



Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

AUTOMATE(TM) Red IK HF Liquid Dye

Revision date: 07/11/2004

Supplier

Rohm and Haas Company
100 Independence Mall West
Philadelphia, PA 19106-2399 United States of America

For non-emergency information contact: 215-592-3000

Emergency telephone number

Spill Emergency	215-592-3000
Health Emergency	215-592-3000
Chemtrec	800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
C.I. Solvent Red 164	92257-31-3	40.0 - 50.0 %
Extracted naphthenic oil	64742-53-6	50.0 - 60.0 %
Xylene	1330-20-7	<= 0.9 %
Ethylbenzene	100-41-4	<= 0.3 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form liquid

Colour red

Odour Petroleum odor

Hazard Summary

CAUTION!

INHALATION OF HIGH VAPOR OR MIST CONCENTRATIONS CAN CAUSE THE FOLLOWING:
IRRITATION OF NOSE, THROAT, AND LUNGS
HEADACHE
CENTRAL NERVOUS SYSTEM (CNS) EFFECTS
IRRITATING TO EYES AND SKIN.
PROLONGED OR REPEATED OVEREXPOSURE TO ETHYLBENZENE MAY CAUSE THE FOLLOWING: - KIDNEY EFFECTS - LIVER EFFECTS - LUNG EFFECTS - PITUITARY EFFECTS - THYROID EFFECTS - TESTICULAR EFFECTS
THE FOLLOWING CHEMICALS HAVE BEEN LISTED BY THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) AS POSSIBLE CANCER CAUSING AGENTS:
ETHYLBENZENE (100-41-4)
PROLONGED OR REPEATED OVEREXPOSURE TO C.I. SOLVENT RED 164 CAN CAUSE ADVERSE REPRODUCTIVE EFFECTS BASED ON PRELIMINARY RESULTS FROM A SCREENING LEVEL TEST IN EXPERIMENTAL ANIMALS.

Potential Health Effects

Primary Routes of Entry: Inhalation
Eye contact
Skin contact

Eyes: The solvent(s) in this material can cause the following:
slight irritation

Skin: The solvent(s) in this material can cause the following:
slight irritation
Prolonged or repeated skin contact can cause the following:
defatting and drying of the skin which can lead to irritation and dermatitis

Ingestion: Material is possibly harmful if swallowed.
The solvent(s) in this material can cause the following:
gastrointestinal irritation
abdominal pain
dizziness
headache
nausea
Aspiration into the lungs may cause:
pneumonitis (lung inflammation)
pulmonary edema (fluid in lung tissue and air spaces)
lung injury

Inhalation: Inhalation of high solvent vapor or mist concentrations can cause the following:
irritation of nose, throat, and lungs
headache
nausea
dizziness
anesthetic effects
drowsiness
unconsciousness
central nervous system (CNS) effects

possible death

Chronic Exposure: Prolonged or repeated overexposure to C.I. Solvent Red 164 can cause adverse reproductive effects based on preliminary results from a screening level test in experimental animals. Prolonged or repeated overexposure to ethylbenzene may cause the following: - kidney effects - liver effects - lung effects - pituitary effects - thyroid effects - testicular effects

Xylene	ACGIH	Not classifiable as a human carcinogen.
Xylene	IARC	Classification not possible from current data.
Xylene	IRIS	Not classifiable.
Ethylbenzene	ACGIH	Confirmed animal carcinogen with unknown relevance to humans.
Ethylbenzene	IARC	Possible carcinogen.
Ethylbenzene	IRIS	Not classifiable.

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. Give artificial respiration if breathing has stopped. Consult a physician.

Skin contact: Wash off with soap and plenty of water. Remove contaminated clothing. Consult a physician. Wash clothing before reuse. Do not take clothing home to be laundered.

Eye contact: Rinse with water. If eye irritation persists, consult a specialist.

Ingestion: Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. IMMEDIATELY see a physician. Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

Notes to physician

Product contains a petroleum distillate that may cause CNS symptoms. If swallowed, DO NOT induce vomiting due to the risk of aspiration posed by petroleum distillates. Careful gastric lavage may be indicated.

5. FIRE-FIGHTING MEASURES

Flash point > 93 °C (> 199.40 °F) SETAFLASH CLOSED CUP

Ignition temperature 307.0 °C (585 °F) solvent

Lower explosion limit No data available

Upper explosion limit No data available

Suitable extinguishing media: Use the following extinguishing media when fighting fires involving this material:
 water spray
 dry chemical
 alcohol-resistant foam
 carbon dioxide (CO₂)

Specific hazards during fire fighting: Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and protective suit.

Further information: Move containers promptly out of fire zone. If removal is impossible, cool containers with water spray.

Remain upwind.

Avoid breathing noxious fumes from fire-exposed material.

Contain run-off.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations.

If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow.

Methods for cleaning up

Keep spectators away.

Eliminate all ignition sources including those beyond the immediate spill area.

Ventilate the area.

Floor may be slippery; use care to avoid falling.

Contain spills immediately with inert materials (e.g., sand, earth).

Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.

Avoid breathing vapor.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

7. HANDLING AND STORAGE

Storage

Storage conditions: Avoid temperature extremes during storage; ambient temperature preferred.

Store away from excessive heat (e.g. steam pipes, radiators), from sources of ignition and from reactive materials. Ground all metal containers during storage and handling. Keep tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight.

Further information:

Vapors can be evolved when material is heated during processing operations. See SECTION 8, Exposure Controls/Personal Protection, for types of ventilation required.

Ground all containers when transferring material.

Wash after handling and shower at end of work period.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
Xylene	Rohm and Haas	TWA	50 ppm
	Rohm and Haas	STEL	75 ppm
	Rohm and Haas	Absorbed via skin	

ACGIH	TWA	100 ppm
ACGIH	STEL	150 ppm
OSHA_TRANS	PEL	435 mg/m3 100 ppm
Z1A	TWA	435 mg/m3 100 ppm
Z1A	STEL	655 mg/m3 150 ppm

Component	Regulation	Type of listing	Value
Ethylbenzene	Rohm and Haas	TWA	50 ppm
	Rohm and Haas	STEL	75 ppm
	ACGIH	TWA	434 mg/m3 100 ppm
	ACGIH	STEL	543 mg/m3 125 ppm
	OSHA_TRANS	PEL	435 mg/m3 100 ppm

Eye protection: Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Hand protection: Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): Neoprene gloves. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Skin and body protection: Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

Respiratory protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Up to 10 times the exposure limit: Wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. Up to 50 times the exposure limit: Wear a properly fitted NIOSH approved (or equivalent) full-facepiece, air-purifying respirator, OR full-facepiece, airline respirator in the pressure demand mode. Above 50 times the exposure limit or Unknown: Wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode, OR full-facepiece, airline respirator in the pressure demand mode with emergency escape provision. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and R95 or P95 filters.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Engineering measures: Use explosion-proof local exhaust ventilation with a minimum capture velocity of 100 ft/min (0.5 m/sec) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	red
Odour	Petroleum odour
pH	not applicable
Boiling point/range	204 - 327 °C (399 - 621 °F) solvent

Melting point/range	No data available
Flash point	> 93 °C (> 199.40 °F) SETAFLASH CLOSED CUP
Ignition temperature	307 °C (585 °F) solvent
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	0.04 mmHg at < 20 °C (< 68.00 °F) solvent
Relative vapour density	not applicable
Water solubility	insoluble
Relative density	0.94
Viscosity, dynamic	100.000 - 118.000 mPa.s
Evaporation rate	not applicable
Percent volatility	50 - 60 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	This material is considered stable. However, avoid contact with ignition sources (e.g. sparks, open flame, heated surfaces).
Materials to avoid	acids Strong Oxidizers
Hazardous decomposition products	There are no known hazardous decomposition products for this material.,
polymerization	Product will not undergo polymerization.

11. TOXICOLOGICAL INFORMATION

There is no data available for this product.

Component: **Distillates (petroleum), hydrotreated light naphthenic**

Acute oral toxicity LD50 rat > 5,000 mg/kg

Component: **Xylene**

Acute oral toxicity LD50 rat 4,300 mg/kg

Component: **Ethylbenzene**

Acute oral toxicity LD50 rat 3,500 mg/kg

Component: **Distillates (petroleum), hydrotreated light naphthenic**

Acute inhalation toxicity LC50 rat 4 h 2.2 mg/l

Component: **Xylene**

Acute inhalation toxicity LC50 rat 4 h 29.09 mg/l

Component: **Ethylbenzene**

Acute inhalation toxicity	LC50 rat 17.375 mg/l
Component: <u>Distillates (petroleum), hydrotreated light naphthenic</u>	
Acute dermal toxicity	LD50 rabbit > 3,160 mg/kg
Component: <u>Xylene</u>	
Acute dermal toxicity	LD50 rabbit >4,300 mg/kg
Component: <u>Ethylbenzene</u>	
Acute dermal toxicity	LD50 rabbit > 15,000 mg/kg
Component: <u>Xylene</u>	
Skin irritation	rabbit Moderate irritation.
Component: <u>Xylene</u>	
Eye irritation	rabbit moderate to severe.
Component: <u>Xylene</u>	
Subchronic toxicity	Animal studies indicate prolonged inhalation exposures may cause the following: brain damage
Component: <u>Xylene</u>	
Toxicity to reproduction	In laboratory studies, birth defects, increased fetal lethality and delayed fetal development have been observed in offspring of female animals exposed during pregnancy.
Component: <u>Ethylbenzene</u>	
Subchronic toxicity	IARC assessment: this product is possibly carcinogenic to humans (Group 2B).
Component: <u>Ethylbenzene</u>	
Carcinogenicity:	This product contains ethylbenzene. A study conducted by the National Toxicology Program states that lifetime inhalation exposure of rats and mice to high concentrations of ethylbenzene (750 ppm) resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. Incidences of testicular adenoma were increased along with increased incidences of thyroid effects in rats at 750 ppm; pituitary effects were observed in female mice at 250 ppm. These effects were not observed in animals exposed to lower concentrations of ethylbenzene (75 ppm). The study does not address the relevance of these results to humans.
Component: <u>Ethylbenzene</u>	
Toxicity to reproduction	Inhalation

12. ECOLOGICAL INFORMATION

There is no data available for this product.

Xylene

Ecotoxicity effects

Toxicity to fish LC50 Rainbow trout (*Oncorhynchus mykiss*) 96 h
13.5 mg/l

Toxicity to aquatic invertebrates EC50 *Daphnia magna*
150 mg/l

Ethylbenzene

Ecotoxicity effects

Toxicity to fish	LC50 Rainbow trout (<i>Oncorhynchus mykiss</i>) 96 h 4.2 mg/l
Toxicity to algae	EC50 Algae (<i>Selenastrum capricornutum</i>) 72 h 4.6 mg/l
Toxicity to aquatic invertebrates	EC50 <i>Daphnia magna</i> 48 h 2.1 mg/l

13. DISPOSAL CONSIDERATIONS

Disposal

Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

IMO/IMDG

Not regulated (Not dangerous for transport)

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations

15. REGULATORY INFORMATION

Workplace Classification

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

SARA TITLE III: Section 313 Information (40CFR372)

This product contains a chemical which is listed in Section 313 at or above de minimis concentrations. The following listed chemicals are present: (Quantity present is found elsewhere on this MSDS.)

SARA Title III Components:	Ethylbenzene	100-41-4
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CERCLA Information (40CFR302.4)

This material is regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304. This material is or contains chemical(s) listed in 40 CFR Table 302.4 or nondesignated RCRA ICR substance(s). (Nondesignated ICR substances apply to materials that will not be reused.) The Reportable Quantity(s) (RQ) are listed below. Releases in excess of its reportable quantity must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

CERCLA Components:	Ethylbenzene	100-41-4	1,000 lbs RQ
	Xylene	1330-20-7	100 lbs RQ

US. Toxic Substances Control Act (TSCA) All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
HMIS	1*	1	0

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAC	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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