

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

### · 1.1 Product identifier

· **Trade name: 8349TFM-A**

· **Other Means of Identification:** Thermal Adhesive

· **Related Part Number:**

8349TFM-A, 8349TFM-25ML, 8349TFM-45ML, 8349TFM-50ML, 8349TFM-200ML

· **UFI:** TEQ0-Y0SS-6008-17J8

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

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

· **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**



GHS09 environment

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

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— GB —

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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  
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane

· **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.  
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.  
P337+P313            If eye irritation persists: 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  $\geq 0.1\%$  = none

## SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**

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

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· <b>Dangerous components:</b>		
CAS: 21645-51-2 EINECS: 244-492-7	aluminium hydroxide	50.0%
CAS: 28064-14-4	phenol, polymer with formaldehyde, glycidyl ether Alternative CAS number: 9003-36-5 ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	30.0%
CAS: 1344-28-1 EINECS: 215-691-6	aluminium oxide	7.0%
CAS: 68333-79-9	Ammonium Polyphosphate ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	7.0%
CAS: 17557-23-2 EINECS: 241-536-7 Index number: 603-094-00-7	1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane ⚠ Skin Irrit. 2, H315; Skin Sens. 1, H317	3.0%
CAS: 70700-21-9	poly(oxy-1,2-ethanediyl), α-methyl-ω-phosphate ⚠ Eye Dam. 1, H318; ⚠ Skin Irrit. 2, H315	1.0%
CAS: 1333-86-4 EINECS: 215-609-9	Carbon black ⚠ Carc. 2, H351	0.8%

· **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

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.

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· **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:**

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.

· **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**

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.

· **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.

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- **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

· <b>Ingredients with limit values that require monitoring at the workplace:</b>	
<b>1333-86-4 Carbon black</b>	
WEL	Short-term value: 7 mg/m <sup>3</sup> Long-term value: 3.5 mg/m <sup>3</sup>

- **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:**  
Not necessary if room is well-ventilated.  
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**  
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.

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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:	Viscous
· Colour:	Black
· Odour:	Light
· Odour threshold:	Not available
· Melting point/freezing point:	Not available
· 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 available
· pH	Not applicable.
· Viscosity:	
· Kinematic viscosity at 20 °C	>20.5 mm <sup>2</sup> /s
· Dynamic:	Not applicable.
· Solubility	
· water:	Not miscible or difficult to mix.
· Partition coefficient n-octanol/water (log value)	Not available
· Vapour pressure:	Not determined.
· Relative density at 20 °C:	1.35
· Vapour density (air=1) at 20 °C:	125 g/cm <sup>3</sup>
· 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 available
· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· Organic solvents:	1.00 %
· Solids content:	64.0 %

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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**  
Do not use in away that forms mist or aerosolizes the product.  
Avoid ignition sources, open flames, and incompatible substances.
- **10.5 Incompatible materials:**  
Ethylene oxides  
Strong bases  
Strong acids  
Halogenated compounds  
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:		
<b>ATE (Acute Toxicity Estimates)</b>		
Oral	LD50	7,143 mg/kg
<b>21645-51-2 aluminium hydroxide</b>		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	mg/L (rat)
<b>28064-14-4 phenol, polymer with formaldehyde, glycidyl ether</b>		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
<b>1344-28-1 aluminium oxide</b>		
Oral	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	>2 mg/L (mouse)
<b>68333-79-9 Ammonium Polyphosphate</b>		
Oral	LD50	500 mg/kg (ATE)
<b>17557-23-2 1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane</b>		
Oral	LD50	2,000 mg/kg (rat)
Dermal	LD50	2,150 mg/kg (rabbit)

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1333-86-4 Carbon black		
Oral	LD50	>15,400 mg/kg (rat)
Dermal	LD50	>3,000 mg/kg (rabbit)

- **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
  - **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:**
    - abdominal pain
    - irritation
    - vomiting
    - nausea
- **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

· <b>Endocrine disrupting properties</b>
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) 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)

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EC0/ 3 h	>800 mg/L (microorganisms)
LC50	>1,000 mg/L (fish)

- **12.2 Persistence and degradability** Not readily biodegradable.
- **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:**  
Also poisonous for fish and plankton in water bodies.  
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.

· <b>European waste catalogue</b>	
HP4	Irritant - skin irritation and eye damage
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



· <b>14.1 UN number or ID number</b>	
· <b>ADR, IMDG, IATA</b>	UN3082
· <b>14.2 UN proper shipping name</b>	
· <b>ADR</b>	NOT REGULATED by Road ADR Special Provision 375 for sizes 5L or less. ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (phenol, polymer with formaldehyde, glycidyl ether)
· <b>IMDG</b>	NOT REGULATED by Sea IMDG according to

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<ul style="list-style-type: none"> <li>· IATA</li> </ul>	<p>2.10.2.7 for sizes of 5L or less. ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (phenol, polymer with formaldehyde, glycidyl ether) NOT REGULATED by Air IATA Special Provision A197 for sizes 5L or less. Environmentally hazardous substance, liquid, n.o.s. (phenol, polymer with formaldehyde, glycidyl ether)</p>
<ul style="list-style-type: none"> <li>· 14.3 Transport hazard class(es)</li> <li>· ADR, IMDG</li> </ul>  <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>9 Miscellaneous dangerous substances and articles. 9</p>
<ul style="list-style-type: none"> <li>· IATA</li> </ul>  <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>9 Miscellaneous dangerous substances and articles. 9</p>
<ul style="list-style-type: none"> <li>· 14.4 Packing group</li> <li>· ADR, IMDG, IATA</li> </ul>	<p>III</p>
<ul style="list-style-type: none"> <li>· 14.5 Environmental hazards:</li> <li>· Marine pollutant:</li> <li>· Special marking (ADR):</li> <li>· Special marking (IATA):</li> </ul>	<p>MARINE POLLUTANT ENVIRONMENTALLY HAZARDOUS ENVIRONMENTALLY HAZARDOUS Symbol (fish and tree)</p>
<ul style="list-style-type: none"> <li>· 14.6 Special precautions for user</li> <li>· Hazard identification number (Kemler code):</li> <li>· EMS Number:</li> <li>· Stowage Category</li> </ul>	<p>Not applicable. 90 F-A,S-F A</p>
<ul style="list-style-type: none"> <li>· 14.7 Maritime transport in bulk according to IMO instruments</li> </ul>	<p>Not applicable.</p>
<ul style="list-style-type: none"> <li>· Transport/Additional information:</li> </ul>	<p>Not Regulated 8349TFM-A-25ML, 8349TFM-A-45ML, 8349TFM-A- 50ML, 8349TFM-A-200ML</p>
<ul style="list-style-type: none"> <li>· ADR</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	<p>5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging:</p>

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·	1000 ml
· Transport category	3
· Tunnel restriction code	(-)
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· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETHER), 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.
· 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.

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· **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**

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H351 Suspected of causing cancer.
- H411 Toxic to aquatic life with long lasting effects.

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

Skin corrosion/irritation Serious eye damage/irritation Skin sensitisation 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.
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· **Department issuing SDS:** Regulatory department

· **Contact:** sds@mgchemicals.com

· **Date of previous version:** 05.09.2023

· **Version number of previous version:** 2.01

· **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  
 ATE: Acute toxicity estimate values  
 Acute Tox. 4: Acute toxicity – Category 4  
 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  
 Carc. 2: Carcinogenicity – Category 2  
 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2