# Safety data sheet
***according to UK REACH***

Printing date 25.11.2024 Version number 6.01 (replaces version 6.00) Revision: 25.11.2024

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

· **1.1 Product identifier**

· **Trade name: 832TC-A**

· **Other Means of Identification:** Thermally Conductive Epoxy (Part A)

· **Related Part Number:**
832TC-Part A, 832TC-450ML, 832TC-450MLCA, 832TC-2L, 832TC-8L, 832TC-40L

· **UFI:** 69G0-Y0GT-S005-4W5W

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**

· **Application of the substance / the mixture** Epoxy resin

· **Uses advised against** Not applicable

· **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.
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
+(1) 760 476 3961
UK Toll free: +(0) 800 680 0425

## SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

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



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

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GHS07

| | |
|---|---|
| Skin Irrit. 2 | H315 Causes skin irritation. |
| Eye Irrit. 2 | H319 Causes serious eye 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**



GHS07 GHS09

· **Signal word** Warning

· **Hazard-determining components of labelling:**
phenol, polymer with formaldehyde, glycidyl ether
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
oxirane, mono[(C12-14-alkyloxy)methyl] derivs

· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H411 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 / eye 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. |
| 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.

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| · **Dangerous components:** | | |
|---|---|---|
| CAS: 28064-14-4 | phenol, polymer with formaldehyde, glycidyl ether<br>Alternative CAS number: 9003-36-5<br>Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317 | 48% |
| CAS: 1344-28-1<br>EINECS: 215-691-6 | aluminium oxide | 47% |
| CAS: 25068-38-6<br>NLP: 500-033-5<br>Index number: 603-074-00-8 | reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)<br>Alternative CAS number: 1675-54-3<br>Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317, EUH205<br>Specific concentration limits: Eye Irrit. 2; H319: C ≥ 5 %<br>Skin Irrit. 2; H315: C ≥ 5 % | 2% |
| CAS: 64741-65-7<br>EINECS: 265-067-2<br>Index number: 649-275-00-4 | Naphtha (petroleum), heavy alkylate<br>Flam. Liq. 3, H226; Muta. 1B, H340; Carc. 1B, H350; Asp. Tox. 1, H304 | 1% |
| CAS: 1333-86-4<br>EINECS: 215-609-9 | Carbon black<br>Carc. 2, H351 | 0.7% |
| CAS: 68609-97-2<br>EINECS: 271-846-8<br>Index number: 603-103-00-4 | oxirane, mono[(C12-14-alkyloxy)methyl] derivs<br>Skin Irrit. 2, H315; Skin Sens. 1, H317 | 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 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.

· **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.



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## 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**
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.
The flu-like symptoms of metal fever may be delayed, occurring 4 to 12 hours after exposure.
· **Hazardous combustion products:**
Carbon Oxides (COx)
toxic metal fumes
other toxic fumes

· **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 the fumes or vapors.
Remove or keep away all sources of extreme heat or open flames.

· **6.2 Environmental precautions:**
Avoid release to the environment.
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).
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.

## SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Avoid breathing fumes or vapours.
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.
· **Information about fire - and explosion protection:** No special measures required.

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· **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
DO NOT FREEZE. Store in a clean and dry area between 5 to 35 °C.
· **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<br>Long-term value: 3.5 mg/m³ |

· **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 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.



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/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:** | Highly viscous |
| · **Colour:** | Black |
| · **Odour:** | Mild |
| · **Odour threshold:** | Not determined. |
| · **Melting point/freezing point:** | Undetermined. |
| · **Boiling point or initial boiling point and boiling range** | >150 °C |
| · **Flammability** | Non flammable |
| · **Lower and upper explosion limit** | |
| · **Lower:** | Not applicable |
| · **Upper:** | Not applicable |
| · **Flash point:** | 150 °C |
| · **Decomposition temperature:** | Not determined. |
| · **pH** | Not determined. |
| · **Viscosity:** | |
| · **Kinematic viscosity at 20 °C** | 36,000 mm²/s |
| · **Dynamic:** | Not determined. |
| · **Solubility** | |
| · **water:** | Insoluble. |
| · **Partition coefficient n-octanol/water (log value)** | Not determined. |
| · **Vapour pressure:** | Not determined. |
| · **Relative density at 25 °C:** | 1.73 |
| · **Vapour density (air=1):** | Not determined. |
| · **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:** | Not available |
| · **VOC (EC)** | 0.00 % |
| · **Solids content:** | 48.8 % |



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## SECTION 10: Stability and reactivity

· **10.1 Reactivity** Reacts exothermically with amines.

· **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 open flames, excessive heat, sparks, ignition sources, and incompatible substances.
Do not use in away that forms mist or aerosolizes the product.

· **10.5 Incompatible materials:**
Strong acids
Strong bases
Ammonia
Strong oxidizing agents
alkali

· **10.6 Hazardous decomposition products:**
No dangerous decomposition products known.
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:** | | |
|---|---|---|
| **28064-14-4 phenol, polymer with formaldehyde, glycidyl ether** | | |
| Oral | LD50 | >2,000 mg/kg (rat) |
| Dermal | LD50 | >2,000 mg/kg (rabbit) |
| **1344-28-1 aluminium oxide** | | |
| Oral | LD50 | >2,000 mg/kg (rat) |
| Inhalative | LC50/4 h | >2 mg/L (mouse) |
| **25068-38-6 reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)** | | |
| Oral | LD50 | 11,400 mg/kg (rat) |
| **64741-65-7 Naphtha (petroleum), heavy alkylate** | | |
| Oral | LD50 | >6,000 mg/kg (rat) |
| Dermal | LD50 | >3,000 mg/kg (rabbit) |
| Inhalative | LC50/4 h | >7.8 mg/L (rat) |
| **1333-86-4 Carbon black** | | |
| Oral | LD50 | >15,400 mg/kg (rat) |
| Dermal | LD50 | >3,000 mg/kg (rabbit) |
| **68609-97-2 oxirane, mono[(C12-14-alkyloxy)methyl] derivs** | | |
| Oral | LD50 | 19,200 mg/kg (rat) |
| Dermal | LD50 | 4,500 mg/kg (rat) |

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· **Primary irritant effect:**
· **Skin corrosion/irritation** Causes skin irritation.
· **Serious eye damage/irritation** Causes serious eye irritation.
· **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, serious irritation
pain
· **Skin:**
rash, allergic contact dermatitis
redness, irritation
· **Inhalation:** irritation of the respiratory tract
· **Swallowed:**
Low toxicity:
irritation
see inhalation symptoms
· **Additional toxicological information:**
· **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.

· **11.2 Information on other hazards**

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

## SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:**
Toxic to aquatic life with long lasting effects.
Avoid release to the environment.
Collect spillage.

| **28064-14-4 phenol, polymer with formaldehyde, glycidyl ether** | |
|---|---|
| LC50 96h | >1–≤10 mg/L (not defined)<br>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. |
| **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.

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· **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**
· **Remark:** Toxic for fish
· **Additional ecological information:**
· **General notes:**
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

## 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** | |
|---|---|
| HP4 | Irritant - skin irritation and eye damage |
| HP7 | Carcinogenic |
| HP11 | Mutagenic |
| HP13 | Sensitising |
| HP14 | Ecotoxic |

· **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** | UN3082 |
| · **14.2 UN proper shipping name** | |
| · **ADR** | NOT REGULATED by Road ADR Special Provision 375 for sizes 5L or less. ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)) |
| · **IMDG** | NOT REGULATED by Sea IMDG according to 2.10.2.7 for sizes of 5L or less. |

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| | |
|---|---|
| · | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)) |
| · **IATA** | NOT REGULATED by Air IATA Special Provision A197 for sizes 5L or less.<br>Environmentally hazardous substance, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)) |

· **14.3 Transport hazard class(es)**

· **ADR, IMDG**



| | |
|---|---|
| · **Class** | 9 Miscellaneous dangerous substances and articles. |
| · **Label** | 9 |

· **IATA**



| | |
|---|---|
| · **Class** | 9 Miscellaneous dangerous substances and articles. |
| · **Label** | 9 |

· **14.4 Packing group**

| | |
|---|---|
| · **ADR, IMDG, IATA** | III |

· **14.5 Environmental hazards:**

| | |
|---|---|
| · **Marine pollutant:** | MARINE POLLUTANT |
| · **Special marking (ADR):** | ENVIRONMENTALLY HAZARDOUS |
| · **Special marking (IATA):** | ENVIRONMENTALLY HAZARDOUS<br>Symbol (fish and tree) |

· **14.6 Special precautions for user** Not applicable.

| | |
|---|---|
| · **Hazard identification number (Kemler code):** | 90 |
| · **EMS Number:** | F-A,S-F |
| · **Stowage Category** | A |

· **14.7 Maritime transport in bulk according to IMO instruments** Not applicable.

· **Transport/Additional information:**

· **ADR**

| | |
|---|---|
| · **Limited quantities (LQ)** | 5L |

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| | |
|---|---|
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **Transport category** | 3 |
| · **Tunnel restriction code** | (-) |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **UN "Model Regulation":** | UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (REACTION PRODUCT: BISPHENOL-A-(EPICHLORHYDRIN) EPOXY RESIN (NUMBER AVERAGE MOLECULAR WEIGHT ≤ 700)), 9, III |

## 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)**

None of the ingredients is listed.

· **Reportable explosives precursors (Part 3)**

None of the ingredients is listed.

· **Reportable poisons (Part 4)**

None of the ingredients is listed.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **Seveso category** E2 Hazardous to the Aquatic Environment

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t

· **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.

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



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## 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.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.
EUH205 EUH205: Contains epoxy constituents. May produce an allergic reaction.

| · **Classification according to Regulation (EC) No 1272/2008** | |
|---|---|
| Skin corrosion/irritation<br>Serious eye damage/irritation<br>Skin sensitisation<br>Hazardous to the aquatic environment - long-term (chronic) aquatic hazard | 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
· **Date of previous version:** 23.07.2024
· **Version number of previous version:** 6.00
· **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
Skin Irrit. 2: Skin corrosion/irritation – Category 2
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
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

# Safety data sheet
***according to UK REACH***

Printing date 25.11.2024 Version number 5.01 (replaces version 5.00) Revision: 25.11.2024

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

· **1.1 Product identifier**

· **Trade name: 832TC-B**

· **Other Means of Identification:** Thermally Conductive Epoxy (Part B)

· **Related Part Number:**
832TC-Part B, 832TC-450ML (B), 832TC-450MLCA (B), 832TC-2L (B), 832TC-8L (B), 832TC-40L (B)

· **UFI:** 9CG0-G067-200P-T7RY

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**

· **Application of the substance / the mixture** Epoxy Hardener

· **Uses advised against** Not applicable

· **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.
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:**

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**



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Skin Irrit. 2 H315 Causes skin irritation.

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Eye Irrit. 2 H319 Causes serious eye 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**



GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**
benzyl alcohol
3,6-diazaoctanethylenediamin

· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.

· **Precautionary statements**

| | |
|---|---|
| P102 | Keep out of reach of children. |
| P280 | Wear protective gloves / eye 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. |
| P337+P313 | If eye irritation persists: Get medical advice. |
| 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.

| · **Dangerous components:** | | |
|---|---|---|
| CAS: 1344-28-1<br>EINECS: 215-691-6 | aluminium oxide | 52.0% |
| CAS: 68071-65-8 | Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids, tetraethylenepentamine and triethylenetetramine | 30.0% |
| CAS: 100-51-6<br>EINECS: 202-859-9<br>Index number: 603-057-00-5 | benzyl alcohol<br>Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Sens. 1B, H317<br>ATE: LD50 oral: 1,200 mg/kg | 11.0% |

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(Contd. of page 2)

| | | |
|---|---|---|
| CAS: 112-24-3<br>EINECS: 203-950-6<br>Index number: 612-059-00-5 | 3,6-diazaoctanethylenediamin<br>Skin Corr. 1B, H314; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412 | 2.0% |
| CAS: 108-65-6<br>EINECS: 203-603-9<br>Index number: 607-195-00-7 | 2-methoxy-1-methylethyl acetate<br>Flam. Liq. 3, H226; STOT SE 3, H336 | 1.0% |
| CAS: 1333-86-4<br>EINECS: 215-609-9 | Carbon black<br>Carc. 2, H351 | 1.0% |
| CAS: 64741-65-7<br>EINECS: 265-067-2<br>Index number: 649-275-00-4 | Naphtha (petroleum), heavy alkylate<br>Flam. Liq. 3, H226; Muta. 1B, H340; Carc. 1B, H350; Asp. Tox. 1, H304 | 1.0% |

· **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**

· **General information:** Medical supervision for at least 48 hours.

· **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 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.

· **4.2 Most important symptoms and effects, both acute and delayed**
In case of exposure to nitrogen oxides (NOx) combustion products or triethylenetetramine vapors during a fire, the symptoms may be delayed.
For significant exposures, the exposed person should be kept under medical surveillance for 48 hours.

· **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**
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.

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The flu-like symptoms of metal fever may be delayed, occurring 4 to 12 hours after exposure.
Inhalation of toxic smoke during fire may have delayed effects. Exposed person may need to be put under surveillance for 48 h.

· **Hazardous combustion products:**
Carbon Oxides (COx)
Nitrogen Oxides (NOx)
toxic metal fumes

· **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 the fumes 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).
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.

## SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Do not breathe fumes or vapours.
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
DO NOT FREEZE. Store in a clean and dry area between 5 to 35 °C.

· **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



(Contd. on page 5)

(Contd. of page 4)

## SECTION 8: Exposure controls/personal protection

### · 8.1 Control parameters

| · Ingredients with limit values that require monitoring at the workplace: | |
|---|---|
| **108-65-6 2-methoxy-1-methylethyl acetate** | |
| WEL | Short-term value: 548 mg/m³, 100 ppm<br>Long-term value: 274 mg/m³, 50 ppm<br>Sk |
| **1333-86-4 Carbon black** | |
| WEL | Short-term value: 7 mg/m³<br>Long-term value: 3.5 mg/m³ |

· **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 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.



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/face protection**



Safety glasses or tightly sealed goggles: EN 166

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## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| · **Physical state** | Liquid |
| · **Form:** | Highly viscous |
| · **Colour:** | Black |
| · **Odour:** | Mild |
| · **Odour threshold:** | Not determined. |
| · **Melting point/freezing point:** | Undetermined. |
| · **Boiling point or initial boiling point and boiling range** | Undetermined. |
| · **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:** | |
| · **Dynamic:** | Not determined. |
| · **Solubility** | |
| · **water:** | Insoluble. |
| · **Partition coefficient n-octanol/water (log value)** | Not determined. |
| · **Vapour pressure at 20 °C:** | <1 hPa |
| · **Relative density at 25 °C:** | 1.61 |
| · **Vapour density (air=1):** | >1 |
| · **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:** | 12.00 % |
| · **VOC (EC)** | 12.00 % |



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## SECTION 10: Stability and reactivity

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

· **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 open flames, excessive heat, sparks, ignition sources, and incompatible substances.
Do not use in away that forms mist or aerosolizes the product.

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

· **10.6 Hazardous decomposition products:**
No dangerous decomposition products known.
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 | 10,909 mg/kg |
| Dermal | LD50 | 40,250 mg/kg (rabbit) |
| Inhalative | LC50/4 h | 100 mg/L |

| **1344-28-1 aluminium oxide** | | |
|---|---|---|
| Oral | LD50 | >2,000 mg/kg (rat) |
| Inhalative | LC50/4 h | >2 mg/L (mouse) |

| **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) |

| **112-24-3 3,6-diazaoctanethylenediamin** | | |
|---|---|---|
| Oral | LD50 | 2,500 mg/kg (rat) |
| Dermal | LD50 | 805 mg/kg (rabbit) |

| **108-65-6 2-methoxy-1-methylethyl acetate** | | |
|---|---|---|
| Oral | LD50 | 8,532 mg/kg (rat) |
| Dermal | LD/50 | 5 g/kg (rabbit) |

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| | | |
|---|---|---|
| Inhalative | LC50/4 h | 35.7 mg/L (rat) |
| **1333-86-4 Carbon black** | | |
| Oral | LD50 | >15,400 mg/kg (rat) |
| Dermal | LD50 | >3,000 mg/kg (rabbit) |
| **64741-65-7 Naphtha (petroleum), heavy alkylate** | | |
| Oral | LD50 | >6,000 mg/kg (rat) |
| Dermal | LD50 | >3,000 mg/kg (rabbit) |
| Inhalative | LC50/4 h | >7.8 mg/L (rat) |

· **Primary irritant effect:**
· **Skin corrosion/irritation** Causes skin irritation.
· **Serious eye damage/irritation** Causes serious eye irritation.
· **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, serious irritation
pain
· **Skin:**
rash, allergic contact dermatitis
Triethylenetetramine can be absorbed through skin leading to toxic effects.
When heated, hot triethylenetetramine vapors may also result in itching of the face with skin redness (erythema) and swelling (edema).
redness, irritation
· **Inhalation:** irritation of the respiratory tract
· **Swallowed:**
Low toxicity:
irritation
· **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:** | |
|---|---|
| **112-24-3 3,6-diazaoctanethylenediamin** | |
| EC50/ 48 h | 24 mg/L (daphnia) |
| LC50 96h | 420 mg/L (guppie) |
| IC50 72h | 2 mg/L (algae) |

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| **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.

## 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** | |
|---|---|
| HP7 | Carcinogenic |
| HP11 | Mutagenic |
| HP13 | Sensitising |

· **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, IMDG, IATA** | Not regulated |

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| | |
|---|---|
| · **14.3 Transport hazard class(es)** | |
| · **ADR, ADN, IMDG, IATA** | |
| · **Class** | Not regulated |
| · **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. |
| · **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)**

None of the ingredients is listed.

· **Reportable explosives precursors (Part 3)**

None of the ingredients is listed.

· **Reportable poisons (Part 4)**

None of the ingredients is listed.

· **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.

· **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.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.

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H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H351 Suspected of causing cancer.
H412 Harmful to aquatic life with long lasting effects.

| · **Classification according to Regulation (EC) No 1272/2008** | |
|---|---|
| Skin corrosion/irritation<br>Serious eye damage/irritation<br>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
· **Date of previous version:** 23.07.2024
· **Version number of previous version:** 5.00
· **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. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1B
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1B: Carcinogenicity – Category 1B
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
· *** Data compared to the previous version altered.**