



Safety Data Sheet

according to WHMIS 2023 and HCS 2024

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Date of issue 08/28/2025

Version number 4.02

Revision: 04/24/2025

1 Identification

· Product identifier

· Trade name: 8329TFF-A

- Other Means of Identification: Thermally Conductive Epoxy Adhesive (Part A)
- Related Part Number: 8329TFF-Part A, 8329TFF-25ML, 8329TFF-50ML

· Application of the substance / the mixture Thermally conductive adhesive resin

- Uses advised against Not applicable

· Details of the supplier of the safety data sheet

Manufacturer/Supplier:

MG Chemicals (Head Office)
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA
+(1) 800-340-0772
+(1) 905-331-1396
info@mgchemicals.com

Distributor:

Masline
511 Clinton Ave S
Rochester, New York 14620
United States
+(1) 586-546-5373

· Information department: sds@mgchemicals.com

· Emergency telephone number:

For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA-Call 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

2 Hazard identification

· Classification of the substance or mixture

Skin Irritation - Category 2	H315 Causes skin irritation.
Eye damage/irritation – Category 2A	H319 Causes serious eye irritation.
Sensitization - skin – Category 1	H317 May cause an allergic skin reaction.
Reproductive Toxicity - Category 2	H361 Suspected of damaging fertility or the unborn child.

· Label elements

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

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· Hazard pictograms



GHS07 GHS08

· Signal word Warning

· Hazard-determining components of labeling:

phenol, polymer with formaldehyde, glycidyl ether
boron zinc hydroxide oxide
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane

· Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H361 Suspected of damaging fertility or the unborn child.

· Precautionary statements

P102 Keep out of reach of children.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing fumes and vapors.
P264 Wash thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves, protective clothing, and eye protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice.
P333+P313 If skin irritation or rash occurs: Get medical advice.
P337+P313 If eye irritation persists: Get medical advice.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents and container in accordance with local, regional, and national regulations.

· Other hazards Not available

3 Composition/Information on ingredients

· Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:

21645-51-2	aluminium hydroxide	54.0% w/w
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28064-14-4	phenol, polymer with formaldehyde, glycidyl ether Alternative CAS number: 9003-36-5	36.0% w/w
138265-88-0	boron zinc hydroxide oxide	7.0% w/w
17557-23-2	1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	3.0% w/w

* 4 First-aid measures

· Description of first aid measures

· After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact:

Wash with plenty water.

If skin irritation or rash occurs: Get medical advice or attention.

Take off contaminated clothing and wash it before reuse.

· After eye contact:

Rinse cautiously with water for 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice or attention.

· After swallowing:

Rinse mouth.

Do NOT induce vomiting.

If symptoms persist consult doctor.

If exposed or concerned: Get medical advice or attention.

· Most important symptoms and effects, both acute and delayed

See section 11 for additional information.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

· Extinguishing media

· Suitable extinguishing agents: Use fire fighting measures that suit the environment.

· Special hazards arising from the substance or mixture

Not flammable or combustible, but burns if involved in a fire. Produces irritating smoke of unknown toxicity in fires. Prevent fire-fighting wash from entering waterway or sewer system.

· Hazardous combustion products:

Carbon Oxides (CO_x)

Nitrogen Oxides (NO_x)

Boron oxides

toxic metal fumes

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- **Advice for firefighters**

- **Protective equipment:** Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

Avoid breathing the fumes or vapors.

Remove or keep away all sources of extreme heat or open flames.

- **Environmental precautions:**

Avoid release to the environment.

Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Collect liquid in a sealable, chemical-resistant container.

Wash residue with a paper towel and place dirty towels in container.

Use soap and water to remove the last traces of residue.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**

Prevent formation of aerosols.

Wear protective gloves and eye protection.

Wash hands and exposed skin thoroughly after handling.

Take off contaminated clothing and wash it before reuse.

Collect spillage.

Contaminated work clothing should not be allowed out of the workplace.

Obtain, read and follow all safety instructions before use.

- **Information about protection against explosions and fires:**

Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

Keep in a dry and clean area, away from incompatible substances

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:** Keep receptacle tightly sealed.

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- **Specific end use(s)** See section 1.2

8 Exposure controls/ Personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **Additional information:**

The lists that were valid during the creation were used as basis.

Refer to the national or regional occupational exposure limit regulation for abbreviations and acronyms.

- **Exposure controls**

- **Appropriate engineering controls** No further data; see section 7.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

Advice should be sought from respiratory protection specialists.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

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.

- **Protection of hands:**

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.



Protective gloves: EN374

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· Eye protection:



Safety glasses or tightly sealed goggles: EN 166

9 Physical and chemical properties

· Information on basic physical and chemical properties

· Physical state	Liquid
· Form:	Viscous
· Color:	Beige
· Odor:	Light
· Odor threshold:	Not determined.
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	>150 °C (>302 °F)
· Flammability:	Non flammable
· Explosion limits:	
· Lower:	Not applicable
· Upper:	Not applicable
· Flash point:	150 °C (302 °F)
· Auto igniting:	Not determined
· Decomposition temperature:	Not determined.
· pH-value:	Not determined.
· Viscosity:	
· Dynamic:	Not determined.
· Solubility in / Miscibility with	
· Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Vapor pressure:	Not determined.
· Relative density at 25 °C (77 °F):	1.71
· Vapor density (air=1):	Not determined.
· Particle characteristics	Not applicable

· Other information

· Important information on protection of health and environment, and on safety.

· Ignition temperature:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Organic solvents:	Not available
· VOC content:	3,000 %
· Solids content:	54.0 %

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· Evaporation rate	Not determined.
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10 Stability and reactivity

- **Reactivity** Reacts exothermically with amines.
- **Chemical stability** Chemically stable at normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Avoid ignition sources, open flames, and incompatible substances.
- **Incompatible materials:**
Strong oxidizing agents
Strong acids
Strong bases
Amines
Strong reducing agents
- **Hazardous decomposition products:**
No dangerous decomposition products known.
Hazardous combustion products: see section 5.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
21645-51-2 aluminium hydroxide		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	mg/L (rat)
28064-14-4 phenol, polymer with formaldehyde, glycidyl ether		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
138265-88-0 boron zinc hydroxide oxide		
Oral	LD50	>10,000 mg/kg (rat)
Dermal	LD50	>10,000 mg/kg (rat)
17557-23-2 1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane		
Oral	LD50	2,000 mg/kg (rat)
Dermal	LD50	2,150 mg/kg (rabbit)

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- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Summary of effects and symptoms by route of exposure**
 - **Eyes:**
redness, serious irritation
pain
 - **Skin:**
rash, allergic contact dermatitis
redness, irritation
dry skin
 - **Inhalation:**
irritation of the respiratory tract
cough
 - **Swallowed:**
irritation
abdominal pain
diarrhea
nausea, vomiting
- **Delayed and immediate effects as well as chronic effects from short and long-term exposure**
Prolonged and repeated exposure to uncured epoxy hardener may lead to skin sensitization.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
 - **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.
· NTP (National Toxicology Program)
None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:**
Very toxic to aquatic life with long lasting effect.
Avoid release to the environment.
Collect spillage.

28064-14-4 phenol, polymer with formaldehyde, glycidyl ether	
LC50 96h	>1–≤10 mg/L (not defined) In Europe, similar epoxy resin mixtures with CAS 28064-14-4 are generally classified as chronic category 2 marine pollutant due to LC50 96 h of >1 mg/L but ≤10 mg/L.

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138265-88-0 boron zinc hydroxide oxide	
LC50 96h	2.4 mg/L (trout)
LC50/ 48 h	76 mg/L (daphnia)

- Persistence and degradability** No further relevant information available.
- Bioaccumulative potential** No further relevant information available.
- Mobility in soil** No further relevant information available.
- Results of PBT and vPvB assessment**
 - PBT:** Not applicable.
 - vPvB:** Not applicable.
- Other adverse effects**
 - Remark:**
 - Very toxic for fish
 - Toxic for fish

13 Disposal considerations

- Waste treatment methods**
 - Recommendation:** This material and its container must be disposed of as hazardous waste.
- Uncleaned packagings:**
 - Recommendation:**
 - Containers may still present a chemical hazard/ danger when empty.
 - Dispose of contents in accordance with all local, regional, national, and international regulations.
 - Where possible retain label warnings and SDS and observe all notices pertaining to the product.

14 Transport information

UN-Number	UN3082
DOT/TDG, IMDG, IATA	
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (phenol, polymer with formaldehyde, glycidyl ether, boron zinc hydroxide oxide)
DOT/TDG	NOT REGULATED by Sea IMDG per 2.10.2.7 for sizes 5L or less.
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (phenol, polymer with formaldehyde, glycidyl ether, zinc borate)
IATA	NOT REGULATED by Air IATA Special Provision A197 for sizes 5L or less.
	Environmentally hazardous substance, liquid, n.o.s.

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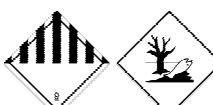
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<p>· (phenol, polymer with formaldehyde, glycidyl ether, zinc borate)</p>	
<p>· Transport hazard class(es)</p>	
· DOT/TDG, IMDG	
· Class	9 Miscellaneous dangerous substances and articles
· Label	9
· IATA	
· Class	9 Miscellaneous dangerous substances and articles
· Label	9
· Packing group	
· DOT/TDG, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	MARINE POLLUTANT
· Special marking (IATA):	ENVIRONMENTALLY HAZARDOUS Symbol (fish and tree)
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT/TDG	
· Quantity limitations	On passenger aircraft/rail: 450 L On cargo aircraft only: 450 L
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Special precautions for user	Not applicable.
· Hazard identification number (Kemler code):	90
· EMS Number:	F-A,S-F
· Stowage Category	A

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· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETHER, ZINC BORATE), 9, III
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15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

· OSHA Hazard Communication Standard (29 CFR Part 1900)

The safety data sheet and label comply with HCS 2024.

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

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2023.

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

21645-51-2	aluminium hydroxide	ACTIVE
28064-14-4	phenol, polymer with formaldehyde, glycidyl ether	ACTIVE
17557-23-2	1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	ACTIVE

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· TLV (Threshold Limit Value)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

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· Canadian substance listings:

· Canadian Domestic Substances List (DSL)

21645-51-2	aluminium hydroxide
28064-14-4	phenol, polymer with formaldehyde, glycidyl ether
17557-23-2	1,3-bis(2,3-epoxypoxy)-2,2-dimethylpropane

· Canadian Non-Domestic Substances List (NDSL)

None of the ingredients is listed.

· Canadian Ingredient Disclosure list (limit 0.1%)

None of the ingredients is listed.

· Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients is listed.

· HMIS-ratings (scale 0 - 4)

Health = * 2

Fire = 1

Reactivity = 1

· 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.

· Per- and polyfluoroalkyl substances (PFAS)

None of the ingredients is listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Regulatory department

· Contact: sds@mgchemicals.com

· Date of previous version 04/24/2025

· Version number of previous version: 4.01

· Date of preparation 08/28/2025

· Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

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LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

• * **Data compared to the previous version altered.**

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