

MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTIFICATION AND USE

Material Name Identifier:

37172 Hardener

Supplier Name: Sterling Marking Products Inc.
 Street Address: 349 Ridout St. N.,
 City and Province: London, Ontario
 Postal Code: N6A 2N8

Telephone Numbers: (519) 434-5785, (800) 265-5957
 Fax Number: (519) 434-9516, (800) 667-6600
 Webpage: <http://www.sterling.ca>

Emergency Telephone Number: CANUTEC (613) 996-6666; Cellular *666

Material Use: **Hardener**

TDG Shipping Information:

PAINT RELATED MATERIAL, UN1263

Class: 3 - Flammable Liquid

PG: III - Relatively Minor Danger

WHMIS Classification:

Class B, Division 2 - Flammable Liquids
 Class D, Division 2A - Very Chronically Toxic (Contains
 Ethylbenzene and Toluene diisocyanate)
 Class D, Division 2B - Skin/Eye Irritant

IATA Shipping (Air):

PAINT RELATED MATERIAL
Packaging Instruction for Limited Quantity: Y344
Maximum Net Quantity (per outer package): 10L
 Refer to Pkg. Inst. No. for inner packaging type and maximum
 quantity per inner package. DGR – 54th edition

SECTION II - HAZARDOUS INGREDIENTS

Component	CAS Registry	Toxicology	Concentration % (w/w)
Ethylbenzene	100-41-4	ACGIH TLV-TWA 100 ppm; STEL 125 ppm LD50: 3500 mg/kg (oral, rat) LC50: 55000 mg/m ³ /2H (inhalation, rat)	1-5
Propylene glycol monomethyl ether aceate	108-65-6	TLV: Not available LD50: 8532 mg/kg (oral, rat) LC50: Not available	10-20
Xylene	1330-20-7	ACGIH TLV-TWA 100 ppm; STEL 150 ppm LD50: 4300 mg/kg (oral, rat) LC50: 5000 ppm/4H (inhalation, rat)	10-20
Toluene diisocyanate	26471-62-5	ACGIH TLV-TWA 0.005 ppm; STEL 0.02 ppm (sen) LD50: 4130 mg/kg (oral, rat) LC50: Not available	<0.5

Note: All ingredients are listed on the Domestic Substances List (DSL) and the Toxic Substances Control Act (TSCA) list.

SECTION III - PHYSICAL DATA

Physical State: Liquid

Specific Gravity: 1.1

Vapour Density: Heavier than air (3-4)

Viscosity: Viscous

Vapour Pressure (mbar): 10.0

VOC (ingredients with vapour pressure >0.1 mbar): 379 g/l

Boiling Point (°C): 137

Odour: Organic solvents

Solubility in Water (20 °C): Insoluble

Flash Point (°C): 23

SECTION IV - FIRE AND EXPLOSION DATA

Flammability: Flammable

LEL (% vol) lowest value of components: 1.0

UEL (% vol) highest value of components: 10.8

Hazardous Combustion Products: Oxides of carbon, oxides of nitrogen, toluene diisocyanate (TDI) vapours and other organic combustion products can be generated in a fire.

Means of Extinction Fire: Chemical powder, foam, carbon dioxide. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

Special Fire-Fighting Procedures: Full protective equipment, including self-contained breathing apparatus should be used. Foam in large quantities. Cool endangered containers with water.

Unusual Fire & Explosion Hazards: Do not inhale fumes or decomposition products. Toxic gases may be generated by burning and thermal decomposition.

Flash Point (°C TCC): 23

SECTION V - REACTIVITY DATA

Stability: Stable

Incompatibility: Material reacts with water, amines and alcohols.

Hazardous Decomposition Products: Oxides of carbon, oxides of nitrogen, toluene diisocyanate (TDI) vapours and other organic combustion products can be generated in a fire.

SECTION VI - TOXICOLOGICAL PROPERTIES

Routes of Entry: Eye, Skin, Inhalation, Ingestion

Effects of Acute Exposure:

Eye: Inhalation or contact with material may irritate or burn skin and eyes.

Skin: Inhalation or contact with material may irritate or burn skin and eyes.

Inhalation: Isocyanate vapours or mists at concentrations above the TLV (Refer to Section II) can irritate the mucous membranes of the respiratory tract. Persons with hyperreactivity may have asthmatic attacks. High concentrations may lead to bronchitis, bronchial spasm and pulmonary edema. Chronical inhalation (over-exposures) or single over-exposure may cause isocyanate sensibilisation.

Ingestion: May cause gastrointestinal distress.

Effects of Chronic Exposure:

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Repeated and prolonged overexposure, and/or individual sensitivity, may increase the potential for, and degree of, adverse health effects.

Irritancy: Hazardous by WHMIS criteria

Respiratory Tract Sensitization: Insufficient data available

Carcinogenicity: This product contains two ingredients listed by IARC (International Agency for Research on Cancer) as Group 2B carcinogens (Possibly Carcinogenic to Humans). Both Ethylbenzene [CAS # 100-41-4] and Toluene Diisocyanate [CAS # 26471-62-5] are listed as Group 2B carcinogens.

Synergistic Materials: Insufficient data available

Reproductive Effects: Insufficient data available

Teratogenicity: High exposures to xylene in some animal studies, often at levels toxic to the mother, affected embryo/fetal development. The significance of this finding to humans is unknown.

Mutagenicity: Insufficient data available

SECTION VII - PREVENTATIVE MEASURES

Gloves: Solvent impermeable gloves are required for repeated or prolonged contact.

Eye Protection: Wear safety glasses where contact with the eye is anticipated. Chemical safety goggles should be worn whenever there is a possibility of splashing or other contact with the eyes.

Respiratory Protection: Proper selection of respiratory protection depends upon many factors, including duration and level of exposure and conditions of use. In general, exposure to organic chemicals, such as those contained in this product, may not require the use of respiratory protection, if used in a well-ventilated area. In areas of restricted ventilation, a NIOSH approved organic vapour respirator may be required. Under certain conditions, such as spraying, a mechanical pre-filter may also be required. In confined areas, or in high exposure situations, a NIOSH/MSHA approved air-supplied respirator may be required. If the TLV's listed in Section II are exceeded, use a properly fitted NIOSH/MSHA approved respirator with an appropriate protection factor.

Use material only with adequate ventilation to prevent exceeding the recommended exposure limit or a build-up of explosive concentrations in the air. Use explosion proof equipment. No smoking or open lights. Air-dry contaminated clothing in a well ventilated area before laundering.

Other Protective Equipment Recommended: Safety shower and eye wash fountain in the work area.

Engineering Controls: Use general dilution and local exhaust in sufficient volume, and pattern to keep concentrations of hazardous ingredients listed in Section II below the lowest exposure limit stated. Fumes emitted while baking this product must be properly vented.

Leak and Spill Procedure:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

All equipment used when handling the product must be grounded.

Do not touch or walk through spilled material.

Stop leak if you can do it without risk.

Prevent entry into waterways, sewers, basements or confined areas.

A vapor suppressing foam may be used to reduce vapors.

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Use clean non-sparking tools to collect absorbed material.

Waste Disposal: Review federal, provincial and local government requirements prior to disposal. Use a licensed waste treatment facility or reclaimer.

Storage Requirements: Store in a tightly closed container. Store away from incompatible materials. Store in a cool, dry, well-ventilated area. Ensure storage area has adequate ventilation, and no source of open flame or sparks. Limit quantity of the material in storage. Ensure all bottles are properly labeled.

Special Precautions: Ground all equipment to prevent static discharge. Keep containers away from heat, sparks, and open flame. Wash thoroughly with soap and water after handling material.

SECTION VIII - FIRST AID

Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Eye: Immediately flush eyes with a directed stream of water for at 15minutes, while holding eyelids open. If irritation or redness develops or persists, get medical attention.

Skin: Flush affected areas with large amounts of water, remove contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation or redness develops or persists, get medical attention.

Inhalation: Remove victim to fresh air. If breathing difficulties develop, administer oxygen and get medical attention. If victim is not breathing, administer artificial respiration and get medical attention.

Ingestion: DO NOT INDUCE VOMITING. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs (Aspiration pneumonitis can be fatal). If victim conscious and alert, give victim lukewarm water. GET IMMEDIATE MEDICAL ATTENTION.

SECTION IX - PREPARATION AND ADDITIONAL INFORMATION

Prepared by: Sterling Marking Products Inc.
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Information for this material safety data sheet was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond the control of the supplier, it is assumed that user of this material has been fully trained according to the mandatory requirements of WHMIS. If user requires independent information on ingredients in this or any other material, we recommend contact with the Canadian Centre for Occupational Health and Safety (CCOHS) in Hamilton, Ontario (1-800-263-8276) or CSST in Montreal, Quebec (514-873-3990).