



Adtech 9146 (Adtech DX8934)

Ureka Global Ltd

Chemwatch Hazard Alert Code: 4

Version No: 1.2

Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Issue Date: 20/01/2023

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S.REACH.GB.EN

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

1.1. Product Identifier

Product name	Adtech 9146 (Adtech DX8934)
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa) (contains methyl methacrylate)
Chemical formula	Not Applicable
Other means of identification	UFI:X1RS-Q03R-V00K-45XG

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

Sectors of Use	SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
	SU3	Industrial uses: Uses of substances as such or in preparations* at industrial sites
Relevant identified uses	Adhesives	
Uses advised against	Not Applicable	

1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	Ureka Global Ltd
Address	7 Flowers Hill Bristol BS4 5JJ United Kingdom
Telephone	+44 (0)117 971 1364
Fax	Not Available
Website	www.thenamethatsticks.com
Email	sales@thenamethatsticks.com

1.4. Emergency telephone number

Association / Organisation	Ureka Global Ltd
Emergency telephone numbers	+44 (0)117 971 1364 (Mon - Fri 09:00 - 16:00)
Other emergency telephone numbers	Not Available

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [1]	H225 - Flammable Liquids Category 2, H318 - Serious Eye Damage/Eye Irritation Category 1, H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H315 - Skin Corrosion/Irritation Category 2, H317 - Sensitisation (Skin) Category 1, H412 - Hazardous to the Aquatic Environment Long-Term Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567

2.2. Label elements

Hazard pictogram(s)	
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Signal word	Danger
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Hazard statement(s)

H225	Highly flammable liquid and vapour.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271	Use only a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P264	Wash all exposed external body areas thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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2.3. Other hazards

Skin contact may produce health damage*.

Cumulative effects may result following exposure*.

Possible respiratory sensitizer*.

methyl methacrylate	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
1,1,2-trichloroethane	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
cumene	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
methanol	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

SECTION 3 Composition / information on ingredients

3.1. Substances

See 'Composition on ingredients' in Section 3.2

3.2. Mixtures

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1.80-62-6	>40-<60	methyl methacrylate *	Flammable Liquids Category 2, Skin	Not Available	Not Available

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1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
2.201-297-1 3.607-035-00-6 4.Not Available			Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H225, H315, H317, H335 [2]		
1.79-41-4 2.201-204-4 3.607-088-00-5 4.Not Available	<5	<u>methacrylic acid</u>	Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 1A; H302, H312, H314 [2]	STOT SE 3; H335: C ≥ 1 %	Not Available
1.2530-83-8 2.219-784-2 3.Not Available 4.Not Available	>1-<5	<u>gamma-glycidoxypropyltrimethoxysilane</u>	Substances and Mixtures which in Contact with Water Emit Flammable Gases Category 2, Acute Toxicity (Oral) Category 3, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Reproductive Toxicity Category 1B, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 3; H261, H301, H312, H315, H319, H360D, H373, H412, EUH205 [1]	Not Available	Not Available
1.109-16-0 2.203-652-6 3.Not Available 4.Not Available	>1-<5	<u>triethylene glycol dimethacrylate</u>	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H315, H319, H317, H335, H411 [1]	Not Available	Not Available
1.80-15-9 2.201-254-7 3.617-002-00-8 4.Not Available	>0.5-<5	<u>cumyl hydroperoxide</u>	Organic Peroxides Type E, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 3, Skin Corrosion/Irritation Category 1B, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H242, H302, H312, H331, H314, H373, H411 [2]	Skin Corr. 1B; H314: C ≥ 10 % Skin Irrit. 2; H315: 3 % ≤ C < 10 % Eye Dam. 1; H318: 3 % ≤ C < 10 % Eye Irrit. 2; H319: 1 % ≤ C < 3 % STOT SE 3; H335: C < 10 %	Not Available
1.128-37-0 2.204-881-4 3.Not Available 4.Not Available	>0.5	<u>2,6-di-tert-butyl-4-methylphenol</u>	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Germ Cell Mutagenicity Category 2, Carcinogenicity Category 2, Reproductive Toxicity Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H302, H315, H319, H341, H351, H361d, H335, H410 [1]	Not Available	Not Available
1.79-00-5 2.201-166-9 3.602-014-00-8 4.Not Available	<0.5	<u>1,1,2-trichloroethane</u>	Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Carcinogenicity Category 2; H302, H312, H332, H351 [2]	*	Not Available
1.617-94-7 2.210-539-5 3.Not Available 4.Not Available	>0.0015-<0.25	<u>alpha.alpha-dimethylbenzyl alcohol</u>	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H302, H315, H319, H335, EUH066 [1]	Not Available	Not Available
1.98-82-8 2.202-704-5 3.601-024-00-X 4.Not Available	>0.0015-<0.25	<u>cumene</u> *	Flammable Liquids Category 3, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Aspiration Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H226, H335, H304, H411 [2]	Not Available	Not Available
1.67-56-1 2.200-659-6 3.603-001-00-X 4.Not Available	<0.25	<u>methanol</u> *	Flammable Liquids Category 2, Acute Toxicity (Oral) Category 3, Acute Toxicity (Dermal) Category 3, Acute Toxicity (Inhalation) Category 3, Specific Target Organ Toxicity - Single Exposure Category 1; H225, H301, H311, H331, H370 [2]	* STOT SE 1; H370: C ≥ 10 % STOT SE 2; H371: 3 % ≤ C < 10 %	Not Available

Legend:

1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties

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4.1. Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▶ Quickly remove all contaminated clothing, including footwear. ▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▶ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay.
Ingestion	<ul style="list-style-type: none"> ▶ For advice, contact a Poisons Information Centre or a doctor at once. ▶ Urgent hospital treatment is likely to be needed. ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Transport to hospital or doctor without delay. ▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus. ▶ Avoid giving milk or oils. ▶ Avoid giving alcohol.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

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

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- ▶ Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- ▶ Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ 50 mm Hg) should be intubated.
- ▶ Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- ▶ A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- ▶ Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- ▶ Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]

Treat symptomatically.

For methyl methacrylate:

Significant effects developing over a work-shift are not detected by symptomatology, blood pressure, respiratory function testing, haemoglobin and white cell count, urinalysis and blood chemistry. Effects may occur in high concentration exposure groups with regard to serum glucose and blood urea, nitrogen, cholesterol, albumin and total bilirubin values. Possible alterations occur in skin and nervous system symptomatology, urinalysis findings and serum triglycerides. Diagnostic signs taken as indicative of methyl methacrylate-induced local neurotoxicity include sensory nerve distal conduction velocities. These deficits appear to result from diffusion of the substance into neurons, lysis of membrane lipids and demyelination.

For acute and short term repeated exposures to methanol:

- Toxicity results from accumulation of formaldehyde/formic acid.
- Clinical signs are usually limited to CNS, eyes and GI tract. Severe metabolic acidosis may produce dyspnea and profound systemic effects which may become intractable. All symptomatic patients should have arterial pH measured. Evaluate airway, breathing and circulation.
- Stabilise obtunded patients by giving naloxone, glucose and thiamine.
- Decontaminate with Ipecac or lavage for patients presenting 2 hours post-ingestion. Charcoal does not absorb well; the usefulness of cathartic is not established.
- Forced diuresis is not effective; haemodialysis is recommended where peak methanol levels exceed 50 mg/dL (this correlates with serum bicarbonate levels below 18 mEq/L).
- Ethanol, maintained at levels between 100 and 150 mg/dL, inhibits formation of toxic metabolites and may be indicated when peak methanol levels exceed 20 mg/dL. An intravenous solution of ethanol in D5W is optimal.
- Folate, as leucovorin, may increase the oxidative removal of formic acid. 4-methylpyrazole may be an effective adjunct in the treatment. 8-Phenytoin may be preferable to diazepam for controlling seizure.

[Ellenhorn Barceloux: Medical Toxicology]

Methanol poisoning can be treated with fomepizole, or if unavailable, ethanol. Both drugs act to reduce the action of alcohol dehydrogenase on methanol by means of competitive inhibition. Ethanol, the active ingredient in alcoholic beverages, acts as a competitive inhibitor by more effectively binding and saturating the alcohol dehydrogenase enzyme in the liver, thus blocking the binding of methanol. Methanol is excreted by the kidneys without being converted into the very toxic metabolites formaldehyde and formic acid. Alcohol dehydrogenase instead enzymatically converts ethanol to acetaldehyde, a much less toxic organic molecule. Additional treatment may include sodium bicarbonate for metabolic acidosis, and hemodialysis or hemodiafiltration to remove methanol and formate from the blood. Folinic acid or folic acid is also administered to enhance the metabolism of formate.

BIOLOGICAL EXPOSURE INDEX - BEI

Determinant	Index	Sampling Time	Comment
1. Methanol in urine	15 mg/l	End of shift	B, NS
2. Formic acid in urine	80 mg/gm creatinine	Before the shift at end of workweek	B, NS

B: Background levels occur in specimens collected from subjects **NOT** exposed.

NS: Non-specific determinant - observed following exposure to other materials.

SECTION 5 Firefighting measures

5.1. Extinguishing media

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- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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5.3. Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear full body protective clothing with breathing apparatus.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Liquid and vapour are highly flammable. ▶ Severe fire hazard when exposed to heat, flame and/or oxidisers. ▶ Vapour may travel a considerable distance to source of ignition. Combustion products include: <ul style="list-style-type: none"> · carbon dioxide (CO₂) · nitrogen oxides (NO_x) · other pyrolysis products typical of burning organic material. May emit clouds of acrid smoke

SECTION 6 Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes.
Major Spills	<ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive.

6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage**7.1. Precautions for safe handling**

Safe handling	<p>The conductivity of this material may make it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid.</p> <p>Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.</p> <ul style="list-style-type: none"> ▶ Containers, even those that have been emptied, may contain explosive vapours. ▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. <p>· Electrostatic discharge may be generated during pumping - this may result in fire.</p> <p>· Ensure electrical continuity by bonding and grounding (earthing) all equipment.</p> <p>· Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec).</p> <ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ DO NOT allow clothing wet with material to stay in contact with skin
Fire and explosion protection	See section 5
Other information	<ul style="list-style-type: none"> ▶ Store below 38 deg. C. ▶ Store in original containers in approved flame-proof area. ▶ No smoking, naked lights, heat or ignition sources. ▶ DO NOT store in pits, depression, basement or areas where vapours may be trapped.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<p>For acrylates or methacrylates: Storage tanks and pipes should be made of stainless steel or aluminium. Although they do not corrode carbon steel, there is a risk of contamination if corrosion does occur.</p> <ul style="list-style-type: none"> ▶ Packing as supplied by manufacturer. ▶ Plastic containers may only be used if approved for flammable liquid. ▶ Check that containers are clearly labelled and free from leaks. ▶ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. ▶ For materials with a viscosity of at least 2680 cSt.
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Storage incompatibility	<p>For cumene:</p> <ul style="list-style-type: none"> ▶ reacts violently with strong acids, strong oxidisers, chlorosulfonic acid, nitric acid, oleum, oxygen ▶ unless inhibited can form unstable peroxides ▶ prolonged exposure to air forms the highly reactive oxidiser, cumyl hydroperoxide ▶ attacks rubber ▶ may generate electrostatic charges due to low conductivity <p>Methyl acrylate:</p> <ul style="list-style-type: none"> ▶ may polymerise explosively when heated above 21 C, or in light, or when when inhibitor concentrations fall to low levels ▶ storage containers may explode at elevated temperatures ▶ reacts violently with strong oxidisers ▶ is incompatible with strong acids, alkalis, aliphatic amines, alkanolamines, polyvinyl chloride, mercaptans, nitro- compounds, perborates, azides, ethers, ketones, aldehydes, nitrates, nitrites, reducing agents, acid anhydrides, acid chlorides, concentrated mineral acids, metal salts, strong bases, ▶ is usually stored below 10 deg C ▶ vapour may block vents and confined spaces after forming solid polymers <p>NOTE: Contact with alkali solutions will remove inhibitor and render material unstable on storage. Avoid oxygen content of less than 5%</p> <p>For alkyl aromatics:</p> <p>The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms. The most common and dominant one is the attack by oxidation at benzylic carbon as the intermediate formed is stabilised by resonance structure of the ring.</p> <ul style="list-style-type: none"> ▶ Following reaction with oxygen and under the influence of sunlight, a hydroperoxide at the alpha-position to the aromatic ring, is the primary oxidation product formed (provided a hydrogen atom is initially available at this position) - this product is often short-lived but may be stable dependent on the nature of the aromatic substitution; a secondary C-H bond is more easily attacked than a primary C-H bond whilst a tertiary C-H bond is even more susceptible to attack by oxygen ▶ Monoalkylbenzenes may subsequently form monocarboxylic acids; alkyl naphthalenes mainly produce the corresponding naphthalene carboxylic acids. ▶ Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents. ▶ Aromatics can react exothermically with bases and with diazo compounds. ▶ Contact with water liberates highly flammable gases <p>Epoxides:</p> <ul style="list-style-type: none"> ▶ are highly reactive with acids, bases, and oxidising and reducing agents. ▶ react, possibly violently, with anhydrous metal chlorides, ammonia, amines and group 1 metals. ▶ may polymerise in the presence of peroxides or heat - polymerisation may be violent ▶ may react, possibly violently, with water in the presence of acids and other catalysts. ▶ Stable under controlled storage conditions provided material contains adequate stabiliser / polymerisation inhibitor. ▶ Bulk storages may have special storage requirements ▶ WARNING: Gradual decomposition in strong, sealed containers may lead to a large pressure build-up and subsequent explosion. Rapid and violent polymerisation possible at temperatures above 32 deg c.
Hazard categories in accordance with Regulation (EC) No 1272/2008	P5a: Flammable Liquids, P5b: Flammable Liquids, P5c: Flammable Liquids
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	P5a Lower- / Upper-tier requirements: 10 / 50 P5b Lower- / Upper-tier requirements: 50 / 200 P5c Lower- / Upper-tier requirements: 5 000 / 50 000

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection**8.1. Control parameters**

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
methyl methacrylate	Dermal 13.67 mg/kg bw/day (Systemic, Chronic) Inhalation 208 mg/m ³ (Systemic, Chronic) Dermal 1.5 mg/cm ² (Local, Chronic) Inhalation 208 mg/m ³ (Local, Chronic) Dermal 1.5 mg/cm ² (Local, Acute) <i>Dermal 8.2 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 74.3 mg/m³ (Systemic, Chronic) *</i> <i>Dermal 1.5 mg/cm² (Local, Chronic) *</i> <i>Inhalation 104 mg/m³ (Local, Chronic) *</i> <i>Dermal 1.5 mg/cm² (Local, Acute) *</i>	0.94 mg/L (Water (Fresh)) 0.94 mg/L (Water - Intermittent release) 0.94 mg/L (Water (Marine)) 5.74 mg/kg sediment dw (Sediment (Fresh Water)) 1.47 mg/kg soil dw (Soil) 10 mg/L (STP)
methacrylic acid	Dermal 4.25 mg/kg bw/day (Systemic, Chronic) Inhalation 29.6 mg/m ³ (Systemic, Chronic) Inhalation 88 mg/m ³ (Local, Chronic) <i>Dermal 2.55 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 6.3 mg/m³ (Systemic, Chronic) *</i> <i>Inhalation 6.55 mg/m³ (Local, Chronic) *</i> <i>Dermal 1 % in mixture (weight basis) (Local, Acute) *</i>	0.82 mg/L (Water (Fresh)) 0.82 mg/L (Water - Intermittent release) 0.82 mg/L (Water (Marine)) 1.2 mg/kg soil dw (Soil) 10 mg/L (STP)
gamma-glycidioxypropyltrimethoxysilane	Dermal 10 mg/kg bw/day (Systemic, Chronic) Inhalation 70.5 mg/m ³ (Systemic, Chronic) <i>Dermal 5 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 17 mg/m³ (Systemic, Chronic) *</i> <i>Oral 5 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 26 400 mg/m³ (Systemic, Acute) *</i>	0.45 mg/L (Water (Fresh)) 0.045 mg/L (Water - Intermittent release) 0.45 mg/L (Water (Marine)) 1.6 mg/kg sediment dw (Sediment (Fresh Water)) 0.16 mg/kg sediment dw (Sediment (Marine)) 0.063 mg/kg soil dw (Soil) 8.2 mg/L (STP)
triethylene glycol dimethacrylate	Dermal 13.9 mg/kg bw/day (Systemic, Chronic) Inhalation 48.5 mg/m ³ (Systemic, Chronic) <i>Dermal 8.33 mg/kg bw/day (Systemic, Chronic) *</i>	0.016 mg/L (Water (Fresh)) 0.002 mg/L (Water - Intermittent release) 0.016 mg/L (Water (Marine))

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Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
	<i>Inhalation 14.5 mg/m³ (Systemic, Chronic) *</i> <i>Oral 8.33 mg/kg bw/day (Systemic, Chronic) *</i>	0.185 mg/kg sediment dw (Sediment (Fresh Water)) 0.018 mg/kg sediment dw (Sediment (Marine)) 0.027 mg/kg soil dw (Soil) 1.7 mg/L (STP)
cumyl hydroperoxide	Inhalation 6 mg/m ³ (Systemic, Chronic)	0.003 mg/L (Water (Fresh)) 0 mg/L (Water - Intermittent release) 0.031 mg/L (Water (Marine)) 0.023 mg/kg sediment dw (Sediment (Fresh Water)) 0.002 mg/kg sediment dw (Sediment (Marine)) 0.003 mg/kg soil dw (Soil) 0.35 mg/L (STP)
2,6-di-tert-butyl-4-methylphenol	Dermal 0.5 mg/kg bw/day (Systemic, Chronic) Inhalation 3.5 mg/m ³ (Systemic, Chronic) <i>Dermal 0.25 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 0.86 mg/m³ (Systemic, Chronic) *</i>	0.199 µg/L (Water (Fresh)) 0.02 µg/L (Water - Intermittent release) 1.99 µg/L (Water (Marine)) 99.6 µg/kg sediment dw (Sediment (Fresh Water)) 9.96 µg/kg sediment dw (Sediment (Marine)) 47.69 µg/kg soil dw (Soil) 0.17 mg/L (STP) 8.33 mg/kg food (Oral)
cumene	Dermal 15.4 mg/kg bw/day (Systemic, Chronic) Inhalation 100 mg/m ³ (Systemic, Chronic) Inhalation 250 mg/m ³ (Local, Acute) <i>Dermal 1.2 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 16.6 mg/m³ (Systemic, Chronic) *</i> <i>Oral 5 mg/kg bw/day (Systemic, Chronic) *</i>	0.035 mg/L (Water (Fresh)) 0.004 mg/L (Water - Intermittent release) 0.012 mg/L (Water (Marine)) 3.22 mg/kg sediment dw (Sediment (Fresh Water)) 0.322 mg/kg sediment dw (Sediment (Marine)) 0.624 mg/kg soil dw (Soil) 200 mg/L (STP)
methanol	Dermal 0.4 mg/kg bw/day (Systemic, Chronic) Inhalation 1.3 mg/m ³ (Systemic, Chronic) Inhalation 130 mg/m ³ (Local, Chronic) Dermal 20 mg/kg bw/day (Systemic, Acute) Inhalation 8.8 mg/m ³ (Systemic, Acute) Inhalation 130 mg/m ³ (Local, Acute) <i>Dermal 0.2 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 0.3 mg/m³ (Systemic, Chronic) *</i> <i>Oral 0.2 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 26 mg/m³ (Local, Chronic) *</i> <i>Dermal 4 mg/kg bw/day (Systemic, Acute) *</i> <i>Inhalation 2.2 mg/m³ (Systemic, Acute) *</i> <i>Oral 4 mg/kg bw/day (Systemic, Acute) *</i> <i>Inhalation 26 mg/m³ (Local, Acute) *</i>	20.8 mg/L (Water (Fresh)) 2.08 mg/L (Water - Intermittent release) 1540 mg/L (Water (Marine)) 77 mg/kg sediment dw (Sediment (Fresh Water)) 7.7 mg/kg sediment dw (Sediment (Marine)) 100 mg/kg soil dw (Soil) 100 mg/L (STP)

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	methyl methacrylate	Methyl methacrylate	50 ppm / 208 mg/m ³	416 mg/m ³ / 100 ppm	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	methacrylic acid	Methacrylic acid	20 ppm / 72 mg/m ³	143 mg/m ³ / 40 ppm	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	2,6-di-tert-butyl-4-methylphenol	2,6-Di-tert-butyl-p-cresol	10 mg/m ³	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs).	cumene	Cumene	25 ppm / 125 mg/m ³	250 mg/m ³ / 50 ppm	Not Available	Sk
UK Workplace Exposure Limits (WELs).	methanol	Methanol	200 ppm / 266 mg/m ³	333 mg/m ³ / 250 ppm	Not Available	Sk

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
methyl methacrylate	Not Available	Not Available	Not Available
methacrylic acid	Not Available	Not Available	Not Available
gamma-glycidioxypropyltrimethoxysilane	9.3 mg/m ³	100 mg/m ³	230 mg/m ³
triethylene glycol dimethacrylate	33 mg/m ³	360 mg/m ³	2,100 mg/m ³
cumyl hydroperoxide	0.15 ppm	1.6 ppm	9.7 ppm
1,1,2-trichloroethane	30 ppm	180 ppm	500 ppm
alpha,alpha-dimethylbenzyl alcohol	0.7 ppm	7.7 ppm	46 ppm
cumene	Not Available	Not Available	Not Available
methanol	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
methyl methacrylate	1,000 ppm	Not Available
methacrylic acid	Not Available	Not Available

Continued...

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Ingredient	Original IDLH	Revised IDLH
gamma-glycidoxypropyltrimethoxysilane	Not Available	Not Available
triethylene glycol dimethacrylate	Not Available	Not Available
cumyl hydroperoxide	Not Available	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available	Not Available
1,1,2-trichloroethane	100 ppm	Not Available
alpha,alpha-dimethylbenzyl alcohol	Not Available	Not Available
cumene	900 ppm	Not Available
methanol	6,000 ppm	Not Available


Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
gamma-glycidoxypropyltrimethoxysilane	E	≤ 0.1 ppm
triethylene glycol dimethacrylate	E	≤ 0.1 ppm
cumyl hydroperoxide	E	≤ 0.1 ppm
1,1,2-trichloroethane	E	≤ 0.1 ppm
alpha,alpha-dimethylbenzyl alcohol	E	≤ 0.01 mg/m ³

Notes:

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

8.2. Exposure controls

8.2.1. Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
8.2.2. Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Chemical goggles. ▶ Full face shield may be required for supplementary but never for primary protection of eyes. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. <p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p>
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] ▶ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. ▶ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ▶ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ▶ Non sparking safety or conductive footwear should be considered.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the: "Forsberg Clothing Performance Index".

Respiratory protection

Type BAX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or

Continued...

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The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:
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Material	CPI
BUTYL	C
BUTYL/NEOPRENE	C
NAT+NEOPR+NITRILE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
PE/EVAL/PE	C
PVA	C
PVC	C
PVDC/PE/PVDC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	C
VITON/NEOPRENE	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	BAX-AUS P2	-	BAX-PAPR-AUS / Class 1 P2
up to 50 x ES	-	BAX-AUS / Class 1 P2	-
up to 100 x ES	-	BAX-2 P2	BAX-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Not Available		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	120000
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	>65	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not explosive.
Flammability	Combustible.	Oxidising properties	Non oxidizing material according to EC criteria.
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Not Available	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	<ul style="list-style-type: none"> ▶ Stable under controlled storage conditions provided material contains adequate stabiliser / polymerisation inhibitor. ▶ Bulk storages may have special storage requirements ▶ WARNING: Gradual decomposition in strong, sealed containers may lead to a large pressure build-up and subsequent explosion. Rapid and violent polymerisation possible at temperatures above 32 deg c.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 Toxicological information**11.1. Information on toxicological effects**

Inhaled	<p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>Workers in plants manufacturing methyl methacrylate may experience headaches, pains in the extremities, tiredness, memory loss and sleep disturbance, with hormonal disturbance in women. Inhalation of the substance may cause low blood pressure, central nervous system depression, liver and kidney degeneration and death from failure of breathing.</p> <p>Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.</p> <p>Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.</p> <p>The acute toxicity of inhaled alkylbenzene is best described by central nervous system depression. These compounds may also act as general anaesthetics. Whole body symptoms of poisoning include light-headedness, nervousness, apprehension, a feeling of well-being, confusion, dizziness, drowsiness, ringing in the ears, blurred or double vision, vomiting and sensations of heat, cold or numbness, twitching, tremors, convulsions, unconsciousness, depression of breathing, and arrest.</p> <p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.</p> <p>If exposure to highly concentrated vapour atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and unless resuscitated - death.</p>
Ingestion	<p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p> <p>The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.</p> <p>At sufficiently high doses the material may be hepatotoxic (i.e. poisonous to the liver).</p> <p>Oral doses can produce low blood pressure, central nervous system depression and drowsiness, liver and kidney degeneration and death after cessation of breathing.</p> <p>Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.</p> <p>Accidental ingestion of the material may be damaging to the health of the individual.</p>
Skin Contact	<p>The material can produce chemical burns following direct contact with the skin.</p> <p>Reports of dental technicians, surgeons and manufacturing employees with direct skin contact with methyl methacrylate show altered sensation such as numbing and tingling sensation on the fingers, with mild local nerve damage.</p> <p>Toxic effects may result from skin absorption</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin may readily exceed vapour inhalation exposure.</p>
Eye	<p>The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p> <p>If applied to the eyes, this material causes severe eye damage.</p>
Chronic	<p>Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.</p> <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Strong evidence exists that this substance may cause irreversible mutations (though not lethal) even following a single exposure.</p> <p>Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information.</p> <p>Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.</p> <p>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</p> <p>Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>The epoxide group is an alkylating agent and thus destroys nucleotides within the cell. This may cause cancer.</p> <p>Prolonged and repeated exposures can cause liver and kidney damage, low blood pressure and heart attack. There may be increased deaths from colon or rectal cancer. Long term local injection may cause tumour of the local tissues.</p>

Adtech 9146 (Adtech DX8934)	TOXICITY	IRRITATION
	Not Available	Not Available
methyl methacrylate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >5000 mg/kg ^[2]	Eye (rabbit): 150 mg

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	Inhalation(Rat) LC50: 29.8 mg/l4h ^[1] Oral (Rat) LD50: 7872 mg/kg ^[2]	Skin (rabbit): 10000 mg/kg (open)
methacrylic acid	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 500 mg/kg ^[2]	Not Available
	Inhalation(Rat) LC50: 7.1 mg/l4h ^[2]	
	Oral (Rat) LD50: 1060 mg/kg ^[2]	
gamma-glycidioxypropyltrimethoxysilane	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 4247.9 mg/kg ^[2]	Not Available
	Inhalation(Rat) LC50: >5.3 mg/l4h ^[1]	
	Oral (Rat) LD50: 7010 mg/kg ^[2]	
triethylene glycol dimethacrylate	TOXICITY	IRRITATION
	dermal (mouse) LD50: >2000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral (Mouse) LD50; 10750 mg/kg ^[2]	Skin: no adverse effect observed (not irritating) ^[1]
cumyl hydroperoxide	TOXICITY	IRRITATION
	dermal (rat) LD50: 500 mg/kg ^[2]	Eye (rabbit): 1 mg
	Inhalation(Rat) LC50: 220 ppm4h ^[2]	Skin (rabbit): 500 mg - mild
	Oral (Rat) LD50: 382 mg/kg ^[2]	
2,6-di-tert-butyl-4-methylphenol	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye (rabbit): 100 mg/24h-moderate
	Oral (Rat) LD50: 890 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin (human): 500 mg/48h - mild
		Skin (rabbit):500 mg/48h-moderate
		Skin: no adverse effect observed (not irritating) ^[1]
1,1,2-trichloroethane	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 5377 mg/kg ^[2]	Eye (rabbit): 162 mg - mild
	Inhalation(Rat) LC50: ~11.1 mg/l4h ^[2]	Eye (rabbit): 500 mg/24h - mild
	Oral (Mouse) LD50; 378 mg/kg ^[2]	Skin (rabbit): 500 mg(open)-mild
		Skin (rabbit): 500 mg/24h - mild
		Skin (rabbit): 810 mg/24h-SEVERE
alpha,alpha-dimethylbenzyl alcohol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 4300 mg/kg ^[2]	Skin (rabbit): 500 mg/24h-SEVERE
	Oral (Rat) LD50: 1300 mg/kg ^[2]	
cumene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 2000 mg/kg ^[2]	Eye (rabbit): 500 mg/24h mild
	Inhalation(Rat) LC50: 39 mg/L4h ^[2]	Eye (rabbit): 86 mg mild
	Oral (Rat) LD50: 1400 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin (rabbit): 10 mg/24h mild
		Skin (rabbit):100 mg/24h moderate
methanol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 15800 mg/kg ^[2]	Eye (rabbit): 100 mg/24h-moderate
	Inhalation(Rat) LC50: 64000 ppm4h ^[2]	Eye (rabbit): 40 mg-moderate
	Oral (Rat) LD50: 5628 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin (rabbit): 20 mg/24 h-moderate
		Skin: no adverse effect observed (not irritating) ^[1]

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

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	<p>Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms.</p> <p>Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.</p> <p>Data demonstrate that during inhalation exposure, aromatic hydrocarbons undergo substantial partitioning into adipose tissues. Following cessation of exposure, the level of aromatic hydrocarbons in body fats rapidly declines. Thus, the aromatic hydrocarbons are unlikely to bioaccumulate in the body.</p>
METHYL METHACRYLATE	Inhalation (human) TCLo: 60 mg/m ³ (15 ppm) [* Manuf. Rohm & Haas]
METHACRYLIC ACID	<p>For acid mists, aerosols, vapours</p> <p>Test results suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. Mucous secretion may protect the cells of the airway from direct exposure to inhaled acidic mists (which also protects the stomach lining from the hydrochloric acid secreted there).</p> <p>For methacrylic acid (MAA): Animal testing suggests that MAA is rapidly absorbed if given by mouth or inhaled. MAA causes adverse effects at the site of application, depending on the concentration and frequency or time of exposure. The undiluted acid causes skin and eye corrosion and damage to the airway.</p> <p>The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.</p>
GAMMA-GLYCIDOPROPYLTRIMETHOXSILANE	<p>Low molecular weight alkoxysilane can cause irreversible lung damage when inhaled at low dose. It is not an obvious skin irritant. However, studies suggest with repeated occupational exposure, methoxysilane may cause damage to the eye and skin as well as cancer.</p> <p>For gamma-glycidopropyltrimethoxysilane (GPTMS): GPTMS undergoes rapid hydrolysis and the observed toxicity is expected to be due primarily to methanol and silanetriols. GPTMS is mildly irritating to the skin and eyes and is not a known skin sensitiser in humans or in animals. GPTMS has been shown to cause chromosomal damage and gene mutations.</p>
CUMYL HYDROPEROXIDE	<p>Bacterial cell mutagen Equivocal tumorigen by RTECS criteria</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>
2,6-DI-TERT-BUTYL-4-METHYLPHENOL	<p>* Degussa SDS Effects such as behavioral changes, reduction in body weight gain, and decrement in body weight have been observed after long-term administration of BHT to mice and rats. Toxic effects may be attributed more to BHT metabolites than to their parent compound, only a few studies have focused on their carcinogenicity and toxicity, and not only on that of BHT. The metabolite BHT-QM (syn: 2,6-di-tert-butyl-1,4-methylene-2,5-cyclohexadien-1-one, CAS RN: 2607-52-5) is a very reactive compound which is considered to play a significant role in hepatotoxicity, pneumotoxicity, and skin tumor promotion in mice. In addition, it was reported that another quinone derivative, BHT-OH(t)QM (syn 2-tert-butyl-6-(2-hydroxy-tert-butyl-4-methylene-2,5-cyclohexadien-1-one, CAS RN: 124755-19-7), is chemically more reactive than BHT-QM, and it has been recognized as the principal metabolite responsible for lung tumor promotion activity of BHT in mice. BHT has been reported to exert prooxidant effects under certain conditions. Thus, when BHT was added in excess to a wheat seedling medium in aerobic conditions, an enhancement of the generation rate of superoxide anion was observed. This is a reactive particle that may damage cellular structures at high concentrations. In addition, an increase in hepatic microsomal lipid peroxidation was observed in rats fed with diets containing 0.2% of BHT for 30 days. Some authors have reported that at high aeration rate, BHT can react with molecular oxygen rather than with the reactive oxygen species present, yielding BHT-phenoxy radical and superoxide anion. In addition, the phenolic radical itself may undergo redox recycling which can be a critical factor depending on the reductant involved. However, it has to be noted that BHT-phenoxy radical has been reported to be relatively stable. Furthermore, the potential reactivity of BHT-derived metabolites should be taken into account; some studies reported that not only BHT but also its metabolites, such as BHT-Q and BHT-QM, can act as prooxidant. As BHT undergoes several reactions during biotransformation, a large number of intermediate metabolites have been identified. However, their nature and concentration depend on the environmental conditions and on the animal species. Although the changes undergone by BHT during in vivo digestion processes have not been studied, after submission of a fluid deep-frying fat containing BHT and BHT-QM to an in vitro gastrointestinal digestion model, both these were detected in the digested samples. These results indicate that BHT and its toxic metabolite could remain bioaccessible for intestinal absorption. Studies concerning BHT metabolism have shown that, unlike other synthetic antioxidants, BHT is a potent inducer of the microsomal monooxygenase system and its major route of degradation is oxidation catalyzed by cytochrome P450. Studies have reported potential toxicity derived from the ingestion or administration of BHT. As for acute oral toxicity, although this is considered low in animals, it must be noted that 2 clinical cases were reported in patients who suffered acute neurotoxicity and gastritis after ingesting a high dose of BHT (4 and 80 g without medical prescription) to cure recurrent genital herpes. Regarding short-term subchronic toxicity studies, it has been reported that BHT causes dose-related increase in the incidence and severity of toxic nephrosis in mice, nephrotoxicity and pneumotoxicity in rats, and in chicken a marked congestion of the liver and kidney, as well as diffuse enlargement of the liver with rounded borders and rupture with hemorrhaging. It has to be noted that the EFSA Panel (2012) pointed out certain inconsistencies in the findings obtained from the short-term and subchronic toxicity studies. Several genotoxicity studies on BHT concluded that BHT does not represent a genotoxic risk, because most of the studies carried out to that date had shown BHT was not able to induce mutations or to damage deoxyribonucleic acid (DNA). Nevertheless, it must be mentioned that other studies reported contrary results. The effect of BHT and 7 of its metabolites on in vitro DNA cleavage was studied and the metabolites BHT-Q (syn: 2,6-di-tert-butyl-2,5-cyclohexadiene-1,4-dione, CAS RN: 719-22-2), BHT-CHO (syn: 3,5-di-tert-butyl-4-hydroxybenzaldehyde, CAS RN: 1620-98-0 and BHT-OOH (syn: 2,6-di-tert-butyl-4-methyl-4-hydroperoxy-2,5-cyclohexadien-1-one, CAS RN: 6485-57-0) were able to cleave DNA. The Panel on Food Additives and Nutrient Sources Added to Food of the European Food Safety Authority (EFSA) recognized that these positive genotoxicity results may be due to the prooxidative chemistry of BHT, which gives rise to reactive metabolites. Some studies addressed the carcinogenicity and chronic toxicity of BHT and its metabolites in rodents with contradictory results. Thus, mice-fed dietary BHT for a year developed marked hyperplasia of the hepatic bile ducts with an associated subacute cholangitis. Moreover, after 104 wk of administration of BHT, the formation of hepatocellular tumors in male mice was observed. After 10 months of feeding mice with a diet containing different amounts of BHT, an increased incidence of liver tumors in male, but not female, animals was also reported. Several studies have demonstrated the potential of BHT to act either as a tumor promoter or as a tumor suppressor, modulating the carcinogenicity of some well-known carcinogens. Barbara Nieva-Echevarria et al: Comprehensive reviews in Food Science and Food Safety, Vol 14, Dec 2014 http://onlinelibrary.wiley.com/doi/10.1111/1541-4337.12121/pdf</p> <p>for bridged alkyl phenols:</p> <p>Acute toxicity: Acute oral and dermal toxicity data are available for all but two of the substances in the group. The data show that acute toxicity of these substances is low. The testing for acute toxicity spans five decades</p> <p>Repeat dose toxicity: Repeat dose studies on the members of this category include both subchronic and chronic exposures. Data show that acute toxicity following oral and topical use of hindered phenols is low. They are not proven to cause mutations. However, long term use may affect the liver, thyroid, kidney and lymph nodes.</p> <p>NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.</p>
1,1,2-TRICHLOROETHANE	<p>Disinfection byproducts (DBPs) are formed when disinfectants such as chlorine, chloramines and ozone react with organic and inorganic matter in water. Animal studies have shown that some DBPs cause cancer. To date, several hundred DBPs have been identified.</p> <p>Numerous haloalkanes and haloalkenes have been tested for cancer-causing and mutation-causing activities.</p> <p>For 1,1,2-trichloroethane (TCE): TCE is irritating to the skin, eyes, upper airway, and stomach. There is no available information</p>

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	regarding skin sensitisation. In humans, TCE was reported to have narcotic effects at low concentrations, and irritate the conjunctiva, the airway lining and the skin. Reproductive effector
ALPHA,ALPHA-DIMETHYLBENZYL ALCOHOL	<p>For terpenoid tertiary alcohols and their related esters: These substances are metabolised in the liver and excreted primarily in the urine and faeces. A portion is also excreted unchanged. They have low short term toxicity when ingested or applied on the skin. A member or analogue of a group of aliphatic and alicyclic terpenoid tertiary alcohols and structurally related substances generally regarded as safe. Animal testing suggests that the acute toxicity of tertiary alcohols and related esters is extremely low. Genetic toxicity: Tests on bacterial and animal cells showed no evidence of genetic toxicity or potential to cause mutations. The aryl alkyl alcohol (AAA) fragrance ingredients have diverse chemical structures, with similar metabolic and toxicity profiles. The AAA fragrances demonstrate low acute and subchronic toxicity by skin contact and swallowing. At concentrations likely to be encountered by consumers, AAA fragrance ingredients are non-irritating to the skin.</p>
CUMENE	<p>Cumene is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in experimental animals. Cumene caused tumours at several tissue sites, including lung and liver in mice and kidney in male rats. Several proposed mechanisms of carcinogenesis support the relevance to humans of lung and liver tumours in experimental animals. Similar metabolic pathways. There is also evidence that cumene is genotoxic in some tissues, based on findings of DNA damage in rodent lung and liver. Furthermore, mutations of the K-ras oncogene and p53 tumor-suppressor gene observed in cumene-induced lung tumours in mice, along with altered expression of many other genes, resemble molecular alterations found in human lung and other cancers. The relevance of the kidney tumors to cancer in humans is uncertain; there is evidence that a species-specific mechanism not relevant to humans contributes to their induction, but it is possible that other mechanisms relevant to humans, such as genotoxicity, may also contribute to kidney-tumour formation in male rats. For aromatic terpenes: p-cymene and cumene have low toxic potential and are excreted in the urine. At very high doses in animal testing, inco-ordination, damage to the kidneys and lung inflammation, with decrease in thymus weight, occurred. This group of substances does not seem to cause cancer, genetic damage or developmental toxicity and has low potential for reproductive toxicity. Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen [National Toxicology Program: U.S. Dep. of Health & Human Services 2002]</p> <p>WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.</p>
Adtech 9146 (Adtech DX8934) & METHYL METHACRYLATE & METHACRYLIC ACID & TRIETHYLENE GLYCOL DIMETHACRYLATE & CUMYL HYDROPEROXIDE & 2,6-DI-TERT-BUTYL-4-METHYLPHENOL & ALPHA,ALPHA-DIMETHYLBENZYL ALCOHOL & CUMENE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.
Adtech 9146 (Adtech DX8934) & METHYL METHACRYLATE & TRIETHYLENE GLYCOL DIMETHACRYLATE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.
Adtech 9146 (Adtech DX8934) & METHYL METHACRYLATE	MMA is absorbed after inhalation, oral intake and less readily through the skin. Following inhalation it is partly deposited in the airway where it is metabolised by local enzymes. Acute toxicity is low.
Adtech 9146 (Adtech DX8934) & GAMMA-GLYCIDOXYPROPYLTRIMETHOXSILANE	Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) share many common characteristics with respect to animal toxicology. One such oxirane is ethyloxirane; data presented here may be taken as representative. For 1,2-butylene oxide (ethyloxirane): In animal testing, ethyloxirane increased the incidence of tumours of the airways in animals exposed via inhalation. However, tumours were not observed in mice chronically exposed via skin. Two structurally related substances, oxirane (ethylene oxide) and methylloxirane (propylene oxide), which are also direct-acting alkylating agents, have been classified as causing cancer.
METHYL METHACRYLATE & METHACRYLIC ACID	Where no "official" classification for acrylates and methacrylates exists, there have been cautious attempts to create classifications in the absence of contrary evidence. For example Monoalkyl or monoarylestere of acrylic acids should be classified as R36/37/38 and R51/53 Monoalkyl or monoaryl estere of methacrylic acid should be classified as R36/37/38 Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH ₂ =CHCOO or CH ₂ =C(CH ₃)COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing. This position has now been revised and acrylates and methacrylates are no longer <i>de facto</i> carcinogens.
METHYL METHACRYLATE & 2,6-DI-TERT-BUTYL-4-METHYLPHENOL & 1,1,2-TRICHLOROETHANE	The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
METHACRYLIC ACID & 1,1,2-TRICHLOROETHANE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
METHACRYLIC ACID & CUMYL HYDROPEROXIDE & 2,6-DI-TERT-BUTYL-4-METHYLPHENOL & CUMENE & METHANOL	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
1,1,2-TRICHLOROETHANE & ALPHA,ALPHA-DIMETHYLBENZYL ALCOHOL	The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.

Acute Toxicity	✘	Carcinogenicity	✘
Skin Irritation/Corrosion	✔	Reproductivity	✘
Serious Eye Damage/Irritation	✔	STOT - Single Exposure	✔
Respiratory or Skin sensitisation	✔	STOT - Repeated Exposure	✘
Mutagenicity	✘	Aspiration Hazard	✘

Legend: ✘ – Data either not available or does not fill the criteria for classification
✔ – Data available to make classification

11.2 Information on other hazards

11.2.1. Endocrine Disruption Properties

Continued...

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Not Available

11.2.2. Other Information

See Section 11.1

SECTION 12 Ecological information

12.1. Toxicity

Adtech 9146 (Adtech DX8934)	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
methyl methacrylate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC0(ECx)	48h	Crustacea	48mg/l	1
	EC50	72h	Algae or other aquatic plants	>110mg/l	2
	EC50	48h	Crustacea	69mg/l	1
	LC50	96h	Fish	>79mg/l	2
	EC50	96h	Algae or other aquatic plants	170mg/l	1
methacrylic acid	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	96h	Algae or other aquatic plants	0.38mg/l	1
	EC50	72h	Algae or other aquatic plants	14mg/l	2
	EC50	48h	Crustacea	>130mg/l	1
	LC50	96h	Fish	85mg/l	2
gamma-glycidioxypropyltrimethoxysilane	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	>420mg/l	2
	EC50	48h	Crustacea	473mg/l	2
	NOEC(ECx)	96h	Fish	1.5mg/l	2
	LC50	96h	Fish	4.9mg/l	2
triethylene glycol dimethacrylate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	72.8mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	18.6mg/l	2
	LC50	96h	Fish	16.4mg/l	2
	cumyl hydroperoxide	Endpoint	Test Duration (hr)	Species	Value
NOEC(ECx)		96h	Fish	<0.64mg/l	4
EC50		48h	Crustacea	18.84mg/l	2
LC50		96h	Fish	3.9mg/l	2
2,6-di-tert-butyl-4-methylphenol	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1344h	Fish	220-2800	7
	EC50	72h	Algae or other aquatic plants	>0.42mg/l	1
	ErC50	72h	Algae or other aquatic plants	>0.42mg/l	1
	EC50	48h	Crustacea	>0.17mg/l	2
	EC0(ECx)	48h	Crustacea	>=0.31mg/l	1
	LC50	96h	Fish	>0.5mg/l	Not Available
1,1,2-trichloroethane	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	0.7-2.6	7
	NOEC(ECx)	24h	Crustacea	1mg/l	1
	EC50	72h	Algae or other aquatic plants	54-60.6mg/l	4
	EC50	48h	Crustacea	18mg/l	1
	LC50	96h	Fish	35-47mg/l	4
	EC50	96h	Algae or other aquatic plants	60mg/l	1
alpha,alpha-dimethylbenzyl alcohol	Endpoint	Test Duration (hr)	Species	Value	Source

Continued...

	Not Available	Not Available	Not Available	Not Available	Not Available
cumene	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	96h	Crustacea	0.4mg/l	1
	EC50	72h	Algae or other aquatic plants	1.29mg/l	2
	EC50	48h	Crustacea	4mg/l	1
	LC50	96h	Fish	2.7mg/l	2
methanol	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	720h	Fish	0.007mg/L	4
	EC50	48h	Crustacea	>10000mg/l	2
	LC50	96h	Fish	290mg/l	2
	EC50	96h	Algae or other aquatic plants	14.11-20.623mg/l	4
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For Aromatic Substances Series:

Environmental Fate: Large, molecularly complex polycyclic aromatic hydrocarbons, or PAHs, are persistent in the environment longer than smaller PAHs.

Atmospheric Fate: PAHs are "semi-volatile substances" which can move between the atmosphere and the Earth's surface in repeated, temperature-driven cycles of deposition and volatilization. Terrestrial Fate: BTEX compounds have the potential to move through soil and contaminate ground water, and their vapors are highly flammable and explosive.

For Methyl Methacrylate (MMA):

Koc: 87; Log Pow: 1.83; Half-life (hr) air: 2.7-3; Half-life (hr) H₂O surface water: 6.3-336; Henry's atm m³/mol: 3.24E-04; BOD₅: 0.14; log BCF: 0.55.

Environmental Fate: The environmental behavior of MMA is determined by its range of 1.1-9.7 hours atmospheric half-life and moderate volatility. MMA is readily biodegradable.

Significant environmental findings are limited. Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) exhibit common characteristics with respect to environmental fate and ecotoxicology. One such oxirane is ethyloxirane and data presented here may be taken as representative.

For 1,2-Butylene oxide (Ethyloxirane):

log Kow values of 0.68 and 0.86. BAF and BCF : 1 to 17 L./kg.

Aquatic Fate - Ethyloxirane is highly soluble in water and has a very low soil-adsorption coefficient, which suggests that, if released to water, adsorption of ethyloxirane to sediment and suspended solids is not expected.

Substances containing unsaturated carbons are ubiquitous in indoor environments. They result from many sources (see below). Most are reactive with environmental ozone and many produce stable products which are thought to adversely affect human health. The potential for surfaces in an enclosed space to facilitate reactions should be considered.

Drinking Water Standards: hydrocarbon total: 10 ug/l (UK max.).

For Hydrocarbons: log Kow 1. BCF~10.

For Aromatics: log Kow 2-3.

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
methyl methacrylate	LOW	LOW
methacrylic acid	LOW	LOW
gamma-glycidoxypropyltrimethoxysilane	HIGH	HIGH
triethylene glycol dimethacrylate	LOW	LOW
cumyl hydroperoxide	LOW (Half-life = 56 days)	LOW (Half-life = 5.42 days)
2,6-di-tert-butyl-4-methylphenol	HIGH	HIGH
1,1,2-trichloroethane	HIGH (Half-life = 730 days)	MEDIUM (Half-life = 81.5 days)
alpha, alpha-dimethylbenzyl alcohol	HIGH	HIGH
cumene	HIGH	HIGH
methanol	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
methyl methacrylate	LOW (BCF = 6.6)
methacrylic acid	LOW (LogKOW = 0.93)
gamma-glycidoxypropyltrimethoxysilane	LOW (LogKOW = -0.9152)
triethylene glycol dimethacrylate	LOW (LogKOW = 1.88)
cumyl hydroperoxide	LOW (BCF = 35.5)
2,6-di-tert-butyl-4-methylphenol	HIGH (BCF = 2500)
1,1,2-trichloroethane	LOW (BCF = 17)
alpha, alpha-dimethylbenzyl alcohol	LOW (LogKOW = 1.9466)
cumene	LOW (BCF = 35.5)

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Ingredient	Bioaccumulation
methanol	LOW (BCF = 10)

12.4. Mobility in soil

Ingredient	Mobility
methyl methacrylate	LOW (KOC = 10.14)
methacrylic acid	HIGH (KOC = 1.895)
gamma-glycidoxypropyltrimethoxysilane	LOW (KOC = 90.22)
triethylene glycol dimethacrylate	LOW (KOC = 10)
cumyl hydroperoxide	LOW (KOC = 2346)
2,6-di-tert-butyl-4-methylphenol	LOW (KOC = 23030)
1,1,2-trichloroethane	LOW (KOC = 67.7)
alpha,alpha-dimethylbenzyl alcohol	LOW (KOC = 35.72)
cumene	LOW (KOC = 817.2)
methanol	HIGH (KOC = 1)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✘	✘	✘
vPvB	✘	✘	✘
PBT Criteria fulfilled?	No		
vPvB	No		

12.6. Endocrine Disruption Properties

Not Available

12.7. Other adverse effects

One or more ingredients within this SDS has the potential of causing ozone depletion and/or photochemical ozone creation.

SECTION 13 Disposal considerations

13.1. Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. Otherwise: <ul style="list-style-type: none"> ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Recycle wherever possible. ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
	Waste treatment options
Sewage disposal options	Not Available

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	*3YE

Land transport (ADR-RID)

14.1. UN number	1133
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Adtech 9146 (Adtech DX8934)

14.2. UN proper shipping name	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa) (contains methyl methacrylate)	
14.3. Transport hazard class(es)	Class	3
	Subrisk	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Hazard identification (Kemler)	33
	Classification code	F1
	Hazard Label	3
	Special provisions	640C
	Limited quantity	5 L
	Tunnel Restriction Code	2 (D/E)

Air transport (ICAO-IATA / DGR)

14.1. UN number	1133	
14.2. UN proper shipping name	Adhesives containing flammable liquid (contains methyl methacrylate)	
14.3. Transport hazard class(es)	ICAO/IATA Class	3
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	3L
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	A3
	Cargo Only Packing Instructions	364
	Cargo Only Maximum Qty / Pack	60 L
	Passenger and Cargo Packing Instructions	353
	Passenger and Cargo Maximum Qty / Pack	5 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y341
	Passenger and Cargo Limited Maximum Qty / Pack	1 L

Sea transport (IMDG-Code / GGVSee)

14.1. UN number	1133	
14.2. UN proper shipping name	ADHESIVES containing flammable liquid (contains methyl methacrylate)	
14.3. Transport hazard class(es)	IMDG Class	3
	IMDG Subrisk	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	F-E, S-D
	Special provisions	Not Applicable
	Limited Quantities	5 L

Inland waterways transport (ADN)

14.1. UN number	1133	
14.2. UN proper shipping name	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa) (contains methyl methacrylate)	
14.3. Transport hazard class(es)	3	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	F1
	Special provisions	640C
	Limited quantity	5 L
	Equipment required	PP, EX, A
	Fire cones number	1

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

Not Applicable

14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
methyl methacrylate	Not Available
methacrylic acid	Not Available
gamma-glycidioxypropyltrimethoxysilane	Not Available
triethylene glycol dimethacrylate	Not Available
cumyl hydroperoxide	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available
1,1,2-trichloroethane	Not Available
alpha,alpha-dimethylbenzyl alcohol	Not Available
cumene	Not Available
methanol	Not Available

14.9. Transport in bulk in accordance with the ICG Code

Product name	Ship Type
methyl methacrylate	Not Available
methacrylic acid	Not Available
gamma-glycidioxypropyltrimethoxysilane	Not Available
triethylene glycol dimethacrylate	Not Available
cumyl hydroperoxide	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available
1,1,2-trichloroethane	Not Available
alpha,alpha-dimethylbenzyl alcohol	Not Available
cumene	Not Available
methanol	Not Available

SECTION 15 Regulatory information**15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****methyl methacrylate is found on the following regulatory lists**

Great Britain GB mandatory classification and labelling list (GB MCL)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

UK REACH grandfathered registrations notified substances list
UK Workplace Exposure Limits (WELs).

methacrylic acid is found on the following regulatory lists

Great Britain GB mandatory classification and labelling list (GB MCL)
UK REACH grandfathered registrations notified substances list

UK Workplace Exposure Limits (WELs).

gamma-glycidioxypropyltrimethoxysilane is found on the following regulatory lists

UK REACH grandfathered registrations notified substances list

triethylene glycol dimethacrylate is found on the following regulatory lists

UK REACH grandfathered registrations notified substances list

cumyl hydroperoxide is found on the following regulatory lists

Great Britain GB mandatory classification and labelling list (GB MCL)

2,6-di-tert-butyl-4-methylphenol is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

UK REACH grandfathered registrations notified substances list
UK Workplace Exposure Limits (WELs).

1,1,2-trichloroethane is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB mandatory classification and labelling list (GB MCL)

Great Britain GB PIC List of Chemicals - Part 1 - Chemicals subject to export notification procedure (referred to in Article 8 of the PIC Regulation)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

alpha,alpha-dimethylbenzyl alcohol is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

cumene is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB mandatory classification and labelling (GB MCL) technical reports
Great Britain GB mandatory classification and labelling list (GB MCL)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
UK Workplace Exposure Limits (WELs).

methanol is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB mandatory classification and labelling list (GB MCL)

UK REACH grandfathered registrations notified substances list
UK Workplace Exposure Limits (WELs).

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Information according to 2012/18/EU (Seveso III):

Seveso Category	
	P5a, P5b, P5c

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
methyl methacrylate	80-62-6	607-035-00-6	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 2; Skin Irrit. 2; Skin Sens. 1; STOT SE 3	GHS07; GHS02; Dgr	H225; H315; H317; H335
2	Flam. Liq. 2; Skin Irrit. 2; Skin Sens. 1B; STOT SE 3; Acute Tox. 5; Aquatic Acute 3; STOT SE 3; Eye Irrit. 2; Resp. Sens. 1; Repr. 2; STOT RE 1; Aquatic Chronic 3; Acute Tox. 3	GHS02; Dgr; GHS08; GHS06	H225; H315; H317; H335; H402; H370; H319; H334; H361; H372; H228; H412; H301

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
methacrylic acid	79-41-4	607-088-00-5	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; Acute Tox. 4; STOT SE 3	GHS05; GHS06; Dgr	H302; H311; H314; H332; H335
2	Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; STOT SE 3; Aquatic Acute 3; Acute Tox. 3; STOT SE 3; STOT RE 1; Acute Tox. 3; Muta. 2; Carc. 1B	GHS05; GHS06; Dgr	H311; H314; H332; H335; H402; H318; H301; H336; H372

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
gamma-glycidioxypropyltrimethoxysilane	2530-83-8	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3	GHS07; Wng	H315; H319; H335
2	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3	GHS07; Wng	H315; H319; H335
1	Eye Dam. 1	GHS05; Dgr	H318
2	Eye Dam. 1; Muta. 2; Acute Tox. 4; Aquatic Chronic 2; Skin Irrit. 2; STOT SE 3; Acute Tox. 3; Acute Tox. 4; Repr. 2; Asp. Tox. 1; Skin Sens. 1B	GHS05; Dgr; GHS08; GHS02; GHS06; GHS09	H318; H341; H226; H301; H411; H315; H335; H331; H312; H361; H317

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
triethylene glycol dimethacrylate	109-16-0	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Not Classified	Not Available	Not Available
2	Skin Sens. 1B; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; Resp. Sens. 1	GHS08; Dgr	H317; H315; H319; H335; H334

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
cumyl hydroperoxide	80-15-9	617-002-00-8	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Org. Perox. E; Acute Tox. 4; Acute Tox. 4; Skin Corr. 1B; Acute Tox. 3; STOT RE 2; Aquatic Chronic 2	GHS08; GHS02; GHS05; GHS09; GHS06; Dgr	H242; H302; H312; H314; H331; H373; H411

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

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Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
2	Org. Perox. E; Acute Tox. 4; Skin Corr. 1B; Aquatic Chronic 2; Skin Sens. 1B; Eye Dam. 1; Muta. 2; Acute Tox. 3; STOT SE 3; STOT SE 3; Acute Tox. 2; STOT SE 2; STOT RE 1; Flam. Liq. 3	GHS03; GHS08; GHS05; GHS09; GHS06; Dgr; GHS02	H242; H302; H314; H411; H317; H318; H341; H311; H335; H336; H330; H371; H372; H226; H400

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
2,6-di-tert-butyl-4-methylphenol	128-37-0	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Aquatic Chronic 1	GHS09; Wng	H410
2	Aquatic Chronic 1; Aquatic Acute 1; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; Acute Tox. 4; STOT SE 3; STOT RE 2; Muta. 1B; Repr. 2; Skin Sens. 1; STOT SE 1; Resp. Sens. 1; Carc. 1B; Acute Tox. 3	GHS09; GHS08; GHS05; Dgr; GHS03; GHS02; GHS06	H410; H400; H315; H319; H335; H373; H340; H361; H317; H370; H311; H331; H350; H301; H222; H229
1	Aquatic Acute 1; Aquatic Chronic 1	GHS09; Wng	H410
2	Aquatic Acute 1; Aquatic Chronic 1	GHS09; Wng	H410

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
1,1,2-trichloroethane	79-00-5	602-014-00-8	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4; Acute Tox. 4; Acute Tox. 4; Carc. 2	GHS08; Wng	H302; H312; H332; H351
2	Acute Tox. 4; Acute Tox. 4; Acute Tox. 3; Aquatic Chronic 3; Skin Irrit. 2; Eye Irrit. 2; Carc. 1B	GHS08; GHS06; Dgr	H302; H312; H331; H412; H315; H319; H350

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
alpha,alpha-dimethylbenzyl alcohol	617-94-7	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2	GHS07; Wng	H302; H315; H319
2	Flam. Liq. 4; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; Acute Tox. 4; Acute Tox. 4	GHS07; Wng	H227; H302; H315; H319; H335; H312; H332

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
cumene	98-82-8	601-024-00-X	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 3; Asp. Tox. 1; STOT SE 3; Aquatic Chronic 2	GHS08; GHS02; GHS09; Dgr	H226; H304; H335; H411
2	Flam. Liq. 3; Asp. Tox. 1; STOT SE 3; Aquatic Chronic 2; Acute Tox. 4; STOT SE 3; Carc. 2; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; STOT RE 1; STOT SE 3	GHS08; GHS02; GHS09; Dgr	H226; H304; H335; H411; H332; H370; H351; H302; H315; H319; H372; H336

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
methanol	67-56-1	603-001-00-X	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 2; Acute Tox. 3; Acute Tox. 3; Acute Tox. 3; STOT SE 1	GHS08; GHS02; GHS06; Dgr	H225; H301; H311; H331; H370
2	Flam. Liq. 2; Acute Tox. 3; Acute Tox. 3; STOT SE 1; Eye Irrit. 2; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; Skin Corr. 1A; STOT SE 3; STOT SE 3; Acute Tox. 2; Carc. 2	GHS08; GHS06; Dgr; GHS01; GHS05; GHS09	H301; H311; H370; H319; H335; H360; H372; H315; H336; H340; H350; H400; H410; H330; H224

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

National Inventory Status

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes

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National Inventory	Status
Canada - NDSL	No (methyl methacrylate; methacrylic acid; gamma-glycidioxypropyltrimethoxysilane; triethylene glycol dimethacrylate; cumyl hydroperoxide; 1,1,2-trichloroethane; alpha,alpha-dimethylbenzyl alcohol; cumene; methanol)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (gamma-glycidioxypropyltrimethoxysilane; alpha,alpha-dimethylbenzyl alcohol)
Vietnam - NCI	Yes
Russia - FBEPH	No (alpha,alpha-dimethylbenzyl alcohol)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	20/01/2023
Initial Date	21/01/2023

Full text Risk and Hazard codes

H222	Extremely flammable aerosol.
H224	Extremely flammable liquid and vapour.
H226	Flammable liquid and vapour.
H227	Combustible liquid.
H228	Flammable solid.
H229	Pressurised container: May burst if heated.
H242	Heating may cause a fire.
H261	In contact with water releases flammable gases.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H360D	May damage the unborn child.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H370	Causes damage to organs.
H371	May cause damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

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Version	Date of Update	Sections Updated
0.2	20/01/2023	Classification, Ingredients, Physical Properties

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection
 EN 340 Protective clothing
 EN 374 Protective gloves against chemicals and micro-organisms
 EN 13832 Footwear protecting against chemicals
 EN 133 Respiratory protective devices

Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average
 PC – STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit.
 IDLH: Immediately Dangerous to Life or Health Concentrations
 ES: Exposure Standard
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index
 AIIC: Australian Inventory of Industrial Chemicals
 DSL: Domestic Substances List
 NDSL: Non-Domestic Substances List
 IECSC: Inventory of Existing Chemical Substance in China
 EINECS: European INventory of Existing Commercial chemical Substances
 ELINCS: European List of Notified Chemical Substances
 NLP: No-Longer Polymers
 ENCS: Existing and New Chemical Substances Inventory
 KECI: Korea Existing Chemicals Inventory
 NZIoC: New Zealand Inventory of Chemicals
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 TSCA: Toxic Substances Control Act
 TCSI: Taiwan Chemical Substance Inventory
 INSQ: Inventario Nacional de Sustancias Químicas
 NCI: National Chemical Inventory
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Flammable Liquids Category 2, H225	Expert judgement
Serious Eye Damage/Eye Irritation Category 1, H318	Minimum classification
Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , H335	Calculation method
Skin Corrosion/Irritation Category 2, H315	Minimum classification
Sensitisation (Skin) Category 1, H317	Calculation method
Hazardous to the Aquatic Environment Long-Term Hazard Category 3, H412	Calculation method

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