KRYLEX KU223 UV-Curing Coating

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: 28/07/2022 Supersedes version of: 11/04/2022 Version: 7.0

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 Coating
UFI	:	XSGW-C4C2-M806-K78T
Product code	:	KU223
Type of product	:	coatings
Product group	:	Trade product

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

1.2.1. Relevant identified uses

Main use category	:	Industrial use,Professional use
Industrial/Professional use spec	:	For professional and industrial use only
Use of the substance/mixture	:	UV-Curing Coating
Use of the substance/mixture	:	Adhesives and coatings
Function or use category	:	Protective coatings

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer
Chemence Ltd
13 Princewood Road,
Corby,
Northamptonshire NN17 4XD
United Kingdom

Tel: +44 (0)1536 402600
Faxl: +44 (0)1536 400266

email:technical@chemence.com

Only Representative
Chemence Graphics France SAS
Parc d'activites Frederic Fays
15, rue de la ligne de l'Est
69100 Villeurbanne, Lyon,
France

Tel: +44 (0)1536 402600
Faxl: +44 (0)1536 400266

email:technical@chemence.com

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

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
Reproductive toxicity, Category 1B	H360Fd
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) :

GHS07 GHS08 GHS09

Signal word (CLP) : Danger

Contains : 2,4,6-Triallyloxy-1,3,5-Triazine, Acrylic Acid, Isopropylidenediphenyl Bisoxyhydroxypropyl Acrylate, Pentaerythritol Tetrakis(3-Mercaptopropionate), Methanol, 4-methoxyphenol, Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

Hazard statements (CLP) : 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.
H360Fd - May damage fertility. Suspected of damaging the unborn child.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) : P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing fume, vapours.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection.
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.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
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.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P273 - Avoid release to the environment.

Extra phrases : For professional and industrial use only.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

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 Bisoxyhydroxypropyl 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 substance with a Community workplace exposure limit	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. 1B, H360Fd 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

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

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.

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

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

An eyewash station should be available on the premises. If you feel unwell, seek medical advice (show the label where possible).

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, CO_2) (carbon monoxide, carbon dioxide) nitrogen oxides (NO, NO_2 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.

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. Contaminated absorbent material may pose the same hazard as the spilt product.

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)

Protective coatings.

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/m³
IOEL TWA [ppm]	10 ppm
IOEL STEL	59 mg/m³ (Short-term exposure limit value in relation to a reference period of 1 minute.)
IOEL STEL [ppm]	20 ppm
Ireland - Occupational Exposure Limits	
Local name	Acrylic acid
OEL TWA [1]	29 mg/m³
OEL TWA [2]	10 ppm
OEL STEL	59 mg/m³ 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

Acrylic Acid (79-10-7)	
United Kingdom - Occupational Exposure Limits	
Local name	Acrylic acid (Prop-2-enoic acid)
WEL TWA (OEL TWA) [1]	30 mg/m³
WEL TWA (OEL TWA) [2]	10 ppm
WEL STEL (OEL STEL)	60 mg/m³
WEL STEL (OEL STEL) [ppm]	20 ppm
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. Do not wear protective gloves made from PVC as these absorb (meth)acrylates. 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.

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
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

Other properties : Light sensitive

SECTION 10: Stability and reactivity

10.1. Reactivity

Light sensitive. May polymerise 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, CO_2) (carbon monoxide, carbon dioxide) nitrogen oxides (NO, NO_2 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)

KRYLEX KU223 UV-Curing Coating	
ATE CLP (oral)	1675.106 mg/kg bodyweight

2,4,6-Triallyloxy-1,3,5-Triazine (101-37-1)	
LD50 oral rat	753 mg/kg
LD50 dermal rabbit	> 2000 mg/kg bodyweight (OECD 402 method)

2,4,6-Triallyloxy-1,3,5-Triazine (101-37-1)	
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)

Isopropylidenediphenyl Bisoxyhydroxypropyl 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)

4-methoxyphenol (150-76-5)	
LD50 oral rat	1630 mg/kg LD50 oral rat (Experimental value)
LD50 dermal rat	> 2000 mg/kg bodyweight Test method EU B.3

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 2000 mg/kg

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

STOT-single exposure : May cause respiratory irritation.

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 (OECD 422 method)

4-methoxyphenol (150-76-5)	
NOAEL (oral, rat, 90 days)	150 mg/kg bodyweight (OECD 422 method)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

KRYLEX KU223 UV-Curing Coating	
Viscosity, kinematic	≈ 2750 (calculated value)

Acrylic Acid (79-10-7)	
Viscosity, kinematic	1.093 mm²/s

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.

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

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'

Isopropylidenediphenyl Bisoxyhydroxypropyl 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)

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)

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (75980-60-8)	
EC50 - Other aquatic organisms [1]	3.53 mg/l

12.2. Persistence and degradability

KRYLEX KU223 UV-Curing Coating	
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.

4-methoxyphenol (150-76-5)	
Persistence and degradability	Readily biodegradable in water. easily degradable in the soil.

12.3. Bioaccumulative potential

KRYLEX KU223 UV-Curing Coating	
Bioaccumulative potential	Slightly or not bioaccumulative.

Acrylic Acid (79-10-7)	
BCF - Fish [1]	3.162 (estimated value)
Partition coefficient n-octanol/water (Log Pow)	0.46 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 23 °C)

Acrylic Acid (79-10-7)	
Bioaccumulative potential	Low bioaccumulation potential. BCF. <500.

4-methoxyphenol (150-76-5)	
Partition coefficient n-octanol/water (Log Pow)	1.41 Experimental value
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow <4).

12.4. Mobility in soil

KRYLEX KU223 UV-Curing Coating	
Ecology - soil	Low Potential for mobility in the soil. The liquid is heavier than water. Not volatile. virtually insoluble.

Acrylic Acid (79-10-7)	
Surface tension	69.9 mN/m (1 g/) @20°C
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.78 – 2.14
Ecology - soil	Low potential for absorption in soil.

4-methoxyphenol (150-76-5)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.75 (calculated value)
Ecology - soil	Expected to be highly mobile in soil.

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

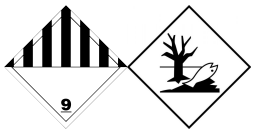
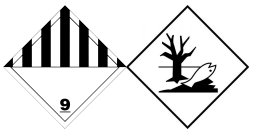
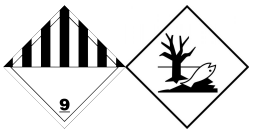
Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose as hazardous waste.
Product/Packaging disposal recommendations : a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed 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

HP Code : HP3 - “Flammable:”
– flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C;
– flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;
– flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction;
– flammable gaseous waste: gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
– water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities;
– other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.
HP6 - “Acute Toxicity:” waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure.
HP4 - “Irritant – skin irritation and eye damage:” waste which on application can cause skin irritation or damage to the eye.
HP13 - “Sensitising:” waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.
HP14 - “Ecotoxic:” waste which presents or may present immediate or delayed risks for one or more sectors of the environment

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				
UN 3082	UN 3082	UN 3082	UN 3082	UN 3082
14.2. UN proper shipping name				
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				
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

ADR	IMDG	IATA	ADN	RID
14.3. Transport hazard class(es)				
9	9	9	9	9
				
14.4. Packing group				
III	III	III	III	III
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)	:	5l
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	:	90 3082
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
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

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	**Applicable on**	**Entry title or description**
3(a)	Acrylic Acid	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
3(b)	KRYLEX KU223 UV-Curing Coating ; 2,4,6-Triallyloxy-1,3,5-Triazine ; Acrylic Acid ; Isopropylidenediphenyl Bisoxyhydroxypropyl 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 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 Coating ; 2,4,6-Triallyloxy-1,3,5-Triazine ; Acrylic Acid ; Isopropylidenediphenyl Bisoxyhydroxypropyl 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

REACH Annex XIV (Authorisation List)

Contains no REACH Annex XIV substances

REACH Candidate List (SVHC)

Contains no substance on the REACH candidate list

PIC Regulation (Prior Informed Consent)

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.

POP Regulation (Persistent Organic Pollutants)

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

Ozone Regulation (1005/2009)

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.

Explosives Precursors Regulation (2019/1148)

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.

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

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:
Classification. Composition/information on ingredients. First aid measures. Handling and storage.

Indication of changes			
Section	**Changed item**	**Change**	**Comments**
	Revision date	Modified	
	Supersedes version of	Modified	
	Type of product	Modified	
	Indication of changes	Added	
	Particle size	Added	
1.1	Name	Modified	
1.2	Industrial/Professional use spec	Added	
1.2	Main use category	Added	
1.2	Use of the substance/mixture	Modified	
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	Extra phrases	Added	
2.2	Signal word (CLP)	Modified	
2.2	Hazard pictograms (CLP)	Modified	
2.2	Hazard statements (CLP)	Modified	
2.2	Precautionary statements (CLP)	Modified	
3	Composition/information on ingredients	Modified	
4.2	Chronic symptoms	Modified	
4.3	Other medical advice or treatment	Modified	
6.3	Other information	Modified	
7.3	Specific end uses	Modified	
8.2	Appropriate engineering controls	Modified	
8.2	Skin and body protection	Added	
9.2	Other properties	Added	
15.1	REACH Annex XVII	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
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. 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. 3	Flammable liquids, Category 3
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
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.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Repr. 1B	Reproductive toxicity, Category 1B
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 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

Safety Data Sheet (SDS), EU