

Material Safety Data Sheet

Section 1. Product Identification and Use

Product Name - Trade Name **876-9077 HARDENER**

Supplier - Manufacturer **Chemcraft International Inc.,**
155 Rose Glen Road North
P.O. Box 458
Port Hope, ON.
Canada L1A 3Z3

Telephone (905) 885-6388 Fax (905) 885-5097

In case of Emergency (905) 885-6388, (800) 263-7951

For Transport Emergency or After Hours

CANUTEC (613) 996-6666

Code 876-9077

Synonym HARDENER

Chemical Name Not applicable.

Chemical Family Synthetic polymer in organic solvent. (Paint.)

Chemical Formula Not applicable.

Material Uses Coatings: Surface coatings and finishes.

Product Identification Number (PIN) 1263 PAINT

Section 2. Hazardous Ingredients

Name	CAS #	% by Weight	Exposure Limits	
			LC ₅₀ /LD ₅₀	TLV/PEL
2-Propanol, 1-methoxy, acetate	108-65-6	10-30	ORAL (LD50): Acute: 8532 mg/kg [Rat].	Not available.
Polymeric isocyanate		30-60	Not available.	Not available.
Xylenes	1330-20-7	5-10	ORAL (LD50): Acute: 4300 mg/kg [Rat].	TWA: 100 (ppm) from ACGIH (TLV) [United States] [1992] TWA: 150 (ppm) from ACGIH (TLV) [United States] STEL: 651 (mg/m ³) from ACGIH (TLV) [United States]
n-Butyl acetate	123-86-4	10-30	ORAL (LD50): Acute: 14130 mg/kg [Rat]. 7100 mg/kg [Mouse]. DERMAL (LD50): Acute: 5000 mg/kg [Rabbit].	TWA: 150 STEL: 200 (ppb) from ACGIH (TLV) [United States] [1994]
Hexamethylene diisocyanate	822-06-0	0.1-1	ORAL (LD50): Acute: 350 mg/kg [Mouse]. 768 mg/kg [Rat]. DERMAL (LD50): Acute: 617 mg/kg [Rabbit].	TWA: 0.005 (ppm) from ACGIH (TLV) [United States]

Trace impurities and additional material names not listed above may appear in other sections of this MSDS. These materials may be listed for toxicological concerns, local compliance, or other reasons.

Section 3. Physical Data

Physical State and Appearance Liquid.

Color Not available. Odor Not available. Taste Not available.

Molecular Weight Not applicable.

pH (1% soln/water) Not applicable.

Boiling Point The lowest known value is 126.5°C (259.7°F) (Acetic acid, butyl ester). Weighted average: 138.97°C (282.1°F)

Continued on Next Page

Melting Point	May start to solidify at -77.9°C (-108.2°F) based on data for: Acetic acid, butyl ester.
Critical Temperature	Not available.
Specific Gravity	Weighted average: 1.01 (Water = 1)
Vapor Pressure	The highest known value is 1.1 kPa (@ 20°C) (Acetic acid, butyl ester). Weighted average: 0.62 kPa (@ 20°C)
Vapor Density	The highest known value is 4.6 (Air = 1) (2-Propanol, 1-methoxy-, acetate). Weighted average: 4.29 (Air = 1)
Volatility	Not available.
Odor Threshold	The highest known value is 0.3 ppm (Benzene, dimethyl-) Weighted average: 0.12 ppm
Water/Oil Dist. Coeff.	The product is much more soluble in oil.
Ionicity (in Water)	Not available.
Dispersion Properties	Is not dispersed in cold water, hot water. See solubility in methanol, diethyl ether, n-octanol, acetone.
Solubility	Easily soluble in methanol, diethyl ether, n-octanol, acetone. Insoluble in cold water, hot water.

Section 4. Fire and Explosion Hazard

The Product is:	Flammable.
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames and sparks. Flammable in presence of heat.
Fire Fighting Media and Instructions	Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Never direct a water jet in the container in order to prevent any splashing of the product which could cause spreading of the fire. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Fire Hazards	Vapor may travel considerable distance to source of ignition and flash back. (Acetic acid, butyl ester)
Flash Points	The lowest known value is CLOSED CUP: 24°C (75.2°F). (Tagliabue.). OPEN CUP: 37.8°C (100°F). (Cleveland). (Benzene, dimethyl-)
Flammable Limits	The greatest known range is LOWER: 1.3% UPPER: 13.1% (2-Propanol, 1-methoxy-, acetate)
Auto-Ignition Temperature	The lowest known value is 407°C (764.6°F) (Acetic acid, butyl ester).
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Highly explosive in presence of open flames and sparks.
Special Remarks on Explosion Hazards	Not available.

Section 5. Reactivity Data

Stability	The product is stable.
Decomposition products	Not available.
Conditions of Instability	High heat and moisture. (Hexane, 1,6-diisocyanato-)
Incompatibility with various substances	Reactive with oxidizing agents, acids, alkalis, moisture. Slightly reactive to reactive with reducing agents, organic materials, metals.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Not available.
Special Remarks on Corrosivity	Not available.

Section 6. Toxicological Properties

Routes of Entry	Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 4300 mg/kg [Rat.]. (Benzene, dimethyl-). Acute dermal toxicity (LD50): 5000 mg/kg [Rabbit]. (Acetic acid, butyl ester).
Effects of Acute Exposure	SENSITIZER:SKIN AND RESPIRATORY. Very dangerous in case of skin contact (irritant), of eye contact (irritant). Slightly dangerous to dangerous in case of ingestion, of inhalation. Very slightly to slightly dangerous in case of skin contact (sensitizer, permeator). This product may irritate eyes and skin upon contact. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC [Hexane, 1,6-diisocyanato-]. Classified None. by OSHA [Hexane, 1,6-diisocyanato-]. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs. Repeated or prolonged exposure to the substance can produce target organs damage.
Special Remarks on Toxicity to Animals	In laboratory inhalation studies, birth defects, increased foetal lethality and delayed foetal development have been observed in offspring of female animals, exposed during pregnancy, with a threshold response level in the range of 545 ppm concentration in the air. (1-Propanol, 2-methoxy-, acetate)
Special Remarks on Chronic Effects on Humans	Medical supervision of all employees who handle or come in contact with isocyanates is recommended. These should include preemployment and periodic medical examinations with pulmonary function test (FEV, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin aczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to an isocyanate, no further exposure can be permitted. (Polymeric Isocyanate)
Special Remarks on Other Toxic Effects on Humans	Material is irritating to mucous membranes and upper respiratory tract. (Acetic acid, butyl ester)
Exposure Limits	Benzene, dimethyl- TWA: 100 (ppm) from ACGIH (TLV) [United States] [1992] TWA: 150 (ppm) from ACGIH (TLV) [United States] STEL: 651 (mg/m ³) from ACGIH (TLV) [United States] Acetic Acid, Butyl Ester TWA: 150 STEL: 200 (ppb) from ACGIH (TLV) [United States] [1994] Hexane, 1,6-diisocyanato- TWA: 0.005 (ppm) from ACGIH (TLV) [United States] Consult local authorities for acceptable exposure limits.

Section 7. Preventive Measures

Personal Protection	Splash goggles. Overalls. Respiratory protection as specified in the Respirator Code, is required. Fresh air respirators such as NIOSH Type Cor equivalent, or self-contained breathing apparatus may be required. Chemical resistant gloves (Nitrile rubber, Butyl rubber). Wear appropriate respirator when ventilation is inadequate.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Small Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal. Transport to a well ventilated area (outside) and treat with neutralizing solution: mixture of water (80%) with non-ionic surfactant Tergitol TMN-10[such as from Union Carbide](20%).
Large Spill	Toxic flammable liquid, insoluble or very slightly soluble in water. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Precautions	Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, alkalis, moisture.	
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).	
TDG Classification	TDG CLASS 3: Flammable liquid.	
PIN	1263 PAINT	PG: II
Special Provisions for Transport	109 The consignor must determine legal limit. (Benzene, dimethyl-)	
Federal and State Regulations	California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Xylenes - mixed isomers; normal Butyl Acetate TSCA 8(b) inventory: Xylenes - mixed isomers; normal Butyl Acetate SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Xylenes - mixed isomers: fire, immediate health hazard SARA 313 toxic chemical notification and release reporting: Xylenes - mixed isomers 6.60625% CERCLA: Hazardous substances.: Xylenes - mixed isomers; normal Butyl Acetate;	
Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).	
Other Classifications	WHMIS (Canada)	WHMIS CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
	HCS (U.S.A.)	Class: Contains material which may cause cancer. Class: Flammable liquid having a flash point lower than 37.8°C (100°F). Class: Target organ effects.
Hazardous Material Information System (U.S.A.)	Health Hazard	* 2
	Fire Hazard	3
	Reactivity	2
	Personal Protection	h
National Fire Protection Association (U.S.A.)	Health	2
	Fire Hazard	3
	Reactivity	2
	Specific Hazard	

Section 8. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Hazardous Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Hazardous Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.
Ingestion	Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Continued on Next Page

Hazardous Ingestion Not available.

Section 9. Preparation Information

References	-Manufacturers Material Safety Data Sheets.
Other Special Considerations	<ul style="list-style-type: none">- Please note that this material contains isocyanates as a component of the formulation. Isocyanates have been prescribed as a designated substance (R.R.O. 1990, Reg. 182, s. 2) by the Government of Ontario under the Occupational Health and Safety Act (the Act). This Occupational Health and Safety Division of the Ministry of Labour is responsible for administering the Act. The Act places duties on employers to take all precautions reasonable in the circumstances to protect the health of workers. Employers are also required to comply with regulations and to provide information, instruction and supervision to workers.- A "designated substance" is defined by the Act to mean a biological, chemical or physical agent or combination thereof prescribed as a designated substance to which the exposure of a worker is prohibited, regulated, restricted, limited or controlled. As such, there are regulations associated with the production, use handling and storage of isocyanates such as exposure limits, assessment and control programs and medical surveillance. Information regarding the type of isocyanate supplied by Chemcraft Inc. and used at your facility may be obtained from the individual MSDS's of the materials purchased.- There are several informative books and guides to the Act and the Regulation respecting Isocyanates published by the Ontario Government such as:<ul style="list-style-type: none">· Occupational Health and Safety Act· Occupational Health and Safety Act and Regulations for Industrial Establishments· Regulations respecting Isocyanates - made under the Occupational Health and Safety Act· Designated Substances in the Workplace: A Guide to the Isocyanates RegulationThese books may be obtained through your local office of the Ministry of Labour.- Please be aware that the regulations may require you to control exposure limits by the use of personal protective equipment. In this case, the regulations clearly state that the use of charcoal filter respirators are not an effective control for isocyanates. When respiratory protection is required fresh air respirators or self-contained breathing apparatus, as specified in the Respirator Code, must be used.- If you have further questions regarding these products or the regulations, or require more detailed information, you may contact us or your local branch of the Ministry of Labour.
Related Information	This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by CPR.
Preparation Information	<p>Validated by A McLeod on 2/13/2001.</p> <p>Verified by A McLeod.</p> <p>Printed 10/8/2002.</p>
Information Contact	Prepared by the Health, Safety and Environment Department, Chemcraft International Inc., P.O. Box 458, 155, Rose Glen Road North, Port Hope, ON. Canada. Phone: 905 885-6388 Fax: 905 885-5097

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.