

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

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

1.1 Product identifier

· **Trade name:** 8329TCS-Part B

· **Other Means of Identification:** Thermally Conductive Epoxy Adhesive

· **Related Part Number:**

8329TCS-B, 8329TCS-B-6ML, 8329TCS-B-50ML, 8329TCS-B-200ML

· **UFI:** 52F0-V0U8-G008-V410

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture** Thermally conductive adhesive hardener

· **1.3 Details of the supplier of the safety data sheet** M.G. Chemicals Ltd.

· **Manufacturer/Supplier:**

MG Chemicals Ltd. (Head Office)
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA
+(1) 800-340-0772

MG Chemicals
Heame House, 23 Bliston Street
Sedgely Dudley DY3 1JA.
UNITED KINGDOM
+(44) 1663 362888 sales@mgchemicals.com

MG Chemicalst Ltd.
Level 2, Vision Exchange, Building Territorials Street,
Zone 1, Central Business, District,
Birkirkara CBD 1070,
MALTA

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

· **1.4 Emergency telephone number:**

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

Verisk 3E (Access code: 335388), +(44) 20 3514787

Other emergency telephone numbers: +(0) 800 680 0425

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)

GB

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 1)



GHS09 environment

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



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

GHS09

Signal word Danger

Hazard-determining components of labelling:

fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine
 3,3'-(oxybis(2,1-ethane-diyl oxy))bis-1-propanamine
 3,6-diazaoctanethylenediamin

Hazard statements

H315 Causes skin irritation.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P102 Keep out of reach of children.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and 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.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international 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 $\geq 0.1\%$ = none

3 Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

(Contd. on page 3)

according to 1907/2006/EC, Article 31

Printing date 05.01.2024















Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 2)

· **Dangerous components:**

CAS: 1344-28-1	aluminium oxide	37.0%
EINECS: 215-691-6 substance with a Community workplace exposure limit		
CAS: 1314-13-2	zinc oxide	34.0%
EINECS: 215-222-5  Aquatic Acute 1, H400; Aquatic Chronic 1, H410		
CAS: 68541-13-9	fatty acids, c18-unsat, dimer, polymers, w/3,3'-(oxybis(2,1-ethane-diyloxy))bis-1-propanamine	13.0%
 Eye Irrit. 2, H319		
CAS: 68082-29-1	fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine	8.0%
 Eye Dam. 1, H318;  Aquatic Chronic 2, H411;  Skin Irrit. 2, H315; Skin Sens. 1, H317		
CAS: 108-65-6	2-methoxy-1-methylethyl acetate	1.0%
EINECS: 203-603-9  Flam. Liq. 3, H226		
CAS: 112-24-3	3,6-diazaoctanethylenediamin	≥0.1—<1%
EINECS: 203-950-6  Skin Corr. 1B, H314;  Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412		
CAS: 1333-86-4	Carbon black	1.0%
EINECS: 215-609-9  Self-heat. 1, H251;  Carc. 2, H351; STOT RE 1, H372		
CAS: 4246-51-9	3,3'-(oxybis(2,1-ethane-diyloxy))bis-1-propanamine	1.0%
 Skin Corr. 1B, H314; Eye Dam. 1, H318;  Skin Sens. 1, H317		
CAS: 8052-41-3	Stoddard solvent	0.5%
EINECS: 232-489-3  Flam. Liq. 3, H226;  Muta. 1B, H340; Carc. 1B, H350; STOT RE 1, H372; Asp. Tox. 1, H304		

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.* **4 First aid measures**· **4.1 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:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** If symptoms persist consult doctor.· **4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Firefighting measures· **5.1 Extinguishing media**· **Suitable extinguishing agents:**CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.· **5.2 Special hazards arising from the substance or mixture**

Vapors are heavier than air. Vapors may travel to sources of ignition near the ground. They can cause flash fire or ignite explosively.

(Contd. on page 4)

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 3)

- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Use neutralising agent.
Dispose contaminated material as waste according to section 13.
- **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.

7 Handling and storage

- **7.1 Precautions for safe handling** Thorough dedusting.
- **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:** No special requirements.
- **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)** No further relevant information available.

8 Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
- 1344-28-1 aluminium oxide**
WEL Long-term value: 10* 4** mg/m³
*inhalable dust **respirable dust
- 108-65-6 2-methoxy-1-methylethyl acetate**
WEL Short-term value: 548 mg/m³, 100 ppm
Long-term value: 274 mg/m³, 50 ppm
Sk
- 1333-86-4 Carbon black**
WEL Short-term value: 7 mg/m³
Long-term value: 3.5 mg/m³
- **Additional information:** The lists valid during the making were used as basis.
- **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.

(Contd. on page 5)

GB

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 4)

*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:** Not required.**· **Hand protection****Protective gloves**The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.**Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.**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****Tightly sealed goggles***9 Physical and chemical properties***· **9.1 Information on basic physical and chemical properties****· **General Information****· **Physical state****Solid**· **Colour:****Grey**· **Odour:****Characteristic**· **Odour threshold:****Not determined.**· **Melting point/freezing point:****Undetermined.**· **Boiling point or initial boiling point and boiling range****130 °C**· **Flammability****Not determined.**· **Lower and upper explosion limit****· **Lower:****1.3 Vol %**· **Upper:****6.9 Vol %**· **Flash point:****21 °C**· **Decomposition temperature:****Not determined.**· **pH****Not applicable.**· **Viscosity:****· **Kinematic viscosity****Not applicable.**· **Dynamic:****Not applicable.*

(Contd. on page 6)

GB

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 5)

· Solubility	
· water:	Soluble.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure:	Not applicable.
· Density and/or relative density	
· Density at 20 °C:	2.2 g/cm ³
· Relative density	Not determined.
· Bulk density:	483 kg/m ³
· Vapour density	Not applicable.
· Particle characteristics	
See section 3.	
· 9.2 Other information	
· Appearance:	
· Form:	Solid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· Organic solvents:	1.0 %
· Solids content:	100.0 %
· Change in condition	
· Evaporation rate	Not applicable.
· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

10 Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **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** No further relevant information available.

(Contd. on page 7)

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 6)

- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

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:**
 - 1314-13-2 zinc oxide**
 - Oral LD50 >5,000 mg/kg (rat)
 - 108-65-6 2-methoxy-1-methylethyl acetate**
 - Oral LD50 8,532 mg/kg (rat)
 - Inhalative LC50/4 h 35.7 mg/l (rat)
 - 112-24-3 3,6-diazaoctanethylenediamin**
 - Oral LD50 2,500 mg/kg (rat)
 - Dermal LD50 805 mg/kg (rabbit)
 - 1333-86-4 Carbon black**
 - Oral LD50 10,000 mg/kg (rat)
- **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.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties**
 - None of the ingredients is listed.

12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **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 3 (German Regulation) (Self-assessment): extremely hazardous for water
 - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 - Must not reach sewage water or drainage ditch undiluted or unneutralised.
 - Danger to drinking water if even extremely small quantities leak into the ground.

(Contd. on page 8)

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 7)

Also poisonous for fish and plankton in water bodies.

* **13 Disposal considerations**· **13.1 Waste treatment methods**· **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **European waste catalogue**

HP4 Irritant - skin irritation and eye damage

HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

HP7 Carcinogenic

HP11 Mutagenic

HP14 Ecotoxic

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

* **14 Transport information**· **14.1 UN number or ID number**· **ADR, IMDG, IATA**

UN3077

· **14.2 UN proper shipping name**· **ADR**

NOT REGULATED by Ground ADR Special Provision 375 for sizes 5kg or less.

3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

· **IMDG**

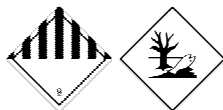
NOT REGULATED by Sea IMDG per 2.10.2.7 for sizes 5kg or less.

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

· **IATA**

NOT REGULATED by Air IATA Special Provision A197 for sizes 5kg or less.

Environmentally hazardous substance, solid, n.o.s.

· **14.3 Transport hazard class(es)**· **ADR, IATA**· **Class**

9 Miscellaneous dangerous substances and articles.

· **Label**

9

(Contd. on page 9)

GB

according to 1907/2006/EC, Article 31

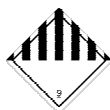
Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 8)

· **IMDG**

· Class	9 Miscellaneous dangerous substances and articles.
· Label	9
· 14.4 Packing group	
· ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	
· Special marking (ADR):	Symbol (fish and tree)
· Special marking (IATA):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Miscellaneous dangerous substances and articles.
· Hazard identification number (Kemler code):	90
· EMS Number:	F-A,S-F
· Stowage Category	A
· Stowage Code	SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· Transport category	3
· Tunnel restriction code	(-)
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. 9, III

* **15 Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**
- **Regulated explosives precursors**
None of the ingredients is listed.
- **Regulated poisons**
None of the ingredients is listed.

(Contd. on page 10)

GB

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 9)

· Reportable explosives precursors*None of the ingredients is listed.***· Reportable poisons***None of the ingredients is listed.***· Directive 2012/18/EU****· Named dangerous substances - ANNEX I** *None of the ingredients is listed.***· Seveso category E1** *Hazardous to the Aquatic Environment***· Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t**· Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t**· 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.***· REGULATION (EU) 2019/1148****· 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.***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.**H251 Self-heating: may catch fire.**H304 May be fatal if swallowed and enters airways.**H312 Harmful 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.**H340 May cause genetic defects.**H350 May cause cancer.**H351 Suspected of causing cancer.**H372 Causes damage to organs through prolonged or repeated exposure.**H400 Very toxic to aquatic life.**H410 Very toxic to aquatic life with long lasting effects.**H411 Toxic to aquatic life with long lasting effects.**H412 Harmful to aquatic life with long lasting effects.***· Department issuing SDS:** *Product safety department.***· Contact:** *sds@mgchemicals.com***· Date of previous version:** *06.11.2023*

(Contd. on page 11)

according to 1907/2006/EC, Article 31

Printing date 05.01.2024

Version number 5

Revision: 05.01.2024

Trade name: 8329TCS-Part B

(Contd. of page 10)

· 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 3: Flammable liquids – Category 3

Self-heat. 1: Self-heating substances and mixtures – Category 1

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 1B: Germ cell mutagenicity – Category 1B

Carc. 1B: Carcinogenicity – Category 1B

Carc. 2: Carcinogenicity – Category 2

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

Asp. Tox. 1: Aspiration hazard – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

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

· * Data compared to the previous version altered.

GB