

8349TFM-B

(PART B)

# Safety Data Sheet

## Section 1: Identification



### Product Identifier and Other Means of Identification

**Product Identifier:** 8349TFM-B**Other Means of Identification:** Thermal Adhesive**Related Part #** 8349TFM-25ML, 8349TFM-50ML

### 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  
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

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**Section 2: Hazard(s) Identification**
**Classification of Hazardous Chemical**
**GHS Categories**

Criteria	Category	Signal Word	Pictograms
Eye Corrosion	1	Danger	Corrosion
Sensitization	1	Warning	Exclamation
Skin Irritation	2	Warning	Exclamation

*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**

<b>Signal Word</b>	<b>DANGER</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H318: Causes serious eye damage
	H317: May cause an allergic skin reaction H315: Causes skin irritation
<b>Prevention</b>	<b>Precautionary Statements</b>
P102	Keep out of reach of children.
P261	Avoid breathing fumes or vapors.
P264	Wash hands and exposed skin thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves and eye protection.

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<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.
P310	Immediately call a POISON CENTER or doctor.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P333 + P313	If skin irritation or rash occurs: Get medical advice or attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of contents in accordance with local, regional, national, and international regulations.

**Hazards Not Otherwise Classified**

<b>Other Criteria</b>	<b>Hazard Statements/Precautionary Statement</b>	<b>Signal Word</b>	<b>Pictograms</b>
Metal fume fever	When the product is exposed to very high heat such as welding or when mechanically aerosolized, this may cause harmful aluminum oxide fumes and dust.	None	None

**Section 3: Composition/Information on Ingredients**

<b>CAS #</b>	<b>Chemical Name</b>	<b>%(weight)</b>
21645-51-2	aluminum trihydrate	53%
1344-28-1	aluminum oxide	15%
100-51-6	benzyl alcohol	3%
135108-88-2	methyleneoxide, polymer with benzenamine, hydrogenated	3%
109-55-7	3-aminopropyldimethylamine	2%
70700-21-9	poly(oxy-1,2-ethanediyl), a-phosphono-w-methoxy-	1%
1333-86-4	carbon black	1%
1761-71-3	4,4'-methylenebis(cyclohexylamine)	0.2%
108-95-2	phenol	0.2%

**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, serious irritation, 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</b>	P302 + P362, P352, P333 + P313, P363
<b>Immediate Symptoms</b>	<i>redness, allergic contact dermatitis, irritation</i>
<b>Response</b>	Take off immediately all contaminated clothing. Wash skin with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. Wash contaminated clothing before reuse.
<b>IF INHALED</b>	P304 + P340
<b>Immediate Symptoms</b>	<i>Low toxicity: cough, irritation of the respiratory track</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>Low toxicity: abdominal pain, diarrhea, drowsiness, nausea, vomiting</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting.

**Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	Use extinguishing media suitable for surrounding materials. Possible suitable fire extinguishing media are dry chemical, carbon dioxide, chemical foam, or water spray.
<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 aluminum oxide fumes may cause metal fever and irritate the respiratory tract. The flu-like symptoms of metal fever may be delayed, occurring 4 to 12 hours after exposure.  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> ), phosphorous oxides, ammonia, 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>	Use personal protection recommended in Section 8.
<b>Precautions for Response</b>	Avoid breathing fumes or vapors. Remove all sources of extreme heat or open flames.
<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>	Not applicable—not readily flowable
<b>Cleaning Methods</b>	Collect the liquid in a chemically resistant and sealable container. Wipe off residue with a paper towel and place dirty towels in the container. Wash the spill area with soap and water to remove the last traces of residue.  <b>RECOMMENDATION:</b> Use a plastic, stainless steel or carbon steel container. Avoid containers containing copper, aluminum, zinc or galvanized surfaces, as waste can slowly oxidize them.
<b>Disposal Methods</b>	Dispose spill waste according to Section 13.

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**Section 7: Handling and Storage**

<b>Prevention</b>	Keep out of reach of children. Avoid breathing fumes or vapors. Contaminated work clothing should not be allowed out of the workplace.
<b>Handling</b>	Wear protective gloves and eye protection. Take off contaminated clothing and wash it before reuse. Wash hands and exposed skin thoroughly after handling.
<b>Storage</b>	<b>RECOMMENDATION:</b> Keep in a dry and clean area, away from incompatible substances

**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
benzyl alcohol	ACGIH	Not established	Not established
	U.S.A. OSHA PEL	Not established	Not established
	U.S.A (WEEL)	10 ppm	Not established
	Canada AB	Not established	Not established
	Canada BC	Not established	Not established
	Canada ON	Not established	Not established
carbon black <sup>a)</sup>	ACGIH	3.5 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	3.5 mg/m <sup>3</sup>	Not established
	Canada AB	3.5 mg/m <sup>3</sup>	Not established
	Canada BC	3 mg/m <sup>3</sup>	Not established
	Canada ON	3.5 mg/m <sup>3</sup>	Not established
	Canada QC	3.5 mg/m <sup>3</sup>	Not established

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<b>Chemical Name</b>	<b>Country or Vendor</b>	<b>Long Term Exposure Limits (PEL)</b>	<b>Short Term Exposure Limits (STEL)</b>
phenol	ACGIH	5 ppm (Skin)	Not established
	U.S.A. OSHA PEL	5 ppm (Skin)	Not established
	U.S.A (WEEL)	5 ppm (Skin)	Not established
	Canada AB	5 ppm (Skin)	Not established
	Canada BC	5 ppm (Skin)	Not established
	Canada ON	5 ppm (Skin)	Not established
	Canada QC	5 ppm (Skin)	Not established

*Note:* Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH<sup>1</sup>, OSHA, and Canadian provinces exposure limits were consulted. Limits from the RTECS database<sup>2</sup> and from suppliers' SDSs were also consulted. Short term exposure limits (STEL) are usually for 15 min and long-term permissible exposure limits (PEL) for 8 h.

a) As respirable airborne particles.

### Engineering Controls

#### Ventilation

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

Note that the aluminum oxide and carbon black powders are inextricably bound to the adhesive mixture; therefore, they are not available as airborne hazard under normal or foreseeable condition of use.

### 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.

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**Respiratory Protection** For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges. Dust particulate filters are not required.

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.



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**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Liquid	<b>Lower Flammability Limit</b>	Not available
<b>Appearance</b>	Black, paste	<b>Upper Flammability Limit</b>	Not available
<b>Odor</b>	Slight ammoniacal	<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>	1.74
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water</b>	Insoluble
<b>Initial Boiling Point <sup>a)</sup></b>	203 °C [397 °F]	<b>Partition Coefficient n-octanol/water</b>	Not available
<b>Flash Point <sup>a)</sup></b>	96 °C [205 °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

a) Values based on benzyl alcohol

**Section 10: Stability and Reactivity**

<b>Reactivity</b>	Reacts exothermically with halogenated hydrocarbons, 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.

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**Section 11: Toxicological Information**
**Summary of Effects and Symptoms by Routes of Exposure**

<b>Eyes</b>	Cause eye redness, pain, or eye damages.
<b>Skin</b>	Cause redness, skin irritation, and may cause allergic contact dermatitis.
<b>Inhalation</b>	Low toxicity: Inhalation of vapors may cause cough and irritation of the nose, throat, and lungs (upper respiratory tract).
<b>Ingestion</b>	Low toxicity: May cause abdominal pain, diarrhoea, drowsiness, nausea, and vomiting.
<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 <sup>a)</sup>	Not available	Not available
aluminum oxide	>2 000 mg/kg Rat	Not available	>2 mg/L 4 h Mouse (dust)
benzyl alcohol	1 620 mg/kg Rat	Not available	4.178 mg/L 4 h Rat
methyleneoxide, polymer with benzenamine, hydrogenated	368 mg/kg Rat	>1 000 mg/kg Rabbit	Not available
3-aminopropyldimethylamine	377.1 mg/kg Rat	300 mg/kg Rat	>4.31 mg/L 4 h Rat (vapor)
poly(oxy-1,2-ethanediyl), a-phosphono-w-methoxy-	Not available	Not available	Not available
carbon black	>15.4 g/kg Rat	>3 g/kg Rabbit	Not available
4,4'-methylenebis(cyclohexylamine)	>670 mg/kg Rat	2 110 mg/kg Rabbit	Not available
phenol	650 mg/kg Rat	660 mg/kg Rat	0.316 mg/L 4 h Rat (vapor)

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

a) Supplier SDS

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**8349TFM-B****(PART B)****Other Toxicological Effects****Skin corrosion/irritation**

Methyleneoxide, polymer with benzenamine, hydrogenated, 3-aminopropyldimethylamine, 4,4'-methylenebis(cyclohexylamine) causes severe skin burns.

**Serious eye damage/irritation**

Methyleneoxide, polymer with benzenamine, hydrogenated, 3-aminopropyldimethylamine, 4,4'-methylenebis(cyclohexylamine) and poly(oxy-1,2-ethanediyl), a-phosphono-w-methoxy-causes severe eye damage.

**Respiratory and skin sensitization** (allergic reactions)

Methyleneoxide, polymer with benzenamine, hydrogenated, 3-aminopropyldimethylamine, 4,4'-methylenebis(cyclohexylamine) may cause skin sensitization.

**Carcinogenicity**  
(risk of cancer)

The carbon black [1333-86-4] is possibly carcinogenic by airborne routes of exposures under WHMIS 2015 and HCS 2012.

Because the carbon black is bound in the epoxy liquid mixture, it is not available as an airborne hazard (dust, mist, or spray) under normal use.

**Carbon Black [1333-86-4]**

IARC Group 2B: Possibly carcinogenic to humans

ACGIH A4: Not classified as a human carcinogen

CA Prop 65: Listed as a carcinogen (airborne, as unbound particles of respirable size)

NTP: Not listed

**Mutagenicity**  
(risk of heritable genetic effects)

Based on available data, the classification criteria are not.

**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**

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.

The 4,4'-methylenebis(cyclohexylamine) and phenol are classified as a chronic category 2 environmental toxicant.

Based on available data, aluminum trihydrate, aluminum oxide, benzyl alcohol, 3-aminopropyldimethylamine and carbon black are not classified as environmental hazard according to GHS criteria.

### Acute Ecotoxicity

Available toxicity data does not meet classification thresholds.

### Chronic Ecotoxicity

Available toxicity data does not meet classification thresholds.

### 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.

**8349TFM-B****(PART B)****Section 14: Transport Information****Ground****Refer to TDG regulations** (Canadian Transportation of Dangerous Goods regulations);  
**USA DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Not Regulated

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

Not Regulated

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

Not Regulated

**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.

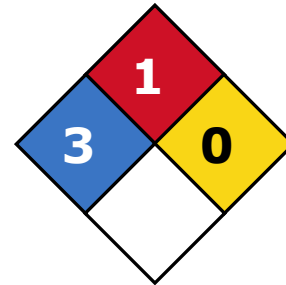
**Hazardous Products Act (R.S.C., 1985, c. H-3)**

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

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**8349TFM-B****(PART B)****USA****Other Classifications****HMIS<sup>®</sup> 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<sup>®</sup> 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 aluminum oxide (CAS# 1344-28-1), which is subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

This product contains phenol (CAS# 108-95-2); reportable quantity = 1 000 lb), 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 contains carbon black, but it is bound and exposures during normal conditions of uses are below the Safe Harbor Threshold.

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**8349TFM-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**

<b>SDS Prepared by</b>	MG Chemical's Regulatory Department
<b>Date of Revision</b>	14 July 2020
<b>Supersedes</b>	09 March 2020
<b>Reason for Changes:</b>	New formulation.

**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®)

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**8349TFM-B****(PART B)****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).

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