



Kit Revision Date: 09 March 2020

## 8329TCF THERMALLY CONDUCTIVE EPOXY ADHESIVE KIT

### MG Chemicals Multipart Product Kit

This product is a kit made up of multiple parts. Each part is an independently packaged chemical component and has independent hazard assessments.

#### **Kit Content**

<i>Part</i>	<i>Product Name</i>	<i>Product Use</i>
A	8329TCF-A	Thermally conductive epoxy resin
B	8329TCF-B	Thermally conductive epoxy hardener

*Safety Data Sheets for each part listed above follow this cover sheet.*

#### **Transportation Instruction**

Before offering this product kit for transport, read Section 14 for all parts listed above.

8329TCF-A

(PART A)

# Safety Data Sheet

## Section 1: Identification



### Product Identifier and Other Means of Identification

**Product Identifier:** 8329TCF-A**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 resin**Uses Advised Against:** Not available

### Details of Manufacturer or Importer

**Manufacturer**MG Chemicals  
1210 Corporate Drive  
Burlington, Ontario L7L 5R6  
CANADAMG 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 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

**8329TCF-A**
**(PART A)**
**Section 2: Hazard(s) Identification**
**Classification of Hazardous Chemical**
**GHS Categories**

Criteria	Category	Signal Word	Pictograms
Sensitization Skin	1	Warning	Exclamation
Eye Irritation	2	Warning	Exclamation
Skin Irritation	2	Warning	Exclamation
Hazardous to the Aquatic Environment Chronic	2	<i>none</i>	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	<b>WARNING</b>
Pictograms	Hazard Statements
	H317: May cause an allergic skin reaction H319: Causes serious eye irritation H315: Causes skin irritation
	H411: Toxic to aquatic life with long lasting effects

*Section continued on the next page*

**8329TCF-A**
**(PART A)**
*Continued...*

<b>Prevention</b>	<b>Precautionary Statements</b>
P102	Keep out of reach of children.
P261	Avoid breathing fumes/vapors.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/eye protection.
P264	Wash thoroughly after handling.
P273	Avoid release to the environment.
<b>Response</b>	<b>Precautionary Statements</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.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of contents/container in accordance to local/regional/international regulations.

**Hazards Not Otherwise Classified**

<b>Other Criteria</b>	<b>Hazard Statements/Precautionary Statement</b>	<b>Signal Word</b>	<b>Pictograms</b>
Metal fumes fever	When exposed to extreme heat, this product may produce harmful zinc oxide and aluminum oxide fumes	None	None

**8329TCF-A**
**(PART A)**
**Section 3: Composition/Information on Ingredients**

CAS #	Chemical Name	%(weight)
21645-51-2	aluminum trihydrate	45%
28064-14-4	phenol, polymer with formaldehyde, glycidyl ether	33%
1314-13-2	zinc oxide	17%
68609-97-2	alkyl glycidyl ether	3%

**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>redness, serious irritation, pain</i>
<b>Response</b>	Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>IF ON SKIN</b>	P302 + P352, P333 + P313, P362 + P364
<b>Immediate</b>	<i>redness, irritation, dry skin, allergic contact dermatitis</i>
<b>Response</b>	Wash with plenty water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
<b>IF INHALED</b>	P304 + P340
<b>Immediate Symptoms</b>	<i>cough, irritation of the respiratory track, sore throat</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing.
<b>IF SWALLOWED</b>	P301 + P330 + P331
<b>Immediate Symptoms</b>	<i>irritation, abdominal pain, diarrhea, nausea, vomiting</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting.

**8329TCF-A****(PART A)****Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
<b>Specific Hazards</b>	<p>Not flammable or combustible, but burns if involved in a fire. Produces irritating smoke of unknown toxicity in fires.</p> <p>Inhalation of zinc oxide and aluminum oxide fumes may cause metal fume fever and irritate the respiratory tract. The flu-like symptoms of metal fever may be delayed, occurring 4 to 12 hours after exposure.</p> <p>Prevent fire-fighting wash from entering waterway or sewer system.</p>
<b>Combustion Products</b>	Produces carbon oxides (CO,CO <sub>2</sub> ), nitrogen oxides, and toxic metal fumes.
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

**Section 6: Accidental Release Measures**

<b>Personal Protection</b>	See personal protection recommendations in Section 8.
<b>Precautions for Response</b>	Avoid breathing the fumes/vapors. Remove or keep away all sources of ignition or extreme heat.
<b>Environmental Precautions</b>	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
<b>Containment Methods</b>	Not required—this product is not readily flowable.
<b>Cleaning Methods</b>	Collect liquid in a sealable, chemical-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash residue with a paper towel wetted with alcohol, ethyl lactate, or another suitable organic solvent; and place dirty towels in container. Use soap and water to remove the last traces of residue.
<b>Disposal Methods</b>	Dispose of spill waste according to Section 13.

**8329TCF-A**
**(PART A)**
**Section 7: Handling and Storage**

<b>Prevention</b>	Keep out of reach of children. Avoid breathing fumes/vapors. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.
<b>Handling</b>	Wear protective gloves/eye protection. Take off contaminated clothing and wash it before reuse. Wash hands and exposed skin thoroughly after handling. Collect spillage.
<b>Storage</b>	Not applicable.

**Section 8: Exposure Controls/Personal Protection**
**Substances with Occupational Exposure Limit Values**

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
aluminum metal and insoluble compounds <sup>a)</sup>	ACGIH	1 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	15 mg/m <sup>3</sup>	Not established
	Canada AB	10 mg/m <sup>3</sup>	Not established
	Canada BC	1 mg/m <sup>3</sup>	Not established
	Canada ON	1 mg/m <sup>3</sup>	Not established
	Canada QC	10 mg/m <sup>3</sup>	Not established
zinc oxide (dust/mist)	ACGIH	2 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
	Canada AB	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
	Canada BC	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
	Canada ON	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
	Canada QC	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
fumes dust	Canada QC	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
	Canada QC	10 mg/m <sup>3</sup>	Not established

*Note:* Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH<sup>1</sup>, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS<sup>2</sup> 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) Respirable airborne particles.

*Section continued on the next page*

**8329TCF-A****(PART A)****Engineering Controls****Ventilation**

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

Because the aluminum trihydrate and zinc oxide are inextricably bound to the adhesive mixture, they are 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:** Ensure that glasses have side shields for lateral protection.

**Skin Protection**

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

For incidental contacts, use latex, neoprene or other chemically resistant gloves.

**Respiratory Protection**

For over-exposures up to 10 x OEL of fumes/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.



**8329TCF-A**
**(PART A)**
**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Solid	<b>Lower Flammability Limit</b>	Not available
<b>Appearance</b>	White	<b>Upper Flammability Limit</b>	Not available
<b>Odor</b>	Slight	<b>Vapor Pressure @20 °C</b>	Not available
<b>Odor Threshold</b>	Not available	<b>Vapor Density</b>	Not available
<b>pH</b>	Not available	<b>Relative Density @25 °C</b>	1.88
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water</b>	Insoluble
<b>Initial Boiling Point <sup>a)</sup></b>	>207 °C [>404 °F]	<b>Partition Coefficient n-octanol/water</b>	Not available
<b>Flash Point <sup>b)</sup></b>	149 °C [300 °F]	<b>Auto-ignition Temperature</b>	Not available
<b>Evaporation Rate</b>	Not available	<b>Decomposition Temperature</b>	Not available
<b>Flammability</b>	Non Flammable	<b>Viscosity @40 °C</b>	>20.5 mm <sup>2</sup> /s

a) Values for the component with the lowest reported boiling point.

b) The closed cup flash point values are based on the alkyl glycidyl ether component.

**Section 10: Stability and Reactivity**

<b>Reactivity</b>	Reacts exothermically with amines.
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures.
<b>Conditions to Avoid</b>	Avoid ignition sources, open flames, and incompatible substances. Do not use in away that forms mist or aerosolizes the product.
<b>Incompatibilities</b>	Avoid strong oxidizing agents, strong acids, strong bases, ammonia, ethylene oxides, flax oils, and halogenated compounds.
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

**8329TCF-A**
**(PART A)**
**Section 11: Toxicological Information**
**Summary of Effects and Symptoms by Routes of Exposure**

<b>Eyes</b>	May cause redness, serious irritation, or pain.
<b>Skin</b>	Causes skin redness, irritation, or allergic contact dermatitis.
<b>Inhalation</b>	May cause cough and respiratory irritation, or sore throat.
<b>Ingestion</b>	May cause irritation, abdominal pain, diarrhea, nausea, or vomiting.
<b>Chronic</b>	Prolonged and repeated exposure may lead to skin sensitization.

**Acute Toxicity (Lethal Exposure Concentrations)**

<b>Chemical Name</b>	<b>LD50 oral</b>	<b>LD50 dermal</b>	<b>LC50 inhalation</b>
aluminum trihydrate	Not available	Not available	Not available
phenol, polymer with formaldehyde, glycidyl ether	>2 000 mg/kg	>2 000 mg/kg	Not available
zinc oxide	7 950 mg/kg Mouse	Not available	2 500 mg/m <sup>3</sup> Mouse
alkyl glycidyl ether	19 200 mg/kg Rat	4 500 mg/kg Rat	Not available

*Note:* Toxicity data from the RTECS<sup>2</sup> and ECHA databases were consulted. The data from supplier SDS were also consulted.

**Other Toxicological Effects**

<b>Skin corrosion/irritation</b>	Phenol, polymer with formaldehyde, glycidyl ether and alkyl glycidyl ether are known skin irritants.
<b>Serious eye damage/irritation</b>	Phenol, polymer with formaldehyde, glycidyl ether causes serious eye irritation.
<b>Sensitization</b> (allergic reactions)	May cause skin sensitization based on animal studies due to the epoxy components.
<b>Carcinogenicity</b> (risk of cancer)	Based on available data, the classification criteria are not met.

*Section continued on the next page*

**8329TCF-A****(PART A)**

<b>Mutagenicity</b> (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
<b>Reproductive Toxicity</b> (risk to sex functions)	Based on available data, the classification criteria are not met.
<b>Teratogenicity</b> (risk of fetus malformation)	Based on available data, the classification criteria are not met.
<b>STOT-single exposure</b>	Based on available data, the classification criteria are not met.
<b>STOT-repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met. There are no category 1 components, and the kinematic viscosity is >20.5 mm <sup>2</sup> /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.

Contains zinc oxide which is a chronic category 1 solid (non-biodegradable, minimal LC50 of 0.042 mg/L) that is very toxic to aquatic life.

In Europe, similar epoxy resin mixtures with CAS# 28064-14-4 is generally classified as chronic category 2 marine pollutant due to LC50 96 h of >1 mg/L but ≤10 mg/L.

Based on available data, aluminum trihydrate and alkyl glycidyl ether are not classified as environmental hazard according to GHS criteria.

**Acute Ecotoxicity**

See chronic ecotoxicity.

*Section continued on the next page*

**8329TCF-A****(PART A)****Chronic Ecotoxicity**

Category 2

Toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

**Biodegradability**

Not readily biodegradable

**Bioaccumulation**

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 under 450 kg  
**NOT REGULATED** in TDG  
per Special Provisions 99

Sizes 5 kg and under

**NOT REGULATED** in 49 CFR  
per exception 171.4 (c)(2)

*FOR REFERENCE ONLY*

**UN number:** UN3077

**Shipping Name:** ENVIRONMENTALLY  
HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Zinc oxide; phenol, polymer with  
formaldehyde, glycidyl ether)

**Class:** 9

**Packing Group:** III

**Marine Pollutant:** Yes

**Special Provision 99 (2):** These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

*Section continued on the next page*

**8329TCF-A****(PART A)****Air****Refer to ICAO-IATA regulations.**

Sizes 5 kg and under: Cat. No. 8329TCF-6ML, 8329TCF-50ML,  
8329TCF-T50ML, 8329TCF-200ML

**NOT REGULATED**

On air waybill, write:  
"Not Restricted, as per Special  
Provisions A197"

Special Provision A197: These substances when transported in single or combination packagings containing net quantity per single or inner packaging of less than 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

**Sea****Refer to IMDG regulations.**

Sizes 5 kg and under: Cat. No. 8329TCF-6ML, 8329TCF-50ML,  
8329TCF-T50ML, 8329TCF-200ML

**NOT REGULATED**

per 2.10.2.7

**2.10.2.7:** Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provision of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.

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

**8329TCF-A****(PART A)****Section 15: Regulatory Information****Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

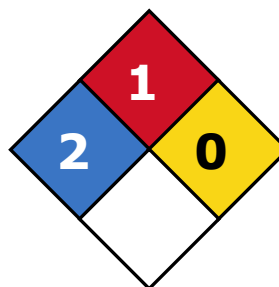
All hazardous ingredients are listed on the DSL.

**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.

**USA****Other Classifications****HMIS® RATING**

<b>HEALTH:</b>	<b>* 2</b>
<b>FLAMMABILITY:</b>	<b>1</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)

**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, USA).

This product does not contain any listed substances in California.

*Section continued on the next page*

**8329TCF-A****(PART A)****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**

<b>SDS Prepared by</b>	MG Chemical's Regulatory Department
<b>Date of Review</b>	09 March 2020
<b>Supersedes</b>	22 May 2018
<b>Reason for Changes:</b>	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®)

*Section continued on the next page*

**8329TCF-A****(PART A)****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

**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).

Email: [support@mgchemicals.com](mailto: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.



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

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 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 serviceCANADA—Call CANUTEC collect at **+1-613-996-6666** or **\*666** on cellular phones

**8329TCF-B**
**(PART B)**
**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	1	Warning	Exclamation
Hazardous to the Aquatic Environment	3	none	none
Chronic			

*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	<b>DANGER</b>
Pictograms	Hazard Statements
	H314: Causes severe skin burns and eye damage
	H317: May cause an allergic skin reaction
<i>No symbol mandated</i>	H412: Harmful to aquatic life with long lasting effects

*Section continued on the next page*

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

<b>Prevention</b>	<b>Precautionary Statements</b>
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.
<b>Response</b>	<b>Precautionary Statements</b>
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.
<b>Storage</b>	<b>Precautionary Statements</b>
P405	Store locked up.
<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of container in accordance to local, regional, and international regulations.

**Hazards Not Otherwise Classified**

<b>Other Criteria</b>	<b>Hazard Statements/Precautionary Statement</b>	<b>Signal Word</b>	<b>Pictograms</b>
None	None	None	None

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

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
<b>IF IN EYES</b>	P305 + P351 + P338, P310
<b>Immediate Symptoms</b>	<i>redness, burns, pain</i>
<b>Response</b>	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.
<b>IF ON SKIN (or hair)</b>	P303 + P361 + P353, P310, P333 + P313, P363
<b>Immediate Symptoms</b>	<i>redness, allergic contact dermatitis, burns</i>
<b>Response</b>	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.
<b>IF INHALED</b>	P304 + P340, P310
<b>Immediate Symptoms</b>	<i>cough, irritation of the respiratory track</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
<b>IF SWALLOWED</b>	P301 + P330 + P331, P310
<b>Immediate Symptoms</b>	<i>burns to mouth and throat, abdominal pain (see inhalation symptoms)</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

**8329TCF-B****(PART B)****Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
<b>Specific Hazards</b>	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.
<b>Combustion Products</b>	Produces carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), and metal fumes.
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

**Section 6: Accidental Release Measures**

<b>Personal Protection</b>	Use personal protection recommended in Section 8.
<b>Precautions for Response</b>	Do not breathe the fumes or vapors. Remove or keep away all sources of ignition or extreme heat.
<b>Environmental Precautions</b>	Avoid releasing to the environment. Prevent spill from entering drains and waterways. Do not flush to sewer.
<b>Containment Methods</b>	No confinement method is required—this product is not readily flowable.
<b>Cleaning Methods</b>	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.
<b>Disposal Methods</b>	Dispose spill waste according to Section 13.

**Section 7: Handling and Storage**

<b>Prevention</b>	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.
<b>Handling</b>	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.
<b>Storage</b>	Store locked up.

**Section 8: Exposure Controls/Personal Protection**
**Substances with Occupational Exposure Limit Values**

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

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

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

**8329TCF-B**
**(PART B)**
**Section 9: Physical and Chemical Properties**

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

**Section 10: Stability and Reactivity**

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



**8329TCF-B**
**(PART B)**
**Section 11: Toxicological Information**
**Summary of Effects and Symptoms by Routes of Exposure**

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

**Acute Toxicity (Lethal Exposure Concentrations)**

<b>Chemical Name</b>	<b>LD50 oral</b>	<b>LD50 dermal</b>	<b>LC50 inhalation</b>
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<sup>2</sup> and ECHA databases were consulted. The data from supplier (M)SDS were also consulted.

**Other Toxicological Effects**

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

*Section continued on the next page*

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<b>Reproductive Toxicity</b> (risk to sex functions)	Based on available data, the classification criteria are not.
<b>Teratogenicity</b> (risk of fetus malformation)	Based on available data, the classification criteria are not.
<b>STOT-single exposure</b>	Based on available data, the classification criteria are not met.
<b>STOT-repeated exposure</b>	Based on available data, the classification criteria are not.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met. There are no category 1 components, 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.

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

**8329TCF-B**

**(PART B)**

**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 <sup>a)</sup>

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 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)**

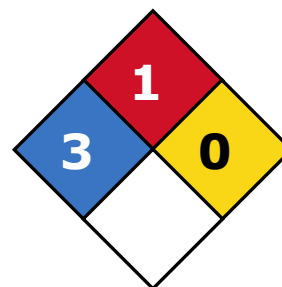
All hazardous ingredients are listed on the DSL/NDSL.

**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**

<b>HEALTH:</b>	<b>* 3</b>
<b>FLAMMABILITY:</b>	<b>1</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)

**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*

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

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Date of Revision: 09 March 2020 / Ver. 3.01

**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](http://www.mgchemicals.com).

Email: [support@mgchemicals.com](mailto: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

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