SAFETY DATA SHEET

M-Bond Curing Agent – Type 10

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ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830 AS AMENDED BY UK REACH REGULATIONS SI 2019/758

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

1.1 Product identifier

Product Name	M-Bond Curing Agent – Type 10
Product Code	Not applicable

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

Identified Use(s)	Adhesive.
Uses advised against	Anything other than the above.

1.3 Details of the supplier of the safety data sheet

Company Identification	VISHAY MEASUREMENTS GROUP UK LTD Stroudley Road Basingstoke Hampshire RG24 8FW United Kingdom
Telephone	+44 (0) 1256 462131
Fax	+44 (0) 1256 471441
E-mail (competent person)	mm.uk@vpgsensors.com

1.4 Emergency telephone number

National Poisons Information Service (United Kingdom)	+44 (0) 3448 920111	24 hr. emergency phone number Healthcare Professionals ONLY
NHS 24	111	Members of Public
Emergency Phone No.	(00-1) 703-527-3887	CHEMTREC (24 hours)
Languages spoken	All official European languages.	

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Acute Tox. 4; H302
Acute Tox. 4; H312
Skin. Corr. 1B; H314
Skin Sens. 1; H317
Eye Dam. 1; H318
Repr. 1B; H360Df
STOT RE 2; H373 (Respiratory effects)
Aquatic Chronic 3; H412

2.2 Label elements

According to the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Product name: M-Bond Curing Agent – Type 10

Contains: Triethylenetetramine, 2-(2-Aminoethylamino)ethanol, 2-Piperazin-1-ylethylamine and Tetraethylenepentamine

Hazard Pictogram(s)

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. H372: Causes damage to organs through prolonged or repeated exposure. H412: Harmful to aquatic life with long lasting effects.
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.
Supplemental information	None Known

2.3 Other hazards Not classified as PBT or vPvB. Does not cause endocrine disruption.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances - Not applicable.

3.2 Mixtures

Classification: The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard classification
Triethylenetetramine (TETA)	90 - < 100	112-24-3	203-950-6	Not yet assigned in the supply chain	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Skin Sens. 1; H317 Eye Dam. 1; H318 Aquatic Chronic 3; H412
2-(2-Aminoethylamino)ethanol (AEEA)	1.5 - ≤ 2.5	111-41-1	203-867-5	Not yet assigned in the supply chain	Skin Corr. 1B; H314 Skin Sens. 1; H317 Eye Dam. 1; H318 STOT SE 3; H335 Repr. 1B; H360Df
2-Piperazin-1-ylethylamine	1.0 ≤ 2.0	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 Skin Sens. 1; H317 Eye Dam. 1; H318 Repr. 2; H361 STOT RE 1; H372 Aquatic Chronic 3; H412
Tetraethylenepentamine (TEPA)	1.0 ≤ 1.5	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
Diethylenetriamine (DETA)*	0.5 ≤ 0.9	111-40-0	203-865-4	Not yet assigned in the supply chain	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B: H314 Skin Sens. 1B; H317 Eye Dam. 1: H318 Acute Tox. 2; H330

					STOT SE 3; H335

Specific concentration limit (SCL), Acute toxicity estimate (ATE) & M-factor

Chemical identity of the substance	CAS No.	EC No.	SCL	ATE	M-factor
2-(2 Aminoethylamino)ethanol (AEEA)	111-41-1	203-867-51	STOT SE 3; H315: C ≥ 5%	-	-

For full text of H phrases see section 16. *Substance with a community workplace exposure limit.

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 if swallowed. 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. Causes damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

Notes to a physician:

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

SECTION 5: FIREFIGHTING 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 firefighters

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**	Adsorb 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

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**	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Keep away from heat, sources of ignition and direct sunlight.
	Storage temperature	Ambient. 5 - 25℃
	Storage life	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

United Kingdom

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Diethylenetriamine (DETA)	111-40-0	1	4.3	-	-	Sk

Source: UK WEL: Workplace Exposure Limit (UK HSE EH40)

Notations:
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 adequate ventilation. Atmospheric levels should be controlled in compliance with the occupational exposure limit. A washing facility/water for eye and skin cleaning purposes should be present.
8.2.2	**Individual protection measures, such as personal protective equipment**	General hygiene measures for the handling of chemicals are applicable. Keep good industrial hygiene. Avoid all contact. Avoid breathing vapours. 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 > 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.

Suitable materials: Polyethylene-Laminate (Minimum thickness 0.1mm)

Body protection:
Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. A suitable mask with filter type A (EN141 or EN405) may be appropriate. A suitable mask with filter type A (EN141 or EN405) may be appropriate.

Thermal hazards — 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- Liquid
Odour	Amine-like Odour
Odour threshold	No data available
pH	No data available
Melting point/freezing point	66℃
Initial boiling point and boiling range	277℃
Flash point	148℃ [Closed cup]
Evaporation rate	480℃ (EU Method A.15)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v): 1 @ 185℃ Flammable Limits (Upper) (%v/v): >6.4 @ 185℃
Vapour pressure	<1 kPa at 20ºC
Vapour density	5 (Air = 1)
Relative density	0.98 g/cm^3 (H_2O = 1)
Solubility(ies)	100% (Water)
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	Not available. (May form explosive peroxides.)
Oxidising properties	Not oxidising.

9.2 Other information — None

SECTION 10: STABILITY AND REACTIVITY

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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity - Ingestion	Mixture: Acute Tox. 4; H302: Harmful if swallowed. Acute Toxicity Estimate Mixture Calculation: Estimated 300 <LC50≤ 2000 mg/kg bw
Triethylenetetramine (TETA)	Acute Tox. 4; H302: Harmful if swallowed. GB Mandatory classification and labelling list
2-Piperazin-1-ylethylamine	Acute Tox. 4; H302: Harmful if swallowed. GB Mandatory classification and labelling list
Tetraethylenepentamine (TEPA)	Acute Tox. 4; H302: Harmful if swallowed. GB Mandatory classification and labelling list
Diethylenetriamine (DETA)	Acute Tox. 4; H302: Harmful if swallowed. GB Mandatory classification and labelling list
Acute toxicity - Inhalation	Mixture: Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20 mg/l. (Vapour)
Acute toxicity - Skin contact	Mixture: Acute Tox. 4; H312: Harmful in contact with skin. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >1000 - ≤2000 mg/kg bw/day.
Triethylenetetramine (TETA)	Acute Tox. 4; H312: Harmful in contact with skin. GB Mandatory classification and labelling list
2-Piperazin-1-ylethylamine	Acute Tox. 3, H311: Toxic in contact with skin. LD50 (rabbit, male): 8.66 mg/kg bw (Smyth et al, 1962)
Tetraethylenepentamine (TEPA)	Acute Tox. 4; H312: Harmful in contact with skin. GB Mandatory classification and labelling list
Diethylenetriamine (DETA)	Acute Tox. 4; H312: Harmful in contact with skin. GB Mandatory classification and labelling list
Skin corrosion/irritation	Mixture: Skin Corr 1B; H314: Causes severe skin burns and eye damage.
Triethylenetetramine (TETA)	Skin Corr 1B; H314: Causes severe skin burns and eye damage. GB Mandatory classification and labelling list
2-(2-Aminoethylamino)ethanol (AEEA)	Skin Corr 1B; H314: Causes severe skin burns and eye damage. GB Mandatory classification and labelling list
2-Piperazin-1-ylethylamine	Skin Corr 1B; H314: Causes severe skin burns and eye damage. GB Mandatory classification and labelling list
Tetraethylenepentamine (TEPA)	Skin Corr 1B; H314: Causes severe skin burns and eye damage. GB Mandatory classification and labelling list
Diethylenetriamine (DETA)	Skin Corr 1B; H314: Causes severe skin burns and eye damage. GB Mandatory classification and labelling list
Serious eye damage/irritation	Mixture: Eye Dam. 1; H318: Causes serious eye damage.
Triethylenetetramine (TETA)	Eye Dam. 1; H318: Causes serious eye damage. Causes serious eye damage. (rabbit) (Unnamed publication, 1993)
2-(2-Aminoethylamino)ethanol (AEEA	Eye Dam. 1; H318: Causes serious eye damage. Causes serious eye damage. (rabbit) (Unnamed publication, 1970)
2-Piperazin-1-ylethylamine	Eye Dam. 1; H318: Causes serious eye damage. Causes serious eye damage. (rabbit) (Unnamed publication, 1958)
Diethylenetriamine (DETA)	Eye Dam. 1; H318: Causes serious eye damage. Causes serious eye damage. (rabbit) (Unnamed publication. 1970)

	Respiratory or skin sensitisation	Mixture: Skin Sens. 1; H317: May cause an allergic skin reaction.
	Triethylenetetramine (TETA)	Skin Sens. 1; H317: May cause an allergic skin reaction. GB Mandatory classification and labelling list
	2-(2-Aminoethylamino)ethanol (AEEA)	Skin Sens. 1; H317: May cause an allergic skin reaction. GB Mandatory classification and labelling list
	2-Piperazin-1-ylethylamine	Skin Sens. 1; H317: May cause an allergic skin reaction. GB Mandatory classification and labelling list
	Tetraethylenepentamine (TEPA)	Skin sensitization, Category 1; May cause an allergic skin reaction. GB Mandatory classification and labelling list
	Diethylenetriamine (DETA)	Skin Sens. 1B; H317: May cause an allergic skin reaction. Sensitisation (Mouse) – positive (OECD 429)
	Germ cell mutagenicity	Mixture: Based upon the available data, the classification criteria are not met.
	Carcinogenicity	Mixture: Based upon the available data, the classification criteria are not met.
	Reproductive toxicity	Mixture: Repr Tox. 1B: H360Df: May damage the unborn child. Suspected of damaging fertility.
	2-(2-Aminoethylamino)ethanol (AEEA)	Repr Tox. 1B: H360Df: May damage the unborn child. Suspected of damaging fertility. Test Result: NOAEL 250 mg/kg bw/day (OECD 421) Test Result: NOAEL 50 mg/kg bw/day (OECD 414)
	STOT - single exposure	Mixture: Based upon the available data, the classification criteria are not met.
	STOT - repeated exposure	Mixture: Based upon the available data, the classification criteria are not met.
	2-Piperazin-1-ylethylamine	STOT RE 1; H370: Causes damage to organs.(Respiratory effects) NOAEL (Oral) 2000 mg/l (OECD 422) NOEC (Inhalation) 0.2 mg/m³ (OECD 413)
	Aspiration hazard	Mixture: Based upon the available data, the classification criteria are not met.
11.2	**Other information**	None

SECTION 12: ECOLOGICAL INFORMATION

12.1	**Toxicity**	Mixture: Aquatic Chronic 3; H412: Harmful to aquatic life with long lasting effects.
	Triethylenetetramine (TETA)	Mixture: Aquatic Chronic 3; H412: Harmful to aquatic life with long lasting effects. GB Mandatory classification and labelling list
	2-Piperazin-1-ylethylamine	Mixture: Aquatic Chronic 3; H412: Harmful to aquatic life with long lasting effects. GB Mandatory classification and labelling list
	Tetraethylenepentamine (TEPA)	Mixture: Aquatic Chronic 2; H411: Toxic to aquatic life with long lasting effects. GB Mandatory classification and labelling list
12.2	**Persistence and degradability**	No data for the mixture as a whole.
	Triethylenetetramine (TETA)	The substance is partially degradable via co- metabolic processes.
	2-(2-Aminoethylamino)ethanol (AEEA)	The substance is non biodegradable. Degradation in water (28 days) : 40-45% (OECD 301 F)
	2-Piperazin-1-ylethylamine	The substance is non biodegradable. Degradation in water (28 days) : 0% (OECD 301 F)
	Tetraethylenepentamine (TEPA)	No data available
	Diethylenetriamine (DETA)	The substance is readily biodegradable. Degradation in water (28 days) – 87% (OECD 301 D)
12.3	**Bioaccumulative potential**	No data for the mixture as a whole.
	Triethylenetetramine (TETA)	No data available
	2-(2-Aminoethylamino)ethanol (AEEA)	No data available
	2-Piperazin-1-ylethylamine	The substance has low potential for bioaccumulation. Read across. Log Pow: -1.48 (OECD 305C)
	Tetraethylenepentamine (TEPA)	No data available
	Diethylenetriamine (DETA)	The substance will not bioaccumulate. BCF: > 2.8 - <= 6.3 (OECD 305 C)
12.4	**Mobility in soil**	No data for the mixture as a whole.
	Triethylenetetramine (TETA)	No data available
	2-(2-Aminoethylamino)ethanol (AEEA)	No data available
	2-Piperazin-1-ylethylamine	The substance is predicted to have low mobility in soil. Koc: 37,000 L/kg
	Tetraethylenepentamine (TEPA)	No data available

	Diethylenetriamine (DETA)	The substance is predicted to have low mobility in soil. Koc: 19,111 L/kg
12.5	**Results of PBT and vPvB assessment**	Not classified as PBT or vPvB.
12.6	**Other adverse effects**	None known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1	**Waste treatment methods**	This material and its container must be disposed of as hazardous waste. Dispose of wastes in an approved waste disposal facility. Waste classification according to Directive 2008/98/EC (Waste Framework Directive)**:** HP 5: Specific Target Organ Toxicity/Aspiration Toxicity HP 6: Acute Toxicity HP 8: Corrosive HP 10: Toxicity for reproduction HP13 Sensitising HP 14 Ecotoxic
13.2	**Additional information**	Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

		ADR/RID	**IMDG**	**IATA/ICAO**
14.1	**UN number**	UN 2259	UN 2259	UN 2259
14.2	**UN proper shipping name**	TRIETHYLENETHETRAMINE	TRIETHYLENETHETRAMINE	TRIETHYLENETHETRAMINE
14.3	**Transport hazard class(es)**	8	8	8
14.4	**Packing group**	II	II	II
14.5	**Environmental hazards**	Not classified	Not classified as a Marine Pollutant.	Not classified
14.6	**Special precautions for user**	See Section: 2		
14.7	**Transport in bulk according to Annex II of Marpol and the IBC Code**	No information available.		

SECTION 15: REGULATORY INFORMATION

15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	
15.1.1	**EU regulations**	
	Authorisations and/or restrictions on use	Not restricted for the intended use(s) of the product.
	GB regulations	
	Authorisations and/or restrictions on use	Not restricted for the intended use(s) of the product.
15.1.2	**National regulations**	
	Germany	
	Water hazard class (WGK)	WGK 2 (Self classification)
15.2	**Chemical Safety Assessment**	A REACH chemical safety assessment has not been carried out.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: V1.0 – Not applicable

References:

Existing Safety Data Sheet (SDS),

GB Mandatory classification and labelling list for Triethylenetetramine (TETA) (CAS No. 112-24-3), 2-(2-Aminoethylamino)ethanol (AEEA) (CAS No. 111-41-1), 2-Piperazin-1-ylethylamine (CAS No. 140-31-8), Tetraethylenepentamine (TEPA) (CAS No. 112-57-2) and 2,2'-Iminodiethylamine (CAS No. 111-40-0).

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

Literature References:

1. Smyth, H.F. et al. 1962. Am Ind Hyg Assoc J, vol 23 ; p. 95.

Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830. Compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Classification of the substance or mixture. The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain	**Classification procedure**
Acute Tox. 4; H302	Acute Toxicity Estimate (ATE) Mixture Calculation
Acute Tox. 4; H312	Acute Toxicity Estimate (ATE) Mixture Calculation
Skin Corr. 1B; H314	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Dam. 1; H318	Threshold Calculation
Repr. 1B; H360Df	Threshold Calculation
STOT RE 2; H373	Threshold Calculation
Aquatic Chronic 3; H412	Summation Calculation

Legend

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DNEL	Derived no effect level
EU	European Union
EC	European Community
ECHA	European Chemicals Agency
EN	European Standard
EC50	Effect concentration; 50 %
EL50	Effective loading rate; 50 %
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LC50	Lethal concentration at which 50% of the population is killed
LD50	Lethal dose at which 50% of the population is killed
LTEL	Long term exposure limit
NOAEC	No observed adverse effect concentration
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TWA	Time Weighted Average
STEL	Short term exposure limit
vPvB	very Persistent and very Bioaccumulative
UN	United Nations

Hazard classification / Classification code:	**Hazard Statement(s)**
Flam. Liq. 2; Flammable liquid, Category 2	H225: Highly flammable liquid and vapour.
Acute Tox. 4; Acute Toxicity, Category 4	H302: Harmful if swallowed.
Skin Irrit. 2; Skin corrosion/irritation, Category 2	H315: Causes skin irritation.
Skin Sens. 1; Skin Sensitisation, Category 1	H317: May cause an allergic skin reaction.
Eye Dam. 1; Eye damage, category 1	H318: Causes serious eye damage.
Eye Irrit. 2; eye Irritation, Category 2	H319: Causes serious eye irritation.
STOT SE 3; Specific target organ toxicity — single exposure, Category 3	H335: May cause respiratory irritation. H336: May cause drowsiness or dizziness.
Carc. 2; Carcinogenicity, Category 2	H351: Suspected of causing cancer.

Aquatic Chronic 2; Hazardous to the aquatic environment, Chronic , Category 2	H411: Toxic to aquatic life with long lasting effects.
	EUH019: May form explosive peroxides. EUH066: Repeated exposure may cause skin dryness or cracking.

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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