SAI Global File #004008 Burlington, Ontario, Canada

8349TFM-A

(Part A)

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 8349TFM-A

Other Means of Identification: Thermal Adhesive

Related Part # 8349TFM-25ML, 8349TFM-45ML, 8349TFM-50ML, 8349TFM-200ML

Recommended Use and Restriction on Use

Use: Thermally conductive adhesive resin

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

FAX +1-800-340-0772 +1-800-340-0773

E-MAIL <u>support@mgchemicals.com</u> **WEB** <u>www.mgchemicals.com</u>

E-MAIL (Competent Person): sds@mqchemicals.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
Sensitization	Skin	1	Warning	Exclamation
Eye Irritation		2	Warning	Exclamation
Skin Irritation		2	Warning	Exclamation
Hazardous to the Aquatic Environment	Chronic	2	Warning	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	WARNING
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

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Prevention	Precautionary Statements
P102	Keep out of reach of children.
P261	Avoid breathing fumes or vapors.
P280	Wear protective gloves 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
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 or attention.
P302 + P352	IF ON SKIN: Wash with plenty 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.
P391	Collect spillage.
Disposal	Precautionary Statements
	Dispose of contents in accordance to local, regional, national, and

Hazards Not Otherwise Classified

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

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Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
21645-51-2	aluminum trihydrate	50%
28064-14-4	phenol, polymer with formaldehyde, glycidyl ether	30%
1344-28-1	aluminum oxide	7%
68333-79-9	ammonium polyphosphate	7%
17557-23-2	neopentyl glycol diglycidyl ether	3%
70700-21-9	poly(oxy-1,2-ethanediyl), α-methyl-ω-phosphate	1%
1333-86-4	carbon black	0.8%

a) The anhydrous inorganic salt is listed under the CAS# 1332-07-6

Section 4: First-Aid Measures

Exposure Condition	GHS Code/Symptoms/Precautionary Statements	
IF IN EYES	P305 + P351 + P338, P337 + P313	
Immediate Symptoms	redness, serious irritation	
Response	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 or attention.	
IF ON SKIN	P302 + P352, P333 + P313, P362 + P364	
Immediate	redness, irritation, dry skin, allergic contact dermatitis	
Response	Wash with plenty water.	
	If skin irritation or rash occurs: Get medical advice or attention.	
	Take off contaminated clothing and wash it before reuse.	
IF SWALLOWED	P301 + P330 + P331, P308 + P313	
Immediate Symptoms	irritation, abdominal pain, diarrhea, nausea, vomiting	
Response	Rinse mouth. Do NOT induce vomiting.	
	IF exposed or concerned: Get medical advice or attention.	
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Immediate Symptoms

low toxicity—cough, irritation of the respiratory track, sore throat

Response

Remove person to fresh air and keep comfortable for breathing.

Section 5: Fire-Fighting Measures

Extinguishing Media In case of fire: Use extinguishing media suitable for surrounding

materials.

Specific Hazards 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.

Combustion Products Produces carbon oxides (CO,CO₂) and toxic metal fumes.

Fire-Fighter Wear self-contained breathing apparatus and full fire-fighting

turn-out gear.

Section 6: Accidental Release Measures

Personal Protection See personal protection recommendations in Section 8.

Precautions for

Response

Avoid breathing the fumes or vapors. Remove or keep away all

sources of extreme heat or open flames.

Environmental

Precautions

Avoid releasing to the environment. Prevent spill from entering

drains and waterways.

Containment Methods Contain with

Contain with inert and non-flammable absorbent (such as soil,

sand, vermiculite).

Cleaning Methods

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.

Disposal Methods

Dispose of spill waste according to Section 13.

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Section 7: Handling and Storage

Prevention Keep out of reach of children.

Avoid breathing fumes or vapors.

Contaminated work clothing should not be allowed out of the

workplace.

Avoid release to the environment.

Handling 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.

Storage RECOMMENDATION: Keep in a dry and clean area, away from

incompatible substances

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	ACGIH	1 mg/m ³	Not established
and insoluble	U.S.A. OSHA PEL	15 mg/m ³	Not established
compounds ^{a)}	Canada AB	10 mg/m ³	Not established
	Canada BC	1 mg/m³	Not established
	Canada ON	1 mg/m³	Not established
	Canada QC	10 mg/m ³	Not established
aluminium oxide	ACGIH	Not established	Not established
	U.S.A. OSHA PEL	5 mg/m ³	Not established
	Canada AB	10 mg/m ³	Not established
	Canada BC	Not established	Not established
	Canada ON	Not established	Not established
	Canada QC	10 mg/m ³	Not established

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Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
carbon black ^{a)}	ACGIH	3.5 mg/m ³	Not established
	U.S.A. OSHA PEL	3.5 mg/m ³	Not established
	Canada AB	3.5 mg/m ³	Not established
	Canada BC	3 mg/m ³	Not established
	Canada ON	3.5 mg/m ³	Not established
	Canada QC	3.5 mg/m3	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS² database and from suppliers' SDSs were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) Respirable airborne particles.

Engineering Controls

Ventilation

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

Because the aluminum oxide, aluminium metal compounds, as well as the carbon black are inextricably bound to the adhesive mixture, they are not available as airborne hazards under normal 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, neoprene, or

other chemically resistant gloves.

For incidental contacts, use nitrile, latex, neoprenee or other

chemically resistant gloves.

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Respiratory Protection

If exposed to fumes or dust above the exposure limit, wear a suitable respirator meeting local, regional, and national guidelines.

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	Liquid	Lower Flammability Limit	Not available
Appearance	Black	Upper Flammability Limit	Not available
Odor	Slight	Vapor Pressure @20°C	Not available
Odor Threshold	Not available	Vapor Density	Not available
рН	Not available	Relative Density @25 °C	1.73
Freezing/Melting Point	Not available	Solubility in Water	Insoluble
Initial Boiling Point ^{a)}	>150 °C [>302 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point a)	150 °C [302 °F]	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Non Flammable	Viscosity @40 °C	>20.5 mm ² /s

a) The closed cup value is based on the phenol, polymer with formaldehyde, glycidyl ether component.



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Section 10: Stability and Reactivity

Reactivity Reacts exothermically with amines.

Chemical Stability Chemically stable at normal temperatures and pressures.

Conditions to

Avoid

Avoid ignition sources, open flames, and incompatible substances. Do

not use in away that forms mist or aerosolizes the product.

Incompatibilities Avoid strong oxidizing agents, strong acids, strong bases, ammonia,

ethylene oxides, and halogenated compounds.

Polymerization Will not occur

Decomposition Will not decompose under normal conditions. 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 or serious irritation.

Skin Causes skin redness, irritation, dry skin, or allergic contact dermatitis.

Inhalation Low toxocity—may cause cough and respiratory irritation, or sore

throat.

Ingestion May cause irritation, abdominal pain, diarrhea, nausea, or vomiting.

Chronic Prolonged and repeated exposure may lead to skin sensitization.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50	LD50	LC50
	oral	dermal	inhalation
aluminum trihydrate	>2 000 mg/kg	>2 000 mg/kg	Not
	Rat	Rabbit	available
phenol, polymer with formaldehyde, glycidyl ether	>2 000 mg/kg	>2 000 mg/kg	Not
	Rat	Rabbit	available
aluminum oxide	>2 000 mg/kg	Not	>2 mg/L
	Rat	available	4 h Mouse (dust)
ammonium polyphosphate	500 mg/kg	Not	Not
	Rat	available	available

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Chemical Name	LD50	LD50	LC50
	oral	dermal	inhalation
neopentyl glycol diglycidyl	Not	Not	Not
ether	available	available	available
poly(oxy-1,2-ethanediyl), a-	Not	Not	Not
phosphono-w-methoxy-	available	available	available
carbon black	>15.4 g/kg	>3 g/kg	Not
	Rat	Rabbit	available

Note: Toxicity data from the RTECS² and ECHA databases were consulted. The data from supplier SDSs were also consulted.

Other Toxicological Effects	
Caro i Oxidorogidai Endoto	
Skin corrosion/irritation	Phenol, polymer with formaldehyde, glycidyl ether and neopentyl glycol diglycidyl ether are known skin irritants.
Serious eye damage/irritation	Phenol, polymer with formaldehyde, glycidyl ether, poly(oxy-1,2-ethanediyl), a-phosphono-w-methoxy- and neopentyl glycol diglycidyl ether causes serious eye irritation.
Sensitization (allergic reactions)	May cause skin sensitization based on animal studies due to the epoxy components.
Carcinogenicity (risk of cancer)	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 and emergency conditions.
	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 met.
Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met.

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Teratogenicity (risk of fetus Based on available data, the classification criteria are not

malformation) met.

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

met.

Aspiration hazard There are no category 1 components, and the kinematic

viscosity is >20.5 mm²/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.

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.

Contains neopentyl glycol diglycidyl ether which is a chronic category 3 enironmental toxicant.

Based on available data, aluminum trihydrate, aluminum oxide, ammonium polyphosphate 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

Category 2

Toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Not readily biodegradable

Bioaccumulation

Not available



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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 L 8349TFM-25ML, 8349TFM-50ML NOT REGULATED in TDG per Special Provisions 99

Sizes 5 L and under

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

FOR REFERENCE ONLY UN number: UN3082

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,N.O.S. (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.

171.4 (c) Exceptions:

(2) 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 of 5 kg or less for solids, are not subject to any other requirements of this subchapter provided the packagings meet the general requirements in §§ 173.24 and 173.24a. This exception does not apply to marine pollutants that are a hazardous waste or a hazardous substance. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this subchapter relevant to any additional hazards continue to apply.

Temperature sensitive—Keep between 5 °C and 35 °C.

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Refer to ICAO-IATA regulations. Sizes 5 L and under 8349TFM-25ML, 8349TFM-50ML 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.

Temperature sensitive—Keep between 5 °C and 35 °C.

Sea

Refer to IMDG regulations.	
Sizes 5 L and under 8349TFM-25ML, 8349TFM-50ML 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.

Temperature sensitive—Keep between 5 °C and 35 °C.

Note: Shipper must be appropriately <u>trained and certified</u> before involvement with the transport of dangerous goods.

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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

HEALTH:	*	2
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 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.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

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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.

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 Review 12 August 2024 Supersedes 07 March 2022

Reason for Changes: New part numbers in section 1

Reference

- 1) ACGIH 2023 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 (2023).
- 2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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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.

Email: support@mgchemicals.com

Phone: +1-905-331-1396

Mailing Addresses Manufacturing & Support

1210 Corporate Drive

Burlington, Ontario, Canada

L7L 5R6

Disclaimer This safety data sheet is provided as an information resource only.

M.G. Chemicals, Ltd. believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to query and verify any information seeming suspect where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, regional,

national, and international regulations.