SAFETY DATA SHEET
Permabond UV634

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

1.1. Product identifier

Product name Permabond UV634

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

Identified uses Adhesive.

1.3. Details of the supplier of the safety data sheet

Supplier

Permabond Engineering Adhesives Ltd.
Wessex Way
Colden Common
Winchester
Hampshire SO21 1WP
United Kingdom
Tel: +44 (0)1962 711 661
Fax: +44 (0)1962 711 662
info.europe@permabond.com

1.4. Emergency telephone number

Emergency telephone CHEMTREC UK: +(44)-870-8200418 CHEMTREC US: 800-424-9300 (CCN: 829878)

National emergency telephone number

CHEMTREC Ireland: +(353)-19014670
CHEMTREC Australia: +(61)-290372994
CHEMTREC New Zealand: +(64)-98010034

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317 STOT SE 3 - H335

Environmental hazards Aquatic Chronic 2 - H411

2.2. Label elements

Pictogram

Signal word Danger

Permabond UV634

Hazard statements	H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H317 May cause an allergic skin reaction. H335 May cause respiratory irritation. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. P302+P352a IF ON SKIN: Wash with plenty of soap and water P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Contains	N,N-DIMETHYLACRYLAMIDE, ISOBORNYL ACRYLATE, BENZYL METHACRYLATE, METHYL METHACRYLATE
Supplementary precautionary statements	P261 Avoid breathing vapour/ spray. P271 Use only outdoors or in a well-ventilated area. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P501 Dispose of contents/container in accordance with existing Community, National and local regulations.

2.3. Other hazards

None under normal conditions. This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

N,N-DIMETHYLACRYLAMIDE **10-30%**

CAS number: 2680-03-7 EC number: 220-237-5

REACH registration exemption – < 1 tonne

Classification
Acute Tox. 3 - H301
Acute Tox. 3 - H311
Eye Dam. 1 - H318

ISOBORNYL ACRYLATE **10-30%**

CAS number: 5888-33-5 EC number: 227-561-6 REACH registration number: 01-2119957862-25-XXXX

M factor (Acute) = 1 M factor (Chronic) = 1

Classification
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Skin Sens. 1 - H317
STOT SE 3 - H335
Aquatic Acute 1 - H400
Aquatic Chronic 1 - H410

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BENZYL METHACRYLATE **10-30%**

CAS number: 2495-37-6 EC number: 219-674-4 REACH registration number: 01-2119960155-39-XXXX

Classification
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Skin Sens. 1 - H317
STOT SE 3 - H335

METHYL METHACRYLATE **5-10%**

CAS number: 80-62-6 EC number: 201-297-1 REACH registration number: 01-2119452498-28-XXXX

Classification
Flam. Liq. 2 - H225
Skin Irrit. 2 - H315
Skin Sens. 1 - H317
STOT SE 3 - H335

3-trimethoxysilylpropyl methacrylate **1-5%**

CAS number: 2530-85-0 EC number: 219-785-8 REACH registration number: 01-2119513216-50-XXXX

Classification
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
STOT SE 3 - H335

DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE **1-<3**

CAS number: 75980-60-8 EC number: 278-355-8 REACH registration number: 01-2119972295-29-XXXX

Classification
Skin Sens. 1B - H317
Repr. 2 - H361f
Aquatic Chronic 2 - H411

4-(METHACRYLOLOXY)BENZOPHENONE **1-<3%**

CAS number: 56467-43-7 EC number: 611-390-2 REACH registration number: 05-2115119107-57-XXXX

M factor (Acute) = 1

Classification
Aquatic Acute 1 - H400

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METHACRYLIC ACID		<1%
CAS number: 79-41-4	EC number: 201-204-4	REACH registration number: 01-2119463884-26-XXXX

Classification
Acute Tox. 4 - H302
Acute Tox. 3 - H311
Acute Tox. 4 - H332
Skin Corr. 1A - H314
Eye Dam. 1 - H318
STOT SE 3 - H335

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Move the exposed person to fresh air. Get medical attention if any discomfort continues.

Ingestion Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention immediately.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact Remove any contact lenses and open eyelids wide apart. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention.

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

Inhalation May cause respiratory irritation. Overexposure may cause the following adverse effects: Headache. Fatigue. Nausea, vomiting.

Ingestion Harmful if swallowed.

Skin contact Skin irritation. Mild dermatitis, allergic skin rash.

Eye contact May cause serious eye damage.

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

Notes for the doctor No specific recommendations. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Burning produces irritating, toxic and obnoxious fumes. Carbon monoxide, carbon dioxide, and unknown hydrocarbons.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with sand or other inert absorbent. Transfer to suitable, labelled containers for disposal.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid contact with skin and eyes. Do not ingest or inhale. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in closed original container at temperatures between 5°C and 25°C. Protect against direct sunlight. Never return unused material to storage receptacle.

7.3. Specific end use(s)

Specific end use(s) Adhesive.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

METHYL METHACRYLATE

Long-term exposure limit (8-hour TWA): WEL 50 ppm 208 mg/m³
Short-term exposure limit (15-minute): WEL 100 ppm 416 mg/m³

METHACRYLIC ACID

Long-term exposure limit (8-hour TWA): WEL 20 ppm 72 mg/m³
Short-term exposure limit (15-minute): WEL 40 ppm 143 mg/m³
WEL = Workplace Exposure Limit

N,N-DIMETHYLACRYLAMIDE (CAS: 2680-03-7)

DNEL	Workers - Inhalation; Long term systemic effects: 0.207 mg/m³ Workers - Dermal; Long term systemic effects: 357 µg/kg/day
PNEC	Fresh water; 0.12 mg/l marine water; 0.012 mg/l STP; 18 mg/l Sediment (Freshwater); 0.509 mg/kg Sediment (Marinewater); 0.051 mg/kg Soil; 0.031 mg/kg

ISOBORNYL ACRYLATE (CAS: 5888-33-5)

DNEL	Workers - Dermal; Long term systemic effects: 1.39 mg/kg/day

PNEC	Fresh water; 0.001 mg/l marine water; 0 mg/l STP; 2 mg/l Sediment (Freshwater); 0.145 mg/kg Sediment (Marinewater); 0.015 mg/kg

BENZYL METHACRYLATE (CAS: 2495-37-6)

DNEL	Workers, Industry - Inhalation; Long term systemic effects: 24.2 mg/m³ Workers, Industry - Dermal; Long term systemic effects: 6.94 mg/kg/day
PNEC	Workers, Industry - Fresh water; 0.0216 mg/l Workers, Industry - marine water; 0.00216 mg/l Workers, Industry - STP; 1.3 mg/l Workers, Industry - Soil; 0.165 mg/kg Workers, Industry - Sediment (Freshwater); 0.888 mg/kg Workers, Industry - Sediment (Marinewater); 0.0888 mg/kg

METHYL METHACRYLATE (CAS: 80-62-6)

DNEL	Workers, Industry/Professional - Inhalation; Long term : 208 mg/m³ Workers, Industry/Professional - Dermal; Long term : 13.67 mg/kg/day Workers, Industry/Professional - Inhalation; Short term : 416 mg/m³
PNEC	Workers, Industry/Professional - Water; Long term <0.94 mg/l

DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE (CAS: 75980-60-8)

DNEL	Workers - Inhalation; Long term systemic effects: 3.5 mg/m³ Workers - Dermal; Long term systemic effects: 1 mg/kg/day
PNEC	Fresh water; 0.004 mg/l marine water; 0 mg/l Sediment (Freshwater); 0.29 mg/kg Sediment (Marinewater); 0.029 mg/kg Soil; 0.056 mg/kg STP; >1000 mg/l

METHACRYLIC ACID (CAS: 79-41-4)

DNEL	Workers, Industry - Inhalation; Long term local effects: 88 mg/m³ Workers, Industry - Dermal; Long term systemic effects: 4.25 mg/kg/day Workers, Industry - Inhalation; Long term systemic effects: 29.6 mg/m³
PNEC	Workers, Industry - Fresh water; 0.82 mg/l Workers, Industry - marine water; 0.82 mg/l Workers, Industry - STP; 10 mg/l Workers, Industry - Soil; 1.2 mg/kg

8.2. Exposure controls

Protective equipment

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Appropriate engineering controls	Provide adequate general and local exhaust ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.
Eye/face protection	The following protection should be worn: Chemical splash goggles or face shield. Personal eye protection should conform to EN 166
Hand protection	It is recommended that chemical-resistant, impervious gloves are worn. Gloves should conform to EN 374. For exposure up to 4 hours, wear gloves made of the following material: Nitrile rubber. Thickness: ≥ 0.4 mm The selected gloves should have a breakthrough time of at least 0.5 hours. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber. Thickness: ≥ 0.4 mm The selected gloves should have a breakthrough time of at least 8 hours. The breakthrough time for any glove material may be different for different glove manufacturers. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected.
Other skin and body protection	Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.
Hygiene measures	Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke. Use of good industrial hygiene practices is required.
Respiratory protection	Ensure adequate ventilation of the working area. Respiratory protection may be required if excessive airborne contamination occurs. Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Organic vapour filter. Type A. (EN14387)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless. Translucent.
Odour	Acrylic
Odour threshold	Not available.
pH	Not relevant.
Melting point	Not available.
Initial boiling point and range	Not applicable.
Flash point	>100°C
Evaporation rate	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	1.0
Solubility(ies)	Slightly soluble in water. Soluble in the following materials: Organic solvents.
Partition coefficient	Not available.

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Auto-ignition temperature	Not available.
Viscosity	≈2000 mPa s @ 25°C
Oxidising properties	Not available.

9.2. Other information

Other information	Not relevant.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	The following materials may react with the product: Strong oxidising agents. Light.

10.2. Chemical stability

Stability	Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	There are no known reactivity hazards associated with this product.

10.4. Conditions to avoid

Conditions to avoid	Protect against direct sunlight.

10.5. Incompatible materials

Materials to avoid	Strong reducing agents. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects	The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Skin sensitisation

Skin sensitisation	May cause sensitisation by skin contact.

Aspiration hazard

Aspiration hazard	None under normal conditions.

Inhalation	May cause respiratory irritation.
Ingestion	Harmful if swallowed.
Skin contact	Irritating to skin.
Eye contact	Causes serious eye damage.

Toxicological information on ingredients.

N,N-DIMETHYLACRYLAMIDE

Acute toxicity - oral

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Acute toxicity oral (LD_{50} mg/kg)	216.0
Species	Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	519.0
Species	Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	3.16
Species	Rat

Skin corrosion/irritation

Animal data	Method: OECD 404, Rabbit Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation	Method: OECD 405, Rabbit Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation	No data available.

Skin sensitisation

Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro	Gene mutation: Negative.
Genotoxicity - in vivo	Chromosome aberration: Negative.

Carcinogenicity

Carcinogenicity	No data available.

Reproductive toxicity

Reproductive toxicity - fertility	Screening - NOAEL 30 mg/kg/day, Oral, Rat F1

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

Aspiration hazard	No information available.

ISOBORNYL ACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	5,000.0

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Species	Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	3,000.0
Species	Rabbit

Acute toxicity - inhalation

Notes (inhalation LC_{50})	No information available.

Skin corrosion/irritation

Skin corrosion/irritation	Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation	Not irritating.

Skin sensitisation

Skin sensitisation	Local Lymph Node Assay (LLNA) - : Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro	Genome mutation: Negative.

Carcinogenicity

Carcinogenicity	No information available.

Reproductive toxicity

Reproductive toxicity - fertility	Two-generation study - NOEC 0.092 mg/l, Inhalation, Rat P
Reproductive toxicity - development	Developmental toxicity: - NOAEL: 500 mg/kg/day, Oral, Rat

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

Aspiration hazard	No information available.

BENZYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	3,980.0
Species	Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	2,000.1
Species	Rat

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Acute toxicity - inhalation

Notes (inhalation LC_{50}) No information available.

Skin corrosion/irritation

Animal data Erythema/eschar score: Very slight erythema - barely perceptible (1). Fully reversible within 72 hours. Slightly irritating.

Serious eye damage/irritation

Serious eye damage/irritation Not irritating.

Skin sensitisation

Skin sensitisation Local Lymph Node Assay (LLNA) - Mouse: Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No evidence of reproductive toxicity in animal studies.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 500 mg/kg, Oral, Rat

Aspiration hazard

Aspiration hazard Not available.

METHYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg) 5,000.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg) 5,000.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l) 29.8

Species Rat

Skin corrosion/irritation

Skin corrosion/irritation Not irritating. Prolonged skin contact may cause temporary irritation.

Serious eye damage/irritation

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Serious eye damage/irritation	Not irritating.
Respiratory sensitisation	
Respiratory sensitisation	Mouse: Sensitising.
Skin sensitisation	
Skin sensitisation	Local Lymph Node Assay (LLNA) - Mouse: Sensitising.
Germ cell mutagenicity	
Genotoxicity - in vitro	Inconclusive.
Genotoxicity - in vivo	This substance has no evidence of mutagenic properties.
Carcinogenicity	
Carcinogenicity	CMR: no
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
Reproductive toxicity	
Reproductive toxicity - fertility	No evidence of reproductive toxicity in animal studies.
Reproductive toxicity - development	No evidence of reproductive toxicity in animal studies. non-teratogenic, not embryotoxic
Specific target organ toxicity - single exposure	
Target organs	Respiratory tract Irritation.
Specific target organ toxicity - repeated exposure	
Target organs	No specific target organs known.
Aspiration hazard	
Aspiration hazard	Based on available data the classification criteria are not met.

DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE

Acute toxicity - oral	
Acute toxicity oral (LD_{50} mg/kg)	5,000.0
Species	Rat
Acute toxicity - dermal	
Acute toxicity dermal (LD_{50} mg/kg)	2,000.1
Species	Rat
Acute toxicity - inhalation	
Notes (inhalation LC_{50})	No information available.
Skin corrosion/irritation	
Skin corrosion/irritation	Not irritating.
Serious eye damage/irritation	

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Serious eye damage/irritation	Not irritating.
Skin sensitisation	
Skin sensitisation	Local Lymph Node Assay (LLNA) - Mouse: Sensitising.
Germ cell mutagenicity	
Genotoxicity - in vitro	Gene mutation: Negative.
Carcinogenicity	
Carcinogenicity	No data available.
Reproductive toxicity	
Reproductive toxicity - fertility	Possible risk of adverse reproductive effects.
Reproductive toxicity - development	Developmental toxicity: - NOAEL: 150 mg/kg, Oral, Rat
Specific target organ toxicity - single exposure	
STOT - single exposure	No information available.
Specific target organ toxicity - repeated exposure	
STOT - repeated exposure	NOAEL 50 mg/kg/day, Oral, Rat
Aspiration hazard	
Aspiration hazard	No data available.

METHACRYLIC ACID

Acute toxicity - oral	
Acute toxicity oral (LD_{50} mg/kg)	1,320.0
Species	Rat
Acute toxicity - dermal	
Acute toxicity dermal (LD_{50} mg/kg)	1,000.0
Species	Rabbit
Acute toxicity - inhalation	
Acute toxicity inhalation (LC_{50} vapours mg/l)	7.1
Species	Rat
Skin corrosion/irritation	
Animal data	Dose: Method: OECD 404, 3 minutes, Rabbit Corrosive.
Serious eye damage/irritation	
Serious eye damage/irritation	Method: OECD 405, Rabbit Corrosive.
Respiratory sensitisation	
Respiratory sensitisation	Guinea pig: Not sensitising. Method: various test systems

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Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity CMR: no

Reproductive toxicity

Reproductive toxicity - fertility No evidence of reproductive toxicity in animal studies.

Reproductive toxicity - development Non-teratogenic, not embryotoxic

Specific target organ toxicity - single exposure

Target organs Respiratory tract Irritating.

Specific target organ toxicity - repeated exposure

Target organs No specific target organs known.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

SECTION 12: Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

12.1. Toxicity

Toxicity The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Ecological information on ingredients.

N,N-DIMETHYLACRYLAMIDE

Acute aquatic toxicity

Acute toxicity - fish LC_{50}, 96 hours: > 120 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC_{50}, 48 hours: > 120 mg/l, Daphnia magna

Acute toxicity - aquatic plants NOEC, 72 hours: 50 mg/l, Pseudokirchneriella subcapitata

Acute toxicity - microorganisms EC_{20}, 3 hours: 430 mg/l, Activated sludge

ISOBORNYL ACRYLATE

Acute aquatic toxicity

LE(C)$_{50}$ 0.1 < L(E)C50 ≤ 1

M factor (Acute) 1

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Acute toxicity - fish	LC_{50}, 96 hours: 0.704 mg/l, Danio rerio (Zebrafish)
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 1.98 mg/l, Pseudokirchneriella subcapitata NOEC, 72 hours: 0.405 mg/l, Pseudokirchneriella subcapitata
Chronic aquatic toxicity	
M factor (Chronic)	1
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 0.092 mg/l, Daphnia magna

BENZYL METHACRYLATE

Acute aquatic toxicity	
Acute toxicity - fish	LC_{50}, 48 hours: 4.67 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic plants	NOEC, 72 hours: 0.899 mg/l, Desmodesmus subspicatus EC_{50}, 72 hours: 2.28 mg/l, Desmodesmus subspicatus
Chronic aquatic toxicity	
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 4.21 mg/l, Daphnia magna

METHYL METHACRYLATE

Acute aquatic toxicity	
Acute toxicity - fish	LC_{50}, 96 hours: > 79 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 69 mg/l, Daphnia magna
Acute toxicity - aquatic plants	NOEC, 72 hours: > 110 mg/l, Selenastrum capricornutum EC_{50}, 72 hours: > 100 mg/l, Selenastrum capricornutum
Acute toxicity - microorganisms	EC_{20}, 30 minutes: 150 - 200 mg/l, Activated sludge
Chronic aquatic toxicity	
Chronic toxicity - fish early life stage	NOEC, 35 days: 9.4 mg/l, Danio rerio (Zebrafish)
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 37 mg/l, Daphnia magna

DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE

Acute aquatic toxicity	
Acute toxicity - fish	LC_{50}, 48 hours: 6.53 mg/l, Oryzias latipes (Red killifish)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 3.53 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: > 2.01 mg/l, Pseudokirchneriella subcapitata
Acute toxicity - microorganisms	EC_{50}, 180 minutes: > 1000 mg/l, Activated sludge

4-(METHACRYLOLOXY)BENZOPHENONE

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Acute aquatic toxicity

LE(C)$_{50}$	0.1 < L(E)C50 ≤ 1
M factor (Acute)	1

METHACRYLIC ACID

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: 85 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: > 130 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 45 mg/l, Selenastrum capricornutum LOEC, 72 hours: 45 mg/l, Selenastrum capricornutum
Acute toxicity - microorganisms	EC_{50}, 17 hours: 270 mg/l, Pseudomonas putida

Chronic aquatic toxicity

Chronic toxicity - fish early life stage	NOEC, 35 days: 10 mg/l, Danio rerio (Zebrafish)
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 53 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability No data available.

Ecological information on ingredients.

N,N-DIMETHYLACRYLAMIDE

Stability (hydrolysis)	pH7 - Half-life : > 1 year @ 50°C
Biodegradation	Water - Degradation 0%: 28 days

ISOBORNYL ACRYLATE

Biodegradation	Water - Degradation 57%: 28 days

BENZYL METHACRYLATE

Biodegradation	Water - Degradation 74%: 28 days

METHYL METHACRYLATE

Biodegradation	Water - Degradation 94%: 14 days

DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE

Biodegradation	Water - Degradation < 20%: 28 days

METHACRYLIC ACID

Biodegradation	Water - Degradation 86%: 28 days

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not available.

Ecological information on ingredients.

N,N-DIMETHYLACRYLAMIDE

Bioaccumulative potential No data available.

DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE

Bioaccumulative potential BCF: 23 - 55, Cyprinus carpio (Common carp)

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

N,N-DIMETHYLACRYLAMIDE

Mobility No data available.

BENZYL METHACRYLATE

Adsorption/desorption coefficient - log Koc: 2.57 @ 25°C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

Ecological information on ingredients.

N,N-DIMETHYLACRYLAMIDE

Other adverse effects No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste disposal should be in accordance with existing Community, National and local regulations Empty containers may contain product residue; follow SDS and label warnings even after they have been emptied.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Waste class 08 04 09* waste adhesives and sealants containing organic solvents or other dangerous substances.

SECTION 14: Transport information

Road transport notes Applies only to inner containers >5 litres. See SP 375

Sea transport notes Applies only to inner containers >5 litres. See 2.10.2.7 of the IMDG code.

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Air transport notes Applies only to inner containers >5 litres. See SP A197 (375)

14.1. UN number

3082

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Isobornyl Acrylate)

14.3. Transport hazard class(es)

9

Transport labels

14.4. Packing group

III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user

EmS F-A, S-F

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

National regulations The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).

EU legislation Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Guidance Workplace Exposure Limits EH40.
CHIP for everyone HSG228.
Safety Data Sheets for Substances and Preparations.
Approved Classification and Labelling Guide (Sixth edition) L131.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

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SECTION 16: Other information

Revision date 11/10/2018

Revision 1

Hazard statements in full

H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H361f Suspected of damaging fertility.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.