Safety data sheet
according to UK REACH

Printing date 29.01.2025 Version number 4.00 Revision: 26.08.2024

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

· **1.1 Product identifier**

· **Trade name: 8349TFM-B**
· **Other Means of Identification:** Thermal Adhesive

· **Related Part Number:**
8349TFM-B, 8349TFM–25ML (B), 8349TFM-45ML (B), 8349TFM-50ML (B), 8349TFM–200ML (B)
· **UFI:** 3GQ0-G0G5-G00R-QK4A

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the mixture** Thermally conductive adhesive hardener
· **Uses advised against** Not for use as a spray coating

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

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

MG Chemicals
Heame House, 23 Bliston Street
Sedgely Dudley DY3 1JA.
United Kingdom
+(44) 1663 362888

MG Chemicalst Ltd.
18-20, Msida Road,
Gzira, GZR 1401
MALTA

· **Further information obtainable from:** sds@mgchemicals.com

· **1.4 Emergency telephone number:**

Verisk 3E (Access code: 335388)
+(44) 20 3514787
+(1) 760 476 3961
UK Toll free: +(0) 800 680 0425

Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**


GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.

(Contd. on page 2)

(Contd. of page 1)

GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

· **Hazard pictograms**

GHS05 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**
3-aminopropyldimethylamine
Methyleneoxide, polymer with benzenamine,hydrogenated
poly(oxy-1,2-ethanediyl), α-methyl-ω-phosphate
benzyl alcohol

· **Hazard statements**
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.

· **Precautionary statements**

P102	Keep out of reach of children.
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.
P310	Immediately call a POISON CENTER/doctor.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P501	Dispose of contents and container in accordance with local, regional, and national regulations.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Determination of endocrine-disrupting properties** Endocrine Disruptor substance ≥ 0.1% = none

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**

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

(Contd. on page 3)

(Contd. of page 2)

· **Dangerous components:**

CAS: 21645-51-2 EINECS: 244-492-7	aluminium hydroxide	51.0%
CAS: 1344-28-1 EINECS: 215-691-6	aluminium oxide	12.0%
CAS: 109-55-7 EINECS: 203-680-9 Index number: 612-061-00-6	3-aminopropyldimethylamine Flam. Liq. 3, H226; Skin Corr. 1B, H314; Acute Tox. 4, H302; Skin Sens. 1, H317	3.0%
CAS: 100-51-6 EINECS: 202-859-9 Index number: 603-057-00-5	benzyl alcohol Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Sens. 1B, H317 ATE: LD50 oral: 1,200 mg/kg	2.0%
CAS: 135108-88-2	Methyleneoxide, polymer with benzenamine,hydrogenated Acute Tox. 3, H301; STOT RE 2, H373; Skin Corr. 1C, H314; Eye Dam. 1, H318; Skin Sens. 1, H317; Aquatic Chronic 3, H412	2.0%
CAS: 1333-86-4 EINECS: 215-609-9	Carbon black Carc. 2, H351	1.0%
CAS: 70700-21-9	poly(oxy-1,2-ethanediyl), α-methyl-ω-phosphate Eye Dam. 1, H318; Skin Irrit. 2, H315	1.0%
CAS: 108-95-2 EINECS: 203-632-7 Index number: 604-001-00-2	phenol Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; STOT RE 2, H373; Skin Corr. 1B, H314 Specific concentration limits: Skin Corr. 1B; H314: C ≥ 3 % Skin Irrit. 2; H315: 1 % ≤ C < 3 % Eye Irrit. 2; H319: 1 % ≤ C < 3 %	0.2%
CAS: 1761-71-3 EINECS: 217-168-8	4,4'-methylenebis(cyclohexylamine) Repr. 2, H361; STOT SE 2, H371; STOT RE 2, H373; Skin Corr. 1B, H314; Eye Dam. 1, H318; Aquatic Chronic 2, H411; Acute Tox. 4, H302	0.2%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **After inhalation:**
Remove person to fresh air and keep comfortable for breathing.
If feeling unwell: Call a POISON CENTRE or doctor.

· **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 at least 30 minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a POISON CENTER or doctor.

· **After swallowing:**
Rinse mouth.
Do NOT induce vomiting.
If symptoms persist consult doctor.

(Contd. on page 4)

(Contd. of page 3)

· **4.2 Most important symptoms and effects, both acute and delayed**
If exposed to metal fumes, chills and fever-like symptoms may occur 4-12 hours after exposure.

· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **5.2 Special hazards arising from the substance or mixture**
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.
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.
Inhalation of metal fumes may cause metal fever and irritate the respiratory tract.
· **Hazardous combustion products:**
phosphorous oxides
ammonia
Carbon Oxides (COx)
toxic metal fumes
Zinc oxides

· **5.3 Advice for firefighters**
· **Protective equipment:** Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid breathing mist, spray, or vapors.
Remove or keep away all sources of extreme heat or open flames.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
RECOMMENDATION: Use a plastic, stainless steel or carbon steel container. Avoid containers containing copper, aluminum, zinc or galvanized surfaces, as waste can slowly oxidize them.
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.

· **6.4 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.

(Contd. on page 5)

(Contd. of page 4)

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Wear protective gloves and eye protection.
Wash hands and exposed skin thoroughly after handling.
Take off contaminated clothing and wash it before reuse.
Contaminated work clothing should not be allowed out of the workplace.
· **Information about fire - and explosion protection:** No special measures required.

· **7.2 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 container tightly sealed.

· **7.3 Specific end use(s)** See section 1.2

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
1333-86-4 Carbon black	
WEL	Short-term value: 7 mg/m³ Long-term value: 3.5 mg/m³
108-95-2 phenol	
WEL	Short-term value: 16 mg/m³, 4 ppm Long-term value: 7.8 mg/m³, 2 ppm Sk

· **Additional information:**
The lists valid during the making were used as basis.
Refer to the national or regional occupational exposure limit regulation for abbreviations and acronyms.

· **8.2 Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **Individual protection measures, such as 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.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
· **Respiratory protection:**
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.
· **Hand protection**
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

(Contd. on page 6)

(Contd. of page 5)

For Incidental Contact: Type = Nitrile ; Permeation 3 (> 360 min); Min. Thickness = 0.11 mm ; EN 374-2

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.

· **Eye/face protection**

Safety glasses or tightly sealed goggles: EN 166

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **Physical state**	Liquid
· **Form:**	Viscous
· **Colour:**	Black
· **Odour:**	Aromatic
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	Undetermined.
· **Boiling point or initial boiling point and boiling range**	203 °C
· **Flammability**	Non flammable
· **Lower and upper explosion limit**	
· **Lower:**	Not applicable
· **Upper:**	Not applicable
· **Flash point:**	96 °C
· **Decomposition temperature:**	Not determined.
· **pH**	Not determined.
· **Viscosity:**	
· **Kinematic viscosity at 20 °C**	>20.5 mm²/s
· **Dynamic:**	Not determined.
· **Solubility**	
· **water:**	Not miscible or difficult to mix.
· **Partition coefficient n-octanol/water (log value)**	Not determined.
· **Vapour pressure:**	Not determined.
· **Relative density at 20 °C:**	1.74
· **Vapour density (air=1):**	Not determined.

(Contd. on page 7)

(Contd. of page 6)

· **Particle characteristics**	Not applicable.

· **9.2 Other information**

· **9.2.1 Information with regard to physical hazard classes**	Not applicable
· **9.2.2 Other safety characteristics**	
· **Evaporation rate**	Not determined.
· **Ignition temperature:**	Product is not selfigniting.
· **Explosive properties:**	Product does not present an explosion hazard.
· **Solvent content:**	
· **Organic solvents:**	3.20 %
· **VOC (EC)**	2.20 %
· **Solids content:**	95.0 %

SECTION 10: Stability and reactivity

· **10.1 Reactivity**
Reacts exothermically with halogenated hydrocarbons, May attack metals such as aluminum, zinc, copper, and their alloys.
May form explosive peroxides.

· **10.2 Chemical stability** Chemically stable at normal temperatures and pressures.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.

· **10.3 Possibility of hazardous reactions** No dangerous reactions known.

· **10.4 Conditions to avoid**
Avoid direct sunlight, high temperatures, open flames, sparks and incompatible substances.
Do not use in away that forms mist or aerosolizes the product.

· **10.5 Incompatible materials:**
Halogenated compounds
Strong oxidizing agents
Strong acids

· **10.6 Hazardous decomposition products:** Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

ATE (Acute Toxicity Estimates)		
Oral	LD50	4,297 mg/kg
Inhalative	LC50/4 h	550 mg/L

21645-51-2 aluminium hydroxide		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)

(Contd. on page 8)

(Contd. of page 7)

Inhalative	LC50/4 h	mg/L (rat)
1344-28-1 aluminium oxide		
Oral	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	>2 mg/L (mouse)
109-55-7 3-aminopropyldimethylamine		
Oral	LD50	1,870 mg/kg (rat)
Dermal	LD50	490 mg/kg (rabbit)
100-51-6 benzyl alcohol		
Oral	LD50	1,200 mg/kg (ATE)
		1,230 mg/kg (rat)
Dermal	LD50	2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	11 mg/L (ATE)
135108-88-2 Methyleneoxide, polymer with benzenamine,hydrogenated		
Oral	LD50	100 mg/kg (ATE)
1333-86-4 Carbon black		
Oral	LD50	>15,400 mg/kg (rat)
Dermal	LD50	>3,000 mg/kg (rabbit)
108-95-2 phenol		
Oral	LD50	317 mg/kg (rat)
Dermal	LD50	850 mg/kg (rabbit)
Inhalative	LC50/4 h	0.5 mg/L (ATE)
1761-71-3 4,4'-methylenebis(cyclohexylamine)		
Oral	LD50	500 mg/kg (ATE)

· **Primary irritant effect:**
· **Skin corrosion/irritation** Causes skin irritation.
· **Serious eye damage/irritation** Causes serious eye damage.
· **Respiratory or skin sensitisation** May cause an allergic skin reaction.
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not 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** Based on available data, the classification criteria are not met.
· **Summary of Effects and Symptoms by Routes of Exposure**
· **Eyes:**
redness
eye damage, pain
· **Skin:**
rash, allergic contact dermatitis
redness, irritation
· **Inhalation:**
Low toxicity:
Inhalation of fumes may cause metal fever and irritate the respiratory tract.
The flu-like symptoms of metal fume fever may be delayed, occurring 4–12 hours after exposure.
· **Swallowed:**
Low toxicity:
abdominal pain
drowsiness

(Contd. on page 9)

(Contd. of page 8)

nausea
vomiting

· **Additional toxicological information:**

· **Delayed and immediate effects as well as chronic effects from short and long-term exposure**
Prolonged or repeated exposure may cause skin allergies.

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**
None of the ingredients is listed.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
1333-86-4 Carbon black	
EC50/ 24 h	>5,600 mg/L (aquatic invertebrates)
EC50/ 72 h	>10,000 mg/L (aquatic algae and cyanobacteria)
EC0/ 3 h	>800 mg/L (microorganisms)
LC50	>1,000 mg/L (fish)

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects**

· **Additional ecological information:**

· **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation** This material and its container must be disposed of as hazardous waste.

· **European waste catalogue**	
HP8	Corrosive

(Contd. on page 10)

(Contd. of page 9)

· **Uncleaned packaging:**
· **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.

SECTION 14: Transport information

· **14.1 UN number or ID number**	
· **ADR, IMDG, IATA**	Not regulated
· **14.2 UN proper shipping name**	
· **ADR**	Not regulated
· **14.3 Transport hazard class(es)**	
· **ADR, IMDG, IATA**	
· **Class**	-No
· **Label**	-No
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	Not applicable
· **14.5 Environmental hazards:**	Not applicable.
· **14.6 Special precautions for user**	Not applicable.
· **14.7 Maritime transport in bulk according to IMO instruments**	Not applicable.
· **Transport/Additional information:**	Not Regulated 8349TFM-B-25ML, 8349TFM-B-45ML, 8349TFM-B-50ML, 8349TFM-B-200ML
· **UN "Model Regulation":**	Not regulated

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Poisons Act**

· **Regulated explosives precursors (Part 1)**		
None of the ingredients is listed.		
· **Regulated poisons (Part 2)**		
108-95-2	phenol	Listed
· **Reportable explosives precursors (Part 3)**		
None of the ingredients is listed.		
· **Reportable poisons (Part 4)**		
108-95-2	phenol	Listed

(Contd. on page 11)

(Contd. of page 10)

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
None of the ingredients is listed.

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**
None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**
None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
None of the ingredients is listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 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.

· **Relevant phrases**
H226 Flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H371 May cause damage to organs.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

· **Classification according to Regulation (EC) No 1272/2008**	
Skin corrosion/irritation Serious eye damage/irritation Skin sensitisation	The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

· **Department issuing SDS:** Regulatory department
· **Contact:** sds@mgchemicals.com

(Contd. on page 12)

(Contd. of page 11)

· **Date of previous version:** 17.05.2024

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Corr. 1C: Skin corrosion/irritation – Category 1C
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1B
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
Repr. 2: Reproductive toxicity – Category 2
STOT SE 2: Specific target organ toxicity (single exposure) – Category 2
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3