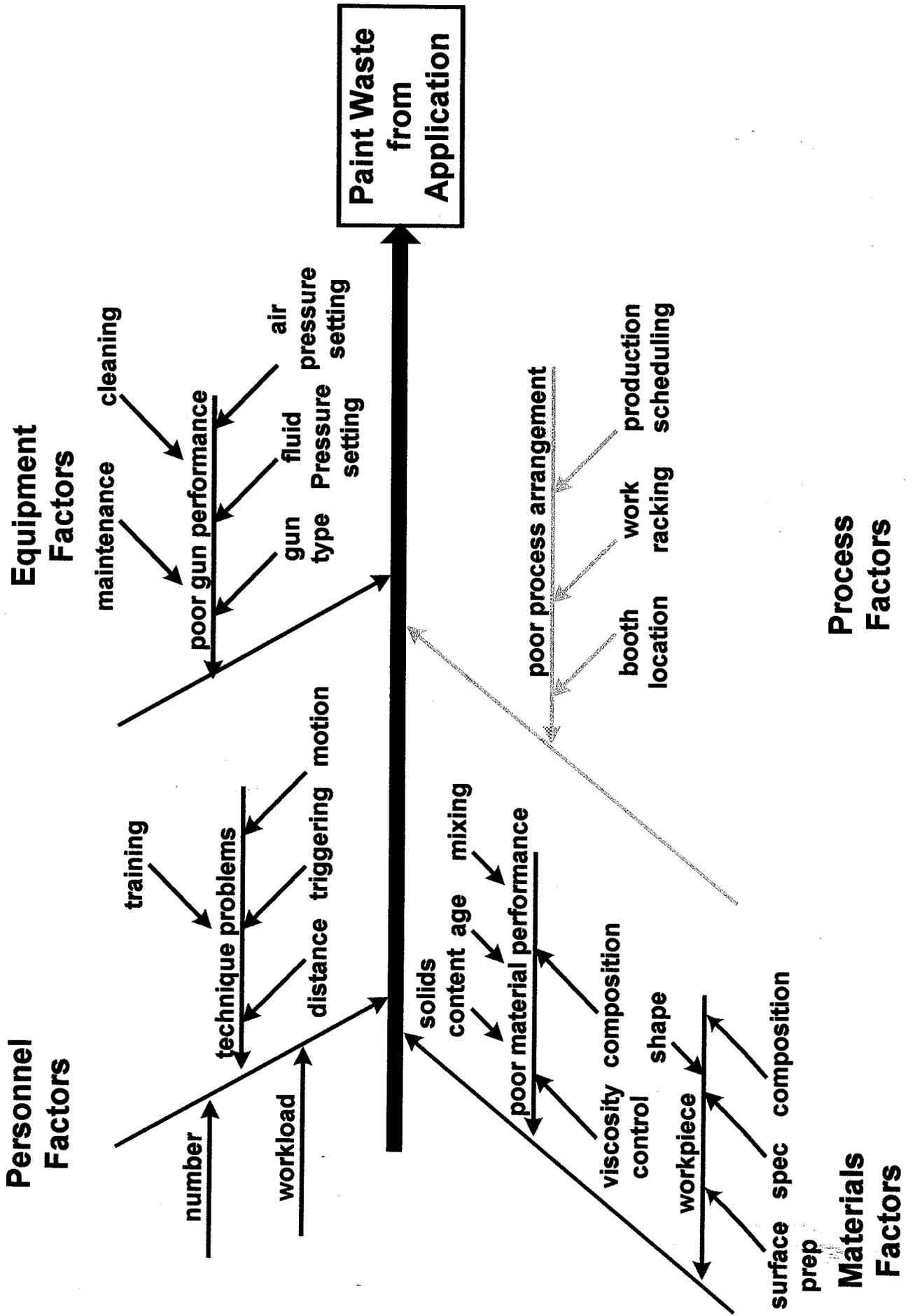


Sample Diagram for Painting Operations



EMISSIONS FROM THE APPLICATION OF VOC-CONTAINING PRODUCTS

Volatile Organic Compounds (VOCs) are found in many products used throughout the manufacturing process. VOCs evaporate readily into the atmosphere where reactions with sunlight produce ground-level ozone, better known as smog.

There are many individual chemicals, which are considered a VOC. The most common VOCs include acetone, xylene, toluene, MEK, and MIBK. Types of common products that contain VOCs include solvents, cleaners, degreasers, resins, glues, inks, coatings, paints, and thinners.

In order to determine whether your facility produces enough VOC emissions to qualify for the VOC Limited Amnesty Project, fill out and return to DEQ, these attached forms, *if you use any VOC-containing products*. You may also use your own format for performing the emissions calculations as long as the data stated below is submitted.

Fortunately, most Materials Safety Data Sheets contain VOC content information already calculated for you. Many paint and solvent suppliers and distributors have also produced special Air Quality Data Sheets or VOC Emissions Data Sheets to assist their customers in determining their VOC emissions.

Each product will have different emissions, depending on the following factors:

1. The VOC content of the product (in pounds of VOC per gallon of product) can be determined in the following ways:
 - a. directly identified on an Air Quality Data Sheet, a VOC Emissions Data Sheet, or a Materials Safety Data Sheet, or
 - b. derived using the percent of volatile compounds, less the water, and the weight of the product.
2. The weight of the product (in pounds per gallon of product) can be determined in the following ways:
 - a. directly identified on an Air Quality Data Sheet, a VOC Emissions Data Sheet, or a Materials Safety Data Sheet, or
 - b. derived using the specific gravity of the product.
3. The annual use of the product (in gallons per year)

Calculation Sheet #1 should be used to calculate the emissions for each individual VOC-containing product.

Company Name: _____

**EMISSIONS FROM THE APPLICATION OF
VOC-CONTAINING PRODUCTS
CALCULATION SHEET #1**

Use one Emissions Calculation Sheet for each VOC-containing product used. (Make additional copies of this sheet as needed, or contact DEQ for additional copies).

All the information needed to calculate the VOC emissions from any VOC-containing product can be found in the Materials Safety Data Sheet. Some products also have more detailed VOC Emissions Data Sheets or Air Quality Data Sheets. Ask your supplier, distributor, or manufacturer for more information.

Name of Product: _____

1. Enter the VOC content of the product:..... _____ lb VOC/gal
2. If the VOC content is not given, then
 - a. Enter the % by weight volatiles of the product:..... _____ %
 - b. Enter the weight of the product:..... _____ lb/gal
 - c. Multiply Line 2.a by Line 2.b and enter:..... _____ lb VOC/gal
3. If the weight of the product is not given, then
 - a. Enter the specific gravity of the product:..... _____
 - b. Multiply Line 3.a by 8.34:..... _____ lb/gal
 - c. Enter in Line 2.b
4. Enter the amount of the product used in 2001:..... 40,000 gallons/yr
5. Multiply Line 1 or Line 2c by Line 4 and enter:..... _____ lbs VOC/yr
6. Divide Line 5 by 2,000 and enter:..... _____ tons VOC/yr

Line 6 is the estimated tons of VOC emitted per year from the application of this VOC-containing product.



MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

DATE OF PREPARATION= 5/03/95

PAGE 1

MANUFACTURER'S NAME: KURFEES COATINGS
ADDRESS: 201 EAST MARKET STREET
CITY, STATE: LOUISVILLE, KENTUCKY 40202

EMERGENCY TELEPHONE NO. DAY 800-424-9300 NIGHT 800-424-9300
INFORMATION TELEPHONE NO. DAY 502-584-0151 NIGHT

SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S CODE IDENTIFICATION: MM172200-00
PRODUCT CLASS: ALKYD
TRADE NAME: IPC - ALKYD INDUSTRIAL ENAMEL - FLAT BLACK
HMIS INFORMATION: HEALTH- 32 FLAMMABILITY- 2 REACTIVITY- 0 PERSONAL PROTECTIVE EQUIPMENT-

SECTION II - HAZARDOUS INGREDIENTS

Table with 7 columns: INGREDIENT, MATERIAL DESCRIPTION, CAS#, % BY WEIGHT, ACGIH TLV/TWA PPM, OSHA PEL PPM, ACGIH TLV TWA MG/M3, OSHA PE MG/M. Rows include LAMP BLACK and MINERAL SPIRITS.

*** THIS PRODUCT CONTAINS PIGMENTS WHICH MAY BECOME A DUST NUISANCE WHEN REMOVED BY ABRASIVE BLASTING, SANDING OR GRINDING.

SECTION III - PHYSICAL DATA

BOILING RANGE: HIGH 401.0 OF, LOW 306.0 OF
VAPOR PRESSURE: 2.00 MMHG @ 68OF
VAPOR DENSITY: HEAVIER THAN AIR
EVAPORATION RATE: SLOWER THAN ETHER
WEIGHT PER GALLON: 10.84
% VOLATILE BY VOLUME: 45.75
% VOLATILE BY WEIGHT: 27.43
VOC/VOS--POUNDS/GALLON: 2.97
VOC/VOS--GRAMS/LITER: 355.81

Company Name: _____

**EMISSIONS FROM THE APPLICATION OF
VOC-CONTAINING PRODUCTS
CALCULATION SHEET #1**

Use one Emissions Calculation Sheet for each VOC-containing product used. (Make additional copies of this sheet as needed, or contact DEQ for additional copies).

All the information needed to calculate the VOC emissions from any VOC-containing product can be found in the Materials Safety Data Sheet. Some products also have more detailed VOC Emissions Data Sheets or Air Quality Data Sheets. Ask your supplier, distributor, or manufacturer for more information.

Name of Product: _____

1. Enter the VOC content of the product:..... _____ lb VOC/gal
2. If the VOC content is not given, then
 - a. Enter the % by weight volatiles of the product:..... _____ %
 - b. Enter the weight of the product:..... _____ lb/gal
 - c. Multiply Line 2.a by Line 2.b and enter:..... _____ lb VOC/gal
3. If the weight of the product is not given, then
 - a. Enter the specific gravity of the product:..... _____
 - b. Multiply Line 3.a by 8.34:..... _____ lb/gal
 - c. Enter in Line 2.b
4. Enter the amount of the product used in 2001:..... 40,000 gallons/yr
5. Multiply Line 1 or Line 2c by Line 4 and enter:..... _____ lbs VOC/yr
6. Divide Line 5 by 2,000 and enter:..... _____ tons VOC/yr

Line 6 is the estimated tons of VOC emitted per year from the application of this VOC-containing product.

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MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS

002/008

#2

SECTION I - GENERAL INFORMATION

MANUFACTURED BY: COURTAULDS COATINGS EMERGENCY 24 HOURS CALL: 1-800-854-6813
400 S. 13TH STREET INFORMATION 8AM - 5PM EST: 502-588-9200
LOUISVILLE, KY. 40203 EFFECTIVE DATE: JANUARY 7, 1994

MANUFACTURER'S IDENTIFICATION CODE/ORDER NO.: 8202, BLACK

PRODUCT CLASS: ALKYD
PRODUCT IDENTITY: INTERLAC 820 (8200 LOW VOC ALKYD)

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	PERCENT BY WEIGHT	OCCUPATIONAL EXPOSURE LIMIT		VAPOR PRESS. @ 20 C
			TLV (PPM)	PEL (PPM)	
ALIPHATIC PETROLEUM DISTILLATES	8052-41-3	34	100	100	2.6MMHG
AROMATIC PETROLEUM DISTILLATES	64742-95-6	2	100	100	10MMHG

INHALATION OF SOLVENT VAPOR MAY CAUSE NOSE AND THROAT IRRITATION. INHALATION OF VAPOR OR ABSORPTION OF SOLVENT THROUGH THE SKIN MAY RESULT IN NERVOUS SYSTEM EFFECTS SUCH AS DIZZINESS, NAUSEA, HEADACHE AND SLEEPINESS. DIRECT EYE OR SKIN CONTACT MAY CAUSE MODERATE TO SEVERE IRRITATION AND MAY CAUSE DERMATITIS.

SECTION III - PHYSICAL DATA

BOILING RANGE: 210-700 F.

PERCENT VOLATILE BY VOLUME: 49

WEIGHT PER GALLON: 8.36 LBS.

VAPOR DENSITY: XX HEAVIER THAN AIR
_____ LIGHTER THAN AIR

EVAPORATION RATE: _____ FASTER THAN ETHER
XX_ SLOWER THAN ETHER

Company Name: _____

**EMISSIONS FROM THE APPLICATION OF
VOC-CONTAINING PRODUCTS
CALCULATION SHEET #1**

Use one Emissions Calculation Sheet for each VOC-containing product used. (Make additional copies of this sheet as needed, or contact DEQ for additional copies).

All the information needed to calculate the VOC emissions from any VOC-containing product can be found in the Materials Safety Data Sheet. Some products also have more detailed VOC Emissions Data Sheets or Air Quality Data Sheets. Ask your supplier, distributor, or manufacturer for more information.

Name of Product: _____

1. Enter the VOC content of the product:..... _____ lb VOC/gal
2. If the VOC content is not given, then
 - a. Enter the % by weight volatiles of the product:..... _____ %
 - b. Enter the weight of the product:..... _____ lb/gal
 - c. Multiply Line 2.a by Line 2.b and enter:..... _____ lb VOC/gal
3. If the weight of the product is not given, then
 - a. Enter the specific gravity of the product:..... _____
 - b. Multiply Line 3.a by 8.34:..... _____ lb/gal
 - c. Enter in Line 2.b
4. Enter the amount of the product used in 2001:..... 40,000 gallons/yr
5. Multiply Line 1 or Line 2c by Line 4 and enter:..... _____ lbs VOC/yr
6. Divide Line 5 by 2,000 and enter:..... _____ tons VOC/yr

Line 6 is the estimated tons of VOC emitted per year from the application of this VOC-containing product.

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005/008

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS

#3

SECTION I - GENERAL INFORMATION

MANUFACTURED BY: COURTAULDS COATINGS EMERGENCY 24 HOURS CALL: 1-800-854-6813
400 S. 13TH STREET INFORMATION 8AM - 5PM EST: 502-588-9200
LOUISVILLE, KY. 40203 EFFECTIVE DATE: MARCH 18, 1994

MANUFACTURER'S ID CODE / ORDER NO.: 2648 KD BASE
2649 LIGHT BASE
PRODUCT CLASS: ALKYD 2650 DEEP BASE
PRODUCT IDENTITY: INTERLAC 665 (DW SERIES ALKYD)

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	PERCENT BY WT.			OCCUPATIONAL EXPOSURE LIMIT		VAPOR PRESS. @ 20 C	TOXICIT DATA
		A	B	A+B	TLV(PPM)	PEL(PPM)		
PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE	108-65-6	1	NO	B	N/E	N/E	3.7MMHG	
MINERAL SPIRITS	64741-41-9	37	NO	B	100	500	2MMHG	
VM&P NAPHTHA	64742-89-8	13	NO	B	300	300	15MMHG	
*XYLENE	1330-20-7	1	NO	B	100	100	5MMHG	

*THIS IS A TOXIC CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III AND OF 40 CFR 372.

SECTION III - PHYSICAL DATA

BOILING RANGE: 240-400 F.

PERCENT VOLATILE BY VOLUME: 59-62

WEIGHT PER GALLON: 7.6-8.8 LBS.

VAPOR DENSITY: XX HEAVIER THAN AIR
— LIGHTER THAN AIR

EVAPORATION RATE: — FASTER THAN ETHER
XX SLOWER THAN ETHER

Company Name: _____

**EMISSIONS FROM THE APPLICATION OF
VOC-CONTAINING PRODUCTS
CALCULATION SHEET #1**

Use one Emissions Calculation Sheet for each VOC-containing product used. (Make additional copies of this sheet as needed, or contact DEQ for additional copies).

All the information needed to calculate the VOC emissions from any VOC-containing product can be found in the Materials Safety Data Sheet. Some products also have more detailed VOC Emissions Data Sheets or Air Quality Data Sheets. Ask your supplier, distributor, or manufacturer for more information.

Name of Product: _____

1. Enter the VOC content of the product:..... _____ lb VOC/gal
2. If the VOC content is not given, then
 - a. Enter the % by weight volatiles of the product:..... _____%
 - b. Enter the weight of the product:..... _____ lb/gal
 - c. Multiply Line 2.a by Line 2.b and enter:..... _____ lb VOC/gal
3. If the weight of the product is not given, then
 - a. Enter the specific gravity of the product:..... _____
 - b. Multiply Line 3.a by 8.34:..... _____ lb/gal
 - c. Enter in Line 2.b
4. Enter the amount of the product used in 2001:..... 40,000 gallons/yr
5. Multiply Line 1 or Line 2c by Line 4 and enter:..... _____ lbs VOC/yr
6. Divide Line 5 by 2,000 and enter:..... _____ tons VOC/yr

Line 6 is the estimated tons of VOC emitted per year from the application of this VOC-containing product.

Internet Resources for P2 in Metal Painting and Coating

Pollution Prevention in Metal Painting and Coating Operations: A Manual for Technical Assistance Providers – Produced by the Northeast Waste Management Officials Association; April 1998.

<http://www.p2pays.org/ref/01/00777/toc.htm>

Waste Reduction in Metal Coating - Information on the many elements of a typical coating process, such as types of metal preparation, application techniques, and cleanup operations. Information on pollution prevention, increasing transfer efficiency, alternatives to solvent-based coatings, and industrial case studies also can be found in this sector. This web site is managed by the Waste Reduction Resource Center (WRRC) based at the North Carolina Division of Pollution Prevention and Environmental Assistance.

<http://wrrc.p2pays.org/industry/metalcoat.htm>

DoD - Painting and Coating Operations – A quick guide to the essential P2 information on DoD - Painting and Coating Operations, as well as a compilation of pertinent on-line resources. Provided by WRRC.

<http://wrrc.p2pays.org/p2rx/toc.asp?hub=45&subsec=7&nav=7>

Pollution Prevention in Painting and Coating Operations - Produced by the Ohio EPA Office of Pollution Prevention (OPP); Fact Sheet Number 23, 1994.

<http://www.epa.state.oh.us/opp/paints/fact23.html>

Pollution Prevention Resources for the Painting and Coating Industry – List of Internet Resources for the Paint and Coatings Sector. Provided by the Ohio EPA OPP.

<http://www.epa.state.oh.us/opp/paints.html>

The Spray Technique Analysis and Research (STAR[®]) Program is a revolutionary and unique approach to improving the efficiency of manual spray coating operations. The STAR[®] program teaches spray technicians how to optimize the efficiency of an entire spray system and was developed by the Iowa Waste Reduction Center (IWRC).

<http://www.iwrc.org/programs/STAR.cfm>

Industry Sector Solutions Database - The Pollution Prevention Information Resource for Industry Sectors (P2IRIS) interactive database of pollution prevention technologies and processes is

organized by industry processes. Developed by the Institute of Advanced Manufacturing Sciences.

<http://www.iams.org/iamsorg/p2iris/home.htm>

Internet Resources for P2 in Metal Painting/Coating

Paints and Coatings Resource Center - Painting compliance and pollution prevention information for painting and coating industry. The Paint and Coatings Resource Center (PCRC) is maintained by the National Center for Manufacturing Sciences (NCMS).

<http://www.paintcenter.org/>

Business Assistance Paint and Coatings Manufacturing Industry Resources – Fact sheets, industry overview, description and links for the paint and coating manufacturing sector. Web site provided by the Pacific Northwest Pollution Prevention Resource Center.

<http://www.pprc.org/pprc/sbap/painting.html#livdoc>

Database for the coating sector. This link includes information on many different coating sectors including metal painting. This web site is maintained by the Toxic Use Reduction Institute (TURI) based at the University of Massachusetts – Lowell.

<http://www.p2gems.org/Sites.cfm?CatID=113>

Pollution Prevention Opportunities for Painting and Coating Operations – Developed by the Pennsylvania Department for Environmental Protection; Fact Sheet, 1997

<http://www.dep.state.pa.us/dep/deputate/pollprev/pdf/paintops.pdf>

Welcome to the Coatings Guide™ a pollution prevention tool for paints and coatings users. The Coatings Guide™ contains several tools to help users identify low-volatile organic compound/hazardous air pollutant coatings that may serve as drop-in replacements for existing coating operations.

<http://www.cage.rti.org/>