

**TECHNICAL SUPPORT DOCUMENT**

**for**

**CONTROL OF VOLATILE ORGANIC MATERIAL  
EMISSIONS**

**from**

**CONSUMER AND COMMERCIAL PRODUCTS,  
ARCHITECTURAL AND INDUSTRIAL  
MAINTENANCE COATINGS, AND AEROSOL  
COATINGS**

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## List of Acronyms

ACP	Alternative Control Plan
AIM	Architectural and Industrial Maintenance
CAA	Clean Air Act
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CRF	Cost Recovery Factor
ERWA	Emission Reduction-Weighted Average
HVOM	High Volatility Organic Materials
IEPA	Illinois Environmental Protection Agency
IPP	Innovative Products Provision
LADCO	Lake Michigan Air Directors Consortium
MIR	Maximum Incremental Reactivity
MRPO	Midwest Regional Planning Organization
MVOM	Medium Volatility Organic Materials
NAA	Non Attainment Area
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
OTC	Ozone Transport Commission
PSU	Primers, Sealers, and Undercoaters
PWMIR	Product Weighted Maximum Incremental Reactivity
SCM	Suggested Control Measures
SIP	State Implementation Plan
SWA	Sales Weighted Average
Tpd	Tons Per Day
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material

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## **1.0 Introduction**

Pursuant to Section 109 of the Clean Air Act, as amended in 1990, and to protect the public health, the United States Environmental Protection Agency (“USEPA”) revised the national ambient air quality standard (“NAAQS”) for ozone. Effective July 17, 1997 the USEPA lowered the NAAQS for ozone to 0.080 parts per million from the previous 0.120 parts per million. In addition, the time period used for measuring compliance was increased from the previous 1 hour to 8 hours. In Illinois, Chicago and the Metro East St. Louis area have been designated as moderate ozone nonattainment areas under the new NAAQS. Included in the Chicago nonattainment area (“NAA”) are Cook, DuPage, Kane, Lake, McHenry, and Will counties, as well as the Aux Sable Township and Goose Lake Township in Grundy County, and Oswego Township in Kendall County. The Metro East St. Louis NAA is comprised of Jersey, Madison, Monroe, and St. Clair counties.

The precursors to the formation of ozone include volatile organic materials (“VOM”), oxides of nitrogen (“NO<sub>x</sub>”) and carbon monoxide (“CO”). Ozone formation is most active during the summer months because the reactions are dependent on direct sunlight and high ambient temperatures. Ozone is a powerful oxidant and, as such, reacts readily with a wide range of substances. In humans, ozone is an irritant to the respiratory system and may damage lung and other tissues. This damage can lead to impaired breathing and reduced immunity to disease for people in good health. The effects may be more severe for young children, the elderly, and people with preexisting respiratory diseases such as

asthma, bronchitis, and emphysema. Ozone oxidation can also damage plant tissue, reducing the yield of some crops, and damage certain other materials such as rubber.

In 1997, the USEPA revised the NAAQS for ozone to reflect improved scientific understanding of the health impacts of the pollutant. The change from the previous 1 hour standard to the 8 hour standard is based on extensive air pollution research that indicated ozone is more harmful when a person is exposed over a longer period of time even if the ozone concentration is lower. As such, the revised 8 hour standard is more stringent than the previous 1 hour standard. The 8 hour standard had an effective date of June 15, 2004, with the 1 hour standard being revoked one year later on June 15, 2005 (40 CFR Part 81).

To protect the public health of the citizens of the State of Illinois, and in an effort to attain the 8 hour ozone NAAQS by 2010 as required by Section 181(a) of the Clean Air Act, the Illinois Environmental Protection Agency (“Illinois EPA”) is proposing to reduce VOM emissions from consumer and commercial products, architectural and industrial maintenance (“AIM”) coatings, and aerosol coatings.

Consumer and commercial products are currently regulated by the USEPA by the consumer and commercial products rule promulgated on Sept. 11, 1998, and codified at 40 CFR Part 59 Subpart D. This national rule currently limits the VOM content of 24 product categories. VOM emissions from these categories are estimated to have been reduced by 20 percent from uncontrolled levels. However, the emissions due to the 24

categories currently being regulated account for only 48 percent of the consumer and commercial products emission inventory<sup>3</sup>.

Architectural and industrial maintenance coatings are currently regulated by the USEPA by the AIM coatings rule promulgated on Sept. 11, 1998, and codified at 40 CFR Part 59 Subpart D. This national rule includes container labeling requirements and is estimated to reduce VOM emissions from AIM coatings by approximately 20% from uncontrolled levels<sup>9</sup>.

Aerosol Coatings are considered to be a Group III Consumer Product, and accordingly are also regulated by 40 CFR Part 59 Subpart D. Currently, federal and Illinois consumer product regulations do not deal specifically with the reactivity of various organic compounds. The proposed rule for aerosol coatings limits the content of various VOM compounds based upon their reactivity and their likelihood to form ground level ozone. This proposed rule is based upon the California Air Resources Board's ("CARB") "Regulation for Reducing the Ozone Formed from Aerosol Coating Product Emissions"<sup>11</sup> that has been employing a reactivity based standard for all aerosol coatings since January 1, 2003.

Further reductions in the aforementioned categories will be beneficial to the environment and are considered to be both economically reasonable and technologically feasible. It is for these reasons that the Illinois EPA has proposed this rule controlling consumer and commercial products, AIM coatings, and aerosol coatings.

In evaluating the potential reductions of VOM emissions from consumer and commercial products, architectural and industrial maintenance coatings, and aerosol coatings, Illinois EPA has reviewed the findings of several groups researching the issue. The groups are MACTEC, an environmental firm that is under contract with the Lake Michigan Air Directors Consortium (“LADCO”); the Ozone Transport Commission (“OTC”), an organization in the eastern United States created under the Clean Air Act; and the California Air Resources Board (“CARB”). The OTC and CARB have drafted candidate measures for the reduction of VOM that go beyond the current federal VOM limits, and MACTEC, CARB, and USEPA have projected the potential reductions and the associated cost of additional control through these measures.

This technical support document is based on the review and application of the aforementioned organizations, and addresses the economic reasonableness and technological feasibility of further regulation to reduce VOM emissions from consumer and commercial products, AIM coatings, and aerosol coating products by limiting the solvent content in these products, or the amount of ozone formed when these products are used. It is the position of the Illinois EPA that further regulation of these source categories is an integral part of its state implementation plan (“SIP”) for achieving attainment of the NAAQS in Illinois.



## **2.0 Consumer and Commercial Products**

### **2.1 Description of Sources and Emissions**

As defined by the USEPA in the federal rule, a consumer product is any household or institutional product (including paints, coatings, and solvents), or substance, or article (including any container or packaging) held by any person, the use, consumption, storage, disposal, destruction, or decomposition of which may result in the release of VOC (40 CFR § 59.202). Consumer and commercial products are chemically formulated products used by household and institutional consumers including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products; but does not include other paint products, furniture coatings, or architectural coatings. The description consumer and commercial products also refers to aerosol adhesives, including aerosol adhesives used for consumer, industrial, and commercial uses.

Consumer and commercial products are sold to retail customers for personal, household, or automotive use, along with products marketed by wholesale distributors for use in commercial or industrial settings such as beauty shops, schools, and hospitals. This source category description includes hundreds of products sold to individuals such as personal care products, household products, automotive aftermarket products, adhesives and sealants, insecticides, coatings and a range of other miscellaneous products.

It has been estimated by MACTEC that approximately 5.9% of the total anthropogenic emissions of VOM in the Midwest Regional Planning Organization (“MRPO”) are due to commercial and consumer products<sup>3</sup>. The MRPO is comprised of Illinois, Indiana, Michigan, Ohio, and Wisconsin. In Illinois, consumer and commercial product emissions account for approximately 4.95% of the total anthropogenic VOM emissions during the ozone season<sup>2</sup>, and account for approximately 8.51% of anthropogenic VOM emissions for the entire year<sup>15</sup>. Consumer and commercial products account for approximately 4.93% of total anthropogenic VOM emissions in the East St. Louis NAA and approximately 9.2% of total anthropogenic VOM emissions in the Chicago NAA during the ozone season(see Section 2.2, Table 2.2.3)<sup>2</sup>. The percentages of anthropogenic VOM emissions from consumer and commercial products for the entire year in the Metro East and Chicago NAAs are 6.89% and 13.45% respectively<sup>15</sup>.

## **2.2 Emissions in Illinois From Regulated Products**

Consumer and commercial product usage results in solvent evaporation and the emission of VOM. For the purposes of the proposed regulation the source category is divided into 59 product categories, each with a VOM limit given in % by weight. These product categories are listed below in Table 2.2.1.

**Table 2.2.1 Proposed Regulated Product Categories and Limits**

Affected Product	% VOM by Weight
1) Adhesives - Aerosol	
A) Mist Spray	65
B) Web Spray	55
C) Special Purpose Spray Adhesives	
i) Mounting, Automotive Engine Compartment, and Flexible Vinyl	70
ii) Polystyrene Foam and Automotive Headliner	65
iii) Polyolefin and Laminate Repair / Edgebanding	60
2) Adhesive Removers	
A) Floor or Wall Covering	5
B) Gasket or Thread Locking	50
C) General Purpose	20
D) Specialty	70
3) Adhesives - Construction, Panel, and Floor Covering	15
4) Adhesives - General Purpose	10
5) <b>Adhesives – Structural Waterproof</b>	<b>15</b>
6) Adhesives	
A) Contact General Purpose	55
B) Contact Special Purpose	80
7) Fresheners	
A) Single-Phase Aerosol	30
B) Double Phase Aerosol	25
C) Liquids / Pump Sprays	18
D) Solids / Semisolids	3
8) Antiperspirants	
A) Aerosol	
*HVOM	40
**MVOM	10
B) Non-Aerosol	
*HVOM	0
**MVOM	0
9) <b>Anti-Static Non-Aerosol</b>	<b>11</b>
10) Automotive Brake Cleaners	45

11)	Automotive Rubbing or Polishing Compound	17
12)	Automotive Wax, Polish, Sealant, or Glaze	
	A) Hard Paste Waxes	45
	B) Instant Detailers	3
	C) All Other Forms	15
13)	Automotive Windshield Washer Fluids	35
14)	Bathroom and Tile Cleaners	
	A) Aerosol	7
	B) All Other Forms	5
15)	Bug and Tar Remover	40
16)	Carburetor or Fuel-Injection Air Intake Cleaners	45
17)	Carpet and Upholstery Cleaners	
	A) Aerosol	7
	B) Non-Aerosol (Dilutables)	0.1
	C) Non-Aerosol (Ready-to-Use)	3.0
18)	Charcoal Lighter Material	see Section 223.220
19)	Cooking Spray – Aerosol	18
20)	Deodorants	
	A) Aerosol	
	*HVOM	0
	**MVOM	10
	B) Non-Aerosol	
	*HVOM	0
	**MVOM	0
21)	Dusting Aides	
	A) Aerosol	25
	B) All Other Forms	7
22)	Electrical Cleaner	45
23)	Electronic Cleaner	75
24)	Engine Degreasers	
	A) Aerosol	35
	B) Non-Aerosol	5

25)	Fabric Protectants	60
26)	Fabric Refresher	
	A) Aerosol	15
	B) Non-aerosol	6
27)	Floor Polishes / Waxes	
	A) Products for Flexible Flooring Materials	7
	B) Products for Nonresilient Flooring	10
	C) Wood Floor Wax	90
28)	Floor Wax Strippers	see Section 223.209
29)	Footwear or Leather Care Products	
	A) Aerosol	75
	B) Solid	55
	C) Other forms	15
30)	Furniture Maintenance Products	
	A) Aerosol	17
	B) All Other Forms Except Solid or Paste	7
31)	General Purpose Cleaners	
	A) Aerosol	10
	B) Non-Aerosol	4
32)	General Purpose Degreasers	
	A) Aerosol	50
	B) Non-Aerosol	4
33)	Glass Cleaners	
	A) Aerosol	12
	B) Non-Aerosol	4
34)	Graffiti Remover	
	A) Aerosol	50
	B) Non-Aerosol	30
35)	Hair Mousses	6
36)	Hairshines	55
37)	Hairsprays	55
38)	Hair Styling Gels	6

39)	Hair Styling Products	
	A) Aerosol and Pump Sprays	6
	B) All other forms	2
40)	Heavy Duty Hand Cleaner or Soap	8
41)	Insecticides	
	A) Crawling Bug (Aerosol)	15
	B) Crawling Bug (All Other Forms)	20
	C) Flea and Tick	25
	D) Flying Bug (Aerosol)	25
	E) Flying Bug (All Other Forms)	35
	F) Foggers	45
	G) Lawn and Garden (Aerosol)	20
	H) Lawn and Garden (All Other Forms)	3
	I) Wasp and Hornet	40
42)	Laundry Prewash	
	A) Aerosols / Solids	22
	B) All Other Forms	5
43)	Laundry Starch Products	5
44)	Metal Polishes / Cleansers	30
45)	Multi-Purpose Lubricant (Excluding Solid or Semi-Solid Products)	50
46)	Non-Selective Terrestrial Herbicide - Non-Aerosol	3
47)	Oven Cleaners	
	A) Aerosols / Pump Sprays	8
	B) Liquids	5
48)	Paint Remover or Strippers	50
49)	Penetrants	50
50)	Rubber and Vinyl Protectants	
	A) Aerosol	10
	B) Non-Aerosol	3
51)	Sealants and Caulking Compounds	4
52)	Shaving Creams	5
53)	Shaving Gel	7

54)	Silicone-Based Multi-Purpose Lubricants (Excluding Solid or Semi-Solid Products)	60
55)	Spot Removers	25
	A) Aerosol	8
	B) Non-Aerosol	
56)	Tire Sealants and Inflators	20
57)	Toilet/Urinal Care	
	A) Aerosol	10
	B) Non-Aerosol	3
58)	Undercoatings – Aerosols	40
59)	Wood Cleaner	
	A) Aerosol	17
	B) Non-Aerosol	
*High Volatility Organic Compound – a volatile organic compound that exerts a vapor pressure greater than 80mm Hg at 20°C.		
**Medium Volatility Organic Compound - a volatile organic compound that exerts a vapor pressure greater than 2mm Hg at 20°C.		

The source category is broken down by the Emission Inventory Improvement Program (“EIIP”) into seven product categories: personal care products, household products, automotive aftermarket products, adhesives and sealants, FIFRA regulated products, coatings and related products, and miscellaneous<sup>1</sup>. The EIIP was a joint project of the USEPA and the National Association of Clean Air Agencies. The “Illinois Base Year Ozone Inventory for 2002”<sup>15</sup> produced by the Illinois EPA contains a comprehensive inventory of VOM emissions from consumer and commercial products statewide, and for both NAAs in Illinois. The data also details the emissions due to each product category. Table 2.2.2 shows the emissions factors for each product category per person in Illinois in pounds per year.

**Table 2.2.2 Consumer Product Emission Factors by Category<sup>1</sup>**

<b>Product Category</b>	<b>Emission Factor (lb/person/year)</b>
Personal Care	2.04
Household	0.70
Automotive Aftermarket	1.24
Adhesives and Sealants	0.52
FIFRA Regulated	1.69
Coatings and Related Products	0.95
Miscellaneous	0.07

Table 2.2.3 shows the inventory figures for VOM due to consumer and commercial products during the ozone season and for the entire year; the total anthropogenic emissions of VOM in each area of the state along with the state total for each period; the percentage of the total anthropogenic VOM emissions in each area; and the population of each of these areas. The emissions data is estimated in a pounds per year per capita.



**Table 2.2.3 VOM Emissions Due to Consumer and Commercial Products During the Ozone Season<sup>2</sup> (Entire Year Data in Parentheses<sup>15</sup>)**

<b>Area and Approximate Population</b>	<b>VOM – Consumer and Commercial Products (T/D)</b>	<b>Total Anthropogenic VOM (T/D)</b>	<b>% of Total Anthropogenic VOM</b>
Attainment Area Pop. 3,756,253	24.40 (36.90)	996.52 (772.71)	2.45% (4.78%)
Chicago NAA Pop. 8,295,996	53.90 (82.24)	584.45 (611.38)	9.22% (13.45%)
Metro – East St. Louis NAA Pop. 548,371	3.56 (5.66)	72.15 (82.16)	4.93% (6.89%)
Statewide Total Pop. 12,600,620	81.86 (124.80)	1653.12 (1466.24)	4.95% (8.51%)

### **2.3 Technical Feasibility of Controls**

The most effective approaches for achieving reductions in this source category are reformulating products currently employing VOM solvents and replacing them with water based formulations or formulations employing acetone or other exempt solvents. Other measures for reductions in this category include increasing the solids content of products, formulating non-VOM propellants for products, or changing the valves, containers, or delivery systems of the products to reduce VOM content.

Consumer and commercial products are currently regulated by USEPA's consumer and commercial products rule, codified at 40 CFR Part 59 Subpart D, under the authority of Section 183(e) of the Clean Air Act. This rule limits the VOM content of 24 product categories. These categories represent only 48% of the consumer and commercial products inventory nationwide<sup>3</sup>. The proposed regulation, mirroring the "OTC Model Rule for Consumer Products"<sup>16</sup>, would increase the number of regulated product categories to approximately 80, and reduce VOM emissions from the source category by an additional 14.2% beyond the federal rule<sup>3</sup>. The OTC Model Rule for Consumer Products is very similar to the CARB rule in regard to the products regulated and the VOM content limits that are required in CARB's midterm measures. The CARB rule was written to become more stringent in 2006 and then more stringent yet in 2010. While both the CARB and the OTC model rules for consumer and commercial products are technologically feasible, the economic reasonableness of the candidate measures indicate that the limits prescribed by the OTC rule are preferable for Illinois (See discussion in Section 2.5).

The OTC consists of the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and the District of Columbia. The OTC Model Rule for Consumer Products became effective for these states and the District of Columbia on January 1, 2005. Due to the nature of this source category, it is considered essential that regulations

be as uniform as possible in a given region in order to affect the smallest possible economic impact and the least amount of disruption to manufacturing processes.

The OTC Model Rule for Consumer Products is based upon the CARB midterm measures for control of VOM in the source category and the associated background data for the CARB rules. The technical basis for the proposed VOC content limits lies within the framework that the CARB developed for its consumer products rules. Significant technical documentation was developed as part of the CARB process. The Illinois EPA, acknowledging that the OTC Model Rule for Consumer Products is currently in place in all OTC states and the District of Columbia, and having reviewed the technical support for the proposed VOM limits created by CARB, is confident that the OTC model rule is technologically feasible for the State of Illinois. Furthermore, the method by which VOM reductions are achieved in this source category is most commonly a change in the formulation or delivery system of the product available to consumers. Since many national manufacturers of products subject to this rule will have already made modifications to their products in order to comply with the new regulations in the OTC states and in California, it is reasonable to consider that similar reformulations could be made, or have already been made, for products for sale in Illinois. In recognition of these facts, it is most appropriate to view the technological feasibility of the OTC Model Rule for Consumer Products primarily in terms of the economic impact of the rule. For this reason it is also in the best interest of the State of Illinois, the manufacturers of products subject to new regulation, and to the consumers of Illinois and elsewhere, that regulations

involving consumer products be as uniform as is possible, while still addressing the issue of air quality.

The OTC Model Rule for Consumer Products is currently the preferred measure of LADCO and the Midwest Regional Planning Organization (“MRPO”), which consists of the States of Illinois, Indiana, Michigan, Ohio, and Wisconsin. Illinois EPA believes that working in conjunction with these states in the MRPO, the OTC states and the District of Columbia, and with California, that the proposed new regulation for consumer and commercial products is not only technologically feasible, but will also have a greater acceptability and a lesser economic impact than the previous estimates by the OTC and CARB that are presented in Section 2.5 of this document.

#### **2.4 Flexibility in Compliance Measures**

As a means of providing manufacturers of affected consumer products flexibility in complying with proposed VOM limits, the proposed regulation includes provisions for an alternate control plan (ACP) and the innovative products provision (IPP).

The innovative products provision in the proposed regulation allows qualified manufacturers to sell products that have VOC contents greater than the applicable VOC limit, provided they demonstrate that such products actually emit less VOCs than representative products that comply with the VOC limit. In California and in the OTC region, where limits similar to those in the proposed Illinois regulation have been adopted, various manufacturers have formulated technologically-advanced products that

are more concentrated, higher in efficacy, or have some other chemical or physical properties that permit users to release less VOCs when using such products<sup>6</sup>. These innovative products shall be allowed under the proposed regulation, subject to a review and approval by the Illinois EPA, as the environmental impact due to the products will be equal or less than comparable affected products.

The alternate control plan (ACP) provision in the proposed regulation allows for approved manufacturers of affected consumer products to use emissions averaging for their product lines. In general, emissions averaging under approved ACP plans allows manufacturers to choose the least-cost or other advantageous reformulation options for its product lines. Rather than directly complying with the VOC limit for each product, manufacturers can choose to “overcomply” with some reformulations in order to offset the “undercompliance” of other product lines<sup>6</sup>. The ACP provision allows for the same amount of VOM emission reduction while providing an added degree of flexibility for manufacturers in compliance.

## **2.5 Economic Reasonableness**

Cost estimates for controlling VOM emissions from consumer and commercial products based on the OTC Model Rule have been made by MACTEC for the LADCO region. Assuming an effective date for the proposed rule in 2007, and a two year sell-through period for regulated products, MACTEC estimates that control costs will be approximately \$800 per ton of VOM<sup>3</sup>. This estimate of the control cost for the proposed regulation was made by MACTEC based upon figures from CARB and the OTC. CARB

estimated the cost of their “Midterm Measures II”<sup>12</sup> rule to be in this range. The limits for VOM content in specific consumer products in the OTC Model Rule for Consumer Products mirror the limits in the CARB “Midterm Measures II”<sup>12</sup> rule. This is the basis for MACTEC’s assumption that the CARB and OTC figures for control costs should approximate control costs for the LADCO region<sup>3</sup>. Furthermore, Illinois EPA asserts that control costs for VOM emissions from consumer and commercial products may indeed be lower than previous estimates due to the adoption of measures throughout the OTC and in California. The effect that uniform measures across a number of regions has been previously discussed in this document. The Illinois EPA also acknowledges that these cost estimates were made based upon a 2007 effective date while the proposed effective date in Illinois is January 1, 2009. It is believed that the effective date will have little or no effect on the cost of the proposed regulation, and again would most likely result in a slight over estimate of costs.

## **2.6 Cost Effectiveness of Controls**

The cost effectiveness of VOM control measures presented in this document was estimated by CARB in various staff reports related to California’s consumer products rules leading up to the “Midterm Measures II”<sup>12</sup> level of control that the OTC model rule for consumer products is based on. The State of New Jersey’s Department of Environmental Protection concentrated data from these reports into a single table in the technical support document prepared in support of their Consumer and Commercial Products rule. The data is separated into three categories corresponding to three different levels of control that were implemented in California. The first section of the table

details cost effectiveness estimates for products controlled by California's Midterm Measures II regulation. The second section of the table details cost effectiveness estimates for products controlled for California's Midterm Measures I regulation. The third section of the table details cost effectiveness estimates for product categories previously unregulated by California, or regulated prior to the Midterm Measures I regulation, but are still more stringent than current federal regulation. In all cases low, high and average estimates are given for the cost of control on a dollars per pound of VOM controlled basis and on the basis of dollars per average unit of a given product.

**Table 2.6.1 Cost Effectiveness Estimates for Consumer Products<sup>10</sup>**

CATEGORY	Estimated Cost-effectiveness			Estimated Cost per Unit		
	(\$/lb VOC reduced)			(\$/unit)		
	Low	High	Avg.	Low	High	Avg.
<b>MIDTERM MEASURES II</b>						
AUTOMOTIVE CARE:						
Automotive Windshield Washer Fluids	NA	NA	NA	NA	NA	NA
Automotive Brake Cleaners	0.44	1.20	0.82	0.02	0.03	0.02
Carburetor, Choke Cleaners	0.09	0.19	0.14	0.02	0.04	0.03
Engine Degreasers - (Aerosols)	0.35	0.67	0.51	0.04	0.06	0.05
Engine Degreasers (non-Aerosols)	-0.49	0.27	0.00	0.00	0.00	0.00
Tire Inflator and Sealant	1.50	1.59	1.54	0.25	0.26	0.26
		ERWA =	0.38			
HOUSEHOLD CARE:						

Construction, Panel, and Flooring Adhesives	1.64	2.02	1.83	0.16	0.19	0.17
Double-Phase Aerosol Air Freshener	0.75	0.79	0.77	0.04	0.04	0.04
Furniture Maintenance Products (Aerosols)	0.47	0.82	0.64	0.03	0.04	0.03
General Purpose Cleaners (Dilutables)	-3.19	-3.92	0.00	0.00	0.00	0.00
General Purpose Cleaners (Ready-to-Use)	1.97	3.17	2.57	0.03	0.04	0.03
General Purpose Degreasers (Dilutables)	-1.18	-1.32	0.00	0.00	0.03	0.01
General Purpose Degreasers (Ready-to-Use)	-0.42	0.00	0.00	0.00	0.04	0.02
General Purpose Degreaser/Solvent Parts Cleaner (Aerosol)	0.25	0.36	0.30	0.11	0.16	0.13
Glass Cleaners (Dilutables)	-0.45	-0.22	0.00	0.00	0.00	0.00
Glass Cleaners (Ready-to-Use, Non-Aerosol)	-0.51	0.30	0.00	0.00	0.01	0.01
Sealant and Caulking Compounds	-0.18	0.14	0.00	0.00	0.01	0.00
		ERWA =	0.68			
PERSONAL CARE:						
Hair Mousses	0.75	2.56	1.65	0.03	0.09	0.06
Nail Polish Remover	NA	NA	NA	NA	NA	NA
		ERWA =	1.65			



PESTICIDES:						
Insecticide Crawling Bug (Aerosols)	0.58	2.27	1.43	0.02	0.07	0.05
Insecticide Flying Insect (Aerosols)	0.77	6.31	3.54	0.04	0.28	0.16
Insecticide Lawn and Garden (Non-Aerosol)	-0.16	0.28	0.06	0.00	0.00	0.00
		ERWA =	1.17			
MIDTERM MEASURES II TOTALS	MIN		-3.19		MIN	0.00
	MAX		6.31		MAX	0.28
	OVERALL ERWA		0.67		SWA	0.02
MIDTERM MEASURES I						
AUTOMOTIVE CARE:						
Automotive Rubbing/Polishing (all forms)	-0.78	-0.24	0.00	0.00	0.00	0.00
Automotive Wax, Polish, Sealant, Glaze (semi&all other)	0.46	1.01	0.74	0.09	0.13	0.11
Automotive Wax, Polish, Sealant, Glaze (hard paste)	-0.32	-0.14	0.00	0.00	0.00	0.00
Automotive Wax, Polish, Sealant, Glaze (instant detailer)	-0.28	0.89	0.30	0.00	0.00	0.00
Bug & Tar Remover	-0.07	0.64	0.28	0.00	0.07	0.03
Multi-Purpose Lubricant (excl. solid/semisolid), Tier1	0.18	0.34	0.26	0.17	0.18	0.18

Multi-Purpose Lubricant (excl. solid/semisolid), Tier2	1.84	1.87	1.86			
Penetrant (excl. solid/semisolid), Tier1	0.35	2.45	1.40	0.05	0.18	0.11
Penetrant (excl. solid/semisolid), Tier2	0.20	0.62	0.41			
Rubber & Vinyl Protectant (aerosol)	1.08	1.72	1.40	0.47	0.60	0.53
Rubber & Vinyl Protectant (non-aerosol)	0.03	0.40	0.22	0.01	0.13	0.07
Silicone-based Multi-Purp. Lubricant (excl. solid/semi)	0.95	1.70	1.33	0.33	0.53	0.43
Undercoating (aerosol)	0.25	1.46	0.85	0.03	0.19	0.11
		ERWA =	0.76			
HOUSEHOLD CARE:						
Carpet & Upholstery Cleaner (aerosol)	2.32	7.11	4.71	0.04	0.11	0.08
Carpet & Upholstery Cleaner (non-aerosol, dilutable)	-1.28	0.51	0.00	0.00	0.00	0.00
Carpet & Upholstery Cleaner (non-aerosol, RTU)	-1.44	-1.09	0.00	0.00	0.00	0.00
Floor Wax Stripper (non-aerosol)	-0.56	-0.35	0.00	0.00	0.00	0.00
General Purpose Degreaser (aerosol)	0.30	0.92	0.61	0.11	0.31	0.21

General Purpose Degreaser (non-aerosol)	-0.05	0.17	0.06	0.00	0.00	0.00
Metal Polish or Cleaner	-0.49	-0.37	0.00	0.00	0.00	0.00
Paint Remover or Stripper, Tier1	-3.58	-0.33	0.00	0.00	0.00	0.00
Paint Remover or Stripper, Tier2	-0.81	-0.01	0.00			
Spot Remover (aerosol)	0.40	6.06	3.23	0.00	0.28	0.14
Spot Remover (non-aerosol)	-1.21	0.02	0.00	0.00	0.00	0.00
		ERWA =	0.13			
<b>PERSONAL CARE:</b>						
Hair Shine	1.61	1.73	1.67	0.56	0.60	0.58
Heavy Duty Hand Cleaner or Soap, Tier1	0.40	1.11	0.76	0.25	0.59	0.42
Heavy Duty Hand Cleaner or Soap, Tier2	3.43	7.73	5.58			
		ERWA =	2.00			
<b>PESTICIDES:</b>						
Non-Selective Terrestrial Herbicide	0.18	0.26	0.22	0.02	0.02	0.02
Wasp and Hornet Insecticide	0.00	0.32	0.16	0.00	0.03	0.01
		ERWA =	0.21			
<b>MIDTERM MEASURES I TOTALS</b>						
	MIN		-3.58		MIN	0.00
	MAX		7.73		MAX	0.60
	OVERALL ERWA		0.68		SWA	0.03
<b>PRIOR TO CA MIDTERM MEASURES AND MORE STRINGENT THAN FEDERAL RULE</b>						
Hairspray	2.10	2.50	2.30			

Anti-perspirants and Deodorants	0.54	1.30	0.92			
Household Adhesives (see Note 8 below)	0.02	0.40	0.21	0.02	0.51	
GRAND TOTALS	MIN		-3.58		MIN	0.00
	MAX		7.73		MAX	0.60
	OVERALL ERWA		1.15		SWA	0.03
<b>Notes:</b>						
1. Calculations and footnotes are based on spreadsheets, formulas and data from the following CARB staff reports:						
"Proposed Regulation to Reduce VOC Emissions from Consumer Products, Aug 1990"						
"Proposed Amendments to the Statewide Regulation to Reduce VOC Emissions from Consumer Products Phase II, Oct 1991"						
"Initial Statement of Reasons for Proposed Amendments to the California Consumer Products Regulation, June 6, 1997"						
"Initial Statement of Reasons for Proposed Amendments to the California Consumer Products Regulation, Sept 10, 1999"						
The CARB data in this table has been modified by the Department to account for the differences between the CARB rule and the OTC model rule (most notably, windshield washer fluids and nail polish removers).						
2. ERWA = emission reduction-weighted average						
3. SWA = sales weighted average						
4. Avg. Cost-effectiveness shown as "\$0.00" means the average of the low and high cost-effectiveness for the category was either 0 or negative.						
5. Non-recurring fixed costs annualized using Cost Recovery Method, with a Cost Recovery Factor (CRF) of						
0.16274 corresponding to 10 percent interest over a 10 year project horizon.						
6. For non-recurring costs, "low" and "high" refer to range of estimated fixed costs; for recurring costs, "low" and "high" refer to "All Other" ingredients assumed to cost \$3.50/lb and \$7.00/lb, respectively, unless otherwise noted in individual category cost spreadsheets.						
7. For wasp and hornet insecticide, the "low" and "high" recurring costs shown are arithmetic averages of the						
applicable ranges for this category.						
8. The cost analysis results for household adhesives are overestimated because CARB subsequently changed the VOC limit requirement for household adhesives, which lowered industry costs.						

This economic analysis assumes that the sales and uses of consumer products in Illinois are comparable to those in California and the OTC states. As mentioned previously in this document, estimates for cost effectiveness of control may be over estimated due to a few factors. Many regulated products are manufactured for national sales, and therefore no changes will be necessary for sales in Illinois. In the case that different formulations are used by national manufacturers for use in different regions, the cost of research of new formulas can be avoided due to the limits of the proposed Illinois regulation being identical to those of CARB and the OTC. In addition, CARB, in its cost estimates, did not account for the potential savings of manufacturers that produce more than one type of regulated product. These manufacturers may only incur one time costs for research, development, formula ingredient changes, and packaging changes that apply to a number of the products they produce<sup>6</sup>.

The economic analysis performed by CARB also intentionally attempted to make conservative cost estimates by using worst case economic scenarios for reformulation of products. For instance, in the case of aerosol products, higher cost propellants such as HFC-152a or HFC-134a were assumed for compliance in many cases where alternative control strategies such as non-VOM propellants, compressed gasses, or dimethyl ether may result in lower costs for compliance<sup>6</sup>.

Additional cost mitigation factors have also been “built in” to the OTC Consumer Products model rule. During the rulemaking process in California, and then again in the

OTC states, extensive comments from affected parties were taken and responded to before final determination of definitions for products, limits for those products, and other considerations in the rule were made. Among these considerations are the Alternative Control Plan (“ACP”) and Innovative Products provision (“IPP”) in the OTC model rule and the proposed Illinois regulation. These two provisions in the proposed regulation and the way in which they lower cost of control through flexibility in compliance options are discussed in section 2.4 of this document.

## **2.7 Reduction of VOM Emissions in Illinois**

Based upon a 14.2% reduction in VOM emissions from consumer and commercial products<sup>3</sup> beyond those achieved by the current federal rule, MACTEC estimates that adopting the OTC Model Rule for Consumer Products will account for a reduction of approximately 17.72 tons per day or 6468 tons of VOM per year in Illinois<sup>15</sup>. This estimate is based on figures from the 2002 inventory in Illinois and would represent a reduction of nearly 1% of the total anthropogenic VOM emissions in the State.

Table 2.7.1 details anticipated reductions in VOM from each affected category and the percentage reduction in those categories. These figures are from USEPA’s Study of Volatile Organic Compound Emissions from Consumer and Commercial Products Report to Congress from March 1995, as well as from a number staff reports from the California Air Resources Board. The CARB staff reports were filed in support of a number of regulations leading to the Midterm Measures II level of control. As previously mentioned, this is the level of control the OTC model rule is based upon. Again, the

State of New Jersey's Department of Environmental Protection concentrated data from these reports into a single table in the technical support document prepared in support of their Consumer and Commercial Products rule. Data in Table 2.7.1 has been adjusted here to account for the population of the State of Illinois, as well as for consumer product emissions inventory data from Illinois<sup>2</sup>.

**Table 2.7.1 Estimated VOM Emission Reductions for Consumer Products<sup>10</sup>**

Consumer Products Category		Estimated VOM Reductions based on USEPA and CARB Survey's (1)(2)			Estimated VOM Reductions based on CARB Survey		
		2002 VOC Emission (tpd)	2002 Emission Reduction (tpd)	Percent Emission Reduction	2002 VOC Emission (tpd)	2002 Emission Reduction (tpd)	Percent Emission Reduction
Adhesives	Aerosols	0.11	0.02	16	0.11	0.02	16
	Construction and panel	0.26	0.11	44	0.26	0.11	44
Air fresheners	Single-phase	0.53	0.31	57	0.15	0.06	40
	Double-phase	1.18	0.40	34	1.18	0.40	34
Automotive Brake Cleaners	aerosols	1.37	0.08	6	1.37	0.08	6
	Non-aerosols	0.09	0.01	6	0.09	0.01	6
Automotive Rubbing or Polishing Compounds		0.27	0.09	33	0.27	0.09	33
Automotive Wax/Polish/Sealant/Glaze	Hard paste waxes	0.17	0.06	36	0.17	0.06	36
	All other forms	0.51	0.17	35	0.51	0.17	35
Bug and Tar Remover		0.21	0.08	40	0.21	0.08	40
Carburetor and choke cleaners (or fuel-injection air intake cleaners)	aerosols	1.62	0.55	34	1.62	0.55	34
	Non-aerosols	0.06	0.01	22	0.06	0.01	22
Carpet and Upholstery Cleaner	aerosols	0.07	0.01	14	0.07	0.01	14
	non-aerosols (dilutables)	0.15	0.09	59	0.15	0.09	59

	non-aerosols (ready-to use)	0.04	0.01	33	0.04	0.01	33
Dusting Aids	Aerosols	0.01	0.00	29	0.12	0.03	25
	All other forms	0.00	0.00	0	0.00	0.00	0
Engine degreasers		0.20	0.07	33	1.00	0.26	26
	Aerosols	0.43	0.09	22	0.43	0.09	22
	Non-aerosols	0.02	0.01	63	0.02	0.01	63
Fabric protectants		0.07	0.01	20	0.07	0.01	20
Floor Wax Stripper		0.87	0.47	54	0.87	0.47	54
Furniture maintenance products	aerosol	0.51	0.09	18	0.51	0.09	18
	all other forms (except solid/paste forms)	0.10	0.03	33	0.10	0.03	33
General purpose cleaners	Non-aerosols (dilutables)	1.24	0.11	9	1.24	0.11	9
	Non-aerosols (ready-to use)	0.83	0.28	33	0.83	0.28	33
General purpose degreasers	aerosols	0.15	0.07	46	0.15	0.07	46
	Non-aerosols (dilutables)	0.29	0.11	38	0.29	0.11	38
	Non-aerosols (ready-to use)	0.25	0.04	16	0.25	0.04	16
Glass cleaners	All other forms	0.64	0.17	27	0.64	0.17	27
	Non-aerosols (dilutables)	0.32	0.21	68	0.32	0.21	68
	Non-aerosols (ready-to use)	0.59	0.09	16	0.59	0.09	16
Hair Shine		0.15	0.06	42	0.15	0.06	42
Hairsprays		13.02	4.06	31	10.87	2.83	26
Hair mousses		0.19	0.08	43	0.19	0.08	43
Heavy-duty Hand Cleaners or Soap		0.80	0.61	76	0.80	0.61	76
Insecticides	Crawling bug	0.62	0.31	50	0.50	0.21	44
	aerosol crawling bug	0.99	0.13	13	0.99	0.13	13
	aerosol flying bug	0.15	0.03	18	0.15	0.03	18



	non-aerosol lawn and garden	0.35	0.09	26	0.35	0.09	26
Laundry prewash	Aerosols/solids	0.00	0.00	0	0.00	0.00	0
	All other forms	0.00	0.00	0	0.00	0.00	0
Metal Polish/Cleanser		0.09	0.04	41	0.09	0.04	41
Multi-purpose Lubricant (excluding solid or semi-solid products)		1.57	0.63	40	1.57	0.63	40
Non-selective Terrestrial Herbicide	Non-aerosols	0.91	0.69	77	0.91	0.69	77
Paint Remover or Stripper		0.53	0.05	10	0.53	0.05	10
Penetrant		0.14	0.04	27	0.14	0.04	27
Rubber and Vinyl Protectant	non-aerosols	0.25	0.22	93	0.25	0.22	93
	aerosols	0.19	0.06	31	0.19	0.06	31
Sealants and Caulking Compounds		0.48	0.20	42	0.48	0.20	42
Silicone-based Multi-purpose Lubricant (excluding solid or semisolid products)		0.19	0.07	34	0.19	0.07	34
Spot Remover	aerosols	0.05	0.01	26	0.05	0.01	26
	non-aerosols	0.08	0.06	68	0.08	0.06	68
Tire Sealants and Inflators		0.23	0.08	36	0.23	0.08	36
Undercoating		0.06	0.02	25	0.06	0.02	25
Wasp and Hornet Insecticide		0.17	0.07	39	0.17	0.07	39
Antiperspirant/Deodorant		0.97	0.40		0.97	0.40	
TOTAL Reduction in Regulated Categories		35.62	11.96	34	33.89	10.60	31
IL 2002 Inventory of Consumer Products		81.86			81.86		

PERCENT REDUCTION OF INVENTORY				15			13
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**2.8 Affected Sources and Compliance Measures**

The proposed regulation affects consumer and commercial products from Source Classification Codes 2460xxxxxx. A detailed list of affected products and proposed limits for VOM content can be found in Table 2.2.1 in Section 2.2 of this document. The proposed regulation affects anyone who sells, supplies, offers for sale, or manufactures any of the products in Table 2.2.1 in Illinois.

It has been determined by CARB and the OTC that these limits for VOM in consumer and commercial products are technologically feasible. CARB has also published documents listing complying formulas for many of these specific products<sup>4</sup>. These example complying formulas have been shown to be effective in their purpose, and do not significantly change the usefulness of the product by reducing VOM content, or by using a substitute solvent in the product.

### **3.0 Architectural and Industrial Maintenance Coatings**

#### **3.1 Description and Sources of Emissions**

An AIM coating, for the purposes of this proposed regulation, is a coating to be applied to stationary structures or the 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” for the purposes of this rule. AIM coatings are used to protect and beautify homes, office buildings, factories, pavements, curbs and on a variety of surfaces inside and outside of such structures such as metal, wood, plastic, concrete, and wallboard. AIM coatings are applied by brush, roller, or spray gun, and are applied by consumers, contractors, or maintenance staff. Emissions of VOM from this source category occur when the solvent carrying the coating material evaporates and leaves the coating material on the surface during application and drying.

It has been estimated by MACTEC that AIM coatings account for approximately 3.7% of anthropogenic VOM emissions in the aforementioned MRPO region. In Illinois, AIM coatings emissions account for approximately 4.30% of the total anthropogenic VOM emissions during the ozone season<sup>2</sup>, and approximately 3.97% of all anthropogenic VOM emissions in Illinois for the entire year<sup>15</sup>. AIM coatings account for approximately 4.28% of total anthropogenic VOM emissions in the East St. Louis NAA, and approximately 8.01% of total anthropogenic VOM emissions in the Chicago NAA during the ozone season(see Section 3.2, Table 3.2.2)<sup>2</sup>. The percentages of anthropogenic VOM

emissions from AIM for the entire year in the Metro East and Chicago NAAs are 3.20% and 6.26% respectively<sup>15</sup>.

### 3.2 Emissions in Illinois from Regulated Products

The application and drying of AIM coatings on surfaces covered by this category results in evaporative emissions of VOM, while coating material is left on the surface. For the purposes of the proposed regulation this source category is broken down into 49 coating categories, each with a specific VOM content limit. These 49 coating categories are listed below in Table 3.2.1.

**Table 3.2.1 AIM Coating Categories and VOM Limits**

<b>Coating Category</b>		<b>VOM Content Limit Grams/liter (Pounds/gallon)</b>	
1)	Flat Coatings	100	(0.8)
2)	Non-flat Coatings	150	(1.3)
3)	Non-flat- High Gloss Coatings	250	(2.1)
<b>Specialty Coatings</b>			
4)	Antenna Coatings	530	(4.4)
5)	Antifouling Coatings	400	(3.3)
6)	Bituminous Roof Coatings	300	(2.5)
7)	Bituminous Roof Primers	350	(2.9)
8)	Bond Breakers	350	(2.9)
9)	<b>Calcamine Recoaters</b>	<b>475</b>	<b>(4.0)</b>

10)	Clear Wood Coatings		
	A) Clear Brushing Lacquers	680	(5.7)
	B) Lacquers (including lacquer sanding sealers)	550	(4.6)
	C) Sanding Sealers (other than lacquer sanding sealers)	350	(2.9)
	D) Varnishes	350	(2.9)
11)	Concrete Curing Compounds	350	(2.9)
12)	<b>Concrete/Masonry Sealer</b>	<b>100</b>	<b>(0.8)</b>
13)	<b>Conversion Varnish</b>	<b>725</b>	<b>(6.1)</b>
14)	Dry Fog Coatings	400	(3.3)
15)	Faux Finishing Coatings	350	(2.9)
16)	Fire-Resistive Coatings	350	(2.9)
17)	Fire-Retardant Coatings		
	A) Clear	650	(5.4)
	B) Opaque	350	(2.9)
18)	Floor Coatings	250	(2.1)
19)	Flow Coatings	420	(3.5)
20)	Form-Release Compounds	250	(2.1)
21)	Graphic Arts Coatings (Sign Paints)	500	(4.2)
22)	High-Temperature Coatings	420	(3.5)
23)	<b>Impacted Immersion Coating</b>	<b>780</b>	<b>(6.5)</b>
24)	Industrial Maintenance Coatings	340	(2.8)
25)	Low-Solids Coatings	120	(1.0)
26)	Magnesite Cement Coatings	450	(3.8)
27)	Mastic Texture Coatings	300	(2.5)
28)	Metallic Pigmented Coatings	500	(4.2)

29)	Multi-Color Coatings	250	(2.1)
<b>30)</b>	<b>Nuclear Coating</b>	<b>550</b>	<b>(4.6)</b>
31)	Pre-Treatment Wash Primers	420	(3.5)
32)	Primers, Sealers, and Undercoaters	200	(1.7)
33)	Quick-Dry Enamels	250	(2.1)
34)	Quick-Dry Primers, Sealers and Undercoaters	200	(1.7)
35)	Recycled Coatings	250	(2.1)
36)	Roof Coatings	250	(2.1)
37)	Rust Preventative Coatings	400	(3.3)
38)	Shellacs		
	A) Clear	730	(6.1)
	B) Opaque	550	(4.6)
39)	Specialty Primers, Sealers, and Undercoaters	350	(2.9)
40)	Stains	250	(2.1)
<b>41)</b>	<b>Stone Consolidants</b>	<b>450</b>	<b>(3.8)</b>
42)	Swimming Pool Coatings	340	(2.8)
43)	Swimming Pool Repair and Maintenance Coatings	340	(2.8)
44)	Temperature-Indicator Safety Coatings	550	(4.6)
<b>45)</b>	<b>Thermoplastic Rubber Coatings and Mastics</b>	<b>550</b>	<b>(4.6)</b>
46)	Traffic Marking Coatings	150	(1.3)
47)	Waterproofing Sealers	250	(2.1)
<b>48)</b>	<b>Waterproofing Membranes</b>	<b>250</b>	<b>(2.1)</b>
49)	Wood Preservatives	350	(2.9)

The Illinois Periodic Emissions Inventory and Milestone Demonstration for 2002 produced by the Illinois EPA contains the comprehensive inventory figures for VOM emissions due to AIM coatings statewide, and for both NAAs in Illinois. The emission factor used for calculating emissions from AIM coatings is a population-based factor of 3.946 pounds per year per capita. This emission factor assumes uniform activity seven day a week, but is adjusted for increased summertime coating usage. Table 3.2.2 shows the approximate population and the VOM emissions due to AIM coatings and other anthropogenic sources in each NAA, in the attainment areas, and statewide.

**Table 3.2.2 VOM Emissions Due to AIM Coatings During the Ozone Season<sup>2</sup>**  
**(Entire Year Data in Parentheses<sup>15</sup>)**

<b>Area and Approximate Population</b>	<b>VOM – AIM Coatings (T/D)</b>	<b>Total Anthropogenic VOM (T/D)</b>	<b>% of Total Anthropogenic VOM</b>
Attainment Area (Pop. 3,756,253)	21.20 (17.23)	996.52 (772.71)	2.13% (2.22%)
Chicago NAA (Pop. 8,295,996)	46.81 (38.28)	584.45 (611.38)	8.01% (6.26%)
Metro – East St. Louis NAA (Pop. 548,371)	3.09 (2.63)	72.15 (82.16)	4.28 % (3.20%)
Statewide Total (Pop. 12,600,620)	71.10 (58.14)	1653.12 (1466.24)	4.30% (3.97%)

### **3.3 Technical Feasibility of Controls**

The most effective approach for reducing emissions of VOM from AIM coatings is reformulation of the coatings themselves. This involves using water based formulations, using formulations employing acetone or other exempt solvents, or increasing the coating material content of the coating.

AIM coatings are currently regulated by USEPA's federal AIM rule, codified at 40 CFR Part 59 Subpart D, under the authority of Section 183(e) of the Clean Air Act. The current federal rule is estimated to reduce VOM emissions from AIM coatings by approximately 20% from uncontrolled levels. It has been estimated by MACTEC that the proposed regulation would result in an additional emission reduction of 21% beyond the current federal regulation. The proposed regulation is based on the "AIM OTC Model Rule"<sup>17</sup> in order to maintain consistency with the OTC states. The AIM OTC Model Rule and its VOM content limits were based on the affected coatings and VOM content limits in CARB's suggested control measures ("SCM") for AIM coatings<sup>13</sup> so that the coating formulations of the eastern states in the OTC would be consistent with formulations being used in California.

The Illinois EPA, acknowledging that the AIM OTC Model Rule is currently in place in all OTC states and the District of Columbia, and having reviewed the technical support for the proposed VOM limits created by CARB, is confident that the OTC model rule is technologically feasible for the State of Illinois. Furthermore, the method by which VOM reductions are achieved in this source category is most commonly a change in the



formulation of the product available to consumers or contractors. Since many national manufacturers of products subject to this rule will have already made modifications to their products in order to comply with the new regulations in the OTC states and in California, it is reasonable to consider that similar reformulations could be made, or have already been made, for products for sale in Illinois. In recognition of these facts, it is most appropriate to view the technological feasibility of the AIM OTC Model Rule primarily in terms of the economic impact of the rule. For this reason it is also in the best interest of the State of Illinois, the manufacturers of coatings subject to new regulation, and to the consumers of Illinois and elsewhere, that regulations involving AIM coatings be as uniform as is possible, while still addressing the issue of air quality.

The AIM OTC Model Rule is currently the preferred emission reduction measure for this source category of the states participating in LADCO and the MRPO. The Illinois EPA believes that working in conjunction with these states in the MRPO, the OTC states and the District of Columbia, and with California, that the proposed new regulation for consumer and commercial products is not only technologically feasible, but will also have a greater acceptability and a lesser economic impact than the previous estimates by the OTC and California that are presented in Section 3.5 of this document.

### **3.4 Economic Reasonableness**

Cost estimates for controlling VOM emissions from AIM coatings based on the OTC Model Rule have been made by MACTEC for the LADCO region. Assuming an effective date for adoption of the proposed rule in 2007, and a two year sell-through

period for regulated products, MACTEC estimates that control costs will be approximately \$6400 per ton of VOM. This estimate of the control cost for the proposed regulation was made by MACTEC based upon figures from CARB and the OTC. CARB estimated the cost of their suggested control measures rule to be in this range. The limits for VOM content in specific AIM coatings in the AIM OTC Model Rule mirrors the level of emission limits in CARB's SCM<sup>13</sup>. This is the basis for MACTEC's assumption that the CARB and OTC control costs should approximate control costs for the LADCO region<sup>3</sup>. Furthermore, Illinois EPA asserts that control costs for VOM emissions from consumer and commercial products may indeed be lower than previous estimates due to the adoption of similar measures throughout the OTC and in California. The effect that uniform measures across a number of regions has been previously discussed in this document.

### **3.5 Cost Effectiveness of Controls**

The figures for the cost effectiveness of VOM control measures presented in this document were estimated by CARB in various staff reports related to California's SCM for control of emissions from AIM coatings drafted in 2000<sup>13</sup>. These suggested control measures are the basis for the AIM OTC Model Rule. The data in Table 3.5.1 is taken from a New Jersey technical support document in support of the AIM OTC Model Rule, which in turn was taken from a CARB staff report for the CARB SCM for AIM coatings, but modified to reflect a slight variation in the VOM limit for industrial maintenance coatings that is in both the AIM OTC Model Rule and the proposed Illinois regulation.

The table contains data detailing the cost per gallon of regulated coatings and is separated into the various coating categories that would be affected by the proposed regulation.

**Table 3.5.1 Producer Cost Per Gallon for AIM Coatings<sup>14</sup>**

<b>Coating Category</b>	<b>Estimated Producer Cost Per Gallon (dollars per gallon)</b>
Flats	(\$0.04)
Industrial Maintenance	\$4.19
Lacquer	\$4.00
Multicolor	\$2.74
Non-flat (low & medium-gloss)	\$0.93
Primers, Sealers, Undercoaters (PSU)	\$4.78
Quick Dry Enamel	\$6.02
Quick Dry PSU	(\$0.35)
Stains	\$1.70
Swimming Pool Repair	\$2.65
Waterproofing Sealers	(\$0.40)

Table 3.5.2 details the cost effectiveness of the controls of the proposed regulation in dollars per pound of VOM reduced and in dollars per ton of VOM reduced. The data is taken from a New Jersey technical support document<sup>14</sup> based on CARB reports for California's SCM for AIM coatings and modified to reflect slight differences in the AIM OTC Model Rule. Likewise, the data is separated by the various affected coating categories.

**Table 3.5.2 Estimated Cost Effectiveness for AIM Coating Control<sup>14</sup>**

<b>Coating Category</b>	<b>Estimated Cost Effectiveness (dollars per pound of VOM reduced)</b>
Flats	(\$0.30)
Industrial Maintenance	\$6.07
Lacquer	\$1.59
Multicolor	\$2.83
Non-flat (low & medium-gloss)	\$4.37
Primers, Sealers, Undercoaters (PSU)	\$7.65
Quick Dry Enamel	\$3.97
Quick Dry PSU	(\$0.25)
Stains	\$2.14
Swimming Pool Repair	\$0.83
Waterproofing Sealers	(\$0.50)

This economic analysis assumes that the sales and use of AIM coatings in Illinois is comparable to those of California and the OTC states. As mentioned previously in this document, estimates for cost effectiveness of control may be over estimated due to a few factors. Many regulated coatings are manufactured for national sales, and therefore no changes will be necessary for sales in Illinois. In the case that different formulations are used by national manufacturers for use in different regions, the cost of research of new formulas can be avoided due to the similarity of the proposed Illinois regulation to those of California and the OTC. In addition, CARB, in its cost estimates, did not account for

the potential savings of manufacturers that produce more than one type of regulated product. These manufacturers may only incur one time costs for research, development, formula ingredient changes, and packaging changes that apply to a number of the products they produce. Another mitigating factor in the cost effectiveness analysis here is the potential decrease in cost for ingredient materials common in the reformulations of coating. Cost estimates were made using current costs for materials at the time the SCM was proposed in California. These costs may actually decrease due to increased demand for these materials in coatings inducing economy of scale production<sup>13</sup>.

The CARB analysis assumed that all cost incurred were absorbed by the coatings manufacturers, and not passed on to consumers. Total annual costs were estimated for the coating categories and were used to determine cost per gallon of coating and cost effectiveness in dollars per pound of VOM reduction. These annual costs consisted of annual recurring and nonrecurring costs. The annual recurring costs included costs for materials, labeling, packaging, record keeping and reporting. Annual nonrecurring costs consisted of the costs for research, development, product testing, equipment purchase and modification, and marketing and distribution changes. Total annual costs were then divided by the number of gallons of coatings produced to determine an average number of dollars per gallon of coating shown in Table 3.5.1. Total annual costs were also divided by estimates for VOM emission reductions to provide data in dollars per pound of VOM reduced shown in Table 3.5.2.

### **3.6 Reduction of VOM Emissions in Illinois**

Based upon MACTEC's estimate of a 21% reduction of VOM emissions from AIM coatings beyond those currently being achieved by the federal rule, adoption of the proposed regulation will account for the reduction 12.21 tons of VOM per day or 4456 tons of VOM annually<sup>3</sup>. This estimate is based on figures from the 2002 inventory in Illinois and would represent a reduction of nearly 1% of the total anthropogenic VOM emissions in the State.

### **3.7 Affected Sources and Compliance Measures**

The proposed regulation affects AIM coating products from Source Classification Codes 2401xxxxxx. A detailed list of affected products and proposed limits for VOM content can be found in Table 3.2.1 in Section 3.2 of this document. The proposed regulation affects anyone who sells, supplies, offers for sale, or manufactures any of the products in the table 3.2.1 in Illinois.

It has been determined by CARB and the OTC that the limits for VOM in AIM coating products detailed in Table 3.2.1 are technologically feasible. These limits have been adopted in California and in the OTC states. There are currently compliant formulas in all affected product categories commercially available in these places.

## **4.0 Aerosol Coatings**

### **4.1 Description of Sources and Emissions**

For the purposes of the proposed regulation, an aerosol coating is 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/marketing applications. Aerosol coatings are listed as a Group III consumer product in the Clean Air Act Section 183(e). The emissions of VOM from aerosol coatings result when the solvent carrying the coating material evaporates and leaves the coating material on the surface during application and drying, as well as from the propellants that are used to apply the coating.

While aerosol coatings are considered to be a consumer product, and emissions of VOM from aerosol coatings are currently regulated by limits given in a percent by weight, more effective measures for the reduction of VOM emissions from this specific product category have been developed. These measures, currently employed in California, involve the regulation of aerosol coatings by their potential to create ground level ozone. This is achieved by assigning maximum incremental reactivity (“MIR”) factors to the various solvents used in aerosol coatings, and then setting limits on the product-weighted maximum incremental reactivity (“PWMIR”) that is allowed for the different categories of aerosol coatings. These limits reflect the number of grams of ozone that can potentially be produced by each gram of the product, or in units of (g O<sub>3</sub> / g of product). This methodology for the specific reduction of ozone produced by aerosol coatings allows for the reformulation of coatings that result in less ozone being produced by the

use of the coating, while still allowing for a relatively high percentage of VOM by weight that may be necessary for the usefulness of the product.

#### 4.2 Emissions in Illinois from Regulated Products

Emissions of VOM due to use of aerosol coatings result from evaporation of the solvents and propellants used to apply the coating. For the purposes of the proposed regulation this source category is broken down into 36 aerosol coating categories, each with a specific PWMIR limit. These 36 aerosol coating categories and their corresponding proposed PWMIR limits are listed below in Table 4.2.1.

**Table 4.2.1 Aerosol Coating Categories and PWMIR Limits**

Aerosol Coating Category	Product-Weighted MIR in Grams Ozone per Gram Product (gO <sub>3</sub> /g product)
<b>1) General Coatings</b>	
A) Clear Coatings	1.50
B) Flat Paint Products	1.20
C) Fluorescent Coatings	1.75
D) Metallic Coatings	1.90
E) Nonflat Paint Products	1.40
F) Primers	1.20
<b>2) Specialty Coatings</b>	
A) Art Fixatives or Sealants	1.80
B) Auto Body Primers	1.55



C) Automotive Bumper and Trim Products	1.75
D) Aviation or Marine Primers	2.00
E) Aviation Propeller Coatings	2.50
F) Corrosion Resistant Brass, Bronze, or Copper Coatings	1.80
G) Exact Match Finishes:	
1) Engine Enamel	1.70
2) Automotive	1.50
3) Industrial	2.05
H) Floral Sprays	1.70
I) Glass Coatings	1.40
J) Ground Traffic/Marking Coatings	1.20
K) High Temperature Coatings	1.85
L) Hobby/Model/Craft Coatings:	
1) Enamel	1.45
2) Lacquer	2.70
3) Clear or Metallic	1.60
M) Marine Spar Varnishes	0.90
N) Photograph Coatings	1.00
O) Pleasure Craft Finish Primers, Surfacer or Undercoaters	1.05
P) Pleasure Craft Topcoats	0.60
Q) Polyolefin Adhesion Promoters	2.50
R) Shellac Sealers:	
1) Clear	1.00

2) Pigmented	0.95
S) Slip-Resistant Coatings	2.45
T) Spatter/Multicolor Coatings	1.05
U) Vinyl/Fabric/Leather/Polycarbonate Coatings	1.55
V) Webbing/Veil Coatings	0.85
W) Weld-Through Primers	1.00
X) Wood Stains	1.40
Y) Wood Touch-Up, Repair or Restoration Coatings	1.50

The Illinois EPA does not segregate inventory data for VOM emissions due to consumer products into specific categories such as aerosol coatings. However, in preparation for a national rule employing PWMIR limits on aerosol coating products, and in order to calculate the equivalent impact that this type of limit would have in terms of pounds or tons of VOM reduced, the USEPA has estimated factors for states to use in determining the equivalent emissions and emission reductions. These factors use an emissions estimate of .588 pounds of VOM per capita per year due to use of aerosol coating products. Table 4.2.2 details emission estimates for this product category in Illinois, in each NAA, and in the attainment areas.

**Table 4.2.2 VOM Emissions Due to Aerosol Coating Products**

<b>Area and Approximate Population</b>	<b>VOM – Aerosol Coating Products (tpd)</b>	<b>Total Anthropogenic VOM (tpd)</b>	<b>% of Total Anthropogenic VOM</b>
Attainment Area (Pop. 3,756,253)	3.03	996.52	0.30%
Chicago NAA (Pop. 8,295,996)	6.68	584.45	1.14%
Metro – East St. Louis NAA (Pop. 548,371)	0.44	72.15	0.61%
Statewide Total (Pop. 12,600,620)	10.15	1653.12	0.61%

### **4.3 Technical Feasibility of Controls**

Due to the nature of aerosol coating products, limiting the amount of VOM on a percent by weight basis, or on a percent by volume basis, would have a negative impact on the efficacy of the product. For this reason it has been determined that the most environmentally beneficial method for the control of emissions from aerosol coatings is to reduce the total amount of ozone that the products have a potential to create by the aforementioned method of limiting their product weighted maximum incremental reactivity. The MIR scale developed by William P.L. Carter at the request of CARB has

been found to be the most appropriate scale to determine the amount of ozone that can be created by a given amount of VOM.

It should be noted that for the section of the proposed regulation dealing with aerosol coating products the regulated pollutant is VOM, but that certain exempt compounds normally excluded from the definition of VOC at 40 CFR 51.100(s)(1) will be regulated. However, as has been previously mentioned the limits will be given in units of grams O<sub>3</sub> per gram of product, and is intended to encourage reformulations of aerosol coatings using VOM ingredients with less reactivity and provide manufacturers of those products with some flexibility in achieving compliance.

The Illinois EPA considers the PWMIR limits in the proposed regulation to be technically feasible for two reasons. First, there are currently compliant products in each of the potentially affected aerosol coating product categories being sold in California and elsewhere as result of the regulations already in effect in California. As has been previously discussed, the proposed regulation is based closely on the regulations currently in effect in California and being considered as the basis of a national rule. Secondly, the USEPA estimates that only 18 percent of the potentially affected products sold in the U.S. are not compliant. This is a result of many manufacturers already selling “CARB compliant” products on a nationwide basis. The USEPA acknowledges that significant emission reductions have already occurred nationwide as a result of the current CARB regulations. It is for these reasons that the Illinois EPA considers the limits in the proposed regulation to be technically feasible. Additionally, it is very likely

that these limits can be achieved at significantly lower costs than have been estimated by the USEPA or CARB.

#### **4.4 Flexibility in Compliance Measures**

The method of limiting the reactivity or the PWMIR of the ingredients of a coating in order to reduce the amount of ozone formed as a result of aerosol coating use provides manufacturers with a great deal of flexibility in compliance measures. The proposed regulation still allows for relatively high percentages of VOM by weight for the products in order to maintain the same or similar performance characteristics, and allows for the use of a wide variety of solvents and propellants provided that the PWMIR of given product does not exceed the limit for that particular category. In this way the proposed regulation can be effective in reducing the amount of ozone formed as a result of aerosol coatings while not imposing stricter VOM limits on manufacturers of the coatings.

It should be noted that the great majority of aerosol coating products currently being sold in the U.S. are already compliant with the proposed limits; that there are currently compliant products being sold in every regulated category; and that CARB has developed a list of typical compliant formulations, as discussed in Section 4.2, while estimating the costs associated with these limits.

#### **4.5 Economic Reasonableness**

Cost estimates for the reduction of ozone formation from aerosol coatings have been estimated by the USEPA in preparation of a national rule based on the same California

regulation that the proposed Illinois regulation has been based. The proposed regulation will affect aerosol coating manufacturers, aerosol coating processors, aerosol coating wholesale distributors, and importers of aerosol coatings. The economic analysis performed by the USEPA focused on coating manufacturers and assumed that costs to processors, distributors, and importers of the coatings would be minimal. The cost to the manufacturers were assumed to be from the cost of raw materials used in the coating formulations, the research and development required to develop compliant formulations, and the cost of record keeping and reporting associated with the proposed regulation. These three costs were evaluated on a per can basis for each of the 36 aerosol coating categories. The assumed volume of the can in all cases was 10.5 ounces.

To determine costs due to differences in raw materials data was used from CARB's 1997 survey of the aerosol coating industry. From this information CARB determined for each category of coating a typical formulation for a compliant product, and a typical formulation of a non-compliant existing product. The raw material costs for compliance per can were then calculated from the difference between typical compliant and non-compliant formulations of the same coating category. These cost ranged from a savings of \$0.04 per can to a cost of \$0.12 per can<sup>8</sup>. The raw materials costs per can for each coating category are shown in Table 4.5.1.

To determine the research and development costs of the proposed regulation the USEPA used data from the aforementioned CARB survey involving the number of affected coating manufacturers, the number of coating categories those manufacturers produced,

and the number of cans of product produced by those manufacturers. Along with this data, information regarding the salaries of chemists was obtained from the American Chemical Society. It was assumed that additional chemists would be needed by the coatings industry for the reformulation of their products, and the testing of those reformulated products to ensure that performance characteristics are maintained. After making assumptions about the number of additional chemists that would be required for research and development, and annualizing the costs of the research and development efforts over a ten year period with an assumed interest rate of 7%, research and development costs were made on a per can basis. These costs ranged from \$0.00 to \$0.109 per can<sup>8</sup>. The research and development costs per can for each coating category are also shown in Table 4.5.1.

Recordkeeping and reporting costs arise from time spent by manufacturers reading and understanding the requirements of a new regulation, implementing new approaches for compliance, and preparing initial compliance reports. Because the reactivity limit approach is relatively new to coatings manufacturers, it was assumed that these tasks would be performed by supervisory level employees. It was estimated that recordkeeping and reporting costs for the entire industry nationwide would be \$670,140 per year. These costs yield an estimate of \$0.002 per can<sup>8</sup>. This value was included in Table 4.5.1 in order to calculate the total cost per can of the proposed regulation.

**Table 4.5.1 Cost Estimates per Can for Aerosol Coating Products<sup>8</sup>**

<b>Coating Category</b>	<b>Raw Material Cost (per can)</b>	<b>R &amp; D Cost (per can)</b>	<b>R &amp; R Costs (per can)</b>	<b>Total Cost(s) (per can)</b>
Clear Coatings	0.03	0.008	0.002	.040
Flat Coatings	0.05	0.003	0.002	0.055
Flourescent Coatings	0.01	0.009	0.002	0.021
Metallic Coatings	0.01	0.004	0.002	0.016
Non-Flat Coatings	0.07	0.001	0.002	0.073
Primers	0.05	0.003	0.002	0.055
Ground/Traffic/Marking	0.07	0.002	0.002	0.055
Art Fixatives or Sealants	0.1	0.006	0.002	0.108
Auto Body Primers	0.02	0.006	0.002	0.028
Automotive Bumber and Trim	0.12	0.019	0.002	0.141
Aviation or Marine Primers	0	0	0.002	0.002
Aviation Propeller Coatings	0	0	0.002	0.002
Corrosion Resistant Brass Coatings	0.07	0.011	0.002	0.083
Exact Match Finish – Engine	0.05	0.003	0.002	0.055
Exact Match Finish – Automotive	0.05	0.003	0.002	0.055
Exact Match Finish – Industrial	0.08	0.001	0.002	0.083
Glass Coatings	0.07	0.023	0.002	0.095
High Temperature Coatings	0.03	0.009	0.002	0.041
Hobby/Craft, Enamel	-0.04	0.022	0.002	0
Hobby/Craft, Lacquer	-0.03	0.057	0.002	0.029
Hobby/Craft, Clear or Metallic	0.08	0.014	0.002	0.096
Marine Spar Varnishes	0	0	0.002	0.002
Photographic Coatings	-0.04	0.011	0.002	0



Pleasure Craft Primers, Surfaces, or Undercoaters	0	0	0.002	0.002
Pleasure Craft Topcoats	0	0	0.002	0.002
Polyolefin Adhesion Promoters	0.03	0.077	0.002	0.109
Shellac Sealers, Clear	0	0	0.002	0.002
Shellac Sealers, Pigmented	0	0	0.002	0.002
Slip-Resistant Coatings	0	0	0.002	0.002
Spatter/Multicolor Coatings	0.05	0.004	0.002	0.056
Vinyl/Fabric/Leather/Polycarbonate Coatings	0.03	0.015	0.002	0.047
Webbing/Veiling Coatings	0	0	0.002	0.002
Weld-Through Primers	0.01	0.109	0.002	0.121
Wood Stains	0	0	0.002	0.002
Wood Touch-up, Repair, or Restoration Coatings	0.07	0.04	0.002	0.112

It should be noted that estimated costs for raw materials, research and development, and recordkeeping and reporting are likely higher than what will actually be incurred due to Illinois adopting the proposed regulation. As previously stated, the majority (approximately 82%) of the aerosol coating products currently being sold nationwide are in compliance with the PWMIR limits in the proposed regulation<sup>7</sup>, and it is likely that many manufacturers of aerosol coatings will incur no additional costs.

#### 4.6 Cost Effectiveness of Controls

In order to estimate the cost effectiveness of the measures in the proposed regulation for the control of VOM emissions from aerosol coatings a few key assumptions must be

made. First, the total cost of control for a national rule estimated by the USEPA assumes that all of an estimated 329,536,000 10.5 ounce cans produced in 2005 would have to be reformulated. The cost for this was estimated to be \$20,360,521 for the entire U.S.<sup>7</sup> Second, it is assumed that the cost to Illinois will be proportional to its population in relation to the U.S. population. This would assume that the cost to Illinois would be approximately 4.4% of the national cost or \$895,863. Third, it is assumed, as it was in Section 4.2 of this document, that limiting the amount of ozone prevented from forming rather than limiting VOM by % by weight is equivalent to a reduction of 0.114 lbs of VOM per capita per year<sup>7</sup>, and that a factor of 0.588 lbs VOM per capita per year can be used to estimate current emissions.

It can then be estimated, using the assumptions above, that the cost effectiveness of the proposed regulation in terms of dollars per ton of VOM reduced is approximately \$1272 per ton. As has been previously discussed, this value reflects assumptions that do not consider the mitigating factors detailed in Section 4.2 of this document, and most likely represents an over estimate of cost.

#### **4.7 Reduction of VOM Emissions in Illinois**

In the USEPA analysis of air pollution impacts for the proposed limits in a national rule it is explained that the limits on PWMIR will be effective in reducing both VOM emissions and reducing the amount of ozone formed from those emissions. Since most states will use these reductions in their ozone SIP planning, the USEPA calculated the effect of the

reactivity-based limits in terms of mass VOM emissions. These reductions should more accurately be described as “equivalent reductions in VOM emissions”.

It has been estimated by the USEPA that the proposed limits would result in a 19.4% reduction of VOM emissions from aerosol coating products beyond a baseline level set in 1990<sup>7</sup>. A 19.4% reduction in equivalent VOM emissions from the estimates given in Section 4.2 would account for an equivalent reduction of 1.97 tons per day or approximately 719 tons per year. The USEPA acknowledges that these figures are only estimates to be used in SIP planning, and the actual reductions in terms of mass of VOM or in ozone formation are difficult to estimate given the portion of aerosol coating products that are already compliant with the proposed limits.

#### **4.8 Affected Sources and Compliance Measures**

The proposed regulation affects Group III consumer and commercial products classified as aerosol coatings. A detailed list of affected products and proposed limits for VOM content can be found in Table 4.2.1 in Section 4.2 of this document. The proposed regulation affects anyone who sells, supplies, offers for sale, or manufactures any of the products in Table 4.2.1 in Illinois.

It has been determined by CARB and the USEPA that these limits for VOM in aerosol coating products are technologically feasible. These limits for the PWMIR of various aerosol coating products have been adopted in California and are currently being considered as the basis for a national rule. There are currently compliant formulas in

each coating category that are commercially available. These compliant formulas have not significantly changed the usefulness of the product by reducing VOM content or by using a substitute solvent in the product. In addition, the great majority of the affected products being sold nationwide are already compliant products.

## 5.0 Summary

The proposed regulation for the control of VOM emissions from area sources is based on rules that have been adopted in California and in the OTC states in order reduce VOM emissions from a wide variety of consumer and commercial products and coating products. The limits in the consumer products portion of the rule have been adopted by all the OTC states (most in 2005) and in California. This is also true for the AIM coatings portion of the rule. The OTC states have adopted the limits in the proposed regulation by adopting versions of the AIM OTC Model Rule, and in California the same limits have been adopted as suggested control measures. The limits proposed in the aerosol coating portion of the proposed regulation are the same as those that have been adopted in California, and are the same limits that have been proposed by the USEPA for a national rule. The adoption of the regulation will move Illinois forward toward regulation of these products that is consistent with a large portion of the United States population that includes California, the OTC states, and a number of Midwestern states that are in different phases of adopting regulations with the same uniform limits.

By adopting the proposed regulation the Illinois EPA anticipates a significant reduction in VOM emissions from the affected area sources. When added together the emission of VOM from consumer products, AIM coatings, and aerosol coating products accounts for approximately 9.86% of all anthropogenic VOM emissions in the State of Illinois. The estimated reductions given in sections 2.7, 3.7, and 4.7 of this document add up to slightly more than 10,000 tons of VOM annually or a reduction of approximately 28.5 tons per day. The Illinois EPA acknowledges that some of these reductions have already

taken place due to nationwide compliance by many of the larger manufacturers of these products, however adoption of these limits in Illinois will lead to greater compliance in Illinois, as well as in the remaining Midwestern states. A list of potentially affected manufacturers in Illinois has been included as Appendix A to this document, and contains manufacturers potentially affected by all subparts of the proposed regulation.

The Illinois EPA asserts that the proposed regulation is both technologically feasible and economically reasonable. The technological feasibility of the limits in all three subparts of the rule is self evident. While the staff reports of CARB and the OTC include arguments for the feasibility of the required reformulations for compliance, these reports were drafted before the said limits had been adopted. Since compliant products in every affected category in the proposed regulation are currently being sold and are in use in all states of the OTC and in California, no further evidence for technological feasibility is required. Likewise, all figures presented in this document as evidence of economic reasonableness are likely to be overestimates because much of the cost for compliance associated with the limits in the proposed regulation have already been incurred by the majority of the manufacturers of the affected products. These overestimates of cost still produce quite reasonable estimates for cost effectiveness when translated into dollars per ton of VOM reduced.

In light of the facts presented in this technical support document the proposed regulation for the control of VOM emissions from consumer and commercial products, AIM coatings, and aerosol coating products should be considered to be technologically

feasible, economically reasonable, and an effective measure toward achieving attainment of the 8-hour ozone NAAQS in all areas of the State of Illinois.

## 6.0 References

1. Emission Inventory Improvement Program Volume III: Chapter 5 – Consumer and Commercial Solvent Use, Eastern Research Group, NC, August 1996.
2. Illinois 2002 Periodic Emissions Inventory and Milestone Demonstration, Illinois Environmental Protection Agency, Springfield, IL, November 2004.
3. Interim White Paper – Midwest RPO Candidate Control Measures, Source Category: Consumer and Commercial Products, MACTEC, December 1, 2005.
4. Example Complying Formulas, 2004 Consumer Products Amendments, State of California Air Resources Board, March 18, 2004.
5. Initial Statement of Reasons for the Proposed Amendments to the California Aerosol Coating Products, Antiperspirants and Deodorants, and Consumer Products Regulations, Test Method 310, and Airborne Toxic Control Measure for Para-Dichlorobenzene Solid Air Fresheners and Toilet/Urinal Care Products, State of California Air Resources Board, May 7, 2004.
6. Initial statement of Reasons for Amendments to the California Consumer Products Regulation, State of California Air Resources Board, September 10, 1999.
7. National Volatile Organic Compound Emission Standards for Aerosol Coatings, Proposed Rule, 72 FR 38952-38991, July 16, 2007.
8. National Volatile Organic Compound Emission Standards for Aerosol Coatings, Cost Impacts Analysis, U.S. Environmental Protection Agency Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Research Triangle Park, North Carolina 27711, June 2007.
9. Interim White Paper - Midwest RPO Candidate Control Measures, Source Category, MACTEC, December 1, 2005.
10. Estimated VOC Emission Reductions and Economic Impact Analysis for Proposed Amendments to Chemically Formulated Consumer Products, The State of New Jersey Department of Environmental Protection, July 3, 2003.
11. Regulation for Reducing the Ozone Formed from Aerosol Coating Product Emissions, Title 17, California Code of Regulations, Article 3, Aerosol Coating Products, Sections 94521-94524 and 94526, approved June 18, 2001.



12. Regulation for Reducing Volatile Organic Compound Emissions from Consumer Products, Title 17 California Code of Regulations Sections 94507, 94508, 94509, 94513, 94514, and 94515, November 19, 2000.
13. Staff Report for the Proposed Suggested Control Measure for Architectural Coatings, California Air Resources Board, June 2000.
14. Estimated VOC Emission Reductions and Economic Impact Analysis for Proposed Amendments to Architectural Coatings Rule, The State of New Jersey Department of Environmental Protection, June 12, 2003.
15. Illinois Base Year Ozone Inventory for 2002, Illinois Environmental Protection Agency, Springfield, IL, June 2006.
16. Model Rule for Consumer Products, Ozone Transport Commission, November 29, 2001.
17. AIM OTC Model Rule, Ozone Transport Commission, March 6, 2001.
18. Control Measure Development Support Analysis of Ozone Transport Commission Model Rules, E.H. Pechan and Associates, March 31, 2001.

**Appendix A: Potentially Affected Manufacturers in Illinois**

<b>Company Name</b>	<b>City</b>	<b>Zip Code</b>	<b>Primary SIC</b>	<b>SIC Description</b>
Aabbitt Adhesives, Inc	CHICAGO	60647	28910200	Adhesives
Aabbitt Adhesives, Inc	CHICAGO	60620	28910200	Adhesives
Adhesive Products Corporation	CHICAGO	60612	28910200	Adhesives
Armitage Industries Inc	FRANKLIN PARK	60131	28910200	Adhesives
Bradley Coating, Inc.	SAINT CHARLES	60174	28910200	Adhesives
Bruce Adhesives	WEST CHICAGO	60185	28910200	Adhesives
Budnick Supply Inc	COLUMBIA	62236	28910200	Adhesives
C.P. Moyon Co.	SKOKIE	60076	28910200	Adhesives
Cbrtt, Inc.	AURORA	60504	28910200	Adhesives
Croda Adhesives Inc	CAROL STREAM	60188	28910200	Adhesives
Cyberbond, L.L.C.	BATAVIA	60510	28910200	Adhesives
Firenze USA Inc	CHICAGO	60612	28910200	Adhesives
Forbo Adhesives, LLC	MORRIS	60450	28910200	Adhesives
Henkel Corporation	CAROL STREAM	60188	28910200	Adhesives
Henkel Corporation	ELGIN	60120	28910200	Adhesives
Indopco Inc	ITASCA	60143	28910200	Adhesives
Indopco Inc	LINCOLNSHIRE	60069	28910200	Adhesives
Indopco Inc	HOFFMAN ESTATES	60192	28910200	Adhesives
Loctite	BETHALTO	62010	28910200	Adhesives
Morton International Incorporated Adhesives & Specialty	RINGWOOD	60072	28910200	Adhesives
Morton International, Inc	WAUKEGAN	60087	28910200	Adhesives
Morton International, Inc	CHICAGO HEIGHTS	60411	28910200	Adhesives
Morton International, Inc.	CHICAGO	60606	28910200	Adhesives
National Casein of New Jersey, Incorporated	CHICAGO	60620	28910200	Adhesives
North Shore Consultants Inc	CHICAGO	60630	28910200	Adhesives
On Hand Adhesives	LAKE ZURICH	60047	28910200	Adhesives
Rohm and Haas Company	ELK GROVE VILLAGE	60007	28910200	Adhesives
Roman Decorating Products, Inc	CALUMET CITY	60409	28910200	Adhesives
Roman Holdings Corporation	CALUMET CITY	60409	28910200	Adhesives
Rubrtek Inc	OLNEY	62450	28910200	Adhesives
Sanford Chemical Co., Inc	ELK GROVE VILLAGE	60007	28910200	Adhesives
Sovereign Adhesives Inc	PLAINFIELD	60544	28910200	Adhesives
Spartan Adhesives & Coatings Specialty Construction Brands, Inc	CRYSTAL LAKE	60014	28910200	Adhesives
Specialty Construction Brands, Inc	AURORA	60504	28910200	Adhesives
Specialty Construction Brands, Inc	PALATINE	60067	28910200	Adhesives
The W W Henry Company LP California	BOURBONNAIS	60914	28910200	Adhesives
Tsv Adhesive Systems, Inc	FRANKFORT	60423	28910200	Adhesives

Tyco International (us) Inc.	CARPENTERSVILLE	60110	28910200	Adhesives
U S Adhesives Corp	CHICAGO	60612	28910200	Adhesives
Val-A Chicago, Inc	CHICAGO	60609	28910200	Adhesives
Willett America, Inc	WOOD DALE	60191	28910200	Adhesives
BASF Construction Chemicals Inc	CHICAGO HEIGHTS	60411	28910000	Adhesives and sealants
Bradley Group	SAINT CHARLES	60174	28910000	Adhesives and sealants
Chem Spec Corporation	SCHAUMBURG	60193	28910000	Adhesives and sealants
Cr Investments, Inc	ELGIN	60123	28910000	Adhesives and sealants
Dover Alliances, Inc	NAPERVILLE	60563	28910000	Adhesives and sealants
Emecole, Inc.	ROMEDEVILLE	60446	28910000	Adhesives and sealants
Eternabond, Inc.	MUNDELEIN	60060	28910000	Adhesives and sealants
Foster Products	ARLINGTON HEIGHTS	60004	28910000	Adhesives and sealants
Green Products LLC	ROMEDEVILLE	60446	28910000	Adhesives and sealants
H. B. Fuller Company	PALATINE	60067	28910000	Adhesives and sealants
H. B. Fuller Company	ARLINGTON HEIGHTS	60004	28910000	Adhesives and sealants
H. B. Fuller Company	TINLEY PARK	60477	28910000	Adhesives and sealants
Henkel Corporation	PLAINFIELD	60544	28910000	Adhesives and sealants
Hot Melt Technologies Inc	ELMHURST	60126	28910000	Adhesives and sealants
Indopco Inc	CHICAGO	60632	28910000	Adhesives and sealants
Kwik Lok Inc	FRANKFORT	60423	28910000	Adhesives and sealants
Lintec of America Inc	BUFFALO GROVE	60089	28910000	Adhesives and sealants
Mapei Corporation	WEST CHICAGO	60185	28910000	Adhesives and sealants
Microcosm	CHICAGO	60804	28910000	Adhesives and sealants
Morgan Adhesives Company	MUNDELEIN	60060	28910000	Adhesives and sealants
Morgan Adhesives Company	PALATINE	60074	28910000	Adhesives and sealants
Performance Minerals Corp	CHICAGO	60633	28910000	Adhesives and sealants
Right/Pointe Company	DE KALB	60115	28910000	Adhesives and sealants
River City Seacolt & Asphalt Inc	PEORIA	61615	28910000	Adhesives and sealants
Rj Oreda & Associates	DOWNERS GROVE	60515	28910000	Adhesives and sealants
Rohm and Haas Company	RINGWOOD	60072	28910000	Adhesives and sealants
Saf T Lok International Corp	LOMBARD	60148	28910000	Adhesives and sealants
Sigma Coatings Inc	ADDISON	60101	28910000	Adhesives and sealants
Ski Seal Coating Inc	LA GRANGE	60525	28910000	Adhesives and sealants
The Dow Chemical Company	KANKAKEE	60901	28910000	Adhesives and sealants
W. R. Meadows, Inc.	HAMPSHIRE	60140	28910000	Adhesives and sealants
Elmer's Products, Inc.	GURNEE	60031	28910201	Adhesives, paste
R A Hahn Associates	LIBERTYVILLE	60048	28910202	Adhesives, plastic
Bayer Cropscience Limited Partnership	PRINCETON	61356	28790000	Agricultural chemicals, nec
Bunker Hill Supply Co	WEST UNION	62477	28790000	Agricultural chemicals, nec
Dow Agrosciences L.L.C.	MOUNT VERNON	62864	28790000	Agricultural chemicals, nec
Eastman Chemical Company, Inc	SOUTH ELGIN	60177	28790000	Agricultural chemicals, nec
Farmer Manufacturing Co Inc	DORSEY	62021	28790000	Agricultural chemicals, nec
Gard Products Inc	CARPENTERSVILLE	60110	28790000	Agricultural chemicals, nec
Gard Rogard Inc	CARPENTERSVILLE	60110	28790000	Agricultural chemicals, nec
Harbach, Nixon & Willson Inc	CLINTON	61727	28790000	Agricultural chemicals, nec

Kill Grow, Inc	ESSEX	60935	28790000	Agricultural chemicals, nec
Monsanto Company	CENTRALIA	62801	28790000	Agricultural chemicals, nec
Precision Laboratories Inc	WAUKEGAN	60085	28790000	Agricultural chemicals, nec
Pro Tek Products Inc	WHEATON	60187	28790000	Agricultural chemicals, nec
Rhodia Inc	CHICAGO	60827	28790000	Agricultural chemicals, nec
Taggart's AG Supply	GREENUP	62428	28790000	Agricultural chemicals, nec
Trace Chemicals LLC	PEKIN	61554	28790000	Agricultural chemicals, nec
Valent Biosciences Corporation	LIBERTYVILLE	60048	28790000	Agricultural chemicals, nec
West Agro Inc	DES PLAINES	60018	28790000	Agricultural chemicals, nec
Westmin Corp	QUINCY	62301	28790000	Agricultural chemicals, nec
Westmin Corporation	QUINCY	62301	28790000	Agricultural chemicals, nec
Tri-County Chemical Inc	GALATIA	62935	28790101	Arsenates, arsenites (formulated)
Bumper Scuffs	LAKE VILLA	60046	28420201	Automobile polish
Reed-Union Corporation	CHICAGO	60611	28420201	Automobile polish
Rukin Industries	CHICAGO	60639	28420201	Automobile polish
Treatment Products, Ltd.	CHICAGO	60651	28420201	Automobile polish
Voodoo Ride LLC	CHICAGO	60610	28420201	Automobile polish
Brenda Fields	GLEN ELLYN	60137	28449901	Bath salts
June Edwards	JOLIET	60432	28449901	Bath salts
Oak Court Creations	MINOOKA	60447	28449901	Bath salts
Tanyas Bath and Body	CHICAGO	60612	28449901	Bath salts
Clorox Data	ROCKFORD	61109	28429901	Bleaches, household: dry or liquid
Clorox Products Manufacturing Company	CHICAGO	60638	28429901	Bleaches, household: dry or liquid
Eddie V Vanzant	CHICAGO	60617	28790102	Bordeaux mixture
Roanoke Companies Group Inc	AURORA	60504	28910101	Caulking compounds
Apco Enterprises Inc	OAK LAWN	60455	28420102	Cleaning or polishing preparations, nec
Apex Engineering Products Corporation	AURORA	60504	28420102	Cleaning or polishing preparations, nec
Blackboard Maintenance Co	FULTON	61252	28420102	Cleaning or polishing preparations, nec
Chemical Specialties Manufacturing Corp	MAPLETON	61547	28420102	Cleaning or polishing preparations, nec
Claire-Sprayway, Inc.	ADDISON	60101	28420102	Cleaning or polishing preparations, nec
Colorex Chemicals Co Inc	BENSENVILLE	60106	28420102	Cleaning or polishing preparations, nec
Coral Chemical Company	ZION	60099	28420102	Cleaning or polishing preparations, nec
Ecolab Inc	SOUTH BELOIT	61080	28420102	Cleaning or polishing preparations, nec
Ecolab Southfield Bus Par	JOLIET	60431	28420102	Cleaning or polishing preparations, nec
Grayson & Associates	SAINT CHARLES	60174	28420102	Cleaning or polishing preparations, nec
Johnson Diversey Inc	ELGIN	60123	28420102	Cleaning or polishing preparations, nec
PLC Corp	LAKE BLUFF	60044	28420102	Cleaning or polishing preparations, nec
R R Street & Co Inc	CHICAGO	60616	28420102	Cleaning or polishing preparations, nec
R R Street & Co Inc	CHICAGO	60632	28420102	Cleaning or polishing preparations, nec
Rycoline Products, LLC	CHICAGO	60630	28420102	Cleaning or polishing preparations, nec
Sunshine Makers, Inc.	DES PLAINES	60018	28420102	Cleaning or polishing preparations, nec
Magnum International, Inc	LANSING	60438	28510201	Coating, air curing
Mid-America Protective Coatings, Inc.	ELK GROVE VILLAGE	60007	28510201	Coating, air curing
Universal Chemicals and Coatings, Inc.	ELGIN	60123	28510201	Coating, air curing
Dworin Holdings, Inc.	ELMHURST	60126	28440301	Colognes

Bill Vuksanovich Art Stud	CHICAGO	60634	28510101	Colors in oil, except artists'
Roads & Leads Inc	GURNEE	60031	28510101	Colors in oil, except artists'
Labtec Cosmetics By Marzena	ADDISON	60101	28440302	Concentrates, perfume
William K Sullivan	PETERSBURG	62675	28440302	Concentrates, perfume
Avon Products, Inc.	MORTON GROVE	60053	28440500	Cosmetic preparations
Barbara Salomone & Associates	CHICAGO	60613	28440500	Cosmetic preparations
Barbara Salomone & Associates	DES PLAINES	60016	28440500	Cosmetic preparations
Brio Fragrance LLC	CHICAGO	60640	28440500	Cosmetic preparations
C J'S Luscious Body	FOX LAKE	60020	28440500	Cosmetic preparations
Caboodles Cosmetics, LP	PLANO	60545	28440500	Cosmetic preparations
Clintex Laboratories, Inc.	CHICAGO	60621	28440500	Cosmetic preparations
Colorlab Cosmetics, Inc.	ROCKFORD	61104	28440500	Cosmetic preparations
Combe Laboratories, Inc	RANTOUL	61866	28440500	Cosmetic preparations
Concept Laboratories, Inc.	CHICAGO	60622	28440500	Cosmetic preparations
Cory Dental & Medical Supply's, Inc.	ORLAND PARK	60462	28440500	Cosmetic preparations
Ely's Tops, Inc.	NEW LENOX	60451	28440500	Cosmetic preparations
Fan C ME 2 Cosmetics	CHICAGO	60623	28440500	Cosmetic preparations
General Organics, Inc.	CHICAGO	60623	28440500	Cosmetic preparations
Juvenesse By Elaine Gayle Inc	CHICAGO	60611	28440500	Cosmetic preparations
Leiner Health Products Inc	CHICAGO	60632	28440500	Cosmetic preparations
Liquid Packaging, LLC	CHICAGO	60620	28440500	Cosmetic preparations
Maynard Inc	CHICAGO	60647	28440500	Cosmetic preparations
Rw Greeff & Co LLC	VILLA PARK	60181	28440500	Cosmetic preparations
Skincare Technology Inc	CHICAGO	60610	28440500	Cosmetic preparations
Stillman Co	AURORA	60505	28440500	Cosmetic preparations
Vee Pak, Inc	LA GRANGE	60525	28440500	Cosmetic preparations
Vee Pak, Inc.	LA GRANGE	60525	28440500	Cosmetic preparations
Zanfel Laboratories Inc	PEORIA	61602	28440500	Cosmetic preparations
Holland Specialty Co	PEORIA	61605	28440201	Denture cleaners
Smithkline Beecham Corporation	WHITE HALL	62092	28440201	Denture cleaners
Smithkline Beecham Corporation	CHICAGO	60608	28440201	Denture cleaners
Smithkline Beecham Corporation	SPRINGFIELD	62704	28440201	Denture cleaners
Dualle Products	SOUTH ELGIN	60177	28420401	Deodorants, nonpersonal
Wrap-On Company Inc.	BEDFORD PARK	60638	28420401	Deodorants, nonpersonal
Stephanie Selover	MOLINE	61265	28440501	Depilatories (cosmetic)
Consolidated Chemical Works, Ltd.	CHICAGO	60622	28419901	Detergents, synthetic organic or inorganic alkaline
Cygnus Corporation	CHICAGO	60827	28419901	Detergents, synthetic organic or inorganic alkaline
Desoto, L.L.C.	JOLIET	60433	28419901	Detergents, synthetic organic or inorganic alkaline
Getex Corporation	HINSDALE	60523	28419901	Detergents, synthetic organic or inorganic alkaline
Gurtler Chemicals, Inc.	SOUTH HOLLAND	60473	28419901	Detergents, synthetic organic or inorganic alkaline
Eagle Enterprise of Elbur	ELBURN	60119	28420300	Drycleaning preparations

Kor-Kleen Inc	GLEN ELLYN	60137	28420300	Drycleaning preparations
Qualitex Company	CHICAGO	60618	28420300	Drycleaning preparations
R R Street & Co Inc	CHICAGO	60608	28420300	Drycleaning preparations
Shel Drake Cleaners	CHICAGO	60640	28420300	Drycleaning preparations
Song, Tae Hwan	MUNDELEIN	60060	28420300	Drycleaning preparations
Spotless Dry Cleaners Tailors	EVANSTON	60201	28420300	Drycleaning preparations
American Powder Coatings, Inc.	SAINT CHARLES	60174	28510202	Enamels, nec
The Testor Corporation	ROCKFORD	61104	28510202	Enamels, nec
International Coatings, Inc	FRANKLIN PARK	60131	28510203	Epoxy coatings
A B C Exterminating Service LLC	CHICAGO	60640	28790105	Exterminating products, for household or industrial use
Beiersdorf, Inc.	NAPERVILLE	60540	28440502	Face creams or lotions
Bethany Pharmacol Co Inc	BETHANY	61914	28440502	Face creams or lotions
Neaclear Inc	PARK RIDGE	60068	28440502	Face creams or lotions
Solo Laboratories Inc	BELLWOOD	60104	28440502	Face creams or lotions
Tc & Company	ALLENDALE	62410	28440502	Face creams or lotions
Ilf Technologies, LLC	HINSDALE	60527	28430200	Finishing agents
Fox Valley Chemical Company Inc	RINGWOOD	60072	28420204	Floor waxes
J.F. Daley International, Ltd.	CHICAGO	60652	28420204	Floor waxes
E. I. Du Pont De Nemours and Company	EL PASO	61738	28799903	Fungicides, herbicides
Pfizer Inc	CARY	60013	28799903	Fungicides, herbicides
Pfizer Inc	NAPERVILLE	60563	28799903	Fungicides, herbicides
Cgm Enterprises Inc	DEERFIELD	60015	28910206	Glue
H.B. Fuller Company	PALATINE	60067	28910206	Glue
Industrial Adhesive Co	CHICAGO	60612	28910206	Glue
National Casein Company	CHICAGO	60620	28910206	Glue
National Casein of California, Inc	CHICAGO	60620	28910206	Glue
American Blending & Filling Company	WAUKEGAN	60085	28440100	Hair preparations, including shampoos
Biocare Labs	CHICAGO	60638	28440100	Hair preparations, including shampoos
Biostrand, Inc	BELLWOOD	60104	28440100	Hair preparations, including shampoos
Ecoco Inc	CHICAGO	60639	28440100	Hair preparations, including shampoos
Luster Products, Inc.	CHICAGO	60609	28440100	Hair preparations, including shampoos
Masterpiece Products Inc	CHICAGO	60619	28440100	Hair preparations, including shampoos
Raani Corporation	CHICAGO	60638	28440100	Hair preparations, including shampoos
Rna Corporation	BLUE ISLAND	60406	28440100	Hair preparations, including shampoos
Selected Chemical Products Company	WAUKEGAN	60087	28440100	Hair preparations, including shampoos
Summit Laboratories, Inc	HARVEY	60426	28440100	Hair preparations, including shampoos
Zotos International Inc	DES PLAINES	60018	28440100	Hair preparations, including shampoos
Advanced Building Components Inc	CHICAGO	60657	28440103	Home permanent kits
Interflo Industries Inc	ELK GROVE VILLAGE	60007	28420403	Industrial plant disinfectants or deodorants
Teitelbaum Brothers, Inc.	GLENVIEW	60026	28420403	Industrial plant disinfectants or deodorants
Clarke Mosquito Control Products, Inc.	ROSELLE	60172	28790100	Insecticides and pesticides

Evergreen Fs, Inc	BLACKSTONE	61313	28790100	Insecticides and pesticides
Freds Termite & Pest Control	MASCOUTAH	62258	28790100	Insecticides and pesticides
R D V Enterprises Inc	KANKAKEE	60901	28790100	Insecticides and pesticides
FMC Corporation	WYOMING	61491	28790106	Insecticides, agricultural or household
Nufarm Americas Inc.	CHICAGO HEIGHTS	60411	28790106	Insecticides, agricultural or household
C2 Premium Paint	WILMETTE	60091	28510206	Lacquer: bases, dopes, thinner
G. J. Nikolas & Co., Inc.	BELLWOOD	60104	28510206	Lacquer: bases, dopes, thinner
Oak Partners Inc	CICERO	60804	28510206	Lacquer: bases, dopes, thinner
V J Dolan & Company, Inc	CHICAGO	60639	28510206	Lacquer: bases, dopes, thinner
Carboline Company	CHANNAHON	60410	28510200	Lacquers, varnishes, enamels, and other coatings
Continental Supply Co	PALOS HEIGHTS	60463	28510200	Lacquers, varnishes, enamels, and other coatings
Crawford Laboratories Inc	CHICAGO	60609	28510200	Lacquers, varnishes, enamels, and other coatings
Crest Industries, Ltd	NEW LENOX	60451	28510200	Lacquers, varnishes, enamels, and other coatings
Eron Enterprises Ltd	CHICAGO	60630	28510200	Lacquers, varnishes, enamels, and other coatings
Morton International, Inc	BATAVIA	60510	28510200	Lacquers, varnishes, enamels, and other coatings
National Industrial Coating, Inc	ITASCA	60143	28510200	Lacquers, varnishes, enamels, and other coatings
Specialty Coatings Company	ELK GROVE VILLAGE	60007	28510200	Lacquers, varnishes, enamels, and other coatings
W. C. Richards Co.	ALSIP	60803	28510200	Lacquers, varnishes, enamels, and other coatings
A B Seals Inc	SULLIVAN	61951	28910102	Laminating compounds
Attalus Inc USA	MELROSE PARK	60160	28910102	Laminating compounds
D & K Group, Inc	ELK GROVE VILLAGE	60007	28910102	Laminating compounds
D & K International, Inc.	ELK GROVE VILLAGE	60007	28910102	Laminating compounds
Press Time Cleaners	GRAYSLAKE	60030	28420500	Laundry cleaning preparations
Simply Clean Cleaning Services	CHICAGO	60628	28420500	Laundry cleaning preparations
Art Basias	WARRENVILLE	60555	28510102	Lead-in-oil paints
David Jaffe Inc	CHICAGO	60625	28420206	Leather dressings and finishes
I'Sachs Sons Inc	CHICAGO	60607	28430201	Leather finishing agents
Sadelco USA Corp.	HOFFMAN ESTATES	60169	28430201	Leather finishing agents
W-R Industries, Inc.	CHICAGO	60608	28510207	Lithographic varnishes
Be Products Inc	CHICAGO	60602	28449903	Manicure preparations
Diane's Nails	LOMBARD	60148	28449903	Manicure preparations
Manicure Madness	CHICAGO	60605	28449903	Manicure preparations
Minnies Manicure	DEERFIELD	60015	28449903	Manicure preparations
Nail Boutique	ROSELLE	60172	28449903	Manicure preparations
Nail Image Inc	NILES	60714	28449903	Manicure preparations
Professionalnail	FOX LAKE	60020	28449903	Manicure preparations
Professional Nails Inc	ROUND LAKE	60073	28449903	Manicure preparations
The Nail Bar	PEORIA	61616	28449903	Manicure preparations
Uptown Girl	PECATONICA	61063	28449903	Manicure preparations

Websternet Ltd	CHICAGO	60657	28449903	Manicure preparations
Matchless Metal Polish Co	CHICAGO	60609	28420207	Metal polish
Prevention Laboratories, LLC	RALEIGH	62977	28440202	Mouthwashes
Express Grease and Oil	CHICAGO	60618	28430100	Oils and greases
Oral and Maxillofacia Lakeview	CHICAGO	60657	28440200	Oral preparations
Acm Inc	NORTH CHICAGO	60064	28510000	Paints and allied products
Adheron Coatings Corporation	CHICAGO	60622	28510000	Paints and allied products
Akzo Nobel Coatings, Inc	MATTESON	60443	28510000	Paints and allied products
Antoni Tech Coatings	HAMPSHIRE	60140	28510000	Paints and allied products
Autonomic Materials Inc	CHAMPAIGN	61821	28510000	Paints and allied products
Behr Process Corp	ROCKFORD	61107	28510000	Paints and allied products
Behr Process Corp	DOWNERS GROVE	60517	28510000	Paints and allied products
Behr Process Corp	EDWARDSVILLE	62025	28510000	Paints and allied products
Behr Process Corp	CHICAGO RIDGE	60415	28510000	Paints and allied products
Behr Process Corp	HOMEWOOD	60430	28510000	Paints and allied products
Behr Process Corp	CALUMET CITY	60409	28510000	Paints and allied products
Behr Process Corp	CRYSTAL LAKE	60014	28510000	Paints and allied products
Behr Process Corp	MOUNT PROSPECT	60056	28510000	Paints and allied products
Behr Process Corp	OSWEGO	60543	28510000	Paints and allied products
Behr Process Corp	ALGONQUIN	60102	28510000	Paints and allied products
Behr Process Corp	SCHAUMBURG	60194	28510000	Paints and allied products
Behr Process Corp	GLENVIEW	60026	28510000	Paints and allied products
Behr Process Corp	LAKE ZURICH	60047	28510000	Paints and allied products
Behr Process Corp	DEERFIELD	60015	28510000	Paints and allied products
Behr Process Corp	PALATINE	60074	28510000	Paints and allied products
Behr Process Corp	MC HENRY	60050	28510000	Paints and allied products
Behr Process Corp	MELROSE PARK	60164	28510000	Paints and allied products
Behr Process Corp	OAK LAWN	60453	28510000	Paints and allied products
Behr Process Corp	BROADVIEW	60155	28510000	Paints and allied products
Behr Process Corp	GLENDALE HEIGHTS	60139	28510000	Paints and allied products
Behr Process Corp	NAPERVILLE	60540	28510000	Paints and allied products
Behr Process Corp	GENEVA	60134	28510000	Paints and allied products
Behr Process Corp	BOLINGBROOK	60490	28510000	Paints and allied products
Behr Process Corp	INGLESIDE	60041	28510000	Paints and allied products
Behr Process Corp	BARTLETT	60103	28510000	Paints and allied products
California Products Corporation	BARRINGTON	60010	28510000	Paints and allied products
Contract Transportation Systems Co Inc	EFFINGHAM	62401	28510000	Paints and allied products
Crystal Rain Inc	SAN JOSE	62682	28510000	Paints and allied products
Delta Coatings Corp	MELROSE PARK	60160	28510000	Paints and allied products
Euclid Chemical Company, Inc	KIRKLAND	60146	28510000	Paints and allied products
Faux Efficient, Inc.	EFFINGHAM	62401	28510000	Paints and allied products
Federated Paint Manufacturing Co Inc	MELROSE PARK	60160	28510000	Paints and allied products
Federated Paint Manufacturing Co Inc	ARGO	60501	28510000	Paints and allied products
Gibraltar Chemical Works Inc	SOUTH HOLLAND	60473	28510000	Paints and allied products
I. Pulloma Paints Inc.	CARPENTERSVILLE	60110	28510000	Paints and allied products



International Paint LLC	WAUKEGAN	60085	28510000	Paints and allied products
J F B Hart Coatings, Inc.	WOODRIDGE	60517	28510000	Paints and allied products
Lucky Star Painting, Inc	WINNETKA	60093	28510000	Paints and allied products
M A Bruder & Sons Inc	CHICAGO	60622	28510000	Paints and allied products
Marc Sova Studios	COLLINSVILLE	62234	28510000	Paints and allied products
Matthew, Kilcline Co., Inc	BARRINGTON	60010	28510000	Paints and allied products
Mid-America Protective Coatings, Inc.	FRANKLIN PARK	60131	28510000	Paints and allied products
Midwest Power Coating Inc	SAINT CHARLES	60174	28510000	Paints and allied products
Multicolor Specialties Inc	CICERO	60804	28510000	Paints and allied products
Multicolor Specialties, Inc.	CICERO	60804	28510000	Paints and allied products
National Coatings, Inc	GALESBURG	61401	28510000	Paints and allied products
Pioneer Powder Products Inc	MELROSE PARK	60160	28510000	Paints and allied products
Plastics Color Corporation of Illinois	CALUMET CITY	60409	28510000	Paints and allied products
Powder Coat Plus	QUINCY	62305	28510000	Paints and allied products
PPG Industries, Inc	MOUNT ZION	62549	28510000	Paints and allied products
PPG Industries, Inc	AURORA	60506	28510000	Paints and allied products
PPG Industries, Inc	ALSIP	60803	28510000	Paints and allied products
PPG Industries, Inc	CRYSTAL LAKE	60014	28510000	Paints and allied products
PPG Industries, Inc	ELGIN	60120	28510000	Paints and allied products
PPG Industries, Inc	O FALLON	62269	28510000	Paints and allied products
PPG Industries, Inc	GURNEE	60031	28510000	Paints and allied products
PPG Industries, Inc	JOLIET	60435	28510000	Paints and allied products
PPG Industries, Inc	LISLE	60532	28510000	Paints and allied products
PPG Industries, Inc	MOLINE	61265	28510000	Paints and allied products
PPG Industries, Inc	NAPERVILLE	60564	28510000	Paints and allied products
PPG Industries, Inc	CHICAGO	60657	28510000	Paints and allied products
PPG Industries, Inc	CHICAGO	60607	28510000	Paints and allied products
PPG Industries, Inc	ORLAND PARK	60462	28510000	Paints and allied products
PPG Industries, Inc	ROLLING MEADOWS	60008	28510000	Paints and allied products
PPG Industries, Inc	SPRINGFIELD	62703	28510000	Paints and allied products
PPG Industries, Inc	SAINT CHARLES	60174	28510000	Paints and allied products
PPG Industries, Inc	STONE PARK	60165	28510000	Paints and allied products
PPG Industries, Inc	WESTMONT	60559	28510000	Paints and allied products
Premium Products, Inc	YORKVILLE	60560	28510000	Paints and allied products
Sandstrom Products Company	PORT BYRON	61275	28510000	Paints and allied products
Sandstrom Products Company	PORT BYRON	61275	28510000	Paints and allied products
Sentinel Paint & Varnish Co Inc	NILES	60714	28510000	Paints and allied products
Shocktech	CALUMET CITY	60409	28510000	Paints and allied products
Technical Coatings Co	MELROSE PARK	60160	28510000	Paints and allied products
Technical Coatings Co Inc	PRAIRIE DU ROCHER	62277	28510000	Paints and allied products
Tecorp Inc	JOLIET	60433	28510000	Paints and allied products
The Glidden Company	ORLAND PARK	60462	28510000	Paints and allied products
The Sherwin-Williams Company	CHICAGO	60628	28510000	Paints and allied products
The Sherwin-Williams Company	SOUTH HOLLAND	60473	28510000	Paints and allied products
The Sherwin-Williams Company	HARVEY	60426	28510000	Paints and allied products

The Sherwin-Williams Company	EAST MOLINE	61244	28510000	Paints and allied products
The Sherwin-Williams Company	CHICAGO	60628	28510000	Paints and allied products
The Sherwin-Williams Company	SOUTH HOLLAND	60473	28510000	Paints and allied products
The Valspar Corporation	KANKAKEE	60901	28510000	Paints and allied products
The Valspar Corporation	WHEELING	60090	28510000	Paints and allied products
The Valspar Corporation	LIBERTYVILLE	60048	28510000	Paints and allied products
The Valspar Corporation	WHEELING	60090	28510000	Paints and allied products
The Valspar Corporation	CHICAGO	60608	28510000	Paints and allied products
The Valspar Corporation	MOLINE	61265	28510000	Paints and allied products
Union Carbide Corporation	CHICAGO	60803	28510000	Paints and allied products
Williams-Hayward Protective Coatings, Inc	SUMMIT ARGO	60501	28510000	Paints and allied products
Akzo Nobel Non-Stick Coatings, LLC	DES PLAINES	60018	28510100	Paints and paint additives
Allan's Paint Company, Inc.	CHICAGO	60608	28510100	Paints and paint additives
Behr Process Corporation	CHICAGO HEIGHTS	60411	28510100	Paints and paint additives
Coronado Paint Co Inc	ELK GROVE VILLAGE	60007	28510100	Paints and paint additives
Engineered Polymer Solutions, Inc	ROCKFORD	61104	28510100	Paints and paint additives
Finishes Unlimited, Inc	SUGAR GROVE	60554	28510100	Paints and paint additives
Quality Color Products Incorporated	BARTLETT	60103	28510100	Paints and paint additives
Stuart Industrial Coating Inc	CHICAGO	60628	28510100	Paints and paint additives
The Carbit Paint Company	CHICAGO	60622	28510100	Paints and paint additives
The Carbit Paint Company	CHICAGO	60647	28510100	Paints and paint additives
Crider Asphalt Ceiling Inc	LENZBURG	62255	28510105	Paints, asphalt or bituminous
National Bronze Powder Co	FRANKLIN PARK	60131	28510106	Paints, waterproof
Rust-Oleum Corporation	VERNON HILLS	60061	28510106	Paints, waterproof
Spraylat Corporation	CHICAGO	60633	28510106	Paints, waterproof
Akzo Nobel Coatings, Inc	WAUKEGAN	60085	28510107	Paints: oil or alkyd vehicle or water thinned
Seymour of Sycamore, Inc.	SYCAMORE	60178	28510107	Paints: oil or alkyd vehicle or water thinned
Vanex, Inc.	MOUNT VERNON	62864	28510107	Paints: oil or alkyd vehicle or water thinned
Big City Advancement	CHICAGO	60606	28440300	Perfumes and colognes
Coty Inc	BATAVIA	60510	28440300	Perfumes and colognes
Dawah Oil Palace	CHICAGO	60651	28440300	Perfumes and colognes
E Shell Enterprises	OAK LAWN	60453	28440300	Perfumes and colognes
Elite Management	CHICAGO	60619	28440300	Perfumes and colognes
Essence of Love	CHICAGO	60629	28440300	Perfumes and colognes
Fragrance Promotions	CHICAGO	60611	28440300	Perfumes and colognes
Green Mountain Flavors, Inc	OSWEGO	60543	28440300	Perfumes and colognes
Kk Fragrance & Novelties Inc	DARIEN	60561	28440300	Perfumes and colognes
Linda R Yeates	LINCOLN	62656	28440300	Perfumes and colognes
Michael Christopher Ltd	LAKE IN THE HILLS	60156	28440300	Perfumes and colognes
Original Brand Prod Co	EAST CARONDELET	62240	28440300	Perfumes and colognes
Romane Inc	ELMHURST	60126	28440300	Perfumes and colognes

Shiseido	ALGONQUIN	60102	28440300	Perfumes and colognes
Smile Aromatics, Inc.	PARK RIDGE	60068	28440300	Perfumes and colognes
Spoiled Rotten	GALENA	61036	28440300	Perfumes and colognes
Vassi Perfume	CHICAGO	60639	28440300	Perfumes and colognes
Marcy Laboratories, Inc	WEST CHICAGO	60185	28440303	Perfumes, natural or synthetic
Stone Chemical Laboratory Inc	CHICAGO	60622	28790107	Pesticides, agricultural or household
Agrochem Inc	NORTHBROOK	60062	28799904	Plant hormones
N B Coatings	LANSING	60438	28510108	Plastics base paints and varnishes
All In One General Supply Co	CHICAGO	60649	28420000	Polishes and sanitation goods
B&K Greenworld, Inc.	CHICAGO	60615	28420000	Polishes and sanitation goods
C.Q. Concepts Corp	MC HENRY	60050	28420000	Polishes and sanitation goods
Cook Composites and Polymers Co.	LEMONT	60439	28420000	Polishes and sanitation goods
Daley, J F International, Ltd	CHICAGO	60632	28420000	Polishes and sanitation goods
Dober Chemical Corp	MIDLOTHIAN	60445	28420000	Polishes and sanitation goods
Earth Friendly Products	WINNETKA	60093	28420000	Polishes and sanitation goods
Ecolab Inc	JOLIET	60436	28420000	Polishes and sanitation goods
Ecolab Inc	ELK GROVE VILLAGE	60007	28420000	Polishes and sanitation goods
Ernst Products	LITCHFIELD	62056	28420000	Polishes and sanitation goods
Healthcon Corp	CHICAGO	60610	28420000	Polishes and sanitation goods
Huegelmann S Interior	LEMONT	60439	28420000	Polishes and sanitation goods
Kjh Metal Finishing Co	FRANKLIN PARK	60131	28420000	Polishes and sanitation goods
Lundmark, Inc	ADDISON	60101	28420000	Polishes and sanitation goods
Mackenzie Johnson	MAYWOOD	60153	28420000	Polishes and sanitation goods
Medallion Products Inc	CHICAGO	60641	28420000	Polishes and sanitation goods
Prism Sanitation Management LLC	SCHAUMBURG	60173	28420000	Polishes and sanitation goods
R P Polishing Co Inc	BENSENVILLE	60106	28420000	Polishes and sanitation goods
Rainbow Cleaners	WESTMONT	60559	28420000	Polishes and sanitation goods
Rochester Midland Corporation	MONTGOMERY	60538	28420000	Polishes and sanitation goods
S L P Holdings Inc	MONTGOMERY	60538	28420000	Polishes and sanitation goods
Tri Sect Corporation	SCHAUMBURG	60193	28420000	Polishes and sanitation goods
Turtle Wax, Inc.	CHICAGO	60638	28420000	Polishes and sanitation goods
Turtle Wax, Inc.	BRIDGEVIEW	60455	28420000	Polishes and sanitation goods
Turtle Wax, Inc.	BEDFORD PARK	60638	28420000	Polishes and sanitation goods
Vanguard Chemical Corporation	CHICAGO	60610	28420000	Polishes and sanitation goods
White's Sanitation Inc	STAUNTON	62088	28420000	Polishes and sanitation goods
Nu-Look Products Inc	CHICAGO	60609	28420200	Polishing preparations and related products
Polyurethane Products Corp	ADDISON	60101	28510208	Polyurethane coatings
Your Assistant	QUINCY	62301	28430300	Processing assistants
Nu Puttie Corporation	MAYWOOD	60153	28510301	Putty
Sarco Putty Company	CHICAGO	60629	28510301	Putty
Swan Black Manufacturing Co	CHICAGO	60651	28510301	Putty
Atlas Putty Products Co.	TINLEY PARK	60487	28510300	Putty, wood fillers and sealers
Bullen Chemical Company	CHICAGO	60628	28510400	Removers and cleaners
Elco Laboratories, Inc	UNIVERSITY PARK	60466	28420301	Rug, upholstery, or dry cleaning detergents or spotters
R R Street & Co Inc	NAPERVILLE	60563	28420301	Rug, upholstery, or dry cleaning

				detergents or spotters
Rust Contracting Siding	BELLEVILLE	62226	28420107	Rust removers
City of Chicago	CHICAGO	60626	28420404	Sanitation preparations
Diamond American Group	VERNON HILLS	60061	28420404	Sanitation preparations
First Ayd Corporation	ELGIN	60124	28420404	Sanitation preparations
It's Clean U.S.A., LLC	CHICAGO	60610	28420404	Sanitation preparations
Johnnys Little LLC	JACKSONVILLE	62650	28420404	Sanitation preparations
Olympic Sanitation, Ltd.	LOMBARD	60148	28420404	Sanitation preparations
Purdy Products Company	WAUCONDA	60084	28420404	Sanitation preparations
U S Chemical Corporation	MUNDELEIN	60060	28420404	Sanitation preparations
Medivation Industries, Inc.	ROLLING MEADOWS	60008	28420400	Sanitation preparations, disinfectants and deodorants
Medtrol, Inc.	NILES	60714	28420400	Sanitation preparations, disinfectants and deodorants
Fitzpatrick Bros., Inc.	CHICAGO	60612	28419904	Scouring compounds
Alhencam Seal Coat Inc	DECATUR	62521	28910100	Sealants
Eagle Enterprises, Inc	MC LEANSBORO	62859	28910100	Sealants
F H Leinweber Co Inc	CHICAGO	60628	28910100	Sealants
F. H. Leinweber Co., Inc.	OAK LAWN	60453	28910100	Sealants
Harmon Glass	JOLIET	60431	28910100	Sealants
Morton Yokohama Inc	CHICAGO	60606	28910100	Sealants
Safety Compound Corporation	LOMBARD	60148	28910100	Sealants
Sealants Champion & Restoration	PALOS HILLS	60465	28910100	Sealants
Salinas Services & Sealcoating	WEST CHICAGO	60185	28910104	Sealing compounds, synthetic rubber or plastic
Princeton Sealing Wax Co	PRINCETON	61356	28910105	Sealing wax
Remet Corporation	CHICAGO	60607	28910105	Sealing wax
A Veda Corporation	HOFFMAN ESTATES	60173	28440104	Shampoos, rinses, conditioners: hair
AB Services Inc	MELROSE PARK	60160	28440104	Shampoos, rinses, conditioners: hair
Hydrox Chemical Company, Inc.	ELGIN	60123	28440104	Shampoos, rinses, conditioners: hair
Master Well Comb Co Inc	LAKE ZURICH	60047	28440104	Shampoos, rinses, conditioners: hair
Moss International Inc	OGLESBY	61348	28440104	Shampoos, rinses, conditioners: hair
Namaste Laboratories, LLC	BLUE ISLAND	60406	28440104	Shampoos, rinses, conditioners: hair
Origins Natural Resources Inc	SCHAUMBURG	60173	28440104	Shampoos, rinses, conditioners: hair
Origins Natural Resources Inc	CHICAGO	60611	28440104	Shampoos, rinses, conditioners: hair
Pro-Line Winning Ways Inc	WASHINGTON	61571	28440104	Shampoos, rinses, conditioners: hair
Summit Laboratories Inc	CHICAGO HEIGHTS	60411	28440104	Shampoos, rinses, conditioners: hair
The D-Orum Corporation	CHICAGO	60628	28440104	Shampoos, rinses, conditioners: hair
Universal Beauty Products, Inc	ELK GROVE VILLAGE	60007	28440104	Shampoos, rinses, conditioners: hair
Blachford Corporation	FRANKFORT	60423	28410000	Soap and other detergents
Blendtech Industries, Inc.	ELGIN	60123	28410000	Soap and other detergents
Cade Laboratories, LLC	CHICAGO	60614	28410000	Soap and other detergents
Cater Chemical Co	ROSELLE	60172	28410000	Soap and other detergents
Country Lane Enterprises Inc	CHICAGO	60623	28410000	Soap and other detergents
Diamond Detergents LLC	CARY	60013	28410000	Soap and other detergents
Ecolab Inc	WATERLOO	62298	28410000	Soap and other detergents
Ecolab Inc	CHATHAM	62629	28410000	Soap and other detergents

Ecolab Inc	NORTHBROOK	60062	28410000	Soap and other detergents
Ecolab Inc	JOLIET	60431	28410000	Soap and other detergents
Ecolab Inc	SOUTH BELOIT	61080	28410000	Soap and other detergents
Ecolab Inc	MUNDELEIN	60060	28410000	Soap and other detergents
Full Circle Handcrafted Soaps	MOLINE	61265	28410000	Soap and other detergents
Kik Custom Products, Inc.	DES PLAINES	60018	28410000	Soap and other detergents
Lato Supply Corporation	FRANKLIN PARK	60131	28410000	Soap and other detergents
Merilyn & Friends Balenton	CHICAGO	60621	28410000	Soap and other detergents
Randall Packing Co	ORLAND PARK	60462	28410000	Soap and other detergents
Renee Thomas Inc	ELMHURST	60126	28410000	Soap and other detergents
Rock River Blending	ROCKFORD	61102	28410000	Soap and other detergents
Scenter of Mind	ROLLING MEADOWS	60008	28410000	Soap and other detergents
Sea Street Soap Works LLC	BELLEVILLE	62220	28410000	Soap and other detergents
Soaps Gone Buy	ELDORADO	62930	28410000	Soap and other detergents
Soapsublime	EVANSTON	60202	28410000	Soap and other detergents
Soapy Gurls USA Ltd	ALGONQUIN	60102	28410000	Soap and other detergents
Tech-Chem Corp	DUNDEE	60118	28410000	Soap and other detergents
The Dial Corporation	MONTGOMERY	60538	28410000	Soap and other detergents
Unilever United States, Inc.	CHICAGO	60601	28410000	Soap and other detergents
Westfalia-Surge Inc	ROMEOVILLE	60446	28410000	Soap and other detergents
Be Jeweled Bodyscents Corp	RIVERDALE	60827	28419905	Soap: granulated, liquid, cake, flaked, or chip
Blew Chemical Company	PALOS HEIGHTS	60463	28419905	Soap: granulated, liquid, cake, flaked, or chip
Bullen Midwest, Inc.	CHICAGO	60628	28419905	Soap: granulated, liquid, cake, flaked, or chip
Custom Blending & Packa	DUPO	62239	28419905	Soap: granulated, liquid, cake, flaked, or chip
Heaven Scent	SPRINGFIELD	62702	28419905	Soap: granulated, liquid, cake, flaked, or chip
Luvadubdub Co	EVANSTON	60202	28419905	Soap: granulated, liquid, cake, flaked, or chip
Soap Dicor Emporium	WINTHROP HARBOR	60096	28419905	Soap: granulated, liquid, cake, flaked, or chip
The Procter & Gamble Company	MARENGO	60152	28419905	Soap: granulated, liquid, cake, flaked, or chip
Tuple Inc	JOLIET	60435	28419905	Soap: granulated, liquid, cake, flaked, or chip
Unichem Corporation	CHICAGO	60609	28419905	Soap: granulated, liquid, cake, flaked, or chip
Aaro Vision, Inc.	ROCK FALLS	61071	28420100	Specialty cleaning
Atm America Corp.	SKOKIE	60076	28420100	Specialty cleaning
Bass Brother, Incorporated	CHICAGO	60624	28420100	Specialty cleaning
Brite Site Supply Inc	CHICAGO	60639	28420100	Specialty cleaning
Chavez Cleaning Services	CHICAGO	60630	28420100	Specialty cleaning
Clean R Ceilings	BOURBONNAIS	60914	28420100	Specialty cleaning
Clifton Chemical Company	CHEBANSE	60922	28420100	Specialty cleaning
Ecp Incorporated	WOODRIDGE	60517	28420100	Specialty cleaning
First Mate Yacht Detailing	WAUKEGAN	60085	28420100	Specialty cleaning
Fola Community Action	CHICAGO	60620	28420100	Specialty cleaning

Services				
Kirby S Grove	LOMBARD	60148	28420100	Specialty cleaning
Marshall Cleaning Service	BELLEVILLE	62226	28420100	Specialty cleaning
Professional Cleaning Service	LOCKPORT	60441	28420100	Specialty cleaning
R E Z Packaging Inc	CHICAGO	60609	28420100	Specialty cleaning
Scs Company	MIDLOTHIAN	60445	28420100	Specialty cleaning
Sunrise of Bloomingdale	BLOOMINGDALE	60108	28420100	Specialty cleaning
The Boyer Corporation	LA GRANGE	60525	28420100	Specialty cleaning
Tiger Accessory Group, L.L.C.	LINCOLNSHIRE	60069	28420100	Specialty cleaning
Todco Industries Inc	ARLINGTON HEIGHTS	60004	28420100	Specialty cleaning
United Laboratories Inc.	SAINT CHARLES	60174	28420100	Specialty cleaning
Venus Laboratories, Inc.	WOOD DALE	60191	28420100	Specialty cleaning
Another8hours	O FALLON	62269	28430000	Surface active agents
Avatar Corporation	UNIVERSITY PARK	60466	28430000	Surface active agents
Henkel Corporation	CHICAGO	60606	28430000	Surface active agents
Lambent Technologies Corp	GURNEE	60031	28430000	Surface active agents
Lambent Technologies Corp	GURNEE	60031	28430000	Surface active agents
McIntyre Group, Ltd.	UNIVERSITY PARK	60466	28430000	Surface active agents
Ygm Golf & Sportswear	BUFFALO GROVE	60089	28430000	Surface active agents
Frank Miller & Sons, Incorporated	RIVERDALE	60827	28420109	Sweeping compounds, oil or water absorbent, clay or sawdust
Oil-Dri Corporation of America	CHICAGO	60611	28420109	Sweeping compounds, oil or water absorbent, clay or sawdust
T Kw Inc	BARRINGTON	60010	28430202	Textile finishing agents
R-Five, Inc	CHICAGO	60632	28430304	Textile processing assistants
Pure Elegance	ROCKFORD	61104	28419906	Textile soap
Abbott Laboratories	NORTH CHICAGO	60064	28440000	Toilet preparations
Alberto-Culver Company	MELROSE PARK	60160	28440000	Toilet preparations
Alberto-Culver Company	WHEELING	60090	28440000	Toilet preparations
Alberto-Culver International, Inc	MELROSE PARK	60160	28440000	Toilet preparations
Alberto-Culver U S A Inc	MELROSE PARK	60160	28440000	Toilet preparations
Alberto-Culver U S A Inc	MINOOKA	60447	28440000	Toilet preparations
Avon Center	CHICAGO	60619	28440000	Toilet preparations
Bath & Body Works, Inc.	DEERFIELD	60015	28440000	Toilet preparations
Christopher Michael	ISLAND LAKE	60042	28440000	Toilet preparations
Colgate-Palmolive Company	CHICAGO	60602	28440000	Toilet preparations
Conair Corporation	RANTOUL	61866	28449905	Toilet preparations
Conopco, Inc.	LISLE	60532	28440000	Toilet preparations
Conopco, Inc.	WESTMONT	60559	28440000	Toilet preparations
Conopco, Inc.	CHICAGO	60623	28440000	Toilet preparations
Conopco, Inc.	ELGIN	60123	28440000	Toilet preparations
	DES PLAINES	60018	28440000	Toilet preparations
Coty Us, LLC	CHICAGO	60611	28440000	Toilet preparations
Deputante Inc	CHICAGO	60641	28440000	Toilet preparations
Emlin Cosmetics, Inc.	BENSENVILLE	60106	28440000	Toilet preparations
Gold Edge Supply	GLENVIEW	60026	28449905	Toilet preparations
H2o Plus, L.P.	CHICAGO	60607	28440000	Toilet preparations
Herb Mari-Mann Co Inc	DECATUR	62521	28440000	Toilet preparations

Herb Mari-Mann Co Inc	FINDLAY	62534	28440000	Toilet preparations
Iloria L'Original Beauty Concepts, Inc.	SOUTH HOLLAND	60473	28440000	Toilet preparations
Macfee Manufacturing Company	AURORA	60505	28440000	Toilet preparations
Mary Kay Cosmetics	COLLINSVILLE	62234	28440000	Toilet preparations
Mary Kay Inc	ROSELLE	60172	28440000	Toilet preparations
Maryville Women's Center	O FALLON	62269	28440000	Toilet preparations
Melissa Sass	PLAINFIELD	60544	28440000	Toilet preparations
One Love	CALUMET CITY	60409	28440000	Toilet preparations
Peggy Collier	BOLINGBROOK	60440	28440000	Toilet preparations
Pros Life Co	ELK GROVE VILLAGE	60007	28440000	Toilet preparations
Revlon Consumer Products Corporation	WONDER LAKE	60097	28440000	Toilet preparations
Soy World USA	DECATUR	62526	28440000	Toilet preparations
St. Ives Laboratories, Inc.	MELROSE PARK	60160	28440000	Toilet preparations
Stephanie's Cosmetics	HURST	62949	28440000	Toilet preparations
The Enterprising Kitchen Inc	CHICAGO	60640	28440000	Toilet preparations
Tropical Betty Cosmetics, Inc.	CHICAGO	60605	28440000	Toilet preparations
Vp Investment Corp	DEERFIELD	60015	28440000	Toilet preparations
Minar Products LLC	CHICAGO	60615	28440203	Toothpastes or powders, dentifrices
Prince Minerals, Inc.	QUINCY	62305	28799906	Trace elements (agricultural chemicals)
Sem Minerals LP	QUINCY	62305	28799906	Trace elements (agricultural chemicals)
Alvar, Inc	WASHBURN	61570	28510211	Varnishes, nec
United Gilsonite Laboratories	JACKSONVILLE	62650	28510211	Varnishes, nec
Valspar Coatings 12	ROCKFORD	61104	28510211	Varnishes, nec
Cool Vinyl USA LLC	SPRINGFIELD	62703	28510212	Vinyl coatings, strippable
Cusack Auto	BRIMFIELD	61517	28510212	Vinyl coatings, strippable
A Clear View Window Cleaning	LIBERTYVILLE	60048	28420111	Window cleaning preparations
A. J. Funk & Co.	ELGIN	60123	28420111	Window cleaning preparations
Anytime Window Cleaning Inc	CHICAGO	60647	28420111	Window cleaning preparations
Champion Packaging & Distribution, Inc	WOODRIDGE	60517	28420111	Window cleaning preparations
Christopher E Fox	AURORA	60505	28420111	Window cleaning preparations
Inshield Wiper, LLC	GENEVA	60134	28420111	Window cleaning preparations
Northern Illinois Windows Inc	MC HENRY	60050	28420111	Window cleaning preparations
The Knockout Group Inc	MELROSE PARK	60164	28420111	Window cleaning preparations
Zenith Chemical Works Inc	ADDISON	60101	28510213	Wood stains