

Revision: 3.0 Date: 27 April 2017


ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) &amp; 2015/830

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## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

<b>1.1</b>	<b>Product identifier</b> Product Name	M-Bond Curing Agent – Type 10
<b>1.2</b>	<b>Relevant identified uses of the substance or mixture and uses advised against</b> Identified Use(s) Uses Advised Against	Adhesives. For professional users only. Anything other than the above.
<b>1.3</b>	<b>Details of the supplier of the safety data sheet</b> Company Identification  Telephone Fax E-Mail (competent person)	VISHAY MEASUREMENTS GROUP UK LTD Stroudley Road Basingstoke Hampshire RG24 8FW United Kingdom +44 (0) 1256 462131 +44 (0) 1256 471441 mm.uk@vishaypg.com
<b>1.4</b>	<b>Emergency telephone number</b> Emergency Phone No. Languages spoken	(00-1) 703-527-3887 All official European languages.
		CHEMTREC (24 hours)

## SECTION 2: HAZARDS IDENTIFICATION

<b>2.1</b>	<b>Classification of the substance or mixture</b>	
<b>2.1.1</b>	<b>Regulation (EC) No. 1272/2008 (CLP)</b>	Acute Tox. 4; H312 Skin Corr. 1; H314 Skin Sens. 1; H317 Eye Dam. 1; H318 Repr. 1; H360Df Lact; H362 STOT RE 2; H372 Aquatic Chronic 3; H412
<b>2.2</b>	<b>Label elements</b> Product Name  Contains:  Hazard Pictogram(s)	According to Regulation (EC) No. 1272/2008 (CLP) M-Bond Curing Agent – Type 10  Triethylenetetramine, 2-(2-Aminoethylamino)ethanol, 2-Piperazin-1-ylethylamine and 3,6,9-Triazaundecamethylenediamine.  
	Signal Word(s)	DANGER
	Hazard Statement(s)	H312: Harmful in contact with skin. H314: Causes severe skin burns and eye damage. H317: May cause an allergic skin reaction. H360Df: May damage the unborn child. Suspected of damaging fertility. H362: May cause harm to breast-fed children. H372: Causes damage to organs through prolonged or repeated exposure. H412: Harmful to aquatic life with long lasting effects.

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## Precautionary Statement(s)

P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310: Immediately call a POISON CENTER/doctor.

## 2.3 Other hazards

None known.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances Not applicable

### 3.2 Mixtures

EC Classification Regulation (EC) No. 1272/2008 (CLP)

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Triethylenetetramine	< 100	112-24-3	203-950-6	Not yet assigned in the supply chain	Acute Tox. 4; H312 Skin Corr. 1B; H314 Skin Sens. 1; H317 Aquatic Chronic 3; H412
2-(2-Aminoethylamino)ethanol	< 1.6	111-41-1	203-867-5	Not yet assigned in the supply chain	Skin Corr. 1B; H314 Skin Sens. 1; H317 STOT SE 3; H335 (SCL ≥ 5%) Repr. 1B; H360Df Lact.; H362
2-Piperazin-1-ylethylamine	< 1.3	140-31-8	205-411-0	Not yet assigned in the supply chain	Acute Tox. 4; H302 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Repr. 2; H361 STOT RE 1; H372 Aquatic Chronic 3; H412
3,6,9-Triazaundecamethylenediamine	< 1.1	112-57-2	203-986-2	Not yet assigned in the supply chain	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Skin Sens. 1; H317 Aquatic Chronic 2; H411
2,2'-Iminodiethylamine	< 0.6	111-40-0	203-865-4	Not yet assigned in the supply chain	Acute Tox. 4; H302 Acute Tox. 4; H312 Acute Tox. 2; H330 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1B; H317 STOT SE 3; H335

For full text of H/P Statements see section 16.

## SECTION 4: FIRST AID MEASURES



### 4.1 Description of first aid measures

Self-protection of the first aider

Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Do not breathe vapour. Avoid all contact. Contaminated clothing should be laundered before reuse. Avoid contact during pregnancy/while nursing.

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.

Skin Contact

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Continue irrigation until medical attention can be obtained. Immediately call a POISON CENTER/doctor.

Eye Contact

IF IN EYES: Flush eyes with water for at least 15 minutes while holding eyelids open. Immediately call a POISON CENTER/doctor. Continue irrigation until medical attention can be obtained. Treatment by an ophthalmologist due to possible caustic burn of the eyes may be required.

Ingestion

IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Continue irrigation until medical attention can be obtained. Do NOT induce vomiting.

### 4.2 Most important symptoms and effects, both acute and delayed

Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May damage the unborn child. Suspected of damaging fertility. May cause harm to breast-fed children. Causes damage to organs through prolonged or repeated exposure.

### 4.3 Indication of any immediate medical attention and special treatment needed

Notes to a physician:

Treat symptomatically

IF IN EYES: Obtain prompt consultation, preferably from an ophthalmologist. Chemical eye burns may require extended irrigation.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable Extinguishing Media

Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Unsuitable extinguishing Media

Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

Not flammable. Reacts with metals liberating hydrogen. Reaction products may include hydrogen cyanide. May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide. May react with some metals including aluminum, magnesium, and zinc, resulting in evolution of phosphorus oxides.

### 5.3 Advice for fire-fighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Stop leak if safe to do so. Use personal protective equipment as required. See Section: 8. Do not breathe vapour. Avoid all contact. Contaminated clothing should be laundered before reuse. Avoid contact during pregnancy/while nursing.

### 6.2 Environmental precautions

Avoid release to the environment. Do not release undiluted and unneutralised to the sewer. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

### 6.3 Methods and material for containment and cleaning up

Absorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Cautiously neutralize remainder. Then wash away with plenty of water. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste

### 6.4 Reference to other sections

See Section: 8, 13

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## SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure operatives are trained to minimise exposures. Avoid all contact. Do not breathe vapour. Avoid contact during pregnancy/while nursing. Ensure adequate ventilation. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.
- 7.2 Conditions for safe storage, including any incompatibilities**  
 Storage temperature: Store in a well-ventilated place. Keep container tightly closed. Keep cool. Keep away from heat, sources of ignition and direct sunlight.  
 Storage life: Ambient. 5 - 25°C  
 Incompatible materials: Stable under normal conditions.  
 Incompatible materials: Copper, Aluminium, or Brass
- 7.3 Specific end use(s)** Keep away from: Oxidizing agents and Acids. May be corrosive to metals. (Aluminium, Copper and Zinc).

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Control parameters**  
**8.1.1 Occupational Exposure Limits**

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
2,2'-Iminodi(ethylamine)	111-40-0	1	4.3	-	-	WEL, Sk

Source: WEL: Workplace Exposure Limit (UK HSE EH40), Sk - Can be absorbed through skin.

- 8.1.2 Biological limit value** Not established.
- 8.1.3 PNECs and DNELs** Not established.
- 8.2 Exposure controls**
- 8.2.1 Appropriate engineering controls** Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. or Use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Guarantee that the eye flushing systems and safety showers are located close to the working place.
- 8.2.2 Individual protection measures, such as personal protective equipment (PPE)** General hygiene measures for the handling of chemicals are applicable. Keep good industrial hygiene. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place.

Eye/face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection (EN166).

Skin protection

**Hand protection:**

Wear impervious gloves (EN374). Protective index 6, corresponding &gt; 480 minutes of permeation time according to EN 374. Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Neoprene or rubber gloves are recommended. Recommended: Polychloroprene - CR (Minimum thickness; 0.5mm), Nitrile rubber (Minimum thickness; 0.4mm)

**Body protection:**

Wear impervious protective clothing, including boots, lab coat, apron or

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Respiratory protection



Thermal hazards

coveralls, as appropriate, to prevent skin contact.

In case of inadequate ventilation wear respiratory protection. Open system(s):  
Wear suitable respiratory protective equipment. A suitable mask with filter type A  
(EN141 or EN405) may be appropriate.

Not applicable

**8.2.3 Environmental Exposure Controls**

Avoid release to the environment.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

Appearance	Yellow Coloured liquid.
Odour	Amine-like Odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	277°C
Flash point	148°C [Closed cup]
Evaporation rate	2.83 (BuAc = 1)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v): 1 @ 185°C Flammable Limits (Upper) (%v/v): >6.4 @ 185°C
Vapour pressure	<1 kPa at 20°C
Vapour density	5 (Air = 1)
Relative density	0.98 g/cm <sup>3</sup> (H <sub>2</sub> O = 1)
Solubility(ies)	100% (Water)
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

**9.2 Other information**

None.

**SECTION 10: STABILITY AND REACTIVITY**

<b>10.1 Reactivity</b>	Stable under normal conditions.
<b>10.2 Chemical stability</b>	Stable under normal conditions.
<b>10.3 Possibility of hazardous reactions</b>	Hazardous polymerisation will not occur.
<b>10.4 Conditions to avoid</b>	Keep away from heat, sources of ignition and direct sunlight.
<b>10.5 Incompatible materials</b>	Keep away from: Oxidizing agents and Acids. May be corrosive to metals. (Aluminium, Copper and Zinc).
<b>10.6 Hazardous decomposition product(s)</b>	Decomposes in a fire giving off toxic fumes: Nitrogen oxides, Carbon monoxide and Carbon dioxide.

**SECTION 11: TOXICOLOGICAL INFORMATION**

<b>11.1 Information on toxicological effects</b>	All test data taken from existing ECHA registrations for the substances mentioned.
<b>Acute toxicity - Ingestion</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 30000 mg/kg bw/day.
(AEEA) 2-(2-Aminoethylamino)ethanol:	LD50 (oral,rat) mg/kg: 2150 (OECD 401)
2-Piperazine-1-ethylamine:	LD50 (oral,rat) mg/kg: 1680 (Gigiena i Sanitariya, 1986)
3,6,9-Triazaundecamethylenediamine:	Harmonised Classification
2,2'-Iminodiethylamine:	LD50 (oral,rat) mg/kg: 1553 (Unnamed, 1977)
<b>Acute toxicity - Inhalation</b>	Based upon the available data, the classification criteria are not met.

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(AEEA) 2-(2-Aminoethylamino)ethanol: 2-Piperazine-1-ethylamine: 3,6,9-Triazaundecamethylenediamine: 2,2'-Iminodiethylamine: <b>Acute toxicity - Skin Contact</b>	Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l. LC0 (Inhalation, (rat)) mg/m <sup>3</sup> : 51.3 (OECD 403) No mortality observed (Unnamed, 1956) Harmonised Classification LC50 (Inhalation, (rat)) mg/m <sup>3</sup> : 70 (OECD 403) Acute Tox. 4; Harmful in contact with skin. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 1085 mg/kg bw/day.
Triethylenetetramine: (AEEA) 2-(2-Aminoethylamino)ethanol: 2-Piperazine-1-ethylamine: 3,6,9-Triazaundecamethylenediamine: 2,2'-Iminodiethylamine: <b>Skin corrosion/irritation</b>	LD50 (skin,rabbit) mg/kg: 805 (Journal of Industrial Hygiene and Toxicology) LD50 (skin,rat) mg/kg: >2000 (OECD 402) LD50 (skin,rabbit) mg/kg: 866 (Smyth, H.F. et al, 1962) Harmonised Classification LD50 (skin,rabbit) mg/kg: 1045 (Unnamed, 1948) Skin Corr. 1; Causes severe skin burns and eye damage. Harmonised Classification
Triethylenetetramine: (AEEA) 2-(2-Aminoethylamino)ethanol: 2-Piperazine-1-ethylamine: 3,6,9-Triazaundecamethylenediamine: 2,2'-Iminodiethylamine: <b>Serious eye damage/irritation</b>	Test Result: Corrosive to rabbit skin (OECD 404) Test Result: Corrosive (Unnamed, 1958) Harmonised Classification Test Result: Corrosive (Unnamed, 1957) Eye Dam. 1; Causes serious eye damage. Test Result: Corrosive to eyes. (OECD 405)
(AEEA) 2-(2-Aminoethylamino)ethanol: 2-Piperazine-1-ethylamine: 2,2'-Iminodiethylamine: <b>Respiratory or skin sensitization</b>	Test Result: Causes serious eye damage. (Unnamed, 1958) Test Result: Causes serious eye damage. (Unnamed, 1970) Skin Sens. 1; May cause an allergic skin reaction. Sensitisation (guinea pig) - Positive (Magnusson B et al, 1970)
Triethylenetetramine: (AEEA) 2-(2-Aminoethylamino)ethanol: 2-Piperazine-1-ethylamine: 3,6,9-Triazaundecamethylenediamine: 2,2'-Iminodiethylamine: <b>Germ cell mutagenicity</b>	Sensitisation (mouse) - Positive (OECD 429) Sensitisation (guinea pig) - Positive (OECD 406) Harmonised Classification Sensitisation (mouse) - Positive (OECD 429) Based upon the available data, the classification criteria are not met.
(AEEA) 2-(2-Aminoethylamino)ethanol: 2-Piperazine-1-ethylamine: 2,2'-Iminodiethylamine: <b>Carcinogenicity</b>	Test Result: Negative (OECD 471) Test Result: Negative. (OECD 471) ECHA Registration Endpoint summary: Evidence from in vitro and in vivo studies indicate that not genotoxic and not classifiable under GHS. Based upon the available data, the classification criteria are not met.
2,2'-Iminodiethylamine: <b>Reproductive toxicity</b>	ECHA Registration Endpoint summary: Not carcinogenic via the dermal route and not classifiable under GHS. Repr. 1; May damage the unborn child. Suspected of damaging fertility. Lact; May cause harm to breast-fed children.
(AEEA) 2-(2-Aminoethylamino)ethanol:  2-Piperazine-1-ethylamine: 2,2'-Iminodiethylamine:	Test Result: NOAEL 250 mg/kg bw/day (OECD 421) Test Result: NOAEL 50 mg/kg bw/day (OECD 414) NOAEL 75 mg/kg bw/day (OECD 414) ECHA Registration Endpoint summary: Not proposed to be classified at this time so that the additional research can be considered.
<b>STOT - single exposure</b>	Based upon the available data, the classification criteria are not met.
(AEEA) 2-(2-Aminoethylamino)ethanol: 3,6,9-Triazaundecamethylenediamine: <b>STOT - repeated exposure</b>	Harmonised Classification Harmonised Classification STOT RE 2; Causes damage to organs through prolonged or repeated exposure.
2-Piperazine-1-ethylamine:	NOAEL (Oral) 2000 mg/l (OECD 422) NOEC (Inhalation) 0.2 mg/m <sup>3</sup> (OECD 413)
<b>Aspiration hazard</b>	Based upon the available data, the classification criteria are not met.
<b>11.2 Other information</b>	None known.

## SECTION 12: ECOLOGICAL INFORMATION

<b>12.1 Toxicity</b>	Aquatic Chronic 3; Harmful to aquatic life with long lasting effects. Estimated Mixture LC50 > 10 to ≤ 100 mg/l (Fish)
Triethylenetetramine:	EC50 (Daphnia magna) 31.1 mg/l (48 hour) (Unnamed, 1989)
2-Piperazine-1-ethylamine:	EC50 (Daphnia magna) 58 mg/l (48 hour) (OECD 202)

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12.2	<b>Persistence and degradability</b> 3,6,9-Triazaundecamethylenediamine: Triethylenetetramine: 2-Piperazine-1-ethylamine:	No data. Harmonised Classification Part of the components are poorly biodegradable. Not readily biodegradable. (OECD 301 D) ECHA Registration Endpoint summary: Little or no biodegradation has been observed (OECD 301 F)
12.3	<b>Bioaccumulative potential</b> 3,6,9-Triazaundecamethylenediamine: Triethylenetetramine: 2-Piperazine-1-ethylamine:	No data. Harmonised Classification The product has low potential for bioaccumulation. The substance has low potential for bioaccumulation. The substance has low potential for bioaccumulation.
12.4	<b>Mobility in soil</b> 3,6,9-Triazaundecamethylenediamine: Triethylenetetramine: 2-Piperazine-1-ethylamine:	No data. Harmonised Classification The product is predicted to have high mobility in soil. Soluble in water. The substance is predicted to have high mobility in soil. The substance is predicted to have low mobility in soil.
12.5	<b>Results of PBT and VPVB assessment</b> 3,6,9-Triazaundecamethylenediamine:	No data. Harmonised Classification Not classified as PBT or vPvB.
12.6	<b>Other adverse effects</b>	None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

13.1	<b>Waste treatment methods</b>	This material and its container must be disposed of as hazardous waste. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
13.2	<b>Additional Information</b>	Dispose of contents in accordance with local, state or national legislation.

## SECTION 14: TRANSPORT INFORMATION

	<b>ADR/RID</b>	<b>IMDG</b>	<b>IATA/ICAO</b>
14.1	<b>UN number</b> UN 2259	UN 2259	UN 2259
14.2	<b>UN proper shipping name</b> TRIETHYLENETHETRAMINE	TRIETHYLENETHETRAMINE	TRIETHYLENETHETRAMINE
14.3	<b>Transport hazard class(es)</b> 8	8	8
14.4	<b>Packing group</b> II		
14.5	<b>Environmental hazards</b> Not classified	Not classified as a Marine Pollutant.	Not classified
14.6	<b>Special precautions for user</b> See Section: 2		
14.7	<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> Not applicable		

## SECTION 15: REGULATORY INFORMATION

15.1	<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
15.1.1	<b>EU regulations</b> Authorisations and/or Restrictions On Use Annex XVIII (Restrictions)	(AEEA) 2-(2-Aminoethylamino)ethanol: Entry 30: Restriction on supply of substances and mixtures to the general public, if classified as Repr. 1A or 1B
15.1.2	<b>National regulations</b> Germany	Water hazard class: 2
15.2	<b>Chemical Safety Assessment</b>	A chemical safety assessment is not required under REACH.

## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: New SDS Regulation 2015/830 format, all sections have been updated to include new information. Please review SDS with care.

### References:

Existing Safety Data Sheet (SDS)

Harmonised Classification(s) for Triethylenetetramine (CAS No. 112-24-3), (AEEA) 2-(2-Aminoethylamino)ethanol (CAS No. 111-41-1), 2-Piperazin-1-ylethylamine (CAS No. 140-31-8), 3,6,9-Triazaundecamethylenediamine (CAS No. 112-57-2), 2,2'-Iminodiethylamine (CAS No. 111-40-0) and Existing ECHA registration(s) for 2-Piperazin-1-ylethylamine (CAS No. 140-31-8), 2,2'-Iminodiethylamine (CAS No. 111-40-0).

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## Literature References:

1. Gigiena i Sanitariya., (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1936- 51(10),66,1986
2. Journal of Industrial Hygiene and Toxicology. (Cambridge, MA) V.18-31, 1936-49. For publisher information, see AEHLAU. 31,60,1949
3. Smyth, H.F. et al, 1962, Am Ind Hyg Assoc J, vol 23 ; p. 95
4. Magnusson B., Kligman A.M., cited in: Identification of contact Allergens, Ch.C. thomas Publisher, Springfield, Ill., 1970

EU Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830.

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	Classification Procedure
Acute Tox. 4; H312	Acute Toxicity Estimate (ATE) Calculation.
Skin Corr. 1; H314	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Dam. 1; H318	Threshold Calculation
Repr. 1; H360Df	Threshold Calculation
Lact; H362	Threshold Calculation
STOT RE 2; H372	Threshold Calculation
Aquatic Chronic 3; H412	Summation Calculation

## LEGEND

LTEL: Long Term Exposure Limit

DNEL: Derived No Effect Level

PBT: PBT: Persistent, Bioaccumulative and Toxic

SCL: Specific Concentration Limit

NOEC: no observed effect concentration

STEL: Short Term Exposure Limit

PNEC: Predicted No Effect Concentration

vPvB: very Persistent and very Bioaccumulative

NOAEL: no observed adverse effect level

## Hazard classification / Classification code:

Acute Tox. 4; Acute toxicity, Category 4

Acute Tox. 3; Acute toxicity, Category 3

Acute Tox. 4; Acute toxicity, Category 4

Skin Corr. 1; Skin corrosion/irritation, Category 1

Skin Corr. 1B; Skin corrosion/irritation, Category 1B

Skin Sens. 1; Skin Sensitisation, Category 1

Skin Sens. 1B; Skin Sensitisation, Category 1B

Eye Dam. 1; Eye damage, category 1

Acute Tox. 1; Acute toxicity, Category 1

STOT SE 3; Specific target organ toxicity — single exposure, Category 3

Repr. 1B; Reproductive toxicity, Category 1B

Repr. 2; Reproductive toxicity, Category 2

Lact; Reproductive toxicity, Additional category, Effects on or via lactation

STOT RE 1; Specific target organ toxicity — repeated exposure, Category 1

STOT RE 2; Specific target organ toxicity — repeated exposure, Category 2

Aquatic Chronic 2; Hazardous to the aquatic environment, Chronic, Category 2

Aquatic Chronic 3; Hazardous to the aquatic environment, Chronic, Category 3

## Hazard Statement(s)

H302: Harmful if swallowed.

H311: Toxic in contact with skin.

H312: Harmful in contact with skin.

H314: Causes severe skin burns and eye damage.

H314: Causes severe skin burns and eye damage.

H317: May cause an allergic skin reaction.

H317: May cause an allergic skin reaction.

H318: Causes serious eye damage.

H330: Fatal if inhaled.

H335: May cause respiratory irritation.

H360Df: May damage the unborn child. Suspected of damaging fertility.

H361: Suspected of damaging fertility or the unborn child.

H362: May cause harm to breast-fed children.

H372: Causes damage to organs through prolonged or repeated exposure.

H373: May cause damage to organs through prolonged or repeated exposure.

H411: Toxic to aquatic life with long lasting effects.

H412: Harmful to aquatic life with long lasting effects.

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