

OPTICALLY CLEAR CONFORMAL COATING EPOXY

4224-PART B

# Safety Data Sheet

## Section 1: Product and Company Identification

### Product Identifier and Other Means of Identification

**Product Name:** Optically Clear Conformal Coating Epoxy**SDS Code:** 4224-Part B**Related Part #** 4224-1, 4224-2, 4224-3

### Recommended Use and Restriction on Use

**Use:** Epoxy conformal coating hardener**Uses Advised Against:** Not available

### Details of Manufacturer or Importer

#### Manufacturer

MG Chemicals  
1210 Corporate Drive  
Burlington, Ontario L7L 5R6  
CANADA

MG Chemicals (Head Office)  
9347-193 Street  
Surrey, British Columbia V4N 4E7  
CANADA

**☎** 1-800-340-0772**FAX** 1-800-340-0773**E-MAIL:** [support@mgchemicals.com](mailto:support@mgchemicals.com)**WEB** [www.mgchemicals.com](http://www.mgchemicals.com)**☎** 1-905-331-1396**FAX** 1-905-331-2682**E-MAIL:** [info@mgchemicals.com](mailto:info@mgchemicals.com)**E-MAIL** (Competent Person): [sds@mgchemicals.com](mailto:sds@mgchemicals.com)

### Emergency Phone Number

**For hazardous material incidents ONLY**—leaks, spills, fires, exposures or accidents  
USA or CANADA: Call CHEMTREC ☎: **1-800-424-9300**

**For emergencies involving dangerous goods;** Collect 24/7  
CANADA: Call CANUTEC ☎: **1-613-996-6666** or **\*666** on cellular phones

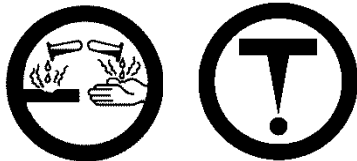
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**Section 2: Hazards Identification**

**Classification of Hazardous Chemical**

**WHMIS Classification**



E - Corrosive; D2B - Toxic Material (Skin Sensitization in Humans)

**GHS Categories**

Criteria		Category	Signal Word	Pictograms
Serious Eye Damage		1B	Danger	Corrosion
Skin Corrosion		1	Danger	Corrosion
Sensitization	Skin sensitizer	1	Warning	Exclamation
Acute Toxicity	Oral	4	Warning	Exclamation
Environmental Hazard	Acute Aqua. Tox.	3	—	none

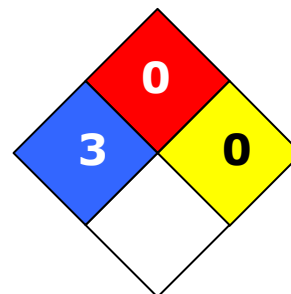
*Note:* The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories do not allow comparisons between classes.

**Other Classifications**

**HMIS® RATING**

<b>HEALTH:</b>	<b>3</b>
<b>FLAMMABILITY:</b>	<b>0</b>
<b>PHYSICAL HAZARD:</b>	<b>0</b>
<b>PERSONAL PROTECTION:</b>	

**NFPA® 704 CODES**



*Approximate HMIS and NFPA Risk Ratings Legend:*



0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

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**Label Elements**

<b>Signal Word</b>	<b>DANGER</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H314: Causes severe skin burns and eye damage
	H302: Harmful if swallowed H317: May cause allergic skin reaction
No Symbol Mandated	H402: Toxic to aquatic life
	<b>Precautionary Statements</b>
<b>Prevention</b>	P102: Keep out of reach of children. P280: Wear protective gloves/protective clothing/eye protection. P260: Do not breathe vapors. P264: Wash hands thoroughly after handling. P272: Contaminated clothing should not be allowed out of the workplace. P273: Avoid release to the environment.
<b>Response</b>	P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P363: Wash contaminated clothing before reuse. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P301+ P312 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P310: Immediately call a POISON CENTER or doctor.
<b>Storage</b>	P405: Store locked up.
<b>Disposal</b>	P501: Dispose of contents/container in accordance to local/regional/national/international regulations.

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**Other Hazards**

Not applicable

**Section 3: Hazardous Ingredients**

CAS #	Chemical Name	Wt%
2855-13-2	isophorone diamine	100%

**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
<b>IF IN EYES</b>	P305 + P351 + P338, P310
<b>Immediate Symptoms</b>	<i>burns, irritation, tearing, redness, pain</i>
<b>Response</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
<b>IF ON SKIN (or hair)</b>	P303 + P353 + P361, P310, P363
<b>Immediate Symptoms</b>	<i>burns, blistering, pain, rash, redness</i>
<b>Response</b>	Rinse skin with water/shower. Take off immediately all contaminated clothing. Immediately call a POISON CENTRE/doctor.  Wash contaminated clothing before reuse.
<b>Delayed Symptoms</b>	<i>rash, redness</i>
<b>If skin irritation or rash occurs</b>	Get medical advice/attention.
<b>IF SWALLOWED</b>	P301 + P330 + P331, P310 <i>(Not a likely route of exposure under normal use)</i>
<b>Immediate Symptoms</b>	<i>Burns to mouth, throat, stomach, abdominal pain</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTRE/doctor.
<b>IF INHALED</b>	P304 + P340, P312 <i>(Not a likely route of exposure under normal use)</i>
<b>Immediate Symptoms</b>	<i>cough, respiratory tract irritation</i>
<b>Response</b>	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing.
<b>If feeling unwell</b>	Call a POISON CENTRE/doctor.

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**Section 5: Fire-Fighting Measures**

<b>Auto-ignition Temperature</b>	Not available	<b>Flash Point</b> <sup>a)</sup>	112 °C [234 °F]	<b>LFL [LEL]</b> <b>UFL [UEL]</b> <sup>b)</sup>	Not available
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**In case of fire** P370 + P378

**Response** Use dry chemical, carbon dioxide, or chemical foam to extinguish. Use water spray to cool containers.

**Combustion Products** Produces carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>)

**Fire-Fighter** Wear self-contained breathing apparatus for fire fighting

**General Information** Produces irritating and toxic fumes in fires or in contact with hot surfaces.

a) Based on Pensky-Martens closed cup value

b) LFL = Lower Flammability [or Explosion] Limit (in volume %);  
UFL = Upper Flammability [or Explosion] Limit (in volume %)

**Section 6: Accidental Release Measures**

**Personal Protection** See Section 8. Avoid breathing vapors.

**Containment** Remove all sources of ignition.  
Prevent spill from entering drains and waterways. Contain with inert absorbent (such as soil, sand, vermiculite).

**Cleaning** Collect liquid in a sealable, chemically-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe up further residue with paper towel and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue.

**RECOMMENDATION:** Use a plastic, stainless steel or carbon steel container.

**Disposal** Dispose of spill waste according to Section 13.

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**Section 7: Handling and Storage**

- Prevention**      Keep out of reach of children.
- Do not eat, drink, or smoke when using this product.
- Wear protective gloves/protective clothing/eye protection. Wear butyl rubber, nitrile or other impervious gloves with breakthrough time greater than intended use period.
- Do not breathe vapors.
- Wash hands thoroughly after handling.
- Contaminated clothing should not be allowed out of the workplace.
- Avoid release to the environment.
- Handling**      Wear protective gloves/clothing/eye protection.
- Wash hands thoroughly after handling.
- Storage**      Keep container tightly closed. Store in a well-ventilated area. Protect from sunlight.

**Section 8: Exposure Controls/Personal Protection**

**Routes of Entry**

Eyes, ingestion, inhalation, and skin

**Substances with Occupational Exposure Limit Values**

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
	ACGIH	None established	None established
	U.S.A. OSHA PEL	None established	None established
	Canada	None established	None established

*Note:* The ACGIH<sup>1</sup>, OSHA, and Canadian provinces exposure limits were consulted. Limits from by RTECS database<sup>2</sup> of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

**Engineering Controls**

- Ventilation**      Keep airborne concentrations below exposure limits.

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**OPTICALLY CLEAR CONFORMAL COATING EPOXY****4224-PART B****Personal Protective Equipment****Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

**RECOMMENDATION:** Use safety goggles or faceshield. At a minimum, wear glasses with lateral protection (side shields).

**Skin Protection**

Use of protective gloves chemically resistant gloves.

For incidental exposure, you may use nitrile rubber gloves.

For prolonged exposure, use nitrile rubber, polyvinyl alcohol (PVA) or Viton gloves and aprons.

**Respiratory Protection**

If exposed to vapors or mist, wear a full face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respiratory cartridge.

**RECOMMENDATION:** Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this MSDS, and that the respirator is fitted to the employee by a professional.

**General Hygiene Considerations**

Wash hands thoroughly with water and soap after handling.

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**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Liquid	<b>Appearance</b>	Colorless
<b>Odor</b>	None	<b>Odor Threshold</b>	Not available
<b>pH</b>	Not available	<b>Specific Gravity @25 °C</b>	0.922
<b>Solubility in Water</b>	Not available	<b>Freezing/Melting Point <sup>a)</sup></b>	Not available
<b>Flash Point</b>	112 °C [234°F]	<b>Vapor Pressure @ 20 °C</b>	Not available
<b>Boiling Point</b>	≥247 °C [≥477 °F]	<b>Evaporation Rate</b>	Not available
<b>Lower Flammability Limit <sup>a)</sup></b>	Not available	<b>Upper Flammability Limit <sup>b)</sup></b>	Not available
<b>Auto-ignition Temperature</b>	Not available	<b>Decomposition Temperature</b>	Not available
<b>Viscosity @40 °C</b>	<20 mm <sup>2</sup> /s	<b>Vapor Density</b>	>1 (Air = 1)
<b>Partition Coefficient <sup>a)</sup></b>	Log Pow 0.8 @23 °C [73 °F]		

a) Literature

**Section 10: Stability and Reactivity**

<b>Reactivity</b>	Not available
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures.
<b>Conditions to Avoid</b>	High temperatures, misting
<b>Incompatibilities</b>	Strong oxidizing agents
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5



**OPTICALLY CLEAR CONFORMAL COATING EPOXY****4224-PART B****Section 11: Toxicological Information****Routes of Exposure**

Eyes, ingestion, inhalation, and skin

**Symptoms Summary**

- Eyes** Causes severe eye irritation and may cause chemical burns. Also cause eye redness or pain.
- Skin** May cause chemical burns and serious skin irritation. May cause allergic skin reactions.
- Inhalation** *Not a likely route of exposure due to low volatility.* Inhalation of vapors may cause irritation to the nose, throat and lung (upper respiratory tract).  
When heated, vapors may also result in itching of the face with skin redness (erythema) and swelling (edema).
- Ingestion** *Not a likely route of exposure.* May cause severe irritation or corrosive burns to the mouth, throat, esophagus, and stomach. May cause allergic reactions.
- Chronic** Prolonged or repeated exposure to the uncured epoxy hardener may cause sensitization (allergies).

**Acute Toxicity (Lethal Exposure Concentrations)**

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation	TCLo inhalation
isophorone diamine	1030 mg/kg Rat	Not available	Not available	Not available

*Note:* Representative toxicity data from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS)<sup>1</sup> data from supplier MSDS were also consulted.

**Other Toxicological Effects**

- Skin corrosion/irritation** Isophorone diamine (CAS# 2855-13-2) can cause skin burns.
- Serious eye damage/irritation** Isophorone diamine (CAS# 2855-13-2) can cause severe eye damage.
- Sensitization (allergic reactions)** Isophorone diamine (CAS# 2855-13-2) may cause skin sensitization in humans

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<b>Carcinogenicity</b> (risk of cancer)	Not classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP
<b>Mutagenicity</b> (risk of heritable genetic effects)	No data available
<b>Reproductive Toxicity</b> (risk to sex functions)	No data available
<b>Teratogenicity</b> (risk of fetus malformation)	No data available
<b>STOT-single exposure</b>	No data available.
<b>STOT-repeated exposure</b>	No data available.
<b>Aspiration hazard</b>	Not a Cat 1 or 2 aspiration toxicants

**Section 12: Ecological Information**

The ecotoxicity of the mixture was estimated by the calculation method using the summation of classified ingredients. The IMDG Code criteria and the raw-material MSDS along with supporting data for the classification of registered substances from the European Chemical Agency database (<http://echa.europa.eu>) were used.

Isophorone diamine (CAS# 2855-13-2) is an acute category 3 environmental toxicant (with minimal LC50 of 110 mg/L for *Leuciscus idus* (Golden orfe); EC50 17.4 mg/L 48 h *Daphnia magna* (water flea), EC50 37 mg/L 72 h *Desmodesmus subspicatus* (green algae)).

**Acute Ecotoxicity**

Category 3

*GHS Code: Hazard Statement*

H403: Harmful to aquatic life

P273: Avoid release to the environment

P391: Collect spillage

**Chronic Ecotoxicity**

Not available

**Biodegradability**

Not available

**Other Effects**

VOC (Regulated Volatile Organic Content) = 100% [1055 g/L]

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**Section 13: Disposal Information**

Dispose of contents in accordance with all local, regional, national, and international regulations.

**Section 14: Transport Information**

**Ground**

**Refer to TDG regulations** (Canadian Transportation of Dangerous Goods regulations); **USA CFR 49 Regulations** (Parts 100 to 185). **ADR** (European Agreement Concerning the International Carriage of Dangerous Goods by Road, and **ADN** (Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways).

Sizes 5 liter and under

**Limited Quantity**



Sizes greater than 5 liter

**UN number:** UN2289  
**Shipping Name:** ISOPHORONEDIAMINE  
**Class:** 8  
**Packing Group:** III  
**Marine Pollutant:** No



**Air**

**Refer to ICAO-IATA Dangerous Goods Regulations.**

Sizes 1 liter and under

**Limited Quantity**



Packing Instr. Y841

Sizes greater than 1 liters up to 5 L

**UN number:** UN2289  
**Shipping Name:** ISOPHORONEDIAMINE  
**Class:** 8  
**Packing Group:** III  
**Marine Pollutant:** No  
 Packing Instr. A803



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**OPTICALLY CLEAR CONFORMAL COATING EPOXY****4224-PART B****Sea****Refer to IMDG regulations.**

Sizes 5 liter and under

**Limited Quantity**

Sizes greater than 5 liter

**UN number:** UN2289  
**Shipping Name:**  
ISOPHORONEDIAMINE  
**Class:** 8  
**Packing Group:** III  
**Marine Pollutant:** No



*Note:* Shipper must be appropriately **trained and certified** before involvement with the transport of dangerous goods.

**Section 15: Regulatory Information****Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

All hazardous ingredients are listed on the DSL/NDSL.

**Industry and Science Canada**

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

**Health Canada**

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

**USA****CAA** (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

**EPCRA** (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product does not contain substance subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

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**OPTICALLY CLEAR CONFORMAL COATING EPOXY****4224-PART B****TSCA** (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

**California Proposition 65** (Chemicals known to cause cancer or reproductive toxicity, Sept 2, 2011 revision, USA).

This product does not contain any of the listed substances.

**Europe****RoHS**

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

**WEEE**

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

**Section 16: Other Information**

<b>MSDS Prepared by</b>	Michel Hachey
<b>Date of Revision</b>	19 March 2014
<b>Supersedes</b>	21 November 2013
<b>Reason for Changes:</b>	Catalogue number change in Section 1

**References**

- 1) ACGIH 2013 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2013).
- 2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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**OPTICALLY CLEAR CONFORMAL COATING EPOXY****4224-PART B****Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
NOELR	No observable effect loading ratio
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

**Technical Queries** Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at [www.mgchemicals.com](http://www.mgchemicals.com).

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