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ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),

1272/2008 (CLP) & 2015/830

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

1.1 Product identifier

Product Name P Adhesive
Chemical Name Mixture
CAS No. Mixture
EINECS No. Mixture
REACH Registration No. None assigned.

1.2 Relevant identified uses of the substance or mixture

and uses advised against

Identified Use(s)

Adhesives.

Uses Advised Against For professional users only.

1.3 Details of the supplier of the safety data sheet

Company Identification VISHAY MEASUREMENTS GROUP UK LTD

Stroudley Road Basingstoke Hampshire United Kingdom RG24 8FW

 Telephone
 +44 (0) 1256 462131

 Fax
 +44 (0) 1256 471441

 E-Mail (competent person)
 mm.uk@vishaypg.com

1.4 Emergency telephone number

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

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

Flam. Liq. 3; H226
Asp. Tox. 1; H304
Skin Irrit. 2; H315
Eye Irrit. 2; H319
STOT SE 3; H335
Repr. 1B; H360D
STOT RE 2; H373

2.2 Label elements According to Regulation (EC) No. 1272/2008 (CLP)

Product Name P Adhesive

Hazard Pictogram(s)





Signal Word(s) Danger

Contains: N-Methylpyrrolidone and Xylene.

Hazard Statement(s)

H226: Flammable liquid and vapour.

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation.

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H360D: May damage the unborn child.

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

Precautionary Statement(s) P201: Obtain special instructions before use.

P210: Keep away from heat, hot surfaces, sparks, open flames and other

ignition sources. No smoking.

P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P331: Do NOT induce vomiting.

Supplemental information Not applicable

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 classification
N-Methylpyrrolidone	60 - 70	872-50-4	212-828-1	Not yet assigned in the supply chain	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (SCL: ≥ 10%) Repr. 1B; H360D
Xylene	20 - 24	1330-20-7	215-535-7	Not yet assigned in the supply chain	Flam. Liq. 3; H226 Asp. Tox. 1; H304 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Acute Tox. 4; H332 STOT SE 3; H335 STOT RE 2; H373 Aquatic Chronic. 3; H412

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

SECTION 4: FIRST AID MEASURES



Description of first aid measures

Self-protection of the first aider

Do not breathe vapour. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely.

Avoid all contact. Avoid exposure during pregnancy.

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical advice/attention if you feel unwell. IF exposed or concerned: Get medical advice/attention.

Skin Contact

IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation occurs: Get medical advice/attention. IF exposed or concerned: Get

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Eye Contact

Ingestion

medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye

irritation develops or persists.

IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Drink two glasses of water. Do not give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention. Consider use of charcoal as a slurry (240mL water/30 g charcoal). Usual dose: 25 to 100 g in adults. If determined necessary (and under qualified medical supervision), the stomach should be emptied by gastric lavage with the airway protected by endotracheal intubation.

May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May damage the unborn child. May cause damage to organs through prolonged or repeated exposure.

Treat symptomatically.

4.2 Most important symptoms and effects, both acute and delayed

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

5.2

Suitable Extinguishing media

Unsuitable extinguishing media

Special hazards arising from the substance or mixture

5.3 Advice for fire-fighters As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Do not use water jet. Direct water jet may spread the fire.

Flammable liquid and vapour. May decompose in a fire giving off toxic fumes. Ammonia, Ethanol, Oxides of nitrogen and Oxides of carbon. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Can form explosive mixture with air particularly in empty uncleaned receptacles.

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. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe vapour. Avoid all contact. Avoid exposure during pregnancy. 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

6.2 **Environmental precautions** Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere.

6.3 Methods and material for containment and cleaning

Ensure full personal protection (including respiratory protection) during removal of spillages. Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do NOT absorb in saw-dust or other combustible absorbents. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste.

Reference to other sections 6.4 See Section: 8, 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Take precautionary measures against static discharge. Do not use sparking tools. Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid all contact. Avoid exposure during pregnancy. Do not breathe vapour. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using

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7.2 Conditions for safe storage, including any incompatibilities

this product. Wash hands before breaks and after work.

Ground/bond container and receiving equipment. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct

sunlight.

Storage temperature Ambient. Keep at a temperature not exceeding (°C): 50.

Storage life Stable under normal conditions.

Incompatible materials Keep away from: Strong Reducing agent/Oxidizing agents and Strong Alkalis.

7.3 Specific end use(s) Adhesives.

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/m³)	STEL (ppm)	STEL (mg/m³)	Note
N-Methylpyrrolidone	872-50-4	10	40	20	80	IOELV, WEL, Sk
Xylene, o-,m-,p- or	1330-20-7	50	221	100	442	IOELV, Sk
Mixed isomers,	1330-20-7	50	220	10	441	WEL, Sk. BMGV

Source: IOELV: Indicative Occupational Exposure Limit Value. WEL: Workplace Exposure Limit (UK HSE EH40).

Note: Sk - Can be absorbed through skin.

BMGV: Biological monitoring guidance value (UK HSE EH40)

8.1.2 Biological limit value

SUBSTANCE	CAS No.	Biological Limit Value	Biological Guidance Value	Note
N-Methylpyrrolidone	872-50-4	20 mg/g creatinine of 2-hydroxy-N-methylsuccinimide in urine (morning-after-shift; 18 hours), or	-	SCOEL
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		70 mg/g creatinine of 5-hydroxy-N-methyl-2-pyrrolidone in urine (2-4 hours after the end of exposure/shift)		
Xylene, o-,m-,p- or mixed isomers	1330-20-7	650 mmol methyl hippuric acid/ mol Creatinine	Post shift	Sk, BMGV

Source: SCOEL - Scientific Committee on Occupational Exposure Limits (2014) EU Commission Decision 2014/113/EU.

BMGV: Biological monitoring guidance value (UK HSE EH40)

Note: Sk - Can be absorbed through skin.

8.1.3 PNECs and DNELs

N-Methylpyrrolidone Derived No Effect Level	Oral	Inhalation	Dermal
Worker - Long Term - Systemic effects	-	14.4 mg/m ^{3*}	4.8 mg/kg bw/day*

^{*}Mandatory DNELs

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Local exhaust recommended. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Guarantee that the eye flushing systems and safety showers are located close to the working place. Avoid exposure during pregnancy.

8.2.2 Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Avoid all contact. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly

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cleaned. Do not eat, drink or smoke at the work place.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

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). Gloves should be changed regularly to avoid permeation problems. Suitable materials:

Butyl rubber, 0.7 mm Minimum thickness Protective index 6, corresponding > 480 minutes of permeation time according to EN 374.

Nitrile rubber, 0.4 mm Minimum thickness At least protective index 2, corresponding > 30 minutes of permeation time according to EN 374).

Chloroprene rubber, 0.5 mm Minimum thickness.

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

Respiratory protection

Oxidising properties



Work in well ventilated zones or use proper respiratory protection. Open system(s): Wear suitable respiratory protection. Gas filtering device (EN 14387)

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 Pale yellow viscous liquid.

Odour
Odour threshold
Not available.
pH
Not established.
Melting point/freezing point
Not available.
Initial boiling point and boiling range
Flash point
Plash point
Aromatic odour.
Not available.
Not available.
Flash point
29 - 37°C

Evaporation rate Not available.
Flammability (solid, gas) Not applicable - Liquid.

Upper/lower flammability or explosive limits

Vapour pressure

Vapour density

Not available.

Not available.

Relative density 1.03 @ 20°C (H2O = 1)

Solubility(ies)

Partition coefficient: n-octanol/water

Auto-ignition temperature

Decomposition Temperature

Viscosity

Not available.

Viscosity

6 – 10 Poise @ 25°C

Explosive properties

Not available.

Not explosive.

9.2 Other information Volatile Organic Compound Content (%): 87 - 89

Not oxidising.

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10.6

SECTION 10: STABILITY AND REACTIVITY

10 1 Stability and reactivity Stable under normal conditions 10.2 Chemical stability Stable under normal conditions. 10.3 Possibility of hazardous reactions Flammable liquid and vapour. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Exothermic reaction. Reacts with acids and alkalis. 10.4 Conditions to avoid Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight. Do not use sparking tools 10.5 Incompatible materials Keep away from: Strong Reducing agent/Oxidizing agents and Strong Alkalis.

nitrogen and Oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

Hazardous decomposition product(s)

11.1 Information on toxicological effects (Substances in preparations / mixtures)

Acute toxicity - Oral Mixture: Based upon the available data, the classification criteria are not met.

Acute Toxicity Estimate Mixture Calculation: Estimated LD50 > 2000 mg/kg

May decompose in a fire giving off toxic fumes. Ammonia, Ethanol, Oxides of

bw/day.

Acute toxicity - Dermal Mixture: Based upon the available data, the classification criteria are not met.

Acute Toxicity Estimate Mixture Calculation: Estimated LD50 > 2000 mg/kg

bw/day.

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.

Skin corrosion/irritation Mixture: Skin Irrit. 2; H315. Causes skin irritation.

N-Methylpyrrolidone Skin Irrit. 2

Slight/mild irritant. Human volunteers (van Thriel et al. 2007)

Xylene Skin Irrit. 2

Irritant effect on skin. (Chatterjee A et al., 2005)

Serious eye damage/irritation

Mixture: Eye Irrit. 2; H319 Causes serious eye irritation.

Mixture: Lye units 2 dates serious eye initation

N-Methylpyrrolidone Eye Irrit. 2

Irritating to eyes. (rabbit) (OECD 405)

Xylene Eye Irrit. 2

Slightly irritant to eyes. (rabbit) (Unnamed publication, 1983)

Respiratory or skin sensitization

Mixture: Based upon the available data, the classification criteria are not met.

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 Repr. 1B; H360D. May damage the unborn child.

N-Methylpyrrolidone Repr. 1B

Developmental toxicity NOAEC: 116ppm (rat) (OECD 416)
Reproductive toxicity NOAEC: 350mg/kg bw Day (rat) (OECD 416)

STOT - single exposure Mixture: STOT SE 3; H335. May cause respiratory irritation.

N-Methylpyrrolidone STOT SE 3

ECHA Registration Endpoint summary: Irritating to eyes, respiratory system and

skin.

Xylene STOT SE 3

ECHA Registration Endpoint summary: Irritating to eyes, respiratory system and

skin.

STOT - repeated exposure Mixture: STOT RE 2; H373. May cause damage to organs through prolonged or

repeated exposure.

Xylene STOT RE 2

Oral: No adverse effect observed – NOAEC: 3000ppm (OECD 408) Dermal: Slight/mild irritant – NOAEC: < 413 mg/kg bw Day (OECD 410)

Inhalation: Adverse effects observed - NOAEC (rat) 3515 mg/m³ (Carpenter et

al. 1975)

Aspiration hazard Mixture: Asp. Tox. 1; May be fatal if swallowed and enters airways. This product

was conservatively classified under the basis of: Expert judgement and high

percentage inclusion of components with Aspiration hazard.

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12.2

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Xylene Asp Tox. 1

Dynamic viscosity: 0.74 mm²/s (@20°C)

Surface tension: 28.7nM

11.2 Other information None

SECTION 12: ECOLOGICAL INFORMATION

12.1 Mixture: Based upon the available data, the classification criteria are not met.

Persistence and degradability No data for the mixture as a whole.

N-Methylpyrrolidone Readily biodegradable.

Water % Degradation: 73% (28 days) (OECD 301 C)

Readily biodegradable. **Xylene**

Water % Degradation: 98 (28 days) (OECD 301 F)

12.3 Bioaccumulative potential No data for the mixture as a whole.

N-Methylpyrrolidone The substance has low potential for bioaccumulation.

BCF: - 0.46 (BASF AG, 1988)

Xylene The substance has low potential for bioaccumulation.

BCF: 25.9 (Walsh et al. 1977) (Read across)

12.4 Mobility in soil The product is predicted to have low mobility in soil. N-Methylpyrrolidone

The substance is predicted to have high mobility in soil.

Log Koc: 0.87 ((Q)SAR) (EPA, 2012)

The substance is predicted to have moderate mobility in soil. **Xylene**

Log Koc: 2.73 (Hodson et al 1988).

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 Do not release undiluted and unneutralised to the sewer. Dispose of this

material and its container as hazardous waste. Containers of this material may be hazardous when empty since they retain product residue. Dispose of wastes

in an approved waste disposal facility.

13.2 **Additional Information** Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

ADR/RID Sea transport (IMDG) Air (ICAO/IATA) 14.1 **UN** number **UN 1133** UN 1133 UN 1133

14.2 **UN proper shipping name** ADHESIVES containing ADHESIVES containing ADHESIVES containing flammable liquid flammable liquid flammable liquid

14.3 Transport hazard class(es) 3 3 3

14.4 Packing group Ш Ш Ш 14.5 **Environmental hazards**

Not classified as a Not classified as a Not classified as a Marine Pollutant / Marine Pollutant / Marine Pollutant / Environmentally Environmentally Environmentally hazardous substance hazardous substance hazardous substance

14.6 Special precautions for user See Section: 2 14.7 Transport in bulk according to Annex II of MARPOL Not applicable.

73/78 and the IBC Code 14.8 **Additional Information** None.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1 EU regulations

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Authorisations and/or Restrictions On Use For professional users only.

N-Methylpyrrolidone: Entry 30: Restriction on supply of substances and mixtures to the general public,

if classified as Repr. 1A or 1B

Entry 71: Restricted as a substance on its own or in mixtures >= 0.3% by weight after 9 May 2020. Exemptions: Solvent or reactant in the process of coating

wires (until 9 May 2024)

N-Methylpyrrolidone: Toxic for Reproduction.

Substance(s) of Very High Concern (SVHCs)

15.1.2 National regulations

Wassergefährdungsklasse (Germany) Water hazard class: 2 (Self classification)

15.2 Chemical Safety Assessment A chemical safety assessment is not required under REACH.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Updated substance / mixture classification. Update version and date. Please review SDS with care

The following sections have updates indicated by -

References:

Existing Safety Data Sheet (SDS)

EU Harmonised Classification and Existing ECHA registration(s) for N-Methylpyrrolidone (CAS No. 872-50-4) and Xylene (CAS No. 1330-20-7).

Literature References

- van Thriel C, Blaszkewicz M, Schäper M, Juran SA, Kleinbeck S, Kiesswetter E, Wrbitzky R, Stache J, Golka K, Bader M. 2007. Chemosensory effects during acute exposure to N-methyl-2-pyrrolidone (NMP). Toxicol. Lett. 175:44-56. Epub 2007 Sep 29.
- 2. Chatterjee A, Babu R, Abaghotu E and Singh M. 2005. The effect of occlusive and unocclusive exposure to xylene and benzene on skin irritation and molecular responses in hairless rats. Arch Toxicol 79: 294-301.
- 3. Carpenter CP, Kinkead ER, Geary DJ, et al. 1975. Petroleum hydrocarbon toxicity studies: V. Animal and human response to vapors of mixed xylenes. Toxicol Appl Pharmacol 33:543-558.
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- 5. US EPA, 2012. Estimation Programs Interface Suite for Microsoft Windows, v4.11. United States Environmental Protection Agency, Washington, DC, USA.
- Hodson J and Williams NA. (1988). The estimation of the adsorption coefficient (Koc) for soils by high performance liquid chromatography. Chemosphere 17, 67-77.

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
Flam. Liq. 3; H226	Flash Point [Closed cup] Test Result
Asp. Tox. 1; H304	Estimated Viscosity @ 40°C/Existing Safety Data Sheet (SDS)
Skin Irrit. 2; H315	Threshold Calculation
Eye Irrit. 2; H319	Threshold Calculation
STOT SE 3; H335	Threshold Calculation
Repr. 1B; H360D	Threshold Calculation
STOT RE 2; H373	Threshold Calculation

LEGEND

ADR/RID ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road / RID: Regulations concerning

the international railway transport of dangerous goods

BCF Bioconcentration factor (BCF)

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CAS CAS: Chemical Abstracts Service

DNEL Derived No Effect Level EC: European Community EC

ΕU European Union

IATA IATA: International Air Transport Association

ICAO/IATA ICAO: International Civil Aviation Organization / IATA: International Air Transport Association

IMDG IMDG: International Maritime Dangerous Goods

NOFC No Observed Effect Concentration

OECD Organisation for Economic Cooperation and Development

PBT Persistent, Bioaccumulative and Toxic **PNEC** Predicted No Effect Concentration

STEL Short Term Exposure Limit

United Nations UN

vPvB very Persistent and very Toxic

Hazard classification / Classification code:

Flam. Liq. 3; Flammable Liquid, Category 3 H226: Flammable liquid and vapour.

Asp. Tox. 1; Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters airways.

Acute Tox. 4; Acute toxicity, Category 4 H312: Harmful in contact with skin. Skin Irrit. 2; Skin corrosion/irritation, Category 2 H315: Causes skin irritation.

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. Repr. 1B; Reproductive toxicity, Category 1B H360D: May damage the unborn child.

Acute Tox. 4; Acute toxicity, Category 4 H332: Harmful if inhaled.

STOT RE 2; Specific target organ toxicity — repeated exposure, H373: May cause damage to organs through prolonged or repeated

Hazard Statement(s)

Category 2 exposure. H412: Harmful to aquatic life with long lasting effects.

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

Category 3

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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Annex to the extended Safety Data Sheet (eSDS)

Not applicable

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