%	1026.4	686.4	-33%	335	251	-25%	37	38	3%
Wood Preservatives	Protected	177,444		338.2	249.4	-26%	230	345	50%	65	54	-18%

"Protected": Fewer than three companies reported sales.
"N/A": No sales were reported in this subcategory.
Sales volumes contained in this table include sales of small containers (1 quart or less).

*Note: In some cases, the 1998 data may differ from the data displayed in the 1998 survey report. This is due to the fact that data from multiple categories have been combined to provide a more direct comparison to the categories in the 2001 survey, as shown below. For the VOC Regulatory values and the percent volume solids, some 1998 values have been corrected to account for coatings that contain 100% solids.

1998 Category	2001 Category
Anti-Graffiti	Industrial Maintenance
Chalkboard Resurfacers	Other
Extreme High Durability	Industrial Maintenance
Heat Reactive	Industrial Maintenance
Nuclear	Industrial Maintenance
Repair and Maintenance Thermoplastic	Industrial Maintenance
Sealers	Primers, Sealers, and Undercoaters
Stains: Low Solids	Low Solids
Thermoplastic Rubber and Mastics	Roof
Wood Preservatives: Low Solids	Low Solids

Table 11-3: ***Detailed Comparison of 1998 and 2001 Surveys – Solvent-borne***

	Sales Volume (gallons)			*VOC Emissions (tons per year)*			*Sales-Weighted Average VOC Regulatory (g/l)*			*Sales-Weighted % by Volume Solids*		
	1998	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*
Bituminous Roof	1,295,827	1,608,033	24%	919.4	1,570.2	71%	172	240	40%	80	70	-12%
Bond Breakers	Protected	0		0.0	0.0		750	N/A		1	N/A	
Concrete Curing Compounds	11,820	32,395	174%	33.4	29.8	-11%	677	350	-48%	20	39	94%
Dry Fog	76,661	243,047	217%	113.2	310.7	174%	367	346	-6%	51	45	-12%
Fire Retardant - Opaque	10,297	Protected		11.5	2.5	-78%	267	257	-4%	72	70	-3%
Flat	27,837	17,987	-35%	43.2	27.3	-37%	373	367	-2%	51	52	1%
Floor	493,568	149,939	-70%	305.4	86.5	-72%	149	139	-7%	83	83	-1%
Form Release Compounds	11,025	223,634	1928%	11.4	221.0	1839%	247	238	-4%	12	74	516%
Graphic Arts	Protected	13,667		19.9	23.5	18%	184	413	125%	77	48	-38%
High Temperature	22,839	18,621	-18%	34.8	29.7	-15%	367	401	9%	57	49	-14%
Industrial Maintenance	3,948,166	4,390,310	11%	5107.8	5,810.4	14%	311	319	2%	60	59	-5%
Lacquers	625,938	374,503	-40%	1647	876.0	-47%	647	622	-4%	21	22	4%
Low Solids	0	0		0.0	0.0		N/A	N/A		N/A	N/A	
Magnesite Cement	Protected	Protected		92.1	42.1	-54%	590	443	-25%	27	34	27%
Mastic Texture	Protected	210,143		55.1	165.2	200%	223	229	3%	53	54	3%
Metallic Pigmented	272,965	513,541	88%	513	1,003.2	96%	456	469	3%	45	44	-2%
Multi-Color	Protected	Protected		3.4	0.1	-98%	234	526	125%	67	19	-72%
Nonflat - High Gloss	532,033	615,083	16%	813	863.0	6%	366	339	-7%	53	56	6%
Nonflat - Low Gloss	34,373	64,953	89%	49	78.4	60%	341	291	-15%	56	62	10%
Nonflat - Medium Gloss	522,186	567,173	9%	624.5	772.4	24%	286	329	15%	64	58	-10%
Other	149,950	15,971	-89%	190.2	7.6	-96%	304	117	-62%	62	86	38%
Pre-Treatment Wash Primer	Protected	4,188		1.9	8.5	349%	716	486	-32%	10	37	270%
Primer, Sealer, & Undercoater	1,573,273	1,385,606	-12%	2260.1	1,913.4	-15%	358	340	-5%	52	52	-1%
Quick Dry Enamel	904,739	607,387	-33%	1485	901.7	-39%	403	361	-10%	50	52	3%
Quick Dry Primer, Sealer, & Undercoater	1,076,267	1,259,524	17%	1928.6	2,270.5	18%	432	434	0%	45	43	-4%
Roof	Protected	89,448		124.1	77.9	-37%	259	211	-19%	67	75	12%
Rust Preventative	Protected	166,748		95.7	263.4	175%	382	381	0%	48	52	8%
Sanding Sealers	110,767	20,452	-82%	305.9	47.4	-85%	665	557	-16%	19	30	58%
Shellacs - Clear	Protected	Protected		74.9	38.6	-48%	614	600	-2%	26	23	-12%
Shellacs - Opaque	Protected	Protected		271.3	183.5	-32%	534	538	1%	31	30	-2%

Table 11-3: ***Detailed Comparison of 1998 and 2001 Surveys – Solvent-borne***

	Sales Volume (gallons)			*VOC Emissions (tons per year)*			*Sales-Weighted Average VOC Regulatory (g/l)*			*Sales-Weighted % by Volume Solids*		
	1998	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*
Stains - Clear/Semitransparent	1,007,682	1,694,011	68%	1883.5	2,729.6	45%	449	387	-14%	43	49	14%
Stains - Opaque	127,373	224,925	77%	195.5	309.5	58%	370	331	-10%	52	56	7%
Swimming Pool	Protected	12,399		5.7	16.6	191%	438	321	-27%	49	62	27%
Swimming Pool Repair and Maintenance	12,774	15,266	20%	30.3	36.3	20%	569	573	1%	29	34	18%
Traffic Marking	885,126	799,677	-10%	723.1	273.4	-62%	222	103	-54%	63	74	18%
Varnishes - Clear	445,397	715,187	61%	859	1,285.8	50%	463	432	-7%	43	45	4%
Varnishes - Semitransparent	100,292	58,300	-42%	191.9	106.7	-44%	459	439	-4%	43	43	0%
Waterproofing Sealers	616,356	447,545	-27%	915.4	592.4	-35%	356	334	-6%	53	57	8%
Wood Preservatives	298,839	166,982	-44%	323.2	247.6	-23%	259	356	38%	70	56	-20%

"Protected": Fewer than three companies reported sales.

"N/A": No sales were reported in this subcategory.

Sales volumes contained in this table include sales of small containers (1 quart or less).

*Note: In some cases, the 1998 data may differ from the data displayed in the 1998 survey report. This is due to the fact that data from multiple categories have been combined to provide a more direct comparison to the categories in the 2001 survey, as shown below. For the VOC Regulatory values and the percent volume solids, some 1998 values have been corrected to account for coatings that contain 100% solids.

1998 Category	2001 Category
Anti-Graffiti	Industrial Maintenance
Chalkboard Resurfacers	Other
Extreme High Durability	Industrial Maintenance
Heat Reactive	Industrial Maintenance
Nuclear	Industrial Maintenance
Repair and Maintenance Thermoplastic	Industrial Maintenance

Table 11-4: ***Detailed Comparison of 1998 and 2001 Surveys –Water-borne***

	Sales Volume (gallons)			*VOC Emissions (tons per year)*			*Sales-Weighted Average VOC Regulatory (g/l)*			*Sales-Weighted % by Volume Solids*		
	1998	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*
Bituminous Roof	3,623,800	1,637,364	-55%	24.8	9.1	-63%	3	2	-23%	47	48	3%
Bond Breakers	Protected	93,896		11.6	25.0	115%	345	244	-29%	11	14	30%
Concrete Curing Compounds	399,298	660,024	65%	129.3	105.6	-18%	180	135	-25%	22	21	-5%
Dry Fog	126,241	246,248	95%	60.2	93.9	56%	182	151	-17%	36	37	4%
Fire Retardant - Clear	Protected	Protected		0.0	0.0		22	4	-83%	42	30	-29%
Fire Retardant - Opaque	45,912	26,690	-42%	5.7	3.7	-35%	46	80	73%	56	38	-32%
Flat	31,800,868	37,048,485	17%	5267	6,118.4	16%	98	98	0%	35	36	3%
Floor	657,393	1,275,125	94%	216.5	231.6	7%	164	96	-41%	34	58	70%
Form Release Compounds	72,218	32,090	-56%	0.5	1.8	268%	2	41	1972%	0	20	
Graphic Arts	Protected	12,722		0.2	2.8	1291%	10	125	1148%	35	38	8%
High Temperature	175	Protected		0.1	0.0	-95%	222	261	18%	33	32	-4%
Industrial Maintenance	381,615	626,468	64%	132.5	235.4	78%	169	180	6%	35	44	25%
Lacquers	43,679	88,940	104%	16	42.9	168%	181	270	49%	34	31	-10%
Low Solids	13,609	13,413	-1%	3.8	3.3	-14%	67	59	-12%	8	8	-6%
Magnesite Cement	Protected	0		0.0	0.0		0	N/A		4	N/A	
Mastic Texture	Protected	418,447		42.9	82.4	92%	79	85	8%	51	51	-1%
Metallic Pigmented	119,862	112,402	-6%	24.6	23.7	-4%	137	134	-2%	31	31	2%
Multi-Color	Protected	7,517		24	2.6	-89%	268	224	-16%	28	23	-20%
Nonflat - High Gloss	1,618,786	1,440,663	-11%	626	539.4	-14%	209	202	-3%	35	35	0%
Nonflat - Low Gloss	4,440,720	6,927,809	56%	1096	1,516.6	38%	133	127	-4%	36	36	-1%
Nonflat – Medium Gloss	15,107,606	23,688,268	57%	3852.3	6,825.7	77%	151	176	17%	36	32	-10%
Other	55,721	1,494,345	2582%	6.4	0.1	-99%	64	0	-100%	35	34	-2%
Pre-Treatment Wash Primer	Protected	71,154		29.4	27.9	-5%	248	238	-4%	49	31	-37%
Primer, Sealer, and Undercoater	4,689,604	7,056,478	50%	794.1	1,275.2	61%	106	117	10%	32	36	13%
Quick Dry Enamel	0	Protected		0	7.4		N/A	234		N/A	35	
Quick Dry Primer, Sealer, & Undercoater	836,648	400,703	-52%	243.2	96.7	-60%	136	146	7%	41	35	-15%
Roof	Protected	1,049,761	N/A	74.3	131.6	77%	13	56	332%	44	45	2%
Rust Preventative	Protected	43,151		0.8	10.2	1177%	144	177	23%	39	41	5%
Sanding Sealers	5,166	7,816	51%	1.3	2.6	98%	281	245	-13%	16	26	61%
Stains - Clear/Semitransparent	434,104	481,655	11%	177.1	145.9	-18%	242	215	-11%	24	23	-3%

Table 11-4: ***Detailed Comparison of 1998 and 2001 Surveys –Water-borne***

	Sales Volume (gallons)			*VOC Emissions (tons per year)*			*Sales-Weighted Average VOC Regulatory (g/l)*			*Sales-Weighted % by Volume Solids*		
	1998	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*	*1998*	*2001*	*% change*
Stains - Opaque	1,391,817	862,448	-38%	326.6	188.1	-42%	138	141	2%	34	32	-7%
Swimming Pool	Protected	9,687		0.2	3.7	1740%	147	215	46%	47	33	-29%
Traffic Marking	1,998,244	2,539,241	27%	616.4	834.2	35%	124	120	-3%	56	58	3%
Varnishes - Clear	172,031	372,743	117%	73.2	184.4	152%	260	266	2%	29	29	-1%
Varnishes - Semitransparent	61,917	3,205	-95%	30.5	1.3	-96%	296	270	-9%	29	27	-8%
Waterproofing Sealers	453,650	553,414	22%	110.7	94.0	-15%	307	184	-40%	15	23	51%
Wood Preservatives	76,993	10,462	-86%	14.9	1.8	-88%	115	164	42%	44	11	-75%

"Protected": Fewer than three companies reported sales.

"N/A": No sales were reported in this subcategory.

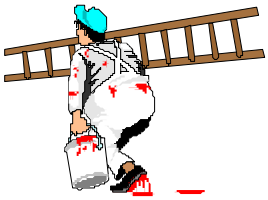
Sales volumes contained in this table include sales of small containers (1 quart or less).

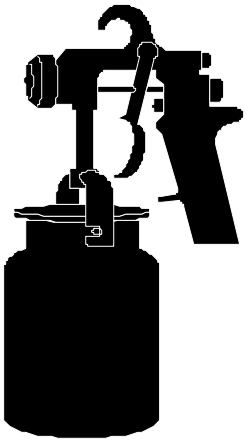
*Note: In some cases, the 1998 data may differ from the data displayed in the 1998 survey report. This is due to the fact that data from multiple categories have been combined to provide a more direct comparison to the categories in the 2001 survey, as shown below. For the VOC Regulatory values and the percent volume solids, some 1998 values have been corrected to account for coatings that contain 100% solids.

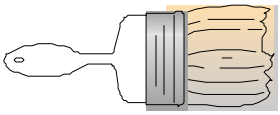
1998 Category	2001 Category
Anti-Graffiti	Industrial Maintenance
Chalkboard Resurfacers	Other
Extreme High Durability	Industrial Maintenance
Heat Reactive	Industrial Maintenance
Nuclear	Industrial Maintenance
Repair and Maintenance Thermoplastic	Industrial Maintenance
Sealers	Primers, Sealers, and Undercoaters
Stains: Low Solids	Low Solids
Thermoplastic Rubber and Mastics	Roof
Wood Preservatives: Low Solids	Low Solids

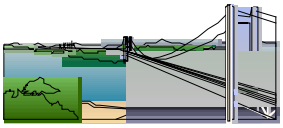
Appendix

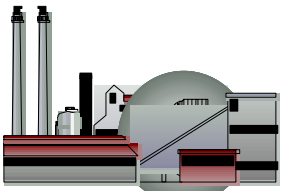
2001 Architectural Coatings Survey











California Environmental Protection Agency

Air Resources Board

TABLE OF CONTENTS

2001 ARCHITECTURAL COATINGS SURVEY

SUBMITTAL OF FORMS

Please return the completed survey to the following address:

Regular Mail

California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812
ATTN: SSD / Measures Assessment Branch
Architectural Coatings Survey

Overnight

California EPA Headquarters Building
Air Resources Board (6th Floor)
1001 I Street
Sacramento, CA 95814
ATTN: SSD / Measures Assessment Branch
Architectural Coatings Survey

ELECTRONIC SUBMITTAL OPTIONS

Electronic submittal options are available. Details can be obtained by contacting the ARB or by visiting our web site at "www.arb.ca.gov/coatings/arch/survey/2001/survey.htm." Additional survey packages can also be downloaded from this site.

QUESTIONS

If you have any questions or other requests please contact any of the following staff:

Name	Phone	Email
Jim Nyarady, Manager	916-322-8273	jnyarady@arb.ca.gov
Mike Jaczola, Survey Lead	916-324-8178	mjaczola@arb.ca.gov
Cheryl Young	916-324-8018	cyoung@arb.ca.gov
Christian Hurley	916-324-8181	churley@arb.ca.gov
Monique Davis	916-324-8182	mdavis@arb.ca.gov

2001 ARCHITECTURAL COATINGS SURVEY

PART A

SURVEY FORMS
AND
INSTRUCTIONS

DUE DATE: October 31, 2001

2001 California Architectural Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

REASONS FOR NOT COMPLETING THE SURVEY FORM

(Please submit this form if you are not completing the survey.)

Company Name:		Web Site:
Division:		
Address:		
City:	State:	Zip:
Contact Person:	Title:	
Phone:	FAX:	Email:

We are not completing the ARB's 2001 Architectural Coating survey because (check one):

- ❑ We are not a paint manufacturer/importer/distributor.

- ❑ We are a paint distributor and the manufacturer of products "manufactured for" us or "distributed by" us is completing the survey. That manufacturer is _____

  _____

- ❑ We are a parent/holding company of a paint manufacturer/importer/distributor and that subsidiary manufacturer/importer/distributor is completing the survey. That subsidiary manufacturer/importer/distributor is _____

  _____

- ❑ We are a paint manufacturer/importer/distributor, but our parent/holding company is completing the survey for us. That parent/holding company is _____

  _____

- ❑ We are a paint manufacturer/importer/distributor, but we did not have sales of architectural coatings in California in 2000.

- ❑ Other (Please explain):

  _____

  _____

  _____

Signature:	Date:

2001 California Architectural Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

CONFIDENTIAL INFORMATION SUBMITTAL FORM

If you wish to designate any information contained in your survey data as **CONFIDENTIAL INFORMATION**, please provide the data requested below and return it with your completed survey forms.

In accordance with Title 17, California Code of Regulations (CCR), sections 91000 to 91022, and the California Public Records Act (Government Code Section 6250 et seq.), the information that a company provides to the Air Resources Board (ARB) may be released (1) to the public upon request, except trade secrets which are not emissions data or other information which is exempt from disclosure or the disclosure of which is prohibited by law; and (2) to the Federal Environmental Protection Agency (EPA), which protects trade secrets as provided in Section 114(c) of the Clean Air Act and amendments thereto (42 USC 7401 et seq.) and in federal regulation; and (3) to other public agencies provided that those agencies preserve the protections afforded information which is identified as a trade secret, or otherwise exempt from disclosure by law (Section 39660(e)).

Trade secrets as defined in Government Code Section 6254.7 are not public records and therefore will not be released to the public. However, the California Public Records Act provides that air pollution emission data are always public records, even if the data comes within the definition of trade secrets. On the other hand, the information used to calculate information is a trade secret.

If any company believes that any of the information it may provide is a trade secret or otherwise exempt from disclosure under any other provision of law, **it must identify the confidential information as such at the time of submission to the ARB and must provide the name, address, and telephone number of the individual to be consulted**, if the ARB receives a request for disclosure or seeks to disclose the data claimed to be confidential. The ARB may ask the company to provide documentation of its claim of trade secret or exemption at a later date. Data identified as confidential will not be disclosed unless the ARB determines, in accordance with the above referenced regulations, that the data do not qualify for a legal exemption from disclosure. The regulations establish substantial safeguards before any such disclosure.

In accordance with the provisions of Title 17, California Code of Regulations, sections 91000 to 91022, and the California Public Records Act (Government Code Sections 6250 et seq.),

Company Name: _____ declares that only those portions specifically identified and submitted in response to the California Air Resources Board's information request on the survey are confidential "**trade secret**" information, and requests that it be protected as such from public disclosure. All inquiries pertaining to the confidentiality of this information should be directed to the following person:

Name (please print): _____

Signature: _____

Title: _____

Telephone #: _____

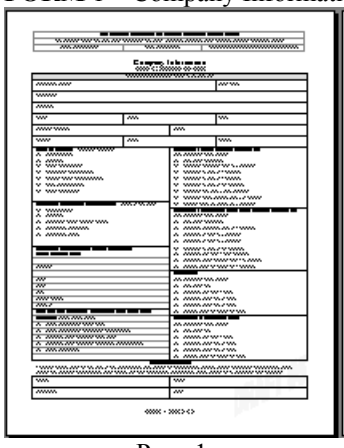
Company Address: _____

_____

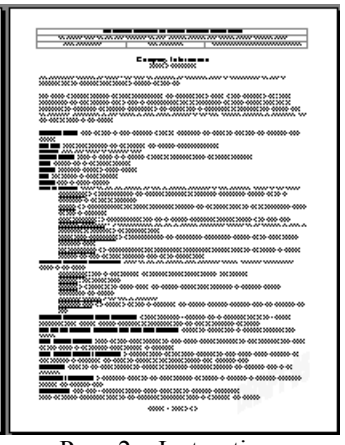
2001 California Architectural Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

SURVEY FORMS – Brief Description
Reporting Year 2000

FORM 1 – Company Information



Page 1

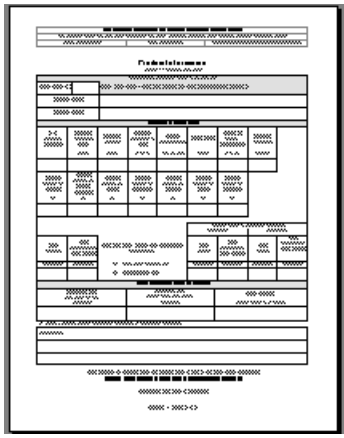


Page 2 – Instructions for FORM 1

There are three key forms to this survey. They consist of FORM 1 (Page 1), FORM 2 (Page 3), and FORM 7 (Page 7). The remaining pages are abbreviated instructions for each form. Additional instructions and supplemental information can be found in the survey booklet.

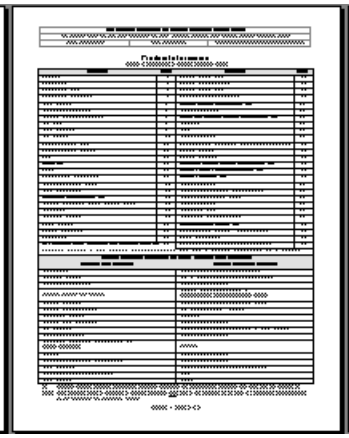
- FORM 1 and instructions consist of pages 1 and 2. Each company/respondent to this survey will complete **one** FORM 1.
- FORM 2 and instructions consist of pages 3 through 6. Complete **one** FORM 2 for each product or group of products.

FORM 2 – Product Information

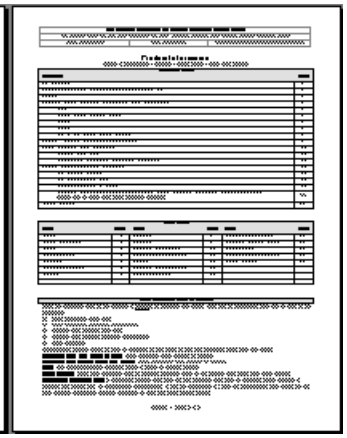


Page 3

Page 4 – Instructions for FORM 2

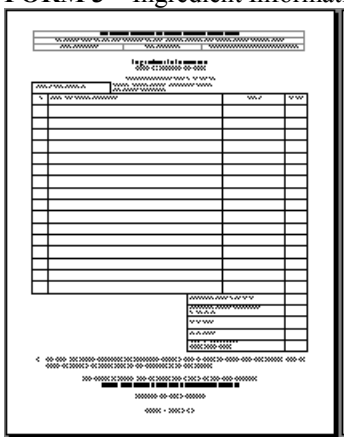


Page 5 – Instructions for FORM 2, continued (Coating Category Codes)



Page 6 – Instructions for FORM 2, continued (Substrate / Resin Codes / Sales Volume)

FORM 3 – Ingredient Information



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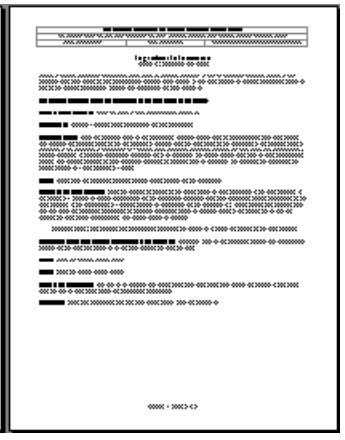


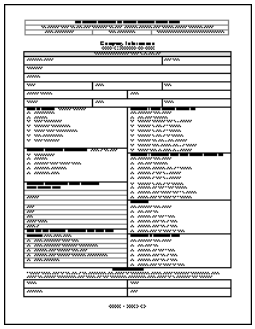
Page 8 – Instructions for FORM 3

- FORM 3 and instructions consist of pages 7 and 8. Complete **one** FORM 3 for each product or group of products.
- **NOTE:** For each FORM 2 there must be a corresponding FORM 3. For each FORM 3 there must be a corresponding FORM 2.

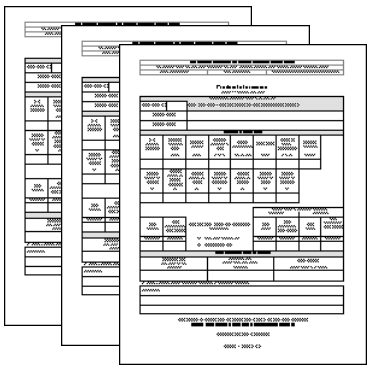
2001 California Architectural Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

Submitting Survey FORMS or Data

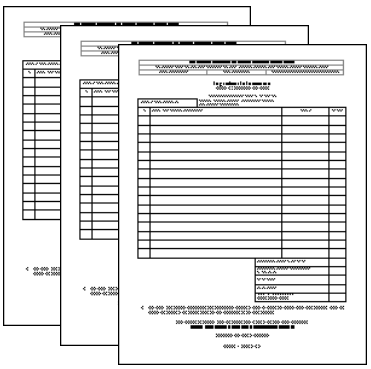
Option 1: Along with your single FORM 1, assemble all FORM 2's and corresponding FORM 3's sequentially by entry #'s (see FORMS page 4 instructions) as separate stacks.



FORM 1

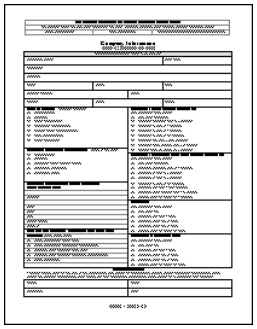


FORM 2

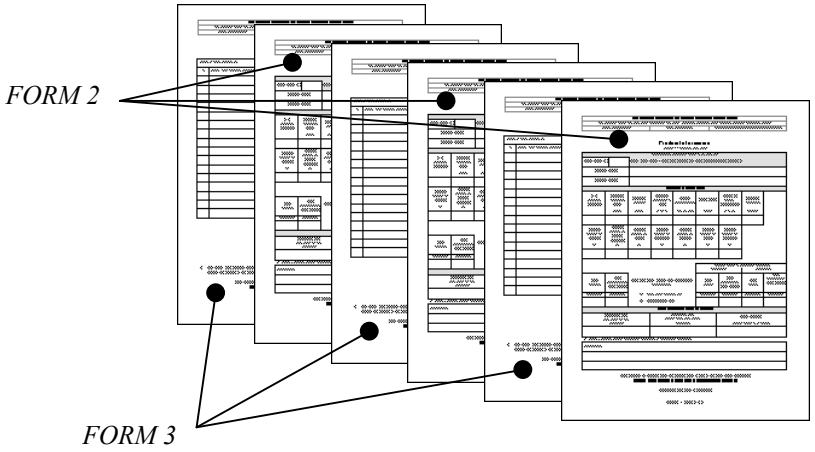


FORM 3

Option 2: Along with your single FORM 1, assemble each FORM 2 and corresponding FORM 3 sequentially by entry #'s (see FORMS page 4 instructions) as a single stack.



FORM 1



Option 3: Submitting Data Electronically.

Survey data may be submitted electronically to the Air Resources Board. The file formats allowed are as follows:

1. ASCII delimited file
2. Microsoft Excel
3. Microsoft Access

To obtain additional information on file formats visit "www.arb.ca.gov/coatings/arch/survey/2001/survey.htm"

2001 California Architectural Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

FORM 1
Company Information – Reporting Year 2000

(Instructions for completing FORM 1: See back side)

Company Name:		Web Site:
Division:		
Address:		
City:	State:	Zip:
Contact Person:	Title:	
Phone:	FAX:	Email:

Type of Business (check all that apply)
- ❑ Manufacturer
- ❑ Importer
- ❑ Retail Distributor
- ❑ Wholesale Distributor
- ❑ Private Label Manufacturer
- ❑ Toll Manufacturer
- ❑ Other (Specify):

Company Marketing Classification (check all that apply)
- ❑ International
- ❑ National
- ❑ Regional (e.g., western U.S.):
- ❑ California Statewide
- ❑ California Local

Company Organization and/or Ownership

Parent Company Name:

Address:

City:

State:

Zip:

Contact Person:

Phone #:

How did you determine California Year 2000 Sales Volume? (check all that apply)
- ❑ Direct California retail sales
- ❑ Direct California wholesale distribution
- ❑ Prorated from national retail sales
- ❑ Prorated from national wholesale distribution
- ❑ Other (explain):

Company – Gross Annual Receipts ($)

For Calendar Year 2000
- ❑ Less than 500,000
- ❑ Between 500,000 and < 1 million
- ❑ Between 1 and < 2 million
- ❑ Between 2 and < 5 million
- ❑ Between 5 and < 10 million
- ❑ Between 10 and < 100 million
- ❑ Between 100 million and < 1 billion
- ❑ Greater than or equal to 1 billion

Company – California Only Gross Annual Receipts ($)

For Calendar Year 2000
- ❑ Less than 500,000
- ❑ Between 500,000 and < 1 million
- ❑ Between 1 and < 2 million
- ❑ Between 2 and < 5 million
- ❑ Between 5 and < 10 million
- ❑ Between 10 and < 100 million
- ❑ Between 100 million and < 1 billion
- ❑ Greater than or equal to 1 billion

Employees

For Calendar Year 2000
- ❑ Less than 10
- ❑ Between 10 and < 100
- ❑ Between 100 and < 250
- ❑ Between 250 and < 500
- ❑ Greater than or equal to 500

Employees – California Only

For Calendar Year 2000
- ❑ Less than 10
- ❑ Between 10 and < 100
- ❑ Between 100 and < 250
- ❑ Between 250 and < 500
- ❑ Greater than or equal to 500

CERTIFICATION

I hereby certify that, to the best of my knowledge and belief, all information entered on the Company Information Form (Form 1), Product Information Form (Form 2), and Ingredient Information Form (Form 3) is complete and accurate.

Name:	Title:
Signature:	Date:

FORM 1 Instructions
Company Information – Reporting Year 2000

The information requested on FORM 1 will assist the California Air Resources Board in characterizing the types of businesses that are included in the survey as required by State law.

This survey is primarily intended for paint manufacturers who distribute architectural coatings in California. The reporting year is 2000. If your company is not a paint manufacturer, but your company name is listed as "manufactured for" or "distributed by" on the product label, you are responsible for completing the requested information in this survey. You are encouraged to coordinate your response with the appropriate manufacturer of your product to avoid double reporting of sales data. Holding companies or subsidiaries may also need to report for this survey.

Company Name: Enter the name of your company. If you are completing this survey for more than one company, please specify.
Web Site: Enter your company web site address, for example, "www.paintcompany.com."
Address: Enter mail address of company name.
Contact Person: Name of person to be contacted if there are questions about the survey responses.
Title: Business title of the contact person.
Phone: Telephone number of contact person.
Fax: Fax number of contact person.
Email: Email of contact person.
Type of Business: Check the box that describes the type of business conducted by your company. (Check all that apply.)

Manufacturer – A company/person that produces, packages, or repackages architectural coatings for sale or distribution in the State of California.
Importer – A company/person that brings architectural coatings into the United States for sale or distribution within the State of California.
Retail Distributor – A company/person who sells or supplies architectural coatings directly at the retail level.
Wholesale Distributor - A company/person who sells or supplies architectural coatings for the purposes of resale or distribution in commerce at the wholesale level.
Private Label Manufacturer – A company/person that manufactures architectural coatings for sale under another company's name.
Toll Manufacturer – A company/person that manufactures architectural coatings based on the formula of another company and places the other company's name on the product label.

Company Marketing Classification: Check the box that describes your company's primary marketing classification. (Check all that apply.)

International – Two or more nations. For example, United States, Canada, and Mexico.
National – The United States.
Regional – A portion of the United States. For example, western U.S., consisting of California, Oregon, Washington, and Arizona.
California Statewide – The State of California.
California Local – A portion of the State of California. For example, Southern California or the San Francisco Bay Area.

Company Organization and/or Ownership: If your company is a "division of," or "subsidiary of," or has a "Parent Company," please specify. Holding companies or subsidiaries may also need to respond to this survey.
How did you determine California Year 2000 Sales Volume?: Identify the method used to determine California sales volume.
Gross Annual Receipts: Check the box which identifies the gross annual receipts generated by your company. This means the total income of the company before expenses are deducted.
Gross Annual Receipts - California: If available, check the box which identifies the gross annual receipts generated by your company in California. This means the portion of total income derived from California sales.
Employees: Check the box which indicates the total number of employees (including part-time and temporary staff) of the company.
Employees - California: If appropriate, check the box which identifies the number of employees in California (including part-time and temporary staff).
Certification: Please have an authorized company officer or corporate counsel certify that the Company Information (FORM 1), Product Information (FORM 2), and Ingredient Information (FORM 3) is complete and accurate.

2001 California Architectural Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

FORM 2
Product Information – Reporting Year 2000

(Instructions for completing FORM 2: See FORMS pages 4 through 6)

Entry # :		Note: This entry # must also appear on your corresponding FORM 3.
Product Code:		
Product Name:		

Physical & Other Data

# of Products Grouped	Coating Category Code 1-51	Substrate Code(s) 0-18	Interior, Exterior, or Dual I, E, D	Vehicle Technology SB or WB	Resin Code 1-19	Single or Multi-Component S or M	Coating Density* lbs/gal

Weight Percent of Solids* %	Weight Percent of Volatile Material* %	Weight Percent of Water* %	Weight Percent of Exempts* %	Volume Percent of Solids* %	Volume Percent of Water* %	Volume Percent of Exempts* %

			Report Only If Grouping Products			
			Minimum		Maximum	
VOC Actual*	VOC Regulatory* (Less Water)	How were VOC Actual and Regulatory determined?	VOC Actual	VOC Regulatory (Less Water)	VOC Actual	VOC Regulatory (Less Water)
grams/liter	grams/liter	❑ U.S. EPA Method 24	grams/liter	grams/liter	grams/liter	grams/liter
		❑ Formulation Data				

2000 California Sales in Gallons

Container Sizes One Quart or Less (gallons)	Container Sizes Larger Than One Quart (gallons)	Total Gallons (quart or less + > quart)

* SWA – Report "Sales Weighted Average" if grouping products.

Comments:

Page _____ of _____ Enter the current page # out of the total pages submitted.

NOTE: Each FORM 2 must have a corresponding FORM 3.

Photocopy this page as necessary

FORM 2 Instructions
Product Information – Reporting Year 2000

Entry # : Each FORM 2 completed must be numbered sequentially, beginning with number "1." This entry # must also appear on your corresponding FORM 3.
Product Code: Enter product code. If you are grouping products, enter the sales leader of the group.
Product Name: Enter the product / label name for the product code above.

Physical & Other Data

Number of Products Grouped: In reporting products for this survey, products can be reported either individually or as a group. Enter "1" if you are reporting one product individually. You may group products only if all of the following conditions are met:

(1) The products belong to the same category (e.g., flats);
(2) The products have the same vehicle technology (i.e., solvent-borne or water-borne), resin type, substrate, interior or exterior use recommendation, and single - or multi-component form; and
(3) VOC Regulatory range cannot exceed 25 grams/liter. That is, the highest VOC Regulatory minus lowest VOC Regulatory of the group cannot exceed 25 grams/liter.

Coating Category Code: See FORMS page 5. Category definitions are on pages 10 through 15 of the survey booklet.
Substrate Code(s): See FORMS page 6. If your product is for a specific substrate or substrates enter code(s). A substrate code must be entered for all products in the coating categories marked with an asterisk (*) on FORMS page 5. If no code is entered, a response of "All Substrates" will be assumed.
Interior/Exterior/Dual: Enter recommended exposure - interior or exterior. Enter "Dual" for dual purpose interior/exterior products.
Resin Code: See FORMS page 6.
Vehicle Technology: Identify the vehicle technology of the coating - Solvent-borne (SB) or Water-borne (WB).

Solvent-borne: A coating that contains less than 50 percent water by weight in its volatile fraction. Is generally cleaned up with solvent.

Water-borne: A coating that contains 50 percent or more water by weight in its volatile fraction. Is generally cleaned up with water.

Note: The definitions above are for general guidance only.

Single or Multi-Component: Identify whether coating is single or multi-component. VOC content for multi-component coatings are as mixed, applied or fully reacted.

***Note**: Use "Sales Weighted Average" (SWA) for the following data fields if you have chosen to group coatings.*
See page 18 of the survey booklet for sample calculation of SWA.

Coating Density: Enter the density of the coating in pounds per gallon (lbs/gal).
Weight Percent of Solids: Enter the solids content of the coating as percent of total coating weight.
Weight Percent of Volatile Material: Weight of volatile material (VOC+water+exempts) as percent of total coating weight. See page 15 of the survey booklet for definition of VOC (volatile organic compound) and VOC content.
Weight Percent of Water: Weight of water as percent of total coating weight.
Weight Percent of Exempts: Weight of exempt compounds as percent of total coating weight. See page 11 and 15 of the survey booklet for definition.
Volume Percent of Solids: Enter the solids content of the coating as percent of total coating volume.
Volume Percent of Water: Volume of water as percent of total coating volume.
Volume Percent of Exempts: Volume of exempt compounds as percent of total coating volume.
VOC Actual: Also known as Material VOC. Enter the VOC content of the coating(s), as supplied, in grams of VOC per liter of coating. This is the weight of all volatile materials less the weight of water and less the weight of exempt compounds per the entire volume of the coating. This is NOT the same as VOC Regulatory. See "VOC Calculations" page 17.
Note: VOC content for multi-component coatings are as mixed, applied or fully reacted.
VOC Regulatory (Less Water): Also known as Coating VOC. Enter the VOC content of the coating(s), as supplied, in grams of VOC per liter of coating, less water, less exempt compounds, and less any colorant added to the tint bases. This may be determined from the formulation data or previously determined by EPA Method 24, 40 CFR Part 60, as amended in Federal Register Vol. 57, No. 133, July 10, 1992, or ASTM D 3960-92. See "VOC Calculations" page 17.
Note: VOC content for multi-component coatings are as mixed, applied or fully reacted.

Report Only If Grouping products: Provide the minumum and maximum VOC Actual and VOC Regulatory for the products grouped.
2000 California Sales in Gallons: See FORMS page 6.

FORM 2 Instructions, Continued
Product Information – Coating Category Codes

Category	Code	Category	Code
Antenna	1	Nonflat – Low Gloss	26
Antifouling	2	Nonflat – Medium gloss	27
Bituminous Roof	3	Nonflat – High Gloss	28
Bituminous Roof Primer	4	Pre-Treatment Wash Primer	29
Bond Breakers	5	**Primer / Sealer / Undercoater ***	30
Clear Brushing Lacquer	6	Quick Dry Enamel	31
Concrete Curing Compounds	7	**Quick Dry Primer / Sealer / Undercoater ***	32
Dry Fog	8	Recycled	33
Faux Finishing	9	Roof	34
Fire Resistive	10	Rust Preventative	35
Fire Retardant – Clear	11	Sanding Sealers (other than lacquer sanding sealers)	36
Fire Retardant – Opaque	12	Shellacs – Clear	37
Flat	13	Shellacs – Opaque	38
Floor *	14	**Specialty Primer / Sealer / Undercoater ***	39
Flow	15	**Stains – Clear / Semitransparent ***	40
Form Release Compounds	16	**Stains – Opaque ***	41
Graphic Arts (Sign Paints)	17	Swimming Pool	42
High Temperature	18	Swimming Pool Repair & Maintenance	43
Industrial Maintenance *	19	Temperature Indicator Safety	44
Lacquers (including lacquer sanding sealers)	20	Traffic Marking	45
Low Solids	21	Varnishes – Clear	46
Magnesite Cement	22	Varnishes – Semitransparent	47
Mastic Texture	23	**Waterproofing Sealers ***	48
Metallic Pigmented	24	Waterproofing Concrete / Masonry Sealers	49
Multi-Color	25	Wood Preservatives	50
*** - Substrate Type Required (See FORMS page 6).** For remaining categories: If your product is for a specific substrate enter code. If left blank "All Substrates" will be assumed.		Other (specify in comment area of FORM 2)	51

Possible Reporting Categories For Other National Rule (1) Categories National Rule Category	Possible Reporting Category
Anti-Graffiti	Industrial Maintenance or Flat/Nonflat
Bituminous and Mastic (2)	Roof, Bituminous Roof or Primer, Primer / Sealer / Undercoater, Waterproofing Sealer, Waterproofing Concrete / Masonry Sealers
Calcimine Recoater	Flat or Specialty Primer / Sealer / Undercoater
Chalkboard Resurfacers	Industrial Maintenance
Concrete Curing and Sealing (2)	Concrete Curing Compounds or Waterproofing Concrete / Masonry Sealers
Concrete Protective (2)	Waterproofing Concrete / Masonry Sealers
Concrete Surface Retarder (2)	Other
Conversion Varnish	Varnishes
Extreme High Durability	Industrial Maintenance
Heat Reactive	Industrial Maintenance (generally an OEM coating)
Impacted Immersion	Industrial Maintenance
Nonferrous Ornamental Metal Lacquers and Surface Protectants	Lacquers or Rust Preventative
Nuclear	Industrial Maintenance
Repair and Maintenance Thermoplastic	Industrial Maintenance
Stain Controllers	Low Solid or Primer, Sealer, Undercoater
Thermoplastic Rubber and Mastics	Roof
Zone Marking	Traffic

2. See page 16 of the survey booklet for additional guidance regarding these national rule categories.

1. National Volatile Organic Compound Emission Standards for Architectural Coatings (40 CFR Part 59, Subpart D)

Note: This reference table is provided as general guidance only and is not intended to be used as a definitive determination by the California Air Resources Board.

FORM 2 Instructions, Continued
Product Information – Substrate / Resin Codes / 2000 Sales Volume

Substrate Codes

Substrate	Code
All Substrates	0
Acoustical Materials: Ceiling Texture, Acoustic Tile, etc.	1
Asphalt	2
Concrete, Stone, Masonry, etc. (Includes codes 4 through 8)	3
Brick	4
Cinder Block, Concrete Block	5
Stone	6
Stucco	7
Tilt up and poured in place concrete	8
Drywall / Plaster: Textured and Untextured	9
Metal: (Includes codes 11 and 12)	10
Ferrous: Iron, Steel	11
Nonferrous: Galvanized, Aluminum, Alloys, etc	12
Wood: (Includes codes 14 through 17)	13
Not painted, smooth	14
Not painted, rough sawn	15
Previously painted or stained	16
Plywood, Synthetic Wood, Hardboard, T-111 Siding, Masonite, Chipboard, Compressed Wood (wood chip or wood fiber based building materials)	17
Other: Specify	18

Resin Codes

Resin	Code	Resin	Code	Resin	Code
Acrylic	1	Oleoresin	8	Urethane, Polyurethane	15
Acrylic Copolymer	2	Phenolic	9	Polyvinyl Chloride (PVC)	16
Alkyd	3	Polyester (Not Alkyd)	10	Vinyl Toluene	17
Amines, Amides	4	Polyvinyl Acetate (PVA)	11	Vinyl Acrylic Copolymer	18
Cellulosic	5	Shellac	12	Other: Specify	19
Chlorinated Rubber	6	Silicone, Silane, Siloxane	13		
Epoxy	7	Styrene-butadiene	14		

2000 California Sales in Gallons

Enter the California sales of the coating, in gallons, for reporting year 2000. Sales can be determined from one or more of the following:

1. Direct California retail sales
2. Direct California wholesale distribution
3. Prorated from national retail sales
4. Prorated from national wholesale distribution
5. Other (explain):

Report sales volume for two classes of container sizes:

Container Sizes One Quart or Less: Enter California sales volume in gallons.

Container Sizes Larger Than One Quart: Enter California sales volume in gallons.

Note: For multi-component coatings, report as mixed or applied volume.

Total Gallons: Enter total California sales in gallons. Combine quart or less volume with larger than quart volume.

Estimating California Sales: If California specific sales data are not available, sales may be estimated using national or regional sales figures that are apportioned appropriately. If you use population as a basis for determining sales, please use the U.S. Resident Population estimates provided on page 20 of the survey booklet.

2001 California Architectural Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

FORM 3
Ingredient Information – Reporting Year 2000

Instructions for completing FORM 3: See back side

Entry # from FORM 2:	Speciate Volatile Organic Compounds (VOCs) and Exempt Compounds

#	VOCs and Exempt Compounds	CAS #	wt %*

Aggregated VOCs < 0.1 wt %	
Aggregated Exempt Compounds < 0.1 wt %	
wt % Water	
wt % Solids	
Total of All Ingredients (Must Equal 100%)	

* List VOCs and Exempt Compounds that individually amount to 0.1% or greater by weight of the final product. Enter the percent by weight to the nearest 0.1% for each ingredient in the final product.

Page _____ of _____ Enter the current page # out of the total pages submitted.

NOTE: Each FORM 3 must have a corresponding FORM 2.

Photocopy this page as necessary

FORM 3 Instructions
Ingredient Information – Reporting Year 2000

FORM 3 requests ingredient information about single or grouped products. If you are grouping products, FORM 3 will represent your sales leader or best representative product of the group. In this table provide all volatile ingredients which are part of the product formulation. Complete one FORM 3 for each FORM 2 completed.

For grouped products, report the ingredients of the sales leader in the group.

Entry # From FORM 2: Enter the Entry # from corresponding FORM 2.

Ingredient #: Number each ingredient sequentially.

Ingredient Name: Enter the chemical name of the ingredient. Chemical names must be distinguished from trade names. For example, the chemical name of SD 40 Alcohol is ethanol. Enter the trade name of the ingredient if the chemical name is unknown. If the ingredient is proprietary or a mixture (e.g., petroleum distillates) identify the trade name and manufacturer / primary supplier. If available, provide the reactivity bin number for distillates. See survey booklet page 19 for more information.
NOTE: *The volatile portions of resin solutions, colorants or additives must be included. For example, do not include the volatile portion of a resin solution as a solid.*

CAS#: Please enter the Chemical Abstract Service (CAS) number for the ingredient.

Weight % (of total material): Enter the percent by weight to the nearest 0.1% for each ingredient in the final product. If the volatile is a mixture of known components, list the components separately with their individual weight percentages in the final product. If the components of a mixture cannot be determined, list the ingredient as a single entity. For example, you may not know the individual ingredients of petroleum distillates, resins, or biocides down to 0.1 weight %. In this case identify the trade name, manufacturer, and weight percent of mixture.
NOTE: *The volatile portions of resin solutions, colorants or additives must be included. For example, do not include the volatile portion of a resin solution as a solid.*

Reporting Level - List volatiles that individually amount to 0.1 weight % or greater by weight of the final product.

Aggregated VOCs and Exempt Compounds < 0.1 weight %: Aggregate each of the remaining volatiles that individually account for less than 0.1 weight % of the final product and enter the sum.

Water: Enter the weight percent water.

Solids: Enter the weight percent solids.

Total of All Ingredients: The sum of all volatiles and solids in the table must equal 100 percent by weight. If this value does not sum to 100, please check the component percentages.

Comments: Enter any information that will help clarify entries made for FORM 3.

2001 ARCHITECTURAL COATINGS SURVEY

PART B

SUPPLEMENTAL INFORMATION

COATING CATEGORY DEFINITIONS

Adhesive: Any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

Aerosol Coating Product: A pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marking applications.

Antenna Coating: A coating labeled and formulated exclusively for application to equipment and associated structural appurtenances that are used to receive or transmit electromagnetic signals.

Antifouling Coating: A coating labeled and formulated for application to submerged stationary structures and their appurtenances to prevent or reduce the attachment of marine or freshwater biological organisms. To qualify as an antifouling coating, the coating must be registered with both the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Section 136, *et seq*.) and with the California Department of Pesticide Regulation.

Appurtenance: Any accessory to a stationary structure coated at the site of installation, whether installed or detached, including but not limited to: bathroom and kitchen fixtures; cabinets; concrete forms; doors; elevators; fences; hand railings; heating equipment, air conditioning equipment, and other fixed mechanical equipment or stationary tools; lampposts; partitions; pipes and piping systems; rain gutters and downspouts; stairways, fixed ladders, catwalks, and fire escapes; and window screens.

Architectural Coating: A coating to be applied to stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. Coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles, and adhesives are not considered architectural coatings.

Bitumens: Black or brown materials including, but not limited to, asphalt, tar, pitch, and asphaltite that are soluble in carbon disulfide, consist mainly of hydrocarbons, and are obtained from natural deposits or as residues from the distillation of crude petroleum or coal.

Bituminous Roof Coating: A coating which incorporates bitumens that is labeled and formulated exclusively for roofing.

Bituminous Roof Primer: A primer which incorporates bitumens that is labeled and formulated exclusively for roofing.

Bond Breaker: A coating labeled and formulated for application between layers of concrete to prevent a freshly poured top layer of concrete from bonding to the layer over which it is poured.

Clear Brushing Lacquers: Clear wood finishes, excluding clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid, protective film, which are intended exclusively for application by brush.

Coating: A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

Colorant: A concentrated pigment dispersion in water, solvent, and/or binder that is added to an architectural coating after packaging in sale units to produce the desired color.

Concrete Curing Compound: A coating labeled and formulated for application to freshly poured concrete to retard the evaporation of water.

Dry Fog Coating: A coating labeled and formulated only for spray application such that overspray droplets dry before subsequent contact with incidental surfaces in the vicinity of the surface coating activity.

Exempt Compound: A compound identified as exempt under the definition of Volatile Organic Compound (VOC). Exempt compounds content of a coating shall be determined by South Coast Air Quality Management District (SCAQMD) Method 303-91 (Revised August 1996).

Faux Finishing Coating: A coating labeled and formulated as a stain or glaze to create artistic effects including, but not limited to, dirt, old age, smoke damage, and simulated marble and wood grain.

Fire-Resistive Coating: An opaque coating labeled and formulated to protect the structural integrity by increasing the fire endurance of interior or exterior steel and other structural materials, that has been fire tested and rated by a testing agency approved by building code officials for use in bringing assemblies of structural materials into compliance with federal, state, and local building code requirements. The fire-resistive coating and the testing agency must be approved by building code officials. The fire-resistive coating shall be tested in accordance with ASTM Designation E 119-98.

Fire-Retardant Coating: A coating labeled and formulated to retard ignition and flame spread, that has been fire tested and rated by a testing agency approved by building code officials for use in bringing building and construction materials into compliance with federal, state and local building code requirements. The fire-retardant coating and the testing agency must be approved by building code officials. The fire-retardant coating shall be tested in accordance with ASTM Designation E 84-99.

Flat Coating: A coating that is not defined under any other definition in this rule and that registers gloss less than 15 on an 85-degree meter or less than 5 on a 60-degree meter according to ASTM Designation D 523-89 (1999).

Floor Coating: An opaque coating that is labeled and formulated for application to flooring, including, but not limited to, decks, porches, steps, and other horizontal surfaces which may be subject to foot traffic.

Flow Coating: A coating labeled and formulated exclusively for use by electric power companies or their subcontractors to maintain the protective coating systems present on utility transformer units.

Form-Release Compound: A coating labeled and formulated for application to a concrete form to prevent the freshly poured concrete from bonding to the form. The form may consist of wood, metal, or some material other than concrete.

Graphic Arts Coating or Sign Paint: A coating labeled and formulated for hand-application by artists using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals including lettering enamels, poster colors, copy blockers, and bulletin enamels.

High-Temperature Coating: A high performance coating labeled and formulated for application to substrates exposed continuously or intermittently to temperatures above 204^{o}C (400^{o}F).

Industrial Maintenance Coating: A high performance architectural coating, including primers, sealers, undercoaters, intermediate coats, and topcoats, formulated for application to substrates exposed to one or more of the following extreme environmental conditions listed below, and labeled for industrial or professional use only ("Not for residential use" or Not intended for residential use").

- Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation;
- Acute or chronic exposure to corrosive, caustic or acidic agents, or to chemicals, chemical fumes, or chemical mixtures or solutions;
- Repeated exposure to temperatures above 121^{o}C (250^{o}F);
- Repeated (frequent) heavy abrasion, including mechanical wear and repeated (frequent) scrubbing with industrial solvents, cleansers, or scouring agents; or
- Exterior exposure of metal structures and structural components.

Lacquer: A clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and to provide a solid, protective film.

Low Solids Coating: A coating containing 0.12 kilogram or less of solids per liter (1 pound or less of solids per gallon) of coating material.

Magnesite Cement Coating: A coating labeled and formulated for application to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

Mastic Texture Coating: A coating labeled and formulated to cover holes and minor cracks and to conceal surface irregularities, and is applied in a single coat of at least 10 mils (0.010 inch) dry film thickness.

Metallic Pigmented Coating: A coating containing at least 48 grams of elemental metallic pigment per liter of coating as applied (0.4 pounds per gallon), when tested in accordance with SCAQMD Method 318-95.

Multi-Color Coating: A coating that is packaged in a single container and that exhibits more than one color when applied in a single coat.

Nonflat Coating: A coating that is not defined under any other definition in this rule and that registers a gloss of 15 or greater on an 85-degree meter and 5 or greater on a 60-degree meter according to ASTM Designation D 523-89 (Reapproved 1999).

Nonflat – High Gloss Coating: A nonflat coating that registers a gloss of 70 or greater on a 60-degree meter according to ASTM Designation D 523-89 (Reapproved 1999).

Nonflat – Medium Gloss Coating: A nonflat coating that registers a gloss of 20 or above, but less than 70 on a 60-degree meter according to ASTM Designation D 523-89 (Reapproved 1999).

Nonflat – Low Gloss Coating: A nonflat coating that registers a gloss of 5 or above, but less than 20 on a 60-degree meter according to ASTM Designation D 523-89 (Reapproved 1999).

Nonindustrial Use: Nonindustrial use means any use of architectural coatings except in the construction or maintenance of any of the following: facilities used in the manufacturing of goods and commodities; transportation infrastructure, including highways, bridges, airports and railroads; facilities used in mining activities, including petroleum extraction; and utilities infrastructure, including power generation and distribution, and water treatment and distribution systems.

Post-Consumer Coating: A finished coating that would have been disposed of in a landfill, having completed its usefulness to a consumer, and does not include manufacturing wastes.

Pre-Treatment Wash Primer: A primer that contains a minimum of 0.5 percent acid, by weight, when tested in accordance with ASTM Designation D 1613-96, that is labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and to promote adhesion of subsequent topcoats.

Primer: A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

Quick-Dry Enamel: A nonflat coating that is labeled as "Quick Dry" and that is formulated to have the following characteristics:

- Is capable of being applied directly from the container under normal conditions with ambient temperatures between 16 and 27^{o}C (60 and 80^{o}F);
- When tested in accordance with ASTM Designation D 1640-95, sets to touch in 2 hours or less, is tack free in 4 hours or less, and dries hard in 8 hours or less by the mechanical test method; and
- Has a dried film gloss of 70 or above on a 60 degree meter.

Quick-Dry Primer, Sealer, and Undercoater: A primer, sealer, or undercoater that is dry to the touch in 30 minutes and can be recoated in 2 hours when tested in accordance with ASTM Designation D 1640- 95.

Recycled Coating: An architectural coating formulated such that not less than 50 percent of the total weight consists of secondary and post-consumer coating, with not less than 10 percent of the total weight consisting of post-consumer coating.

Residential: Areas where people reside or lodge, including, but not limited to, single and multiple family dwellings, condominiums, mobile homes, apartment complexes, motels, and hotels.

Roof Coating: A non-bituminous coating labeled and formulated exclusively for application to roofs for the primary purpose of preventing penetration of the substrate by water or reflecting heat and ultraviolet radiation. Metallic pigmented roof coatings which qualify as metallic pigmented coatings shall not be considered to be in this category, but shall be considered to be in the metallic pigmented coatings category.

Rust Preventative Coating: A coating formulated exclusively for nonindustrial use to prevent the corrosion of metal surfaces.

Sanding Sealer: A clear or semi-transparent wood coating labeled and formulated for application to bare wood to seal the wood and to provide a coat that can be abraded to create a smooth surface for subsequent applications of coatings. A sanding sealer that also meets the definition of a lacquer is not included in this category, but is included in the lacquer category.

Sealer: A coating labeled and formulated for application to a substrate for one or more of the following purposes: to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

Secondary Coating (Rework): A fragment of a finished coating or a finished coating from a manufacturing process that has converted resources into a commodity of real economic value, but does not include excess virgin resources of the manufacturing process.

Shellac: A clear or opaque coating formulated solely with the resinous secretions of the lac beetle (*Laciffer lacca*), thinned with alcohol, and formulated to dry by evaporation without a chemical reaction.

Shop Application: Application of a coating to a product or a component of a product in or on the premises of a factory or a shop as part of a manufacturing, production, or repairing process (e.g., original equipment manufacturing coatings).

Specialty Primer, Sealer, and Undercoater: A coating labeled for blocking stains, for fire-damaged substrates, for smoke-damaged substrates, for water-damaged substrates, for excessively chalky substrates, and that is formulated for application to a substrate to seal fire, smoke or water damage; to condition excessively chalky surfaces, or to block stains. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98.

Stain: A clear, semitransparent, or opaque coating labeled and formulated to change the color of a surface but not conceal the grain pattern or texture.

Swimming Pool Coating: A coating labeled and formulated to coat the interior of swimming pools and to resist swimming pool chemicals.

Swimming Pool Repair and Maintenance Coating: A rubber based coating labeled and formulated to be used over existing rubber based coatings for the repair and maintenance of swimming pools.

Temperature-Indicator Safety Coating: A coating labeled and formulated as a color-changing indicator coating for the purpose of monitoring the temperature and safety of the substrate, underlying piping, or underlying equipment, and for application to substrates exposed continuously or intermittently to temperatures above 204^{o}C (400^{o}F).

Tint Base: An architectural coating to which colorant is added after packaging in sale units to produce a desired color.

Traffic Marking Coating: A coating labeled and formulated for marking and striping streets, highways, or other traffic surfaces including, but not limited to, curbs, berms, driveways, parking lots, sidewalks, and airport runways.

Undercoater: A coating labeled and formulated to provide a smooth surface for subsequent coatings.

Varnish: A clear or semi-transparent wood coating, excluding lacquers and shellacs, formulated to dry by chemical reaction on exposure to air. Varnishes may contain small amounts of pigment to color a surface, or to control the final sheen or gloss of the finish.

Volatile Organic Compound (VOC): Any volatile compound containing at least one atom of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, and excluding the following:

- methane;
- 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);

- chlorodifluoromethane (HCFC-22);
- 1,1,1-trifluoro-2,2-dichloroethane (HCFC-123);
- 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
- 1,1-dichloro-1-fluoroethane (HCFC-141b);
- 1-chloro-1,1-difluoroethane (HCFC-142b);
- trifluoromethane (HFC-23);
- pentafluoroethane (HFC-125);
- 1,1,2,2-tetrafluoroethane (HFC-134);
- 1,1,1,2-tetrafluoroethane (HFC-134a);
- 1,1,1-trifluoroethane (HFC-143a);
- 1,1-difluoroethane (HFC-152a);
- cyclic, branched, or linear completely methylated siloxanes;
- the following classes of perfluorocarbons:
  (A) cyclic, branched, or linear, completely fluorinated alkanes;
  (B) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
  (C) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
  (D) sulfur-containing perfluorocarbons with no unsaturations and with the sulfur bonds only to carbon and fluorine; and
- the following low-reactive organic compounds which have been exempted by the U.S. EPA:
  acetone;
  ethane;
  parachlorobenzotrifluoride (1-chloro-4-trifluoromethyl benzene);
  perchloroethylene; and
  methyl acetate.

VOC Content: The weight of VOC per volume of coating, calculated according to the procedures specified in "VOC Calculations and Conversions." See "VOC Calculations" page 17 and 18.

Waterproofing Sealer: A coating labeled and formulated for application to a porous substrate for the primary purpose of preventing the penetration of water.

Waterproofing Concrete / Masonry Sealer: A clear or pigmented film-forming coating that is labeled and formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light, and staining.

Wood Preservative: A coating labeled and formulated to protect exposed wood from decay or insect attack, that is registered with both the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code (U.S.C.) Section 136, *et seq.*) and with the California Department of Pesticide Regulation.

BITUMINOUS AND CONCRETE COATINGS INFORMATION

If you sold any of the following types of coatings in California in Reporting Year 2000:

- Bituminous dampproofing or foundation coatings sold in containers larger than 16 fluid ounces;
- Bituminous tank and pipe coatings sold in containers larger than 16 fluid ounces;
- Bituminous do-it-yourself driveway repair coatings, sealers, dressings, or crack fillers, sold in containers larger than 16 fluid ounces;
- Bituminous roof cement, flashing compound, adhesive, patching compound, or mastics, sold in containers larger than 16 fluid ounces (bituminous roof coatings and bituminous roof primers are reported as discrete categories);
- Concrete curing and sealing coatings (as defined in the U.S. EPA's National Architectural Coating rule);
- Concrete protective coatings (as defined in the U.S. EPA's National Architectural Coating rule);
- Concrete surface retarders (as defined in the U.S. EPA's National Architectural Coating rule).

Please either:

(1) Classify these as one of the 50 coating categories in the survey (see page 5 of FORMS) and specify the coating type in the comments section of FORM 2 (bituminous roof coatings and bituminous roof primers are reported as discrete categories); *OR*

(2) Classify these as "Other" and specify the coating type in the comments section of FORM 2.

Do not report paving asphalt, emulsified asphalt, or cutback asphalt used in building or repairing highways, streets, roads, parking lots, driveways, runways, airfields, sanitary landfills, extruded curbs, and impounded liners.

If you have any questions, please contact Cheryl Young at (916) 324-8018.

VOC CALCULATIONS AND CONVERSION FACTORS

VOC Content

The following equations can be used to calculate entries contained in FORM 2 of this survey.

$$VOC_{Actual} = \frac{W_{vm} - W_w - W_e}{V_c}$$

(Also known as Material VOC)

$$VOC_{Regulatory} = \frac{W_{vm} - W_w - W_e}{V_c - V_w - V_e}$$

(Also known as Coating VOC)

$$VOC_{Regulatory\ (Low\ Solids)} = \frac{W_{vm} - W_w - W_e}{V_c}$$

Where:

W_{vm} = Total weight of volatile materials (VOC+water+exempt compounds) in the coating, in grams
W_w = Weight of water in the coating, in grams
W_e = Weight of exempt compounds in the coating, in grams
V_c = Total volume of the coating, in liters
V_w = Volume of water in the coating, in liters
V_e = Volume of exempt compounds in the coating, in liters

Note: If you are using BatchMaster, Material VOC and Coating VOC can be found in MSDS / Compliance (Section III – Physical / Chemical Characteristics).

VOC Regulatory After Recommended Thinning

The following equation can be used to calculate VOC Regulatory after the coatings are thinned with VOC containing solvents.

$$VOC_{Regulatory\ (After\ Recommended\ Thinning)} = \frac{Volume_{Coating} \times VOC_{Regulatory} + Volume_{Thinner} \times VOC_{Thinner}}{Volume_{Coating} + Volume_{Thinner}}$$

Percent by Volume Solids of Coating

The following are two equations that can be used to calculate the percent volume solids of coating. The choice of equation depends on the type of information that is known about the coating.

1) If the weight and density of all of the solid (nonvolatile) materials are known, then the following equation may be used:

$$\%\ by\ Volume\ Solids\ of\ Coating = \frac{Weight\ of\ Solids}{Density\ of\ Solids \times Volume\ of\ Coating\ Material} \times 100$$

2) If instead, only the volatile components of a coating (VOC, water and exempt compound) are known, the percent volume of solids may be estimated by the following equation.

$$\%\ by\ Volume\ of\ Solids\ of\ Coating = \left(1 - \frac{W_w}{D_w \times V_c} - \frac{W_{voc}}{D_{voc} \times V_c} - \frac{W_e}{D_e \times V_c}\right) \times 100$$

Where:

W_w = Weight of water in the coating, in grams
W_{voc} = Weight of VOC in the coating, in grams
W_e = Weight of exempt compounds in the coating, in grams
V_c = Total volume of coating in liters
D_w = Density of water, in grams per liter
D_{voc} = Density of VOC, in grams per liter
D_e = Density of exempt compounds, in grams per liter

Sales Weighted Average

The Sales Weighted Average (SWA) is an average value for grouped coatings, calculated by weighting the individual values by their sales. For grouped coatings in this survey, the SWA should be used to report the following entries on FORM 2 (Product Information): coating density, weight percent of solids, weight percent of volatile material, weight percent of water, weight percent of exempts, volume percent of solids, volume percent of water, and volume percent of exempts. The following equation can be used to calculate Sales Weighted Average.

$$SWA = \frac{((Value_1 \times Sales_1) + (Value_2 \times Sales_2) + (Value_n \times Sales_n))}{(Sales_1 + Sales_2 + Sales_n)}$$

Where:

$Value_{(1,2,...n)}$ = Coating characteristic values (e.g., coating density, VOC Actual, VOC Regulatory, etc.) for products 1,2,...n

$Sales_{(1,2,...n)}$ = Sales for products 1,2,...n

Conversion Factors

VOC content:
To convert pounds/gallon to grams/liter multiply by 119.83

Density:
1 pound/gallon = 0.11983 kilograms/liter or 119.83 grams/liter

Specific Gravity :
To convert specific gravity to pounds/gallon multiply by 8.345
To convert specific gravity to grams/liter multiply by 1000

Units of Volume:
1 fl oz = 0.029574 liters
1 liquid pint = 0.47318 liters
1 liquid quart = 2 liquid pints = 0.94635 liters
1 gallon = 4 liquid quarts = 3.7854 liters

Units of Mass:

Unit	ounce(oz)	pound(lb)	gram(g)	kilogram(kg)
1 oz =	1	0.0625	28.3495	0.02834
1 lb =	16	1	453.592	0.45359

REACTIVITY BIN NUMBERS FOR ALIPHATIC AND AROMATIC HYDROCARBON SOLVENTS
(From the Air Resources Board's Aerosol Coating Products Regulation)

Aliphatic Hydrocarbon Solvents

Bin	Average Boiling Point*** (degrees F)	Criteria	MIR Value
1	80-205	Alkanes (< 2% Aromatics)	2.08
2	80-205	N- & Iso-Alkanes (≥ 90% and < 2% Aromatics)	1.59
3	80-205	Cyclo-Alkanes (≥ 90% and < 2% Aromatics)	2.52
4	80-205	Alkanes (2 to < 8% Aromatics)	2.24
5	80-205	Alkanes (8 to 22% Aromatics)	2.56
6	>205-340	Alkanes (< 2% Aromatics)	1.41
7	>205-340	N- & Iso-Alkanes (≥ 90% and < 2% Aromatics)	1.17
8	>205-340	Cyclo-Alkanes (≥ 90% and < 2% Aromatics)	1.65
9	>205-340	Alkanes (2 to < 8% Aromatics)	1.62
10	>205-340	Alkanes (8 to 22% Aromatics)	2.03
11	>340-460	Alkanes (< 2% Aromatics)	0.91
12	>340-460	N- & Iso-Alkanes (≥ 90% and < 2% Aromatics)	0.81
13	>340-460	Cyclo-Alkanes (≥ 90% and < 2% Aromatics)	1.01
14	>340-460	Alkanes (2 to < 8% Aromatics)	1.21
15	>340-460	Alkanes (8 to 22% Aromatics)	1.82
16	>460-580	Alkanes (< 2% Aromatics)	0.57
17	>460-580	N- & Iso-Alkanes (≥ 90% and < 2% Aromatics)	0.51
18	>460-580	Cyclo-Alkanes (≥ 90% and < 2% Aromatics)	0.63
19	>460-580	Alkanes (2 to < 8% Aromatics)	0.88
20	>460-580	Alkanes (8 to 22% Aromatics)	1.49

***Average Boiling Point = (Initial Boiling Point + Dry Point) / 2

Aromatic Hydrocarbon Solvents

Bin	Boiling Range (degrees F)	Criteria	MIR Value
21	280-290	Aromatic Content (≥98%)	7.37
22	320-350	Aromatic Content (≥98%)	7.51
23	355-420	Aromatic Content (≥98%)	8.07
24	450-535	Aromatic Content (≥98%)	5.00

Source: Title 17, California Code of Regulations, Article 3, Aerosol Coating Products, Section 94701

Additional details regarding the Aerosol Coating Products Regulation can be found at the following web site:

"www.arb.ca.gov/regact/conspro/aerocoat/aerocoat.htm"

Specific information regarding the table on this page can be found in Chapter VI, Page 57, of the Staff Report which is also available at the web site identified above.

U.S. RESIDENT POPULATION (As of April 1, 2000)

United States Total = 281,422,000

STATE	POPULATION	%	RANK
Alabama	4,447,000	1.6	23
Alaska	627,000	0.2	48
Arizona	5,131,000	1.8	20
Arkansas	2,673,000	0.9	33
California	**33,872,000**	**12.0**	**1**
Colorado	4,301,000	1.5	24
Connecticut	3,406,000	1.2	29
Delaware	784,000	0.3	45
District of Columbia	572,000	0.2	(X)
Florida	15,982,000	5.7	4
Georgia	8,186,000	2.9	10
Hawaii	1,212,000	0.4	42
Idaho	1,294,000	0.5	39
Illinois	12,419,000	4.4	5
Indiana	6,080,000	2.2	14
Iowa	2,926,000	1.0	30
Kansas	2,688,000	1.0	32
Kentucky	4,042,000	1.4	25
Louisiana	4,469,000	1.6	22
Maine	1,275,000	0.5	40
Maryland	5,296,000	1.9	19
Massachusetts	6,349,000	2.3	13
Michigan	9,938,000	3.5	8
Minnesota	4,919,000	1.7	21
Mississippi	2,845,000	1.0	31
Missouri	5,595,000	2.0	17

STATE	POPULATION	%	RANK
Montana	902,000	0.3	44
Nebraska	1,711,000	0.6	38
Nevada	1,998,000	0.7	35
New Hampshire	1,236,000	0.4	41
New Jersey	8,414,000	3.0	9
New Mexico	1,819,000	0.6	36
New York	18,976,000	6.7	3
North Carolina	8,049,000	2.9	11
North Dakota	642,000	0.2	47
Ohio	11,353,000	4.0	7
Oklahoma	3,451,000	1.2	27
Oregon	3,421,000	1.2	28
Pennsylvania	12,281,000	4.4	6
Rhode Island	1,048,000	0.4	43
South Carolina	4,012,000	1.4	26
South Dakota	755,000	0.3	46
Tennessee	5,689,000	2.0	16
Texas	20,852,000	7.4	2
Utah	2,233,000	0.8	34
Vermont	609,000	0.2	49
Virginia	7,079,000	2.5	12
Washington	5,894,000	2.1	15
West Virginia	1,808,000	0.6	37
Wisconsin	5,364,000	1.9	18
Wyoming	494,000	0.2	50

X = Not Applicable

Source: U.S. Census Bureau
http://www.census.gov/statab/ranks/rank01.txt

2001 ARCHITECTURAL COATINGS SURVEY

PART C

EXAMPLE OF COMPLETED SURVEY

EXAMPLE

"Paintsales Company" is reporting sales of four products. The following data are used to complete a Form 2 (*Product Information*) for each product. A Form 3 (*Ingredient Information*) for each product is also completed, as is a single Form 1 (*Company Information*).

Product Example #1 – Single Component Waterborne Coating

Entry #1

# of Products Grouped:	**1**	
Coating Code:	**27**	(Nonflat – Medium Gloss)
Substrate Code(s):	**9, 13**	(Drywall/Plaster, Wood)
Interior/Exterior/Dual:	**I**	(Interior)
Vehicle Technology:	**WB**	(Waterborne)
Resin Code:	**1**	(Acrylic)
Single or Multi-Component:	**S**	(Single Component)
Coating Density:	**10.0**	
Weight Percent of Solids:	**42**	
Wt. Percent of Volatile Matl:	**58**	
Wt. Percent of Water:	**54**	
Volume Percent of Solids:	**40**	
Volume Percent of Water:	**56**	
VOC Actual:	**48**	
VOC Regulatory:	**109**	
Sales Information (< 1 qt):	**1,000**	
Sales Information (> 1 qt):	**50,000**	
Sales Information (total):	**51,000**	

$$VOC_{Actual} = \frac{W_{vm} - W_w - W_e}{V_c}$$ (*Also known as Material VOC*)

$$VOC_{Regulatory} = \frac{W_{vm} - W_w - W_e}{V_c - V_w - V_e}$$ (*Also known as Coating VOC*).

Where:

- W_{vm} = Total weight of volatile materials (VOC+water+exempt cmpds), in grams
  =[Wt. % Volatiles, 58%]*[Coating Density, 10.0 lb/gal]*[454 grams/lb]*[1 gal] =2633 g
- W_w = Weight of water in the coating, in grams
  =[Wt. % Water, 54%]*[Coating Density, 10.0 lb/gal]*[454 grams/lb]*[1 gal] =2452 g
- W_e = Weight of exempt compounds in the coating, in grams = 0 grams for this coating example
- V_c = Total volume of the coating, in liters = 1 gallon or 3.7854 liters for this coating example
- V_w = Volume of water in the coating, in liters =[Volume % Water, 56%]*[1 gal]*[3.7854 liters/gal] =2.12 liters
- V_e = Volume of exempt compounds in the coating, in liters = 0 liters for this coating example

$$VOC_{Actual} = \frac{2633\,g - 2452\,g - 0\,g}{3.7854\,liters} = 48\,g/l$$

$$VOC_{Regulatory} = \frac{2633\,g - 2452\,g - 0\,g}{3.7854\,liters - 2.12\,liters - 0\,liter} = 109\,g/l$$

Product Example #2 – Single Component Solventborne Coating

Entry #2

# of Products Grouped:	**2**	
Coating Code:	**30**	(Primer/Sealer/Undercoater)
Substrate Code(s):	**3, 9**	(Concrete/Stone/Masonry, Drywall/Plaster)
Interior/Exterior/Dual:	**D**	(Dual)
Vehicle Technology:	**SB**	(Solventborne)
Resin Code:	**3**	(Alkyd)
Single or Multi-Component:	**S**	(Single Component)
Coating Density, SWA:	**12.1**	(product 1 = 11.9 lbs/gal; product 2 = 12.2 lbs/gal)
Weight Percent of Solids, SWA:	**69.9**	(product 1 = 68%; product 2 = 71%)
Wt. Percent of Volatile Matl, SWA:	**30.1**	(product 1 = 32%; product 2 = 29%)
Weight Percent of Exempts, SWA:	**3.9**	(product 1 = 3.8%; product 2 = 3.9%)
Volume Percent of Solids, SWA:	**65.5**	(product 1 = 63%; product 2 = 67%)
Volume Percent of Exempts, SWA:	**3.6**	(product 1 = 3.7%; product 2 = 3.6%)
VOC Actual, SWA:	**380**	(product 1 = 402 g/l; product 2 = 367 g/l)
VOC Regulatory, SWA:	**395**	(product 1 = 418 g/l; product 2 = 381 g/l)
Sales Information (> 1 qt):	**55,000**	(product 1 = 20,000 gallons; product 2 = 35,000 gallons)

"SWA" = Sales Weighted Average

$$\text{Coating Density}^{SWA} = \frac{((\text{Value}_1 \times \text{Sales}_1) + (\text{Value}_2 \times \text{Sales}_2) + (\text{Value}_n \times \text{Sales}_n))}{(\text{Sales}_1 + \text{Sales}_2 + \text{Sales}_n)}$$

$$\text{Coating Density}^{SWA} = \frac{((11.9\ \text{lbs/gal} \times 20{,}000\ \text{gals}) + (12.2\ \text{lbs/gal} \times 35{,}000\ \text{gals}))}{(20{,}000 + 35{,}000\ \text{gals})} = 12.1\ \text{lbs/gal}$$

Where:

Value$_{(1,2,...n)}$ = Coating Density for products 1,2,...n
Sales$_{(1,2,...n)}$ = Sales for products 1,2,...n

$$\text{VOC}_{\text{Actual}} = \frac{W_{vm} - W_w - W_e}{V_c} \qquad \text{VOC}_{\text{Regulatory}} = \frac{W_{vm} - W_w - W_e}{V_c - V_w - V_e}$$

(Also known as Material VOC) (Also known as Coating VOC).

Where:

W_{vm} = Total weight of volatile materials (VOC+water+exempt cmpds), in grams
=[Wt. % Volatiles, 30.1%]*[Coating Density, 12.1 lb/gal]*[454 grams/lb]*[1 gal] =1654 g

W_w = Weight of water in the coating, in grams = 0 grams for this coating example

W_e = Weight of exempt compounds in the coating, in grams
=[Wt. % Exempts, 3.9%]*[Coating Density, 12.1 lb/gal]*[454 grams/lb]*[1 gal] =214 g

V_c = Total volume of the coating, in liters = 1 gallon or 3.7854 liters for this coating example

V_w = Volume of water in the coating, in liters = 0 liters for this coating example

V_e = Volume of exempt compounds in the coating, in liters
=[Volume % Exempts, 3.6%]*[1 gal]*[3.7854 liters/gal] =0.14 liters

$$\text{VOC}_{\text{Actual}} = \frac{1654\ \text{g} - 0\ \text{g} - 214\ \text{g}}{3.7854\ \text{liters}} = 380\ \text{g/l}$$

$$\text{VOC}_{\text{Regulatory}} = \frac{1654\ \text{g} - 0\ \text{g} - 214\ \text{g}}{3.7854\ \text{liters} - 0\ \text{liters} - 0.14\ \text{liter}} = 395\ \text{g/l}$$

Product Example #3 – Multicomponent Solventborne Coating

Entry #3

# of Products Grouped:	**3**	
Coating Code:	**19**	(Industrial Maintenance)
Substrate Code(s):	**10**	(Metal)
Interior/Exterior/Dual:	**D**	(Dual)
Vehicle Technology:	**SB**	(Solventborne)
Resin Code:	**7**	(Epoxy)
Single or Multi-Component:	**M**	(Multi-Component)
Coating Density, SWA:	**11.1**	(product 1 = 10.5 lbs/gal; product 2 = 11.5 ; product 3 = 11.0)
Weight Percent of Solids, SWA:	**69.9**	(product 1 = 68%; product 2 = 71%; product 3 = 70%)
Wt. Percent of Volatile Matl, SWA:	**30.1**	(product 1 = 32%; product 2 = 29%; product 3 = 30%)
Volume Percent of Solids, SWA:	**65.1**	(product 1 = 64%; product 2 = 66%; product 3 = 65%)
VOC Actual, SWA:	**349**	(product 1 = 360 g/l; product 2 = 340 g/l; product 3 = 350 g/l)
VOC Regulatory, SWA:	**349**	(product 1 = 360 g/l; product 2 = 340 g/l; product 3 = 350 g/l)
Sales Information (> 1 qt):	**2,300**	(product 1 = 500 gallons; product 2 = 800; product 3 = 1000)

Notes:

1. "SWA" = Sales Weighted Average
2. VOC contents for multi-component coatings are as mixed, applied or fully reacted.

Sample Calculation:

$$\text{VOC Regulatory}^{SWA} = \frac{((\text{Value}_1 \times \text{Sales}_1) + (\text{Value}_2 \times \text{Sales}_2) + (\text{Value}_n \times \text{Sales}_n))}{(\text{Sales}_1 + \text{Sales}_2 + \text{Sales}_n)}$$

$$\text{VOC Regulatory}^{SWA} = \frac{((360\ \text{g/l} \times 500\ \text{gals}) + (340\ \text{g/l} \times 800\ \text{gals}) + (350\ \text{g/l} \times 1000\ \text{gals}))}{(500 + 800 + 1000\ \text{gals})} = 349\ \text{g/l}$$

Where:

$Value_{(1,2,...n)}$ = VOC Regulatory for products 1,2,...n

$Sales_{(1,2,...n)}$ = Sales for products 1,2,...n

Product Example #4 – Single Component Low Solids Coating

Entry #4

# of Products Grouped:	**1**	
Coating Code:	**21**	(Low Solids)
Substrate Code(s):	**13**	(Wood)
Interior/Exterior/Dual:	**I**	(Interior)
Vehicle Technology:	**WB**	(Waterborne)
Resin Code:	**15**	(Urethane, Polyurethane)
Single or Multi-Component:	**S**	(Single Component)
Coating Density:	**8.3**	
Weight Percent of Solids:	**8.0**	
Wt. Percent of Volatile Matl:	**92.0**	
Wt. Percent of Water:	**89.5**	
Volume Percent of Solids:	**7.5**	
Volume Percent of Water:	**90.0**	
VOC Actual:	**25**	
VOC Regulatory:	**25**	
Sales Information (< 1 qt):	**200**	
Sales Information (> 1 qt):	**500**	
Sales Information (total):	**700**	

For a low solids coating, VOC Regulatory is calculated in a different manner. The VOC Regulatory value for a low solids coatings is the same as the VOC Actual value, as shown below:

$$VOC_{Actual} = \frac{W_{vm} - W_w - W_e}{V_c}$$

$$VOC_{Regulatory\ (Low\ Solids)} = \frac{W_{vm} - W_w - W_e}{V_c}$$

Where:

W_{vm} = Total weight of volatile materials (VOC+water+exempt cmpds), in grams
=[Wt. % Volatiles, 92%]*[Coating Density, 8.3 lb/gal]*[454 grams/lb]*[1 gal] =3467 g

W_w = Weight of water in the coating, in grams
=[Wt. % Water, 89.5%]*[Coating Density, 8.3 lb/gal]*[454 grams/lb]*[1 gal] =3373 g

W_e = Weight of exempt compounds in the coating, in grams = 0 grams for this coating example

V_c = Total volume of the coating, in liters = 1 gallon or 3.7854 liters for this coating example

$$VOC_{Actual} = VOC_{Regulatory\ (Low\ Solids)} = \frac{3467\,g - 3373\,g - 0\,g}{3.7854\,liter} = 25\,g/l$$

2001 California Architectural Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

FORM 1
Company Information – Reporting Year 2000

(Instructions for completing FORM 1: See back side)

Company Name: **Paintsales Company**		Web Site: **www.paintsales.com**
Division: **Architectural Div.**		
Address: **12345 Main St.**		
City: **Anytown**	State: **CA**	Zip: **12345-0000**
Contact Person: **Mr. John Doe**	Title: **Environmental Manager**	
Phone: **(999) 999-9999**	FAX: **(999) 999-9998**	Email: **jdoe@paintsales.com**

Type of Business (check all that apply)
- ☒ Manufacturer
- ❑ Importer
- ❑ Retail Distributor
- ☒ Wholesale Distributor
- ❑ Private Label Manufacturer
- ❑ Toll Manufacturer
- ❑ Other (Specify):

Company Marketing Classification (check all that apply)
- ❑ International
- ❑ National
- ☒ Regional (e.g., western U.S.): **Southwestern U.S.**
- ❑ California Statewide
- ❑ California Local

Company Organization and/or Ownership

Parent Company Name: Chemchem Corp.

Address: **1111 First Avenue**

City: **Bigtown**
State: **NY**
Zip: **01234-0000**
Contact Person: **Ms. Jane Doe**
Phone #: **(000) 555-5555**

How did you determine California Year 2000 Sales Volume? (check all that apply)
- ❑ Direct California retail sales
- ☒ Direct California wholesale distribution
- ❑ Prorated from national retail sales
- ❑ Prorated from national wholesale distribution
- ❑ Other (explain):

Company – Gross Annual Receipts ($)
For Calendar Year 2000
- ❑ Less than 500,000
- ❑ Between 500,000 and < 1 million
- ❑ Between 1 and < 2 million
- ❑ Between 2 and < 5 million
- ☒ Between 5 and < 10 million
- ❑ Between 10 and < 100 million
- ❑ Between 100 million and < 1 billion
- ❑ Greater than or equal to 1 billion

Company – California Only Gross Annual Receipts ($)
For Calendar Year 2000
- ❑ Less than 500,000
- ❑ Between 500,000 and < 1 million
- ❑ Between 1 and < 2 million
- ❑ Between 2 and < 5 million
- ☒ Between 5 and < 10 million
- ❑ Between 10 and < 100 million
- ❑ Between 100 million and < 1 billion
- ❑ Greater than or equal to 1 billion

Employees
For Calendar Year 2000
- ❑ Less than 10
- ❑ Between 10 and < 100
- ☒ Between 100 and < 250
- ❑ Between 250 and < 500
- ❑ Greater than or equal to 500

Employees – California Only
For Calendar Year 2000
- ❑ Less than 10
- ❑ Between 10 and < 100
- ☒ Between 100 and < 250
- ❑ Between 250 and < 500
- ❑ Greater than or equal to 500

CERTIFICATION

I hereby certify that, to the best of my knowledge and belief, all information entered on the Company Information Form (Form 1), Product Information Form (Form 2), and Ingredient Information Form (Form 3) is complete and accurate.

Name: **John Smith**	Title: **Senior Counsel**
Signature: **X**	Date: **September 17, 2001**

FORM 2
Product Information – Reporting Year 2000

(Instructions for completing FORM 2: See FORMS pages 4 through 6)

Entry # :	**1**	Note: This entry # must also appear on your corresponding FORM 3.
Product Code:		**WX3000**
Product Name:		**WALLCOAT**

Physical & Other Data

# of Products Grouped	Coating Category Code	Substrate Code(s)	Interior, Exterior, or Dual	Vehicle Technology	Resin Code	Single or Multi-Component	Coating Density*
	1-51	0-18	I, E, D	SB or WB	1-19	S or M	lbs/gal
1	**27**	**9, 13**	**I**	**WB**	**1**	**S**	**10.0**

Weight Percent of Solids*	Weight Percent of Volatile Material*	Weight Percent of Water*	Weight Percent of Exempts*	Volume Percent of Solids*	Volume Percent of Water*	Volume Percent of Exempts*
%	%	%	%	%	%	%
42.0	**58.0**	**54.0**	**0.0**	**40.0**	**56.0**	**0.0**

			Report Only If Grouping Products			
			Minimum		Maximum	
VOC Actual*	VOC Regulatory* (Less Water)	How were VOC Actual and Regulatory determined?	VOC Actual	VOC Regulatory (Less Water)	VOC Actual	VOC Regulatory (Less Water)
grams/liter	grams/liter	❑ U.S. EPA Method 24	grams/liter	grams/liter	grams/liter	grams/liter
48	**109**	☒ Formulation Data				

2000 California Sales in Gallons

Container Sizes One Quart or Less (gallons)	Container Sizes Larger Than One Quart (gallons)	Total Gallons (quart or less + > quart)
1,000	**50,000**	**51,000**

* SWA – Report "Sales Weighted Average" if grouping products.

Comments:

Page ___**1**___ of ___**8**___ Enter the current page # out of the total pages submitted.

NOTE: Each FORM 2 must have a corresponding FORM 3.

Photocopy this page as necessary

FORM 3
Ingredient Information – Reporting Year 2000

Instructions for completing FORM 3: See back side

Entry # from FORM 2: **1**	Speciate Volatile Organic Compounds (VOCs) and Exempt Compounds

#	VOCs and Exempt Compounds	CAS #	wt %*
1	**Propylene Glycol**	**57556**	**2.5**
2	**2,2,4-Trimethyl-1,3-Pentanediol Isobutyrate**	**25265774**	**0.9**
3	**2-Amino-2-Methyl-1-Propanol**	**124685**	**0.5**
4	**Diethylene Glycol Monobutyl Ether**	**112345**	**0.1**

Aggregated VOCs < 0.1 wt %	**0.0**
Aggregated Exempt Compounds < 0.1 wt %	**0.0**
wt % Water	**54.0**
wt % Solids	**42.0**
Total of All Ingredients (Must Equal 100%)	**100.0**

* List VOCs and Exempt Compounds that individually amount to 0.1% or greater by weight of the final product. Enter the percent by weight to the nearest 0.1% for each ingredient in the final product.

Page ___**2**___ of ___**8**___ Enter the current page # out of the total pages submitted.
NOTE: Each FORM 3 must have a corresponding FORM 2.

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FORM 2
Product Information – Reporting Year 2000

(Instructions for completing FORM 2: See FORMS pages 4 through 6)

Entry # :	**2**	Note: This entry # must also appear on your corresponding FORM 3.
Product Code:		**PX3000**
Product Name:		**PRIMERCOAT**

Physical & Other Data

# of Products Grouped	Coating Category Code	Substrate Code(s)	Interior, Exterior, or Dual	Vehicle Technology	Resin Code	Single or Multi-Component	Coating Density*
	1-51	0-18	I, E, D	SB or WB	1-19	S or M	lbs/gal
2	**30**	**3, 9**	**D**	**SB**	**3**	**S**	**12.1**

Weight Percent of Solids*	Weight Percent of Volatile Material*	Weight Percent of Water*	Weight Percent of Exempts*	Volume Percent of Solids*	Volume Percent of Water*	Volume Percent of Exempts*
%	%	%	%	%	%	%
69.9	**30.1**	**0.0**	**3.9**	**65.5**	**0.0**	**3.6**

			Report Only If Grouping Products			
			Minimum		Maximum	
VOC Actual*	VOC Regulatory* (Less Water)	How were VOC Actual and Regulatory determined?	VOC Actual	VOC Regulatory (Less Water)	VOC Actual	VOC Regulatory (Less Water)
grams/liter	grams/liter	❑ U.S. EPA Method 24	grams/liter	grams/liter	grams/liter	grams/liter
380	**395**	☒ Formulation Data	**367**	**381**	**402**	**418**

2000 California Sales in Gallons

Container Sizes One Quart or Less (gallons)	Container Sizes Larger Than One Quart (gallons)	Total Gallons (quart or less + > quart)
0	**55,000**	**55,000**

* SWA – Report "Sales Weighted Average" if grouping products.

Comments:

Page ___**3**___ of ___**8**___ Enter the current page # out of the total pages submitted.

NOTE: Each FORM 2 must have a corresponding FORM 3.

Photocopy this page as necessary

FORM 3
Ingredient Information – Reporting Year 2000

Instructions for completing FORM 3: See back side

Entry # from FORM 2: **2**	Speciate Volatile Organic Compounds (VOCs) and Exempt Compounds

#	VOCs and Exempt Compounds	CAS #	wt %*
1	**Chemchem Naphtha (Light Aliphatic) (Bin #10)**	**64742898**	**12.2**
2	**Chemchem Naphtha (Heavy) (Bin #8)**	**64741657**	**9.1**
3	**1,1,1-Trichloroethane**	**71556**	**3.9**
4	**Xylene**	**1330207**	**1.9**
5	**Methyl Ethyl Ketone**	**78933**	**1.5**
6	**Isopropyl Alcohol**	**67630**	**1.0**

Aggregated VOCs < 0.1 wt %	**0.5**
Aggregated Exempt Compounds < 0.1 wt %	**0.0**
wt % Water	**0.0**
wt % Solids	**69.9**
Total of All Ingredients (Must Equal 100%)	**100.0**

* List VOCs and Exempt Compounds that individually amount to 0.1% or greater by weight of the final product. Enter the percent by weight to the nearest 0.1% for each ingredient in the final product.

Page ___**4**___ of ___**8**___ Enter the current page # out of the total pages submitted.
NOTE: Each FORM 3 must have a corresponding FORM 2.

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FORM 2
Product Information – Reporting Year 2000

(Instructions for completing FORM 2: See FORMS pages 4 through 6)

Entry # :	**3**	Note: This entry # must also appear on your corresponding FORM 3.
Product Code:		**MX5000**
Product Name:		**IMCOAT**

Physical & Other Data

# of Products Grouped	Coating Category Code	Substrate Code(s)	Interior, Exterior, or Dual	Vehicle Technology	Resin Code	Single or Multi-Component	Coating Density*
	1-51	0-18	I, E, D	SB or WB	1-19	S or M	lbs/gal
3	**19**	**10**	**D**	**SB**	**7**	**M**	**11.1**

Weight Percent of Solids*	Weight Percent of Volatile Material*	Weight Percent of Water*	Weight Percent of Exempts*	Volume Percent of Solids*	Volume Percent of Water*	Volume Percent of Exempts*
%	%	%	%	%	%	%
69.9	**30.1**	**0.0**	**0.0**	**65.1**	**0.0**	**0.0**

			Report Only If Grouping Products			
			Minimum		Maximum	
VOC Actual*	VOC Regulatory* (Less Water)	How were VOC Actual and Regulatory determined?	VOC Actual	VOC Regulatory (Less Water)	VOC Actual	VOC Regulatory (Less Water)
grams/liter	grams/liter	☒ U.S. EPA Method 24	grams/liter	grams/liter	grams/liter	grams/liter
349	**349**	☐ Formulation Data	**340**	**340**	**360**	**360**

2000 California Sales in Gallons

Container Sizes One Quart or Less (gallons)	Container Sizes Larger Than One Quart (gallons)	Total Gallons (quart or less + > quart)
0	**2,300**	**2,300**

* SWA – Report "Sales Weighted Average" if grouping products.

Comments:

2001 California Architectural and Industrial Maintenance Coatings Survey		
Air Resources Board, P.O. Box 2815 - Sacramento, CA 95812 - Attention: Stationary Source Division, Measures Assessment Branch		
Phone: 916.324.8023	FAX: 916.324.8026	www.arb.ca.gov/coatings/arch/survey/2001/survey.htm

FORM 3
Ingredient Information – Reporting Year 2000

Instructions for completing FORM 3: See back side

Entry # from FORM 2: **3**	Speciate Volatile Organic Compounds (VOCs) and Exempt Compounds

#	VOCs and Exempt Compounds	CAS #	wt %*
1	**Chemchem Aromatic 100 (Bin #22)**	**64742956**	**14.0**
2	**1,2,4-Trimethyl Benzene**	**95636**	**5.9**
3	**Methyl Ethyl Ketone**	**78933**	**3.5**
4	**4-Hydroxy-4-Methyl-2-Pentanone**	**123422**	**2.1**
5	**Ethyl Acetate**	**141786**	**2.0**
6	**n-Butyl Alcohol**	**71363**	**1.6**

Aggregated VOCs < 0.1 wt %	**1.0**
Aggregated Exempt Compounds < 0.1 wt %	**0.0**
wt % Water	**0.0**
wt % Solids	**69.9**
Total of All Ingredients (Must Equal 100%)	**100.0**

* List VOCs and Exempt Compounds that individually amount to 0.1% or greater by weight of the final product. Enter the percent by weight to the nearest 0.1% for each ingredient in the final product.

Page ___**6**___ of ___**8**___ Enter the current page # out of the total pages submitted.
NOTE: Each FORM 3 must have a corresponding FORM 2.

Photocopy this page as necessary

FORM 2
Product Information – Reporting Year 2000

(Instructions for completing FORM 2: See FORMS pages 4 through 6)

Entry # :	**4**	Note: This entry # must also appear on your corresponding FORM 3.
Product Code:		**LS1000**
Product Name:		**LOSOLCOAT**

Physical & Other Data

# of Products Grouped	Coating Category Code	Substrate Code(s)	Interior, Exterior, or Dual	Vehicle Technology	Resin Code	Single or Multi-Component	Coating Density*
	1-51	0-18	I, E, D	SB or WB	1-19	S or M	lbs/gal
1	**21**	**13**	**I**	**WB**	**15**	**S**	**8.3**

Weight Percent of Solids*	Weight Percent of Volatile Material*	Weight Percent of Water*	Weight Percent of Exempts*	Volume Percent of Solids*	Volume Percent of Water*	Volume Percent of Exempts*
%	%	%	%	%	%	%
8.0	**92.0**	**89.5**	**0.0**	**7.5**	**90.0**	**0.0**

			Report Only If Grouping Products			
			Minimum		Maximum	
VOC Actual*	VOC Regulatory* (Less Water)	How were VOC Actual and Regulatory determined?	VOC Actual	VOC Regulatory (Less Water)	VOC Actual	VOC Regulatory (Less Water)
grams/liter	grams/liter	❑ U.S. EPA Method 24	grams/liter	grams/liter	grams/liter	grams/liter
25	**25**	☒ Formulation Data				

2000 California Sales in Gallons

Container Sizes One Quart or Less (gallons)	Container Sizes Larger Than One Quart (gallons)	Total Gallons (quart or less + > quart)
200	**500**	**700**

* SWA – Report "Sales Weighted Average" if grouping products.

Comments:

Page ___**7**___ of ___**8**___ Enter the current page # out of the total pages submitted.

NOTE: Each FORM 2 must have a corresponding FORM 3.

Photocopy this page as necessary

FORM 3
Ingredient Information – Reporting Year 2000

Instructions for completing FORM 3: See back side

Entry # from FORM 2: **4**	Speciate Volatile Organic Compounds (VOCs) and Exempt Compounds

#	VOCs and Exempt Compounds	CAS #	wt %*
1	**Ethylene Glycol Butyl Ether**	**11762**	**2.0**

Aggregated VOCs < 0.1 wt %	**0.5**
Aggregated Exempt Compounds < 0.1 wt %	**0.0**
wt % Water	**89.5**
wt % Solids	**8.0**
Total of All Ingredients (Must Equal 100%)	**100.0**

* List VOCs and Exempt Compounds that individually amount to 0.1% or greater by weight of the final product. Enter the percent by weight to the nearest 0.1% for each ingredient in the final product.

Page ___**8**___ of ___**8**___ Enter the current page # out of the total pages submitted.
NOTE: Each FORM 3 must have a corresponding FORM 2.

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