

4225-B

EPOXY CONFORMAL COATING

Safety Data Sheet

Section 1: Identification


Product Identifier and Other Means of Identification

Product Identifier: 4225-B**Other Means of Identification:** Epoxy Conformal Coating**Related Part #** 4225-1.35L, 4225-2.7L, 4225-10.8L, 4225-60L, 4225-540L

Recommended Use and Restriction on Use

Use: Conformal coating epoxy hardener**Uses Advised Against:** Not applicable

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA +1-800-340-0772**Fax** +1-800-340-0773**E-mail** support@mgchemicals.com**Web** www.mgchemicals.com**E-MAIL** (Competent Person): sds@mgchemicals.com

Emergency Phone Number




For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA—Call Verisk 3E at **+1-866-519-4752** or **+1-760-476-3962**
(Service access code: 335388)**For emergencies involving the transport of dangerous goods;** 24/7 service
CANADA—Call CANUTEC collect at **+1-613-996-6666** or ***666** on cellular phones

4225-B
EPOXY CONFORMAL COATING
Section 2: Hazard(s) Identification
Classification of Hazardous Chemical
GHS Categories

Criteria		Category	Signal Word	Pictograms
Eye Damage		1	Danger	Corrosive
Flammable Liquid		2	Danger	Flame
Sensitization	Skin	1	Warning	Exclamation
Skin Irritation		2	Warning	Exclamation
Specific Target Organ Toxicity	Single Exposure	3	Warning	Exclamation
Hazardous to the Aquatic Environment	Chronic	2	None	Environment


Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity), which is opposite to HMIS and NFPA conventions. Severity category rankings do not allow comparisons between classes.

Label Elements

Signal Word	DANGER
Pictograms	Hazard Statements
	H225: Highly flammable liquid and vapor
	H318: Causes serious eye damage
	H315: Causes skin irritation H317: May cause an allergic skin irritation H336: May cause drowsiness or dizziness

Section continued on the next page

4225-B
EPOXY CONFORMAL COATING
Continued...

Pictograms	Hazard Statements
	H411: Toxic to aquatic life with long lasting effects
Prevention	Precautionary Statements
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating, and lighting equipment.
P243	Take action to prevent static discharges.
P260	Avoid breathing mist, vapors, and spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves, protective clothing, eye protection, and face protection.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
Response	Precautionary Statements
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P303 + P361 + P352, P363	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash skin with plenty water. Wash contaminated clothing before use.
P304 + P340, P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
P305 + P351 + P338, P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
P333 + P313	If skin irritation or rash occurs: Get medical advice or attention.
P391	Collect spillage.

Section continued on the next page

4225-B
EPOXY CONFORMAL COATING
Continued...

Storage	Precautionary Statements
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents in accordance to local, regional, and international regulations.

Other Hazards

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
68410-23-1	fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	52%
67-63-0	isopropyl alcohol	23%
123-86-4	n-butyl acetate	14%
67-64-1	acetone	7%
112-24-3	triethylenetetramine	4%

Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
IF IN EYES	P305 + P351 + P338, P310
Immediate Symptoms	<i>redness, pain, burns, blurred vision, loss of vision</i>
Response	Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Section continued on the next page

4225-B

EPOXY CONFORMAL COATING

IF ON SKIN	P302 + P352, P362 + P364, P310
Immediate Symptoms	irritation, redness, pains, blisters, dry skin, allergic dermatitis
Response	Wash with plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice or attention.
IF INHALED	P304 + P340, P310
Immediate Symptoms	sore throat, cough, confusion, headache, dizziness, drowsiness
Response	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
IF SWALLOWED	P301 + P330, P331, P310
Immediate Symptoms	<i>abdominal pain, nausea, vomiting, burning sensation</i>
Response	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
Specific Hazards	The vapors are heavier than air and may accumulate in low-lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion. Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO ₂), nitrogen oxides (NO _x), and toxic fumes.
Fire-Fighter	Wear self-contained breathing apparatus and full fire fighting turn-out gear.

4225-B

EPOXY CONFORMAL COATING

Section 6: Accidental Release Measures

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Avoid breathing the mist, spray, and vapors. Remove or keep away all sources of ignition or extreme heat.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Contain with inert and nonflammable absorbent (such as soil, sand, vermiculite).
Cleaning Methods	Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash spill area with soap and water to remove the last traces of residue.
Disposal Methods	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep out of reach of children. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take action to prevent static discharges. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment. Avoid breathing mist, vapors, and spray. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Avoid release to the environment.
Handling	Wear protective gloves, protective clothing, and eye protection. Contaminated work clothing should not be allowed out of the workplace. Wash hands thoroughly after handling. Collect spillage.
Storage	Store in a well-ventilated place. Keep cool. Store locked up.

4225-B
EPOXY CONFORMAL COATING
Section 8: Exposure Controls/Personal Protection
Substances with Occupational Exposure Limit Values

Chemical Name	Country/Province	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
isopropyl alcohol	ACGIH	200 ppm (TWA)	400 ppm
	U.S.A. OSHA PEL	400 ppm	Not established
	Canada AB	200 ppm	400 ppm
	Canada BC	200 ppm	400 ppm
	Canada ON	200 ppm	400 ppm
	Canada QC	400 ppm	500 ppm
n-butyl acetate	ACGIH	150 ppm	Not established
	U.S.A. OSHA PEL	150 ppm	Not established
	Canada AB	150 ppm	200 ppm
	Canada BC	20 ppm	200 ppm
	Canada ON	150 ppm	Not established
	Canada QC	150 ppm	200 ppm
acetone	ACGIH	500 ppm	750 ppm
	U.S.A. OSHA PEL	1 000 ppm	Not established
	Canada AB	500 ppm	750 ppm
	Canada BC	250 ppm	500 ppm
	Canada ON	500 ppm	750 ppm
	Canada QC	750 ppm	1 000 ppm
triethylenetetramine	ACGIH	Not established	Not established
	U.S.A. OSHA PEL	Not established	Not established
	U.S.A (WEEL)	1 ppm	Not established
	Canada AB	Not established	Not established
	Canada BC	Not established	Not established
	Canada ON	0.5 mg/m ³ (Skin)	Not established
	Canada QC	Not established	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from suppliers' SDSs 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 the occupational exposure limits (OEL).

Section continued on the next page

4225-B**EPOXY CONFORMAL COATING****Personal Protective Equipment****Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Ensure that glasses have side shields for lateral protection.

Skin Protection

For likely contacts, use of protective butyl rubber or other chemically resistant gloves.

For incidental contacts, use nitrile or other chemically resistant gloves.

Respiratory Protection

For over-exposures up to 10 x OEL of mist, vapors, and spray, wear respirator such as a half-mask respirator with organic vapor cartridges.

Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus.

RECOMMENDATION: Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

4225-B
EPOXY CONFORMAL COATING
Section 9: Physical and Chemical Properties

Physical State	Liquid	Lower Flammability Limit	2.2%
Appearance	Clear, amber	Upper Flammability Limit	12%
Odor	Ester-like	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Relative Density @25 °C	0.9
Freezing/Melting Point	-90 °C [-130 °F]	Solubility in Water	Partly soluble
Initial Boiling Point ^{a)}	56 °C [133 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point ^{a)}	-17 °C [1.4 °F]	Auto-ignition Temperature ^{b)}	338 °C [640 °F]
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Highly Flammable	Viscosity @25 °C	60 cP

a) Based on acetone component.

b) Based on triethylenetetramine component.

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures.
Conditions to Avoid	High temperatures, open flames, sparks and incompatible substances.
Incompatibilities	Strong oxidizing agents, strong reducing agents, strong bases, acids, alkali
Polymerization	Will not occur
Decomposition	For thermal decomposition, see combustion products in Section 5.

4225-B
EPOXY CONFORMAL COATING
Section 11: Toxicological Information
Summary of Effects and Symptoms by Routes of Exposure

Eyes	May cause redness, pain, burns, blurred vision, and/or loss of vision.
Skin	May cause skin irritation, redness, pain, blisters, dry skin, and/or allergic dermatitis.
Inhalation	May cause sore throat, cough, confusion, headache, dizziness, drowsiness.
Ingestion	May cause abdominal pain, nausea, vomiting, and/or burning sensation.
Chronic	Prolonged or repeated exposure may cause skin may cause skin allergies.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	>2 000 mg/kg Rat	>2 000 mg/kg Rat	Not available
isopropyl alcohol	5 000 mg/kg Rat	12 800 mg/kg Rabbit	24.6 mg/L 4 h Rat
n-butyl acetate	10 768 mg/kg Rat	>17 600 mg/kg Rabbit	>21.1 mg/L 4 h Rat
acetone	5 800 mg/kg Rat	7 435 mg/kg Rabbit	16 000 ppm 4 h Rat
triethylenetetramine	2 500 mg/kg Rat	805 mg/kg Rabbit	Not available
Mixture ATE	2954 mg/kg	2920 mg/kg	23 mg/kg

Note: Toxicity data from the ECHA database were consulted. The data from supplier SDSs were also consulted.

Section continued on the next page

4225-B**EPOXY CONFORMAL COATING****Other Toxicological Effects**

Skin Corrosion/Irritation	Causes skin irritation.
Serious Eye Damage/Irritation	Causes serious eye damage.
Sensitization (allergic reactions)	Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines and triethylenetetramine may cause skin sensitization.
Carcinogenicity (risk of cancer)	Based on available data, the classification criteria are not met.
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met.
Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not met.
STOT-Single Exposure	Isopropyl alcohol, n-butyl acetate, and acetone can affect the central nervous system by inhalation causing drowsiness or dizziness.
STOT-Repeated Exposure	Based on available data, the classification criteria are not met.
Aspiration Hazard	Based on available data, the classification criteria are not met. There are no cat 1 substances, and the kinematic viscosity is $>20.5 \text{ mm}^2/\text{s}$ at $40 \text{ }^\circ\text{C}$.

Section 12: Ecological Information

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (<http://echa.europa.eu>), and other reliable sources.

The reaction product: bisphenol-A-(epichlorhydrin) ingredient is an acute category 2 environmental toxicant

Fatty acids, C18-unsatd. dimers, reaction products with polyethylenepolyamines and triethylenetetramine are classified as environmental hazards according to GHS criteria.

Isopropyl alcohol, n-butyl acetate, and acetone are not classified as environmental hazards according to GHS criteria.

Section continued on the next page

4225-B

EPOXY CONFORMAL COATING

Acute Ecotoxicity

Available toxicity data does not meet classification thresholds.

Chronic Ecotoxicity

Category 2

Harmful to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Not available.

Other Effects

Not available

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 DOT 49 CFR (Parts 100 to 185) **Regulations.**

Sizes 1 L and under

*Part B of kits 4225-1.35L and
4225-2.7L*

Limited Quantity



Sizes greater than 1 L up to 5 L (passenger
road and rail vehicle), >5 L (cargo)

Part B of kits 4225-10.8L, 4225-60L and 4225-540L

UN number: UN1993

Shipping Name: FLAMMABLE
LIQUID, N.O.S (isopropyl alcohol,
acetone)

Class: 3

Packing Group: II

Marine Pollutant: Yes



Section continued on the next page

4225-B**EPOXY CONFORMAL COATING****Air****Refer to ICAO-IATA Dangerous Goods Regulations.**

	<p>Sizes up to 5 L (Passenger), or more (Cargo) <i>Part B of kits 4225-1.35L, 4225-2.7L, 4225-10.8L, 4225-60L and 4225-540L</i></p> <p>UN number: UN1993 Shipping Name: FLAMMABLE LIQUID, N.O.S (isopropyl alcohol, acetone) Class: 3 Packing Group: II Marine Pollutant: Yes</p>
--	--

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

<p>Sizes 1 L and under <i>Part B of kits 4225-1.35L and 4225-2.7L</i></p> <p>Limited Quantity</p>	<p>Sizes greater than 1 L <i>Part B of kits 4225-10.8L, 4225-60L and 4225-540L</i></p> <p>UN number: UN1993 Shipping Name: FLAMMABLE LIQUID, N.O.S (isopropyl alcohol, acetone) Class: 3 Packing Group: II Marine Pollutant: Yes</p>
--	---



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.

Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

Section continued on the next page

4225-B

EPOXY CONFORMAL COATING

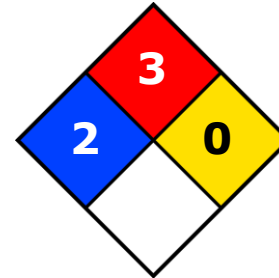
USA

Other Classifications

HMIS® RATING

HEALTH:	*	2
FLAMMABILITY:		3
PHYSICAL HAZARD:		0
PERSONAL PROTECTION:		

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:

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

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 contains acetone (CAS# 67-64-1), which is subject to the CERCLA reporting requirements at the 5 000 lb (2 268 kg) threshold.

This product contains n-butyl acetate (CAS# 123-86-4), which is subject to the CERCLA reporting requirements at the 5 000 lb (2 268 kg) threshold.

This product contains propan-2-ol (CAS# 67-63-0) which is subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, USA).

This product does not contain any substances on the California Proposition 65 list.

Section continued on the next page

4225-B**EPOXY CONFORMAL COATING****Europe****RoHS** (Restriction of Hazardous Substances Directive)

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

WEEE (Waste Electrical and Electronic Equipment Directive)

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

Section 16: Other Information

SDS Prepared by MG Chemical's Regulatory Department

Date of Creation 09 November 2022

Supersedes 05 March 2020

Reason for Changes: Update to toxicological information section 11 and to transport section 14.

Reference

1) ACGIH 2022 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 (2022).

Section continued on the next page

4225-B**EPOXY CONFORMAL COATING****Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content
Wt	Weight

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.

Email: support@mgchemicals.com

Phone: +1-905-331-1396

Mailing Addresses

Manufacturing & Support
1210 Corporate Drive
Burlington, Ontario, Canada
L7L 5R6

Disclaimer

This safety data sheet is provided as an information resource only. *M.G. Chemicals, Ltd.* believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to query and verify any information seeming suspect where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, regional, national, and international regulations.