



KRYLEX KU223 UV-Curing Adhesive

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Reference number: 01-005-1600

Issue date: 02/12/2013 Revision date: 11/04/2022 Supersedes version of: 11/12/2020 Version: 6.0

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

1.1. Product identifier

Product form : Mixture
Product name : KRYLEX KU223 UV-Curing Adhesive
UFI : XSGW-C4C2-M806-K78T
Product code : KU223
Type of product : adhesives
Product group : Trade product

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

1.2.1. Relevant identified uses

Use of the substance/mixture : UV-Curing adhesive
Use of the substance/mixture : Adhesives, sealants
Function or use category : Other adhesives and sealants

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

Chemence Ltd

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Corby,
Northamptonshire NN17 4XD
United Kingdom

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Only Representative

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France

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1.4. Emergency telephone number

Emergency number : +44 (0)1536 402600 (Monday - Friday 8:00 to 17:30)
UK Only - IN CASE OF TOXIC OR TRANSPORT EMERGENCY:
National Chemical Emergency Centre: Telephone 01865 407333

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	Only for healthcare professionals

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335
Hazardous to the aquatic environment – Acute Hazard, Category 1	H400
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

Contains

Hazard statements (CLP)

Precautionary statements (CLP)

- : Warning
- : 2,4,6-Triallyloxy-1,3,5-Triazine, Acrylic Acid, diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide, 4-methoxyphenol, Isopropylidenediphenyl Bisoxhydroxypropyl Acrylate, Pentaerythritol Tetrakis(3-Mercaptopropionate), Methanol
- : H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
H410 - Very toxic to aquatic life with long lasting effects.
- : P261 - Avoid breathing fume, vapours.
P280 - Wear eye protection, protective gloves.
P271 - Use only outdoors or in a well-ventilated area.
P301+P330+P331+P310 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 - Call a POISON CENTRE or doctor if you feel unwell.
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.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P273 - Avoid release to the environment.

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

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Component	
Acrylic Acid (79-10-7)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
4-methoxyphenol (150-76-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Isopropylidenediphenyl Bisoxhydroxypropyl Acrylate	CAS-No.: 55818-57-0 EC-No.: 500-130-2 REACH-no: 01-2119490020-53	≥ 45 – < 60	Skin Sens. 1, H317 Aquatic Chronic 2, H411
Pentaerythritol Tetrakis(3-Mercaptopropionate)	CAS-No.: 7575-23-7 EC-No.: 231-472-8 REACH-no: 01-2119486981-23	≥ 30 – < 45	Acute Tox. 4 (Oral), H302 Skin Sens. 1A, H317 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 3, H412
2,4,6-Triallyloxy-1,3,5-Triazine	CAS-No.: 101-37-1 EC-No.: 202-936-7 REACH-no: 01-2119489756-17	≥ 15 – < 30	Acute Tox. 4 (Oral), H302 Aquatic Chronic 2, H411
Acrylic Acid	CAS-No.: 79-10-7 EC-No.: 201-177-9 EC Index-No.: 607-061-00-8 REACH-no: 01-2119452449-31	≥ 1 – < 3	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1A, H314 Aquatic Acute 1, H400
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	CAS-No.: 75980-60-8 EC-No.: 278-355-8 EC Index-No.: 015-203-00-X REACH-no: 01-2119972295-29	≥ 0.3 – < 1	Skin Sens. 1B, H317 Repr. 2, H361f Aquatic Chronic 2, H411
4-methoxyphenol	CAS-No.: 150-76-5 EC-No.: 205-769-8 EC Index-No.: 604-044-00-7	≥ 0.1 – < 0.3	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 3, H412

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
boron trifluoride	CAS-No.: 7637-07-2 EC-No.: 231-569-5 EC Index-No.: 005-001-00-X REACH-no: 01-2119534579-27	≥ 0.1 – < 0.3	Press. Gas Acute Tox. 2 (Inhalation), H330 Skin Corr. 1A, H314
Methanol	CAS-No.: 67-56-1 EC-No.: 200-659-6 EC Index-No.: 603-001-00-X	≥ 0.1 – < 0.3	Flam. Liq. 2, H225 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Oral), H301 STOT SE 1, H370

Specific concentration limits:		
Name	Product identifier	Specific concentration limits
Acrylic Acid	CAS-No.: 79-10-7 EC-No.: 201-177-9 EC Index-No.: 607-061-00-8 REACH-no: 01-2119452449-31	(1 ≤C ≤ 100) STOT SE 3, H335
Methanol	CAS-No.: 67-56-1 EC-No.: 200-659-6 EC Index-No.: 603-001-00-X	(3 ≤C < 10) STOT SE 2, H371 (10 ≤C ≤ 100) STOT SE 1, H370

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Treat symptomatically. If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor. Unconscious: maintain adequate airway and respiration. Give artificial respiration if necessary. Get immediate medical advice/attention.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water (for at least 15 minutes). In case of accidental eye contact: Avoid exposure to the sun or other sources of UV light that may then increase sensitivity. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth out with water. Do not induce vomiting. If the person is fully conscious, make him/her drink warm water (1/2 litre). Never give an unconscious person anything to drink. Unconscious: maintain adequate airway and respiration. Give artificial respiration if necessary. Get medical advice/attention.

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

Symptoms/effects	: Harmful if inhaled. Harmful if swallowed. May cause an allergic skin reaction.
Symptoms/effects after inhalation	: Inhalation may cause irritation (cough, short breathing, difficulty in breathing). Loss of consciousness. May cause irritation or asthma-like symptoms. May cause an allergic skin reaction.
Symptoms/effects after skin contact	: Causes skin irritation. Red skin. Allergic skin rash. Itching.
Symptoms/effects after eye contact	: May cause slight irritation. Redness.

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- Symptoms/effects after ingestion : May cause irritation to the digestive tract. Ingestion may cause nausea and vomiting. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
- Chronic symptoms : Repeated or prolonged skin contact can result in sensitisation in susceptible individuals.

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

An eyewash station should be available on the premises.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
- Unsuitable extinguishing media : high volume water jet or water based extinguishing media.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Hazardous polymerization may occur if exposure to fire conditions.
- Explosion hazard : Prolonged exposure to fire may cause containers to rupture/explode.
- Reactivity in case of fire : Polymerises on exposure to temperature rise: pressure build-up may cause closed container to burst.
- Hazardous decomposition products in case of fire : Combustion products may include the following: carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide) nitrogen oxides (NO, NO₂ etc.). On combustion releases : Sulphur oxides. Allyl alcohol.

5.3. Advice for firefighters

- Precautionary measures fire : Do not approach fire except upwind and only with proper skin and respiratory protection (supplied air only).
- Firefighting instructions : Use water spray or fog for cooling exposed containers. Do not enter fire area without proper protective equipment, including respiratory protection. Prevent fire fighting water from entering the environment.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
- Other information : Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid breathing vapours. Avoid contact with eyes, skin and clothing. Prevent liquid from entering sewers, watercourses, and soil.

6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Avoid contact with skin, eyes and clothing.

6.1.2. For emergency responders

- Protective equipment : Use self-contained breathing apparatus and chemically protective clothing. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Evacuate unnecessary personnel. Keep people away from and upwind of spill/leak. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Stop the leak. Turn leaking containers leak-side up to prevent the escape of liquid.

6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter drains or water courses. May cause long lasting harmful effects to aquatic life.

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6.3. Methods and material for containment and cleaning up

- For containment : For a large spillage, contain the spillage by bunding.
- Methods for cleaning up : Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. For a large spillage, contain the spillage by bunding. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite. Place spent adsorbent in sealed packages and contact specialist waste disposal contractor.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Provide local exhaust or general room ventilation to minimize mist and/or vapour concentrations. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid breathing vapours. Avoid contact with skin and eyes. Wear personal protective equipment. Do not wear protective gloves made from PVC as these absorb (meth)acrylates. . Never return unused material to original container.
- Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store away from direct sunlight or other heat sources.
- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight. Heat sources. UV light.
- Incompatible products : Peroxides. free radical initiators. Strong oxidizing agents. reactive metals (Al, K, Zn ...).
- Incompatible materials : High temperature. hot surfaces. open flames. Direct sunlight. UV light.
- Storage temperature : < 25 °C
- Storage area : Store away from direct sunlight or other heat sources.
- Packaging materials : Always store product in a container of the same material as original container. Containers must be UV opaque.

7.3. Specific end use(s)

adhesives.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Acrylic Acid (79-10-7)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	29 mg/m ³
IOEL TWA [ppm]	10 ppm
IOEL STEL	59 mg/m ³ (Short-term exposure limit value in relation to a reference period of 1 minute.)
IOEL STEL [ppm]	20 ppm



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Acrylic Acid (79-10-7)	
Ireland - Occupational Exposure Limits	
Local name	Acrylic acid
OEL TWA [1]	29 mg/m ³
OEL TWA [2]	10 ppm
OEL STEL	59 mg/m ³ for a 1 minute reference period
OEL STEL [ppm]	20 ppm for a 1 minute reference period
Remark	IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2021
United Kingdom - Occupational Exposure Limits	
Local name	Acrylic acid (Prop-2-enoic acid)
WEL TWA (OEL TWA) [1]	30 mg/m ³
WEL TWA (OEL TWA) [2]	10 ppm
WEL STEL (OEL STEL)	60 mg/m ³
WEL STEL (OEL STEL) [ppm]	20 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
boron trifluoride (7637-07-2)	
Ireland - Occupational Exposure Limits	
Local name	Boron trifluoride
OEL STEL	3 mg/m ³
OEL STEL [ppm]	1 ppm
Regulatory reference	Chemical Agents Code of Practice 2021
Methanol (67-56-1)	
Ireland - Occupational Exposure Limits	
Local name	Methanol [Methyl alcohol]
OEL TWA [1]	260 mg/m ³
OEL TWA [2]	200 ppm
Remark	Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body), IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2021
Ireland - Biological limit values	
Local name	Methanol
BLV	15 mg/l Parameter: methanol - Medium: urine - Sampling time: End of shift - Notations: B (Background), Ns (Non-specific)
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)

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Methanol (67-56-1)	
United Kingdom - Occupational Exposure Limits	
Local name	Methanol
WEL TWA (OEL TWA) [1]	266 mg/m ³
WEL TWA (OEL TWA) [2]	200 ppm
WEL STEL (OEL STEL)	333 mg/m ³
WEL STEL (OEL STEL) [ppm]	250 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid contact with skin and eyes. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.2.2. Personal protection equipment

Personal protective equipment:

Safety glasses. Wear eye protection. Use protective apron.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

Eye protection			
Type	Field of application	Characteristics	Standard
Safety glasses	Droplet	With side shields	EN 166

8.2.2.2. Skin protection

Hand protection:

Protective gloves. Do not wear protective gloves made from PVC as these absorb (meth)acrylates.

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Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves	Nitrile rubber (NBR), Fluoroelastomer (FKM)	6 (> 480 minutes)	>0.55		EN 374-2
Reusable gloves	Nitrile rubber (NBR)	1 (> 10 minutes)	0.1		

8.2.2.3. Respiratory protection

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Respiratory protection			
Device	Filter type	Condition	Standard
Reusable half mask	Type A - High-boiling (>65 °C) organic compounds	If conc. in air > 1 vol %	EN 405, EN 14387
Reusable half mask	ABEK	If conc. in air > 1 vol %	EN 405, EN 14387

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Do not exceed the occupational exposure limits (OEL). Avoid release to the environment.

Other information:

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Colourless.
Appearance	: Colourless, viscous liquid.
Odour	: Slightly sharp, lingering methacrylate.
Odour threshold	: Not available
Melting point	: Not established
Freezing point	: Not available
Boiling point	: > 100 °C
Flammability	: Not available
Explosive properties	: Product is not explosive.
Oxidising properties	: Not oxidising.
Explosive limits	: Not available
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: > 100 °C
Auto-ignition temperature	: Not established
Decomposition temperature	: Not available
pH	: substance/mixture is non-soluble (in water)
Viscosity, kinematic	: ≈ 2750 (calculated value)
Viscosity, dynamic	: 3165 cP Anton Paar cone and plate, controlled stress rheometer

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Solubility	: Material nearly insoluble in water. soluble in most organic solvents. Water: ≈ 800 µg/l virtually insoluble
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: < 0.0001 hPa @20°C
Vapour pressure at 50 °C	: < 0.001 hPa
Density	: Not available
Relative density	: ≈ 1.15
Relative vapour density at 20 °C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Light sensitive. May polymerize on exposure to temperature rise, on exposure to UV light and on exposure to some compounds: pressure rise and possible bursting of container.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

Stable under normal conditions of use. Polymerises on exposure to temperature rise: pressure build-up may cause closed container to burst.

10.4. Conditions to avoid

High temperature. hot surfaces. open flames. Direct sunlight. UV light.

10.5. Incompatible materials

Peroxides. free radical initiators. Strong oxidizing agents. reactive metals (Al, K, Zn ...).

10.6. Hazardous decomposition products

Combustion products may include the following: carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide) nitrogen oxides (NO, NO₂ etc.).
Combustion generates: Sulphur oxides. Allyl alcohol.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

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ATE CLP (oral)	1675.106 mg/kg bodyweight
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2,4,6-Triallyloxy-1,3,5-Triazine (101-37-1)

LD50 oral rat	753 mg/kg
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2,4,6-Triallyloxy-1,3,5-Triazine (101-37-1)	
LD50 dermal rabbit	> 2000 mg/kg bodyweight (OECD 402 method)
LD50 dermal	> 2000 mg/kg
Acrylic Acid (79-10-7)	
LD50 oral rat	1000 – 2000 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Male, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Remarks on results: other:
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity), Guideline: other:., Remarks on results: other:
4-methoxyphenol (150-76-5)	
LD50 oral rat	1630 mg/kg (Rat, Experimental value, Oral)
LD50 dermal rat	> 2000 mg/kg bodyweight (EU Method B.3: Acute toxicity (dermal), 24 h, Rat, Male / female, Experimental value, Dermal, 015 day(s))
Isopropylidenediphenyl Bisoxhydroxypropyl Acrylate (55818-57-0)	
LD50 oral rat	> 2000 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight
Pentaerythritol Tetrakis(3-Mercaptopropionate) (7575-23-7)	
LD50 oral rat	1000 mg/kg
LD50 dermal	> 5000 mg/l
LC50 Inhalation - Rat	> 3363 mg/l/4h Animal: rat, OECD Guideline 403: (Acute Inhalation Toxicity)
boron trifluoride (7637-07-2)	
LC50 Inhalation - Rat	1.21 mg/l Animal: rat, OECD Guideline 403: (Acute Inhalation Toxicity)
Methanol (67-56-1)	
LD50 oral rat	1187 – 2769 mg/kg bodyweight Animal: rat, Male/Female: Toxicity, Oral
Skin corrosion/irritation	: Causes skin irritation. pH: substance/mixture is non-soluble (in water)
Serious eye damage/irritation	: Causes serious eye irritation. pH: substance/mixture is non-soluble (in water)
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)	
NOAEL (animal/male, F0/P)	200 mg/kg bodyweight
NOAEL (animal/female, F0/P)	200 mg/kg bodyweight

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diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)	
NOAEL (animal/male, F1)	200 mg/kg bodyweight
NOAEL (animal/female, F1)	200 mg/kg bodyweight
Methanol (67-56-1)	
NOAEL (animal/male, F0/P)	< 1000 mg/kg bodyweight mouse
STOT-single exposure	: May cause respiratory irritation.
Methanol (67-56-1)	
STOT-single exposure	Causes damage to organs.
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
2,4,6-Triallyloxy-1,3,5-Triazine (101-37-1)	
LOAEL (oral, rat, 90 days)	120 mg/kg bodyweight Test method EU B.26; (OECD 408 method) NOAEL (subchronic, oral, animal/male, 90 days)
NOAEL (subchronic, oral, animal/male, 90 days)	> 30 mg/kg bodyweight Test method EU B.26; (OECD 408 method) NOAEL (subchronic, oral, animal/male, 90 days)
NOAEL (subchronic, oral, animal/female, 90 days)	> 30 mg/kg bodyweight
Acrylic Acid (79-10-7)	
NOAEL (oral, rat, 90 days)	40 – 375 mg/kg bodyweight/day
4-methoxyphenol (150-76-5)	
LOAEL (oral, rat, 90 days)	300 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:
NOAEL (oral, rat, 90 days)	150 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:
boron trifluoride (7637-07-2)	
LOAEC (inhalation, rat,dust/mist/fume, 90 days)	0.017 mg/l air (OECD 413 method)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
KRYLEX KU223 UV-Curing Adhesive	
Viscosity, kinematic	≈ 2750 (calculated value)

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Ecology - water	: immiscible and insoluble.
Hazardous to the aquatic environment, short—term (acute)	: Very toxic to aquatic life.

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Hazardous to the aquatic environment, long-term : Toxic to aquatic life with long lasting effects.
(chronic)

2,4,6-Triallyloxy-1,3,5-Triazine (101-37-1)	
LC50 - Fish [1]	7.05 mg/l
EC50 - Crustacea [1]	40 mg/l Species: Daphnia magna
EC50 - Other aquatic organisms [1]	40 mg/l
EC50 72h - Algae [1]	10.52 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	5.5 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Acrylic Acid (79-10-7)	
LC50 - Fish [1]	27 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	95 mg/l Species: Daphnia magna
ErC50 algae	0.13 mg/l EU Method C.3, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Weight of evidence, Nominal concentration
LOEC (chronic)	8.1 mg/l Species: Daphnia magna Duration: '21 d'
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)	
LC50 - Fish [1]	1.4 mg/l Cyprinus carpio (Common carp)
LC50 - Fish [2]	6.53 mg/l Test organisms (species): Japanese Rice Fish (Oryzias latipes)
EC50 - Crustacea [1]	3.53 mg/l Species: Daphnia magna
EC50 72h - Algae [1]	> 1.56 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 algae	2.75 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
4-methoxyphenol (150-76-5)	
LC50 - Fish [1]	28.5 mg/l EU Method C.1; 96h Oncorhynchus mykiss, Flow Through, Fresh Water
EC50 - Crustacea [1]	3 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	54.7 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	19 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 algae	54.7 mg/l EU Method C.3, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence, Nominal concentration
LOEC (chronic)	1.45 mg/l Species: Daphnia magna Duration: '21 d'
NOEC (chronic)	0.68 mg/l Species: Daphnia magna Duration: '21 d'
NOEC chronic algae	2.96 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

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Isopropylidenediphenyl Bisoxhydroxypropyl Acrylate (55818-57-0)	
LC50 - Fish [1]	> 100 mg/l
EC50 - Crustacea [1]	> 100 mg/l Species: Daphnia magna
EC50 72h - Algae [1]	≥ 105 mg/l
Pentaerythritol Tetrakis(3-Mercaptopropionate) (7575-23-7)	
LC50 - Fish [1]	0.034 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 0.35 mg/l Species: Daphnia magna
EC50 72h - Algae [1]	> 0.12 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
NOEC chronic algae	0.12 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
boron trifluoride (7637-07-2)	
LC50 - Fish [1]	125 mg/l Test organisms (species): Catostomus latipinnis, Flannelmouth sucker
EC50 72h - Algae [1]	> 500 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	6.4 – 13.6 mg/l Species: Daphnia magna Duration: '21 d'
NOEC chronic fish	75 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
Methanol (67-56-1)	
LC50 - Fish [1]	15400 mg/l Test organisms (species): Bluegill (Lepomis macrochirus)
EC50 96h - Algae [1]	≈ 22000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	208 mg/l Species: Daphnia magna Duration: '21 d'
12.2. Persistence and degradability	
KRYLEX KU223 UV-Curing Adhesive	
Persistence and degradability	Product has only a limited biodegradability in soil and water.
Acrylic Acid (79-10-7)	
Persistence and degradability	Readily biodegradable in water. easily degradable in the soil.
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)	
BOD (% of ThOD)	0 – 10 % ThOD
Biodegradation	0 – 10 %
4-methoxyphenol (150-76-5)	
Persistence and degradability	Readily biodegradable in water. easily degradable in the soil.

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12.3. Bioaccumulative potential

KRYLEX KU223 UV-Curing Adhesive

Bioaccumulative potential	Slightly or not bioaccumulative.
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Acrylic Acid (79-10-7)

BCF - Fish [1]	3.162 (estimated value)
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Partition coefficient n-octanol/water (Log Pow)	0.46 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 23 °C)
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Bioaccumulative potential	Low bioaccumulation potential. BCF. <500.
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diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)

Partition coefficient n-octanol/water (Log Pow)	3.1
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4-methoxyphenol (150-76-5)

Partition coefficient n-octanol/water (Log Pow)	1.41 Experimental value
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Bioaccumulative potential	Low potential for bioaccumulation (Log Kow <4).
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12.4. Mobility in soil

KRYLEX KU223 UV-Curing Adhesive

Ecology - soil	Low Potential for mobility in the soil. The liquid is heavier than water. Not volatile. virtually insoluble.
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Acrylic Acid (79-10-7)

Surface tension	69.9 mN/m (20 °C, 1 g/l)
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Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.78 – 2.14
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Ecology - soil	Low potential for absorption in soil.
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diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	784.8
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4-methoxyphenol (150-76-5)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.75 (calculated value)
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Ecology - soil	Expected to be highly mobile in soil.
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12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose as hazardous waste.
Product/Packaging disposal recommendations	: a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.
European List of Waste (LoW) code	: 08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
Special provision(s) applied : 375	Special provision(s) applied : 969	Special provision(s) applied : A197	Special provision(s) applied : 375	Special provision(s) applied : 375

These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of ADR provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

14.1. UN number or ID number

ADR	IMDG	IATA	ADN	RID
UN 3082	UN 3082	UN 3082	UN 3082	UN 3082






14.2. UN proper shipping name

ADR	IMDG	IATA	ADN	RID
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate))	Environmentally hazardous substance, liquid, n.o.s. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate))

Transport document description

ADR	IMDG	IATA	ADN	RID
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate)), 9, III, (-)	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate)), 9, III, MARINE POLLUTANT	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate)), 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate)), 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS : Pentaerythritol Tetrakis(3-Mercaptopropionate)), 9, III

14.3. Transport hazard class(es)

ADR	IMDG	IATA	ADN	RID
9	9	9	9	9
				

14.4. Packing group

ADR	IMDG	IATA	ADN	RID
III	III	III	III	III

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ADR	IMDG	IATA	ADN	RID
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: M6
Special provisions (ADR)	: 274, 335, 375, 601
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Special packing provisions (ADR)	: PP1
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T4
Portable tank and bulk container special provisions (ADR)	: TP1, TP29
Tank code (ADR)	: LGBV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V12
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV13
Hazard identification number (Kemler No.)	: 90
Orange plates	: 
Tunnel restriction code (ADR)	: -
EAC code	: •3Z

Transport by sea

Special provisions (IMDG)	: 274, 335, 969
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: LP01, P001
Special packing provisions (IMDG)	: PP1
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP1, TP29
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-F
Stowage category (IMDG)	: A

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y964
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 964
PCA max net quantity (IATA)	: 450L
CAO packing instructions (IATA)	: 964



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CAO max net quantity (IATA) : 450L
Special provisions (IATA) : A97, A158, A197, A215
ERG code (IATA) : 9L

Inland waterway transport

Classification code (ADN) : M6
Special provisions (ADN) : 274, 335, 375, 601
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E1
Carriage permitted (ADN) : T
Equipment required (ADN) : PP
Number of blue cones/lights (ADN) : 0

Rail transport

Classification code (RID) : M6
Special provisions (RID) : 274, 335, 375, 601
Limited quantities (RID) : 5L
Excepted quantities (RID) : E1
Packing instructions (RID) : P001, IBC03, LP01, R001
Special packing provisions (RID) : PP1
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T4
Portable tank and bulk container special provisions (RID) : TP1, TP29
Tank codes for RID tanks (RID) : LGBV
Transport category (RID) : 3
Special provisions for carriage – Packages (RID) : W12
Special provisions for carriage - Loading, unloading and handling (RID) : CW13, CW31
Colis express (express parcels) (RID) : CE8
Hazard identification number (RID) : 90

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

EU restriction list (REACH Annex XVII)

Reference code	Applicable on	Entry title or description
3(a)	Acrylic Acid ; Methanol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F

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EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	KRYLEX KU223 UV-Curing Adhesive ; 2,4,6-Triallyloxy-1,3,5-Triazine ; Acrylic Acid ; Isopropylidenediphenyl Bisoxhydroxypropyl Acrylate ; Pentaerythritol Tetrakis(3-Mercaptopropionate) ; Methanol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	KRYLEX KU223 UV-Curing Adhesive ; 2,4,6-Triallyloxy-1,3,5-Triazine ; Acrylic Acid ; Isopropylidenediphenyl Bisoxhydroxypropyl Acrylate ; Pentaerythritol Tetrakis(3-Mercaptopropionate)	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
40.	Acrylic Acid ; Methanol	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.
69.	Methanol	Methanol

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no substance subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

Contains no substance subject to Regulation (EC) 273/2004 of the European Parliament and of the Council of 11 February 2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Type of product	Added	



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Indication of changes			
Section	Changed item	Change	Comments
	Regulatory framework	Added	
	Display additional SDS EU addresses	Added	
	Reference number	Added	
	Excepted quantities (RID)	Added	
	Limited quantities (RID)	Added	
	Special provisions (RID)	Added	
	Packing group (RID)	Added	
	Classification code (RID)	Added	
	ERG code (IATA)	Added	
	Special provisions (IATA)	Added	
	CAO max net quantity (IATA)	Added	
	CAO packing instructions (IATA)	Added	
	PCA max net quantity (IATA)	Added	
	PCA packing instructions (IATA)	Added	
	PCA limited quantity max net quantity (IATA)	Added	
	PCA Limited quantities (IATA)	Added	
	PCA Excepted quantities (IATA)	Added	
	Danger labels (IATA)	Added	
	Proper Shipping Name (IATA)	Added	
	Proper Shipping Name (IMDG)	Added	
	Danger labels (IMDG)	Added	
	EmS-No. (Spillage)	Added	
	EmS-No. (Fire)	Added	
	Limited quantities (IMDG)	Added	
	Stowage category (IMDG)	Added	
	Tank special provisions (IMDG)	Added	
	Tank instructions (IMDG)	Added	
	IBC packing instructions (IMDG)	Added	
	Excepted quantities (IMDG)	Added	
	Special provisions (IMDG)	Added	
	Special provisions for carriage - Loading, unloading and handling (ADR)	Added	
	Special provisions for carriage - Packages (ADR)	Added	
	Tank code (ADR)	Added	



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Indication of changes			
Section	Changed item	Change	Comments
	Portable tank and bulk container special provisions (ADR)	Added	
	Portable tank and bulk container instructions (ADR)	Added	
	Mixed packing provisions (ADR)	Added	
	Special packing provisions (ADR)	Added	
	Packing instructions (ADR)	Added	
	Vehicle for tank carriage	Added	
	Supersedes version of	Added	
	Revision date	Modified	
	UN-No. (RID)	Added	
	Number of blue cones/lights (ADN)	Added	
	Equipment required (ADN)	Added	
	Carriage permitted (ADN)	Added	
	Excepted quantities (ADN)	Added	
	Limited quantities (ADN)	Added	
	Danger labels (ADN)	Added	
	Classification code (ADN)	Added	
	Proper Shipping Name (RID)	Added	
	Hazard identification number (RID)	Added	
	Colis express (express parcels) (RID)	Added	
	Special provisions for carriage - Loading, unloading and handling (RID)	Added	
	Special provisions for carriage – Packages (RID)	Added	
	Transport category (RID)	Added	
	Tank codes for RID tanks (RID)	Added	
	Portable tank and bulk container special provisions (RID)	Added	
	Portable tank and bulk container instructions (RID)	Added	
	Mixed packing provisions (RID)	Added	
	Special packing provisions (RID)	Added	
	Packing instructions (RID)	Added	
1.1	Product group	Added	
1.1	Name	Modified	
1.2	Use of the substance/mixture	Added	



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Indication of changes			
Section	Changed item	Change	Comments
1.2	Use of the substance/mixture	Modified	
1.2	Function or use category	Modified	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.2	Precautionary statements (CLP)	Modified	
2.2	Hazard statements (CLP)	Modified	
3	Composition/information on ingredients	Modified	
4.1	First-aid measures after inhalation	Modified	
4.1	First-aid measures after ingestion	Modified	
4.1	First-aid measures general	Modified	
4.1	First-aid measures after skin contact	Modified	
4.1	First-aid measures after eye contact	Modified	
4.2	Chronic symptoms	Added	
4.2	Symptoms/effects after ingestion	Modified	
4.2	Symptoms/effects after inhalation	Modified	
4.2	Symptoms/effects after skin contact	Modified	
4.2	Symptoms/effects after eye contact	Modified	
4.2	Symptoms/effects	Modified	
4.3	Other medical advice or treatment	Modified	
5.1	Unsuitable extinguishing media	Modified	
5.1	Suitable extinguishing media	Modified	
5.2	Explosion hazard	Added	
5.2	Reactivity in case of fire	Modified	
5.2	Hazardous decomposition products in case of fire	Modified	
5.2	Fire hazard	Added	
5.3	Protection during firefighting	Modified	
5.3	Precautionary measures fire	Modified	
5.3	Other information	Added	
5.3	EAC code	Added	
5.3	Firefighting instructions	Modified	
6.1	General measures	Modified	
6.1	Emergency procedures	Modified	
6.1	Protective equipment	Added	
6.1	Emergency procedures	Modified	



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Indication of changes			
Section	Changed item	Change	Comments
6.1	Protective equipment	Added	
6.2	Environmental precautions	Modified	
6.3	Other information	Modified	
6.3	Methods for cleaning up	Modified	
6.3	For containment	Added	
6.4	Reference to other sections (8, 13)	Modified	
7.1	Hygiene measures	Modified	
7.1	Precautions for safe handling	Modified	
7.2	Technical measures	Modified	
7.2	Storage conditions	Modified	
7.2	Incompatible materials	Modified	
7.2	Packaging materials	Modified	
7.2	Storage area	Modified	
7.2	Storage temperature	Added	
7.2	Incompatible products	Modified	
7.3	Specific end uses	Modified	
8.2	Environmental exposure controls	Modified	
8.2	Respiratory protection	Modified	
8.2	Eye protection	Added	
8.2	Other information	Modified	
8.2	Appropriate engineering controls	Modified	
8.2	Skin and body protection	Modified	
8.2	Hand protection	Added	
8.2	Personal protective equipment	Modified	
9.1	Relative density	Modified	
9.1	Auto-ignition temperature	Modified	
9.1	Oxidising properties	Added	
9.1	Explosive properties	Added	
9.1	Viscosity, kinematic	Modified	
9.1	Viscosity, dynamic	Modified	
9.1	Solubility	Added	
9.1	Vapour pressure at 50 °C	Added	
9.1	Appearance	Modified	
9.1	Vapour pressure	Modified	

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Indication of changes			
Section	Changed item	Change	Comments
9.1	Solubility in water	Added	
9.1	pH	Modified	
10.1	Reactivity	Modified	
10.2	Chemical stability	Modified	
10.3	Possibility of hazardous reactions	Modified	
10.4	Conditions to avoid	Modified	
10.5	Incompatible materials	Modified	
10.6	Hazardous decomposition products	Modified	
11.1	ATE CLP (oral)	Modified	
11.1	Reason for no classification	Modified	
11.1	Reason for no classification	Modified	
11.1	Reason for no classification	Modified	
11.1	Reason for no classification	Modified	
11.1	Reason for no classification	Modified	
11.1	Reason for no classification	Modified	
11.1	Reason for no classification	Modified	
11.1	Reason for no classification	Modified	
12.1	Ecology - water	Added	
12.1	Ecology - general	Added	
12.2	Persistence and degradability	Modified	
12.3	Bioaccumulative potential	Modified	
12.4	Ecology - soil	Modified	
13.1	Product/Packaging disposal recommendations	Added	
13.1	Regional legislation (waste)	Modified	
13.1	Waste treatment methods	Modified	
13.1	European List of Waste (LoW) code	Modified	
14.1	UN-No. (IMDG)	Modified	
14.1	UN-No. (IATA)	Modified	
14.1	UN-No. (ADN)	Modified	
14.2	Proper Shipping Name (ADR)	Added	
14.2	Proper Shipping Name (ADN)	Added	
14.3	Danger labels (RID)	Modified	
14.3	Danger labels (ADR)	Modified	
14.3	Class (ADR)	Modified	
14.4	Packing group (IATA)	Modified	

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Indication of changes			
Section	Changed item	Change	Comments
14.4	Packing group (IMDG)	Modified	
14.4	Packing group (ADN)	Modified	
14.6	Special packing provisions (IMDG)	Modified	
14.6	Packing instructions (IMDG)	Modified	
14.6	Transport category (ADR)	Modified	
14.6	Special provisions (ADR)	Modified	
14.6	Excepted quantities (ADR)	Modified	
14.6	Limited quantities (ADR)	Modified	
14.6	Tunnel restriction code (ADR)	Modified	
14.6	Hazard identification number (Kemler No.)	Modified	
14.6	Classification code (ADR)	Modified	
14.6	Special provisions (ADN)	Modified	
15.1	REACH Annex XVII	Added	
15.2	Chemical safety assessment	Modified	
16	Abbreviations and acronyms	Added	
16	Data sources	Modified	

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose



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Abbreviations and acronyms:	
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Data sources : Supplier's safety documents. ECHA (European Chemicals Agency). UNECE, <http://www.unece.org/>.

Full text of H- and EUH-statements:	
Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.



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Full text of H- and EUH-statements:	
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361f	Suspected of damaging fertility.
H370	Causes damage to organs.
H371	May cause damage to organs.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Press. Gas	Gases under pressure
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1A	Skin sensitisation, category 1A
Skin Sens. 1B	Skin sensitisation, category 1B
STOT SE 1	Specific target organ toxicity – single exposure, Category 1
STOT SE 2	Specific target organ toxicity – Single exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

Safety Data Sheet (SDS), EU

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