8329TCF-B **(PART B)**

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 8329TCF-B

Other Means of Identification: Thermally Conductive Epoxy Adhesive

Related Part # 8329TCF-6ML, 8329TCF-50ML, 8329TCF-T50ML, 8329TCF-200ML

Recommended Use and Restriction on Use

Use: Thermally conductive adhesive hardener

Uses Advised Against: Not for use as a spray coating

Details of Manufacturer or Importer

Manufacturer
MG 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

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

☎ +1-905-331-1396
FAX +1-905-331-2682
E-MAIL info@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

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Criteria		Category	Signal Word	Pictograms
Skin Corrosion		1	Danger	Corrosion
Eye Corrosion		1	Danger	Corrosion
Sensitization	Skin sensitizer	1	Warning	Exclamation
Hazardous to the Aquatic Environment	Chronic	3	none	none

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**
	H314: Causes severe skin burns and eye damage
	H317: May cause an allergic skin reaction
No symbol mandated	H412: Harmful to aquatic life with long lasting effects

Section continued on the next page

Continued…

Prevention	Precautionary Statements
P102	Keep out of reach of children.
P260	Do not breathe fumes, mist, and vapors.
P280	Wear protective gloves, protective clothing, and eye protection.
P264	Wash hands and exposed skin thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
Response	**Precautionary Statements**
P310	For all routes of exposure: Immediately call a POISON CENTER or doctor.
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 + P364 + P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Wash skin with plenty of water [or shower].
P333 + P313	If skin irritation or rash occurs: Get medical advice or attention.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Storage	**Precautionary Statements**
P405	Store locked up.
Disposal	**Precautionary Statements**
P501	Dispose of container in accordance to local, regional, and international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
None	None	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
21645-51-2	aluminum trihydrate	57%
72244-98-5	pentaerythritol-PO-mercaptoglycerol~	36%
90-72-2	tris-2,4,6-(dimethylaminomethyl) phenol	7%

Section 4: First-Aid Measures

Exposure Condition	*GHS Code: Precautionary Statement*
IF IN EYES	P305 + P351 + P338, P310
Immediate Symptoms	*redness, burns, pain*
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.
IF ON SKIN (or hair)	P303 + P361 + P353, P310, P333 + P313, P363
Immediate Symptoms	*redness, allergic contact dermatitis, burns*
Response	Take off immediately all contaminated clothing. Wash with plenty of water [or shower]. Immediately call a POISON CENTER or doctor. If skin irritation or rash occurs: Get medical advice or attention. Wash contaminated clothing before reuse.
IF INHALED	P304 + P340, P310
Immediate Symptoms	*cough, irritation of the respiratory track*
Response	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
IF SWALLOWED	P301 + P330 + P331, P310
Immediate Symptoms	*burns to mouth and throat, abdominal pain (see inhalation symptoms)*
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	Not flammable or combustible, but burns if involved in a fire. Produces irritating smoke of unknown toxicity in fires. Inhalation of toxic smoke during fire may have delayed effects. Exposed person may need to be put under surveillance for 48 h. Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO_2), nitrogen oxides (NO_x), and metal fumes.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	Use personal protection recommended in Section 8.
Precautions for Response	Do not breathe the fumes or 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. Do not flush to sewer.
Containment Methods	No confinement method is required—this product is not readily flowable.
Cleaning Methods	Collect liquid in a sealable container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe residue with a paper towel wetted with a suitable organic solvent such as alcohol or ethyl lactate, and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue.
Disposal Methods	Dispose spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep out of reach of children.
	Do not breathe fumes and vapors.
	Contaminated work clothing should not be allowed out of the workplace.
	Avoid release to the environment.
Handling	Wear protective gloves, protective clothing, and eye protection.
	Take off contaminated clothing and wash it before reuse.
	Wash hands and exposed skin thoroughly after handling.
Storage	Store locked up.

Section 8: Exposure Controls/Personal Protection

Substances with Occupational Exposure Limit Values

Chemical Name	Country or Vendor	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
aluminum metal and insoluble compounds [a)]	ACGIH	1 mg/m^3	Not established
	U.S.A. OSHA PEL	15 mg/m^3	Not established
	Canada AB	10 mg/m^3	Not established
	Canada BC	1 mg/m^3	Not established
	Canada ON	1 mg/m^3	Not established
	Canada QC	10 mg/m^3	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH[1], OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS[2] database and 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.

a) As respirable airborne particles.

Section continued on the next page

Engineering Controls

Ventilation

Keep airborne concentrations below the occupational exposure limits (OEL).

Because the aluminum trihydrate is inextricably bound to the adhesive mixture, it is not available as airborne hazards under normal conditions of use. Ensure adequate ventilation if the product is mechanically misted or aerosolized.

Personal Protective Equipment

Eye protection

Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Use safety glasses with lateral protection (side shields).

Skin Protection

For likely contacts, use of protective butyl rubber, neoprene, 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 fumes/mist/vapors, 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.

If the product is heated or worker has a known allergic reaction, consider using a full mask with organic vapor cartridge or with an independent air supply.

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.

Section 9: Physical and Chemical Properties

Physical State	Solid	**Lower Flammability Limit**	Not available
Appearance	Colorless to Pale yellow	**Upper Flammability Limit**	Not available
Odor	Mercaptan-like (rotten cabbage)	**Vapor Pressure @20 °C**	Not available
Odor Threshold	Not available	**Vapor Density**	Not available
pH	Not available	**Relative Density @25 °C**	1.59
Freezing/Melting Point	Not available	**Solubility in Water**	Insoluble
Initial Boiling Point	Not available	**Partition coefficient n-octanol/water**	Not available
Flash Point	>93.3 °C [>199.9 °F]	**Auto-ignition Temperature**	Not available
Evaporation Rate	Not available	**Decomposition Temperature**	Not available
Flammability	Non Flammable	**Viscosity @25 °C**	>20.5 mm^2/s

Section 10: Stability and Reactivity

Reactivity	Reacts exothermically with ketones, halogenated hydrocarbons, cyanides, nitriles, and epoxides. May attack metals such as aluminum, zinc, copper, and their alloys.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Avoid excessive heat and incompatible substances. Do not use in a way that forms a mist or aerosolize the product.
Incompatibilities	Strong oxidizing agents, strong acids
Polymerization	Will not occur
Decomposition	For thermal decomposition, see combustion products in Section 5.

Section 11: Toxicological Information

Summary of Effects and Symptoms by Routes of Exposure

Eyes	May cause redness, burns, or pain.
Skin	May cause redness, allergic contact dermatitis, and chemical burns.
Inhalation	Inhalation of vapors or mist may cause cough and irritation of the nose, throat, and lungs (upper respiratory tract).
Ingestion	May cause severe irritation and abdominal pain. It is corrosive to the mouth, throat, esophagus, and stomach (see inhalation symptoms).
Chronic	Prolonged and repeated exposure to uncured epoxy hardener may lead to skin sensitization.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
aluminum trihydrate	>2 000 mg/kg Rat	Not available	Not available
pentaerythritol-PO-mercaptoglycerol~	Not available	Not available	Not available
tris-2,4,6-(dimethylaminomethyl) phenol	2 169 mg/kg Rat	969 mg/kg Rabbit	Not available

Note: Toxicity data from the RTECS[2] and ECHA databases were consulted. The data from supplier (M)SDS were also consulted.

Other Toxicological Effects

Skin corrosion/irritation	Causes severe skin burns.
Serious eye damage/irritation	Causes severe eye damage.
Respiratory and skin sensitization (allergic reactions)	Pentaerythritol-PO-mercaptoglycerol~ and tris-2,4,6-(dimethylaminomethyl) phenol may cause skin sensitization according to animal studies.
Carcinogenicity (risk of cancer)	None of the ingredients are classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP.
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not.

Section continued on the next page

Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not.
Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not.
Aspiration hazard	Based on available data, the classification criteria are not met. There are no category 1 components, and the kinematic viscosity is >20.5 mm^2/s at 40 °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.

Pentaerythritol-PO-mercaptoglycerol~ and tris-2,4,6-(dimethylaminomethyl) phenol are classified as a chronic aquatic hazard category 3.

Acute Ecotoxicity

Based on available data, the mixture does not meet classification criteria.

Chronic Ecotoxicity

Harmful to aquatic life with long lasting effects

Avoid Release to the environment.

Biodegradability

Not readily biodegradable

Bioaccumulation

Not available

Other Effects

Not available

Section 13: Disposal Considerations

Dispose of contents in accordance with all local, provincial, state, and federal 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 greater than 30 g up to 5 kg

8329TCF-50ML, 8329TCF-T50ML, 8329TCF-200ML
Limited Quantity

Sizes 30 g and under

FOR REFERENCE ONLY
Excepted Quantity
Code E1

Section continued on the next page

8329TCF-B (PART B)

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes greater than 30 g up to 1 kg [a)] *8329TCF-50ML, 8329TCF-T50ML, 8329TCF-200ML* **Limited Quantity** 	*FOR REFERENCE ONLY* **UN number:** UN3259 **Shipping Name**: AMINES, SOLID, CORROSIVE, n.o.s. (Mercaptan/Amine Blend) **Class:** 8 **Packing Group:** III **Marine Pollutant:** No
Sizes 30 g and under *FOR REFERENCE ONLY* **Excepted Quantity** Code E1  On air waybill, write: "Dangerous Goods in Excepted Quantities"	

a) Inner packaging net quantity per S.P. Y845. Total net quantity per package is 5.0 kg.

Sea

Refer to IMDG regulations.

Sizes greater than 30 g up to 5 kg *Cat # 8329TCF-50ML, 8329TCF-T50ML, 8329TCF-200ML* **Limited Quantity** 	*FOR REFERENCE ONLY* **UN number:** UN3259 **Shipping Name**: AMINES, SOLID, CORROSIVE, n.o.s. (Mercaptan/Amine Blend) **Class:** 8 **Packing Group:** III **Marine Pollutant:** No
Sizes 30 g and under *FOR REFERENCE ONLY* **Excepted Quantity** Code E1  In transport document, write: "Dangerous Goods in Excepted Quantities"	

Note: **Shipper must be appropriately <u>trained and certified</u> 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.

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.

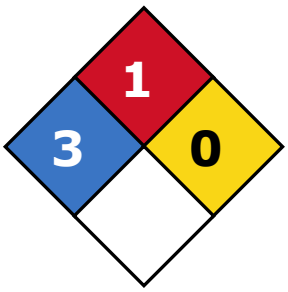
USA

Other Classifications

HMIS® RATING

HEALTH:	* 3
FLAMMABILITY:	1
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 does not contain ingredients that are 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).

This product does not contain any listed substances in California.

Section continued on the next page

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 Revision	09 March 2020
Supersedes	30 January 2019
Reason for Changes:	Update to the emergency phone number information.

Reference

1) ACGIH *2017 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 (2017).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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

Section continued on the next page

8329TCF-B (PART B)

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

Mailing Addresses

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

Head Office
9347–193rd Street
Surrey, British Columbia, Canada
V4N 4E7

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.