

1. IDENTIFICATION OF THE SUBSTRATE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name/designation: Caltech Metprime Detail

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

Relevant identified uses: Pre-treatment agent

Recommended restrictions: Reserved for industrial and professional use.

1.3 Supplier details

Alumasc Building Products Ltd
White House Works, Bold Road, Sutton, St Helens, Merseyside, United Kingdom, WA9 4JG
Tel: +44 (0)1744 648400
e-mail: technical@alumascroofing.com

1.4 Emergency telephone number

Association / Organisation: National Poisons Information Service
Emergency telephone numbers: 0344 892 0111 (Healthcare professionals only)
Other emergency telephone numbers Alumasc Building Products: +44 17 4464 8400
(Mon-Thurs – 08.30-17.00 Fri – 08.30-16.00)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP][1]:

H225 - Flammable Liquids Category 2, H302 - Acute Toxicity (Oral) Category 4, H317 - Sensitisation (Skin) Category 1, H319 - Serious Eye Damage/Eye Irritation Category 2, H334 - Sensitisation (Respiratory) Category 1, H336 - Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, H351 - Carcinogenicity Category 2

2.2 Label elements

Hazard pictures:



Signal word:

Danger.

Hazardous component(s) to be indicated on label:

Material contains ethyl acetate, methyl ethyl ketone, toluene diisocyanate trimethylolpropane diethylene glycol, 4-isocyanatophenol phosphorothioate (3:1).

Hazard statements:

H225: Highly flammable liquid and vapour.
H302: Harmful if swallowed.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336: May cause drowsiness or dizziness.
H351: Suspected of causing cancer.

Supplementary statement(s):

EUH066: Repeated exposure may cause skin dryness or cracking.
EUH204: Contains isocyanates. May produce an allergic reaction.

Precautionary statements prevention:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing mist/vapours/spray.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves, protective clothing, eye protection and face protection.

Precautionary statements response:	P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308+P313: IF exposed or concerned: Get medical advice/ attention. P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER /doctor/physician/first aider. P370+P378: In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
Precautionary statement(s) Storage	P403+P235 Store in a well-ventilated place. Keep cool. P405: Store locked up.
Precautionary statements disposal:	P501: Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

2.3 Other hazards

ethyl acetate	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
methyl ethyl ketone	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
4,4'-diphenylmethane diisocyanate (MDI)	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

This substance/mixture does not meet the criteria for classification as Persistent, Bioaccumulative, and Toxic (PBT) in accordance with Annex XIII, Commission Delegated Regulation (EU) 2017/2100, and Commission Regulation (EU) 2018/605.

This substance/mixture does not meet the criteria for classification as very Persistent and very Bioaccumulative (vPvB) in accordance with Annex XIII, Commission Delegated Regulation (EU) 2017/2100, and Commission Regulation (EU) 2018/605.

This substance/mixture does not meet the criteria for classification as Persistent, Mobile and Toxic (PMT) in accordance with Commission Delegated Regulation (EU) 2023/707.

This substance/mixture does not meet the criteria for classification as very Persistent and very Mobile (vPvM) in accordance with Commission Delegated Regulation (EU) 2023/707.

The substance/mixture does not contain components considered to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, nor is it included in the list established under REACH Article 59(1), at concentrations equal to or greater than 0.1% (w/w).

No further product hazard information.

3. COMPOSITION AND INFORMATION ABOUT THE COMPONENTS

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. 141-78-6 2.205-500-4 3.607-022-00-5 4.01-21194575103-46	25-40	ethyl acetate * -	Flammable Liquids Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity – Single Exposure (Narcotic Effects) Category 3; H225, H319, H336 [2]	SCL: Not Available Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not available

1. 78-93-3 2. 201-159-0 3. 606-002-00-3 4. 01-2119457290-43-XXXX	25-40	methyl ethyl ketone * -	Flammable Liquids Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity – Single Exposure (Narcotic Effects) Category 3; H225, H319, H336 [2]	SCL: Not Available Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not available
1. 53317-61-6 2. 500-120-8 3. Not Available 4. Not Available	5-10	toluene diisocyanate trimethylolpropane diethylene glycol	Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2; H317, H319, EUH204 [3]	SCL: Not Available Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not available
1. 4151-51-3 2. 223-981-9 3. Not Available 4. 01-2119948848-16-XXXX	2.5-5	4- isocyanatophenol phosphorothioate (3:1)	Acute Tox. 4; H302, EUH018, EUH204 [3]	SCL: Not Available Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not available
1. 26115-70-8 2. 247-465-8 3. Not Available 4. 01-2120807606-55-XXXX	2.5-5	tris(3- trimethoxysilylpropyl) isocyanurate	Acute Tox. 3, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2; H301, H315, H319, H331 [3]	SCL: Not Available Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not available
1. 101-68-8 2. 202-966-0 406-550-1 3. 615-005-00-9 616-071-00-1 4. 01-2119457014-47-XXXX	0.5-1	4,4'- diphenylmethane diisocyanate (MDI)	Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2, Acute Toxicity (Inhalation) Category 4, Sensitisation (Respiratory) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Carcinogenicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2; H315, H317, H319, H332, H334, H335, H351, H373 [2]	Eye Irrit. 2; H319: C ≥ 5 % Skin Irrit. 2; H315: C ≥ 5 % Resp. Sens. 1; H334: C ≥ 0,1 % STOT SE 3; H335: C ≥ 5 % Acute M factor: Not Applicable Chronic M factor: Not Applicable	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.				

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact: If this product comes in contact with the eyes:
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: If skin contact occurs:
Immediately remove all contaminated clothing, including footwear.
Flush skin and hair with running water (and soap if available).
Seek medical attention in event of irritation.

Inhalation:	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. Following uptake by inhalation, move person to an area free from risk of further exposure. Oxygen or artificial respiration should be administered as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. A physician should be consulted.
Ingestion:	Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

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.

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

for simple esters:

BASIC TREATMENT

Establish a patent airway with suction where necessary.

Watch for signs of respiratory insufficiency and assist ventilation as necessary.

Administer oxygen by non-rebreather mask at 10 to 15 l/min.

Monitor and treat, where necessary, for pulmonary oedema .

Monitor and treat, where necessary, for shock.

DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

Give activated charcoal.

ADVANCED TREATMENT

Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.

Positive-pressure ventilation using a bag-valve mask might be of use.

Monitor and treat, where necessary, for arrhythmias.

Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.

Drug therapy should be considered for pulmonary oedema.

Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.

Treat seizures with diazepam.

Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.

Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.

Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L. *EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed.* 1994

For sub-chronic and chronic exposures to isocyanates:

This material may be a potent pulmonary sensitiser which causes bronchospasm even in patients without prior airway hyperreactivity.

Clinical symptoms of exposure involve mucosal irritation of respiratory and gastrointestinal tracts.

Conjunctival irritation, skin inflammation (erythema, pain vesiculation) and gastrointestinal disturbances occur soon after exposure.

Pulmonary symptoms include cough, burning, substernal pain and dyspnoea.

Some cross-sensitivity occurs between different isocyanates.

Noncardiogenic pulmonary oedema and bronchospasm are the most serious consequences of exposure. Markedly symptomatic patients should receive oxygen, ventilatory support and an intravenous line.

Treatment for asthma includes inhaled sympathomimetics (epinephrine [adrenalin], terbutaline) and steroids.

Activated charcoal (1 g/kg) and a cathartic (sorbitol, magnesium citrate) may be useful for ingestion.

Mydriatics, systemic analgesics and topical antibiotics (Sulamyd) may be used for corneal abrasions.

There is no effective therapy for sensitised workers.

[Ellenhorn and Barceloux; Medical Toxicology]

NOTE: Isocyanates cause airway restriction in naive individuals with the degree of response dependant on the concentration and duration of exposure. They induce smooth muscle contraction which leads to bronchoconstrictive episodes. Acute changes in lung function, such as decreased FEV1, may not represent sensitivity.

[Karol & Jin, Frontiers in Molecular Toxicology, pp 56-61, 1992]

Personnel who work with isocyanates, isocyanate prepolymers or polyisocyanates should have a pre-placement medical examination and periodic examinations thereafter, including a pulmonary function test. Anyone with a medical history of chronic respiratory disease, asthmatic or bronchial attacks, indications of allergic responses, recurrent eczema or sensitisation conditions of the skin should not handle or work with isocyanates. Anyone who develops chronic respiratory distress when working with isocyanates should be removed from exposure and examined by a physician. Further exposure must be avoided if a sensitivity to isocyanates or polyisocyanates has developed.

5. FIRE-FIGHTING MEASSURES

5.1 Extinguishing media

Suitable extinguishing media:

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Flooding quantities of water only.

5.2 Special hazards arising from the substance or mixture

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

Fire Fighting Alert Fire Brigade and tell them location and nature of hazard.
Wear breathing apparatus plus protective gloves in the event of a fire.
Prevent, by any means available, spillage from entering drains or water courses.
Use fire fighting procedures suitable for surrounding area.

Fire/Explosion Hazard 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.
Heating may cause expansion or decomposition leading to violent rupture of containers.
Combustion products include:
carbon dioxide (CO₂)
isocyanates
hydrogen cyanide
and minor amounts of
nitrogen oxides (NO_x)
other pyrolysis products typical of burning organic material.
Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.
When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture. Release of toxic and/or flammable isocyanate vapours may then occur

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

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.

Major Spills

- Liquid Isocyanates and high isocyanate vapour concentrations will penetrate seals on self contained breathing apparatus - SCBA should be used inside encapsulating suit where this exposure may occur.
- For isocyanate spills of less than 40 litres (2 m²):
 - Evacuate area from everybody not dealing with the emergency, keep them upwind and prevent further access, remove ignition sources and, if inside building, ventilate area as well as possible.
 - Notify supervision and others as necessary.
 - Put on personal protective equipment (suitable respiratory protection, face and eye protection, protective suit, gloves and impermeable boots).
 - Control source of leakage (where applicable).
 - Avoid contamination with water, alkalies and detergent solutions.
 - Material reacts with water and generates gas, pressurises containers with even drum rupture resulting.
 - DO NOT** reseal container if contamination is suspected.
 - Open all containers with care.
 - Clear area of personnel and move upwind.
 - 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.

6.4 Reference to other sections

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

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling:

- Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.
- Check for bulging containers.
- Vent periodically
- Always release caps or seals slowly to ensure slow dissipation of vapours
- Avoid all personal contact, including inhalation.
- DO NOT** allow clothing wet with material to stay in contact with skin

Fire and explosion protection

See section 5

Other information

- for commercial quantities of isocyanates:
 - Isocyanates should be stored in adequately bunded areas. Nothing else should be kept within the same bunding. Pre-polymers need not be segregated. Drums of isocyanates should be stored under cover, out of direct sunlight, protected from rain, protected from physical damage and well away from moisture, acids and alkalis.
 - Store in original containers.
 - Keep containers securely sealed.
 - Store in a cool, dry, well-ventilated area.
 - Store away from incompatible materials and foodstuff containers.

7.2 Conditions for safe storage, including any incompatibilities

Suitable container:

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- 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. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):

- Removable head packaging;
- Cans with friction closures and
- low pressure tubes and cartridges

may be used.

All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

Storage incompatibility:

Methyl ethyl ketone:

reacts violently with strong oxidisers, aldehydes, nitric acid, perchloric acid, potassium tert-butoxide, oleum
is incompatible with inorganic acids, aliphatic amines, ammonia, caustics, isocyanates, pyridines, chlorosulfonic acid
forms unstable peroxides in storage, or on contact with propanol or hydrogen peroxide
attacks some plastics

may generate electrostatic charges, due to low conductivity, on flow or agitation

Esters react with acids to liberate heat along with alcohols and acids.

Strong oxidising acids may cause a vigorous reaction with esters that is sufficiently exothermic to ignite the reaction products.

Heat is also generated by the interaction of esters with caustic solutions.

Flammable hydrogen is generated by mixing esters with alkali metals and hydrides.

Ketones in this group:

- are reactive with many acids and bases liberating heat and flammable gases (e.g., H₂).
- react with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H₂) and heat.
- are incompatible with isocyanates, aldehydes, cyanides, peroxides, and anhydrides.
- react violently with aldehydes, HNO₃ (nitric acid), HNO₃ + H₂O₂ (mixture of nitric acid and hydrogen peroxide), and HClO₄ (perchloric acid).

Avoid reaction with water, alcohols and detergent solutions. Isocyanates are electrophiles, and as such they are reactive toward a variety of nucleophiles including alcohols, amines, and even water. Upon treatment with an alcohol, an isocyanate forms a urethane linkage. If a diisocyanate is treated with a compound containing two or more hydroxyl groups, such as a diol or a polyol, polymer chains are formed, which are known as polyurethanes.

A range of exothermic decomposition energies for isocyanates is given as 20-30 kJ/mol.

The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is suggested that values of energy released per unit of mass, rather than on a molar basis (J/g) be used in the assessment.

For example, in 'open vessel processes' (with man-hole size openings, in an industrial setting), substances with exothermic decomposition energies below 500 J/g are unlikely to present a danger, whilst those in 'closed vessel processes' (opening is a safety valve or bursting disk) present some danger where the decomposition energy exceeds 150 J/g.

BREITHERICK: Handbook of Reactive Chemical Hazards, 4th Edition

Hazard categories in accordance with Regulation (EC) No 2012/18/EU (Seveso III)

- 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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
ethyl acetate	Dermal 63 mg/kg bw/day (Systemic, Chronic) Inhalation 734 mg/m ³ (Systemic, Chronic) Inhalation 734 mg/m ³ (Local, Chronic) Inhalation 1468 mg/m ³ (Systemic, Acute) Inhalation 1468 mg/m ³ (Local, Acute) Dermal 37 mg/kg bw/day (Systemic, Chronic) * Inhalation 367 mg/m ³ (Systemic, Chronic) * Oral 4.5 mg/kg bw/day (Systemic, Chronic) * Inhalation 367 mg/m ³ (Local, Chronic) * Inhalation 734 mg/m ³ (Systemic, Acute) * Inhalation 734 mg/m ³ (Local, Acute) *	0.24 mg/L (Water (Fresh)) 1.65 mg/L (Water - Intermittent release) 0.024 mg/L (Water (Marine)) 1.15 mg/kg sediment dw (Sediment (Fresh Water)) 0.115 mg/kg sediment dw (Sediment (Marine)) 0.148 mg/kg soil dw (Soil) 650 mg/L (STP) 200 mg/kg food (Oral)
methyl ethyl ketone	Dermal 1161 mg/kg bw/day (Systemic, Chronic) Inhalation 600 mg/m ³ (Systemic, Chronic) Inhalation 900 mg/m ³ (Systemic, Acute) Dermal 412 mg/kg bw/day (Systemic, Chronic) * Inhalation 106 mg/m ³ (Systemic, Chronic) * Oral 31 mg/kg bw/day (Systemic, Chronic) * Inhalation 450 mg/m ³ (Systemic, Acute) *	Not Available
4-isocyanatophenol phosphorothioate (3:1)	Inhalation 0.047 mg/m ³ (Local, Chronic)	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 2557 mg/kg sediment dw (Sediment (Fresh Water)) 155 mg/kg sediment dw (Sediment (Marine)) 510 mg/kg soil dw (Soil) 100 mg/L (STP)
tris(3-trimethoxysilylpropyl)isocyanurate	Dermal 1 mg/kg bw/day (Systemic, Chronic) Inhalation 7.05 mg/m ³ (Systemic, Chronic) Dermal 0.5 mg/kg bw/day (Systemic, Chronic) * Inhalation 1.73 mg/m ³ (Systemic, Chronic) * Oral 0.5 mg/kg bw/day (Systemic, Chronic) * Inhalation 26400 mg/m ³ (Systemic, Acute) *	14.3 mg/L (STP)

* Values for General Population

Occupational Exposure Limits (OEL) INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	ethyl acetate	Ethyl acetate	200 ppm / 734 mg/m ³	1 468 mg/m ³ / 400 ppm	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	ethyl acetate	Ethyl acetate	200 ppm / 734 mg/m ³	1468 mg/m ³ / 400 ppm	Not Available	Not Available
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	methyl ethyl ketone	Butanone	200 ppm / 600 mg/m ³	900 mg/m ³ / 300 ppm	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	methyl ethyl ketone	Butan-2-one (methyl ethyl ketone)	200 ppm / 600 mg/m ³	899 mg/m ³ / 300 ppm	Not Available	Sk, BMGV

Europe ECHA Occupational exposure limits substance evaluation	4-isocyanatophenol phosphorothioate (3:1)	Not Available	Not Available	Not Available	Not Available	Not Available
European Union (EU) Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work - Annex I: List of Binding Occupational Exposure Limit Values	4-isocyanatophenol phosphorothioate (3:1)	Diisocyanates (measured as NCO)	0.006 mg/m ³	0.012 mg/m ³	Not Available	Substantial contribution to the total body burden via dermal exposure possible. The substance can cause sensitisation of the skin and of the respiratory tract. NCO refers to isocyanate functional groups of the diisocyanate compounds. A limit value of 10 µg NCO/m ³ in relation to a reference period of 8 hours and a short-term exposure limit value of 20 µg NCO/m ³ shall apply until 31 December 2028.
Europe ECHA Occupational exposure limits substance evaluations	tris(3-trimethoxysilylpropyl)isocyanurate	Not Available	Not Available	Not Available	Not Available	Not Available
European Union (EU) Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work - Annex I: List of Binding Occupational Exposure Limit Values	tris(3-trimethoxysilylpropyl)isocyanurate	Diisocyanates (measured as NCO)	0.006 mg/m ³	0.012 mg/m ³	Not Available	Substantial contribution to the total body burden via dermal exposure possible. The substance can cause sensitisation of the skin and of the respiratory tract. NCO refers to isocyanate functional groups of the diisocyanate compounds. A limit value of 10 µg NCO/m ³ in relation to a reference period of 8 hours and a short-term exposure limit value of 20 µg NCO/m ³ shall apply until 31 December 2028.
UK Workplace Exposure Limits (WELs)	4,4'-diphenylmethane diisocyanate (MDI)	Isocyanates, all (as -NCO) Except methyl isocyanate	0.02 mg/m ³	0.07 mg/m ³	Not Available	Sen
Europe ECHA Occupational exposure limits	4,4'-diphenylmethane diisocyanate (MDI)	Not Available	Not Available	Not Available	Not Available	Not Available

substance evaluations						
European Union (EU) Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work - Annex I: List of Binding Occupational Exposure Limit Values	4,4'-diphenylmethane diisocyanate (MDI)	Diisocyanates (measured as NCO)	0.006 mg/m3	0.012 mg/m3	Not Available	Substantial contribution to the total body burden via dermal exposure possible. The substance can cause sensitisation of the skin and of the respiratory tract. NCO refers to isocyanate functional groups of the diisocyanate compounds. A limit value of 10 µg NCO/m3 in relation to a reference period of 8 hours and a short-term exposure limit value of 20 µg NCO/m3 shall apply until 31 December 2028.

Ingredient	Original IDLH	Revised IDLH
methyl ethyl ketone	3,000 ppm	Not Available
toluene diisocyanate trimethylolpropane diethylene glycol	Not Available	Not Available
4-isocyanatophenol phosphorothioate (3:1)	Not Available	Not Available
tris(3-trimethoxysilylpropyl)isocyanurate	Not Available	Not Available
4,4'-diphenylmethane diisocyanate (MDI)	75 mg/m3	Not Available

8.2 Exposure controls

8.2.1. Appropriate engineering Controls:	All processes in which isocyanates are used should be enclosed wherever possible. Total enclosure, accompanied by good general ventilation, should be used to keep atmospheric concentrations below the relevant exposure standards. If total enclosure of the process is not feasible, local exhaust ventilation may be necessary. Local exhaust ventilation is essential where lower molecular weight isocyanates (such as TDI or HDI) is used or where isocyanate or polyurethane is sprayed. 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. Enclosure and/or isolation of emission source which keeps a selected hazard 'physically' away from the worker and ventilation that strategically 'adds' and 'removes' air in the work environment.
8.2.2. Personal protection:	
Eye and face protection:	Safety glasses with side shields. Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection:	See Hand protection below.

Hands/feet protection:	NOTE: 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. For esters: Do NOT use natural rubber, butyl rubber, EPDM or polystyrene-containing materials. 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. 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. Personal hygiene is a key element of effective hand care. Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves. Protective gloves and overalls should be worn as specified in the appropriate national standard. Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated. NOTE: Natural rubber, neoprene, PVC can be affected by isocyanates
Body protection:	See Other protection below
Other protection	All employees working with isocyanates must be informed of the hazards from exposure to the contaminant and the precautions necessary to prevent damage to their health. They should be made aware of the need to carry out their work so that as little contamination as possible is produced, and of the importance of the proper use of all safeguards against exposure to themselves and their fellow workers. Adequate training, both in the proper execution of the task and in the use of all associated engineering controls, as well as of any personal protective equipment, is essential. Employees exposed to contamination hazards should be educated in the need for, and proper use of, facilities, clothing and equipment and thereby maintain a high standard of personal cleanliness. Overalls. Eyewash unit. Barrier cream. Skin cleansing cream
Respiratory protection	Respiratory protection Respiratory protection is only required in the likelihood that relevant exposure limits may be approached or exceeded, e.g. application in enclosed spaces with restricted air exchange. Concentrations of potentially hazardous substances in air will remain low during normal outdoor application and will not pose a risk to the applicator. Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent) 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 For spraying or operations which might generate aerosols: Full face respirator with supplied air. In certain circumstances, personal protection of the individual employee is necessary. Personal protective devices should be regarded as being

	supplementary to substitution and engineering control and should not be used in preference to them as they do nothing to eliminate the hazard. However, in some situations, minimising exposure to isocyanates by enclosure and ventilation is not possible, and occupational exposure standards may be exceeded, particularly during on-site mixing of paints, spray-painting, foaming and maintenance of machine and ventilation systems. In these situations, air-line respirators or self-contained breathing apparatus complying with the appropriate national standard must be used. Organic vapour respirators with particulate pre- filters and powered, air-purifying respirators are NOT suitable. Personal protective equipment must be appropriately selected, individually fitted and workers trained in their correct use and maintenance. Personal protective equipment must be regularly checked and maintained to ensure that the worker is being protected. Air- line respirators or self-contained breathing apparatus complying with the appropriate national standard should be used during the clean-up of spills and the repair or clean-up of contaminated equipment and similar situations which cause emergency exposures to hazardous atmospheric concentrations of isocyanate.
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8.2.3. Environmental exposure controls

See section 12

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

Physical state:	Liquid	Relative density (Water = 1)	0.97
Colour:	Black	Partition coefficient n-octanol / water	Not Available
Odour:	Not Available	Auto-ignition temperature (°C)	427
Odour threshold:	Not Available	Decomposition temperature (°C)	Not Available
pH (as supplied):	Not available	Viscosity (cSt)	> 20.5 mm ² /s at 40 °C
Melting point/freezing point (°C):	Not Available	Molecular weight (g/mol)	Not Available
Boiling point (°C):	>70 °C	Taste	Not Available
Flash point (°C):	-4 °C	Oxidising properties	Not Available
Evaporation rate [kg/(s m²)]:	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Flammability	HIGHLY FLAMMABLE.	Volatile Component (%vol)	Not Available
Upper Explosive Limit (%):	11.5%	Gas group	Not Available
Lower Explosive Limit (%):	1.8%	pH as a solution (1%)	Not Available
Vapour pressure (kPa)	99,9915 hPa	VOC g/L	Not Available
Solubility in water	Immiscible	Ignition Distance (cm)	Not Available
Vapour density (Air = 1)	Not Available	Flame Duration (s)	Not Available
Heat of Combustion (kJ/g)	Not Available	Enclosed Space Ignition Deflagration Density (g/m³)	Not Available
Flame Height (cm)	Not Available	Nanoform Particle Characteristics	Not Available
Enclosed Space Ignition Time Equivalent (s/m³)	Not Available	Explosive properties	Product is not explosive. However, formation of explosive air/vapour mixtures is possible
Nanoform Solubility	Not Available		
Particle Size Not Available	Not Available		

9.2 Other information

Not Available

10. STABILITY AND REACTIVITY

10.1.Reactivity

See section 7.2

10.2. Chemical stability

Unstable in the presence of incompatible materials.
Product is considered stable.
Hazardous polymerisation will not occur

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

11. TOXICOLOGICAL INFORMATION

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

a) Acute Toxicity	There is sufficient evidence to classify this material as acutely toxic.
b) Skin Irritation/Corrosion	Based on available data, the classification criteria are not met.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating.
d) Respiratory or Skin sensitisation	There is sufficient evidence to classify this material as sensitising to skin or the respiratory system.
e) Mutagenicity	Based on available data, the classification criteria are not met.
f) Carcinogenicity	There is sufficient evidence to classify this material as carcinogenic
g) Reproductivity	Based on available data, the classification criteria are not met.
h) STOT - Single Exposure	There is sufficient evidence to classify this material as toxic to specific organs through single exposure
i) STOT - Repeated Exposure	Based on available data, the classification criteria are not met
j) Aspiration Hazard	Based on available data, the classification criteria are not met.

Inhaled:	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. 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. The main effects of simple esters are irritation, stupor and insensibility. Headache, drowsiness, dizziness, coma and behavioural changes may occur. Exposure to 400ppm ethyl acetate may cause mild eye, nose and throat irritation in an unacclimated persons. However, production workers with regular exposure have better tolerance. Inhalation hazard is increased at higher temperatures. The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Pulmonary sensitisation may produce asthmatic reactions ranging from minor breathing difficulties to severe allergic attacks; this may occur following a single acute exposure or may develop without warning for several hours after exposure. Acute exposure of humans to high concentrations of methyl ethyl ketone produces irritation to the eyes, nose and throat. Acute exposure by inhalation also causes nervous system depression,
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	headache, and nausea. High vapour levels are easily detected due to odour, however odour fatigue may occur, with loss of warning of exposure. Ketone vapours irritate the nose, throat and mucous membrane. High concentrations depress the central nervous system, causing headache, vertigo, poor concentration, sleep and failure of the heart and breathing.
Ingestion:	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. Acute intoxication by ethyl acetate causes impaired co-ordination, exhilaration, slurred speech, nausea, vomiting, and may progress to stupor, coma and death from failure of breathing or blood circulation. Accidental ingestion of the material may be damaging to the health of the individual.
Skin contact:	The material may accentuate any pre-existing dermatitis condition. In humans exposed to methyl ethyl ketone, skin inflammation has been reported. Animal testing has shown methyl ethyl ketone to have high acute toxicity from skin exposure. Open cuts, abraded or irritated skin should not be exposed to this material. 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. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. There is some evidence to suggest that the material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
Eye:	This material causes serious eye irritation. The vapour when concentrated has pronounced eye irritation effects and this gives some warning of high vapour concentrations. If eye irritation occurs seek to reduce exposure with available control measures, or evacuate area. The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated.
Chronic:	There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. 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. Animal testing shows that methyl ethyl ketone may have slight effects on the nervous system, liver, kidney and respiratory system; there may also be developmental effects and an increase in birth defects. However, there is limited information available on the long-term effects of methyl ethyl ketone in humans, and no information is available on whether it causes developmental or reproductive toxicity or cancer. It is generally considered to have low toxicity, but it is often used in combination with other solvents, and the toxic effects of the mixture may be greater than with either solvent alone. Combinations of n-hexane or methyl n-butyl ketone with methyl ethyl ketone may increase the rate of peripheral neuropathy, a progressive disorder of the nerves of the extremities. Persons with a history of asthma or other respiratory problems or are known to be sensitised, should not be engaged in any work involving the handling of isocyanates. The chemistry of reaction of isocyanates, as evidenced by MDI, in biological milieu is such that in the event of a true exposure of small MDI doses to the mouth, reactions will commence at once with biological macromolecules in the buccal region and will continue along the

	digestive tract prior to reaching the stomach. Reaction products will be a variety of polyureas and macromolecular conjugates with for example mucus, proteins and cell components. This is corroborated by the results from an MDI inhalation study. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, incoordination, anxiety, depression and paranoia.
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Caltech Metprime Detail

Toxicity	Irritation
Not available	Not available

ethyl acetate

Toxicity	Irritation
Dermal (rabbit) LD50: >18000 mg/kg[2]	Eye (Human): 400ppm
Inhalation (Mouse) LC50: >18 mg/l4h[1]	Eye: no adverse effect observed (not irritating)[1]
Oral (Mouse) LD50: 4100 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]

methyl ethyl ketone

Toxicity	Irritation
Dermal (rabbit) LD50: 6480 mg/kg[2]	Eye (Human): 350ppm
Inhalation (Mouse) LC50: 32 mg/L4h[2]	Eye (Rodent - rabbit): 80mg
Oral (Rat) LD50: 2054 mg/kg[1]	Eye: adverse effect observed (irritating)[1]
	Skin (Rodent - rabbit): 14mg/24H - Mild
	Skin (Rodent - rabbit): 402mg/24H - Mild
	Skin (Rodent - rabbit): 500mg/24H - Moderate
	Skin: no adverse effect observed (not irritating)[1]

toluene diisocyanate trimethylolpropane diethylene glycol

Toxicity	Irritation
Not available	Not available

4-isocyanatophenol phosphorothioate (3:1)

Toxicity	Irritation
Inhalation (Rat) LC50: 5.721 mg/L4h[1]	Eye: no adverse effect observed (not irritating)[1]
Oral (Rat) LD50: >2500 mg/kg[1]	Skin: no adverse effect observed (not irritating)[1]

tris(3- trimethoxysilylpropyl)isocyanurate

Toxicity	Irritation
Dermal (rabbit) LD50: >18720 mg/kg[2]	Eye (Rodent - rabbit): 100uL - Mild
Oral (Rat) LD50: 1708.2 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
	Skin: no adverse effect observed (not irritating)[1]

4,4'-diphenylmethane diisocyanate(MDI)

Toxicity	Irritation
Dermal (rabbit) LD50: >6200 mg/kg[2]	Eye (Rodent - rabbit): 100mg - Moderate
Inhalation (Rat) LC50: 0.368 mg/L4h[1]	Eye: no adverse effect observed (not irritating)[1]
Oral (Mouse) LD50: 2200 mg/kg[2]	Skin (Rodent - rabbit): 500mg/24H
	Skin: adverse effect observed (irritating)[1]
	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.

Caltech Metprime Detail	Generally, linear and branched-chain alkyl esters are hydrolysed to their component alcohols and carboxylic acids in the intestinal tract, blood and most tissues throughout the body. Following hydrolysis the component alcohols and carboxylic acids are metabolized. Oral acute toxicity studies have been reported for 51 of the 67 esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids. The very low oral acute toxicity of this group of esters is demonstrated by oral LD50 values greater than 1850 mg/kg bw. Genotoxicity studies have been performed in vitro using the following esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids: methyl acetate, butyl acetate, butyl stearate and the structurally related isoamyl formate and demonstrates that these substances are not genotoxic. The JEFCA Committee concluded that the substances in this group would not present safety concerns at the current levels of intake the esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids are generally used as flavouring substances up to average maximum levels of 200 mg/kg. Higher levels of use (up to 3000 mg/kg) are permitted in food categories such as chewing gum and hard candy.
METHYL ETHYL KETONE	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.
TRIS(3-TRIMETHOXYSILYLPROPYL)ISO CYANURATE	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.
4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI)	Inhalation (human) TCLo: 0.13 ppm/30 mins Eye (rabbit): 0.10 mg moderate 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. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect. Of the several members of diisocyanates tested on experimental animals by inhalation and oral exposure, some caused cancer while others produced a harmless outcome. This group of compounds has therefore been classified as cancer-causing.
Caltech Metprime Detail & ETHYL ACETATE & METHYL ETHYL KETONE & 4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI)	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. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.
Caltech Metprime Detail & TOLUENE DIISOCYANATE TRIMETHYLOLPROPANE DIETHYLENE GLYCOL & 4-ISOCYANATOPHENOL PHOSPHOROTHIOATE (3:1) & 4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI)	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. Allergy causing activity is due to interactions with proteins. 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.
Caltech Metprime Detail & TOLUENE DIISOCYANATE TRIMETHYLOLPROPANE DIETHYLENE GLYCOL & 4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI)	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. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.
Caltech Metprime Detail & METHYL ETHYL	Methyl ethyl ketone is considered to have a low order of toxicity; however, methyl ethyl ketone is often used in combination with other solvents and the mixture may have greater

KETONE	toxicity than either solvent alone. Combinations of n-hexane with methyl ethyl ketone, and also methyl n-butyl ketone with methyl ethyl ketone may result in an increased in peripheral neuropathy, a progressive disorder of the nerves of the extremities. Combinations with chloroform also show an increase in toxicity.
TOLUENE DIISOCYANATE TRIMETHYLOLPROPANE DIETHYLENE GLYCOL & 4- ISOCYANATOPHENOL PHOSPHOROTHIOATE (3:1) & TRIS(3- TRIMETHOXSILYL)ISO CYANURATE	No significant acute toxicological data identified in literature search.
TOLUENE DIISOCYANATE TRIMETHYLOLPROPANE DIETHYLENE GLYCOL & 4- ISOCYANATOPHENOL PHOSPHOROTHIOATE (3:1)	Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.

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 disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish [mg/l]:

Hazardous ingredients:

Caltch Metprime Detail				
End Point	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

ethyl acetate				
End Point	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	72h	Algae or other aquatic plants	>100mg/l	1
EC50	96h	Algae or other aquatic plants	2500mg/L	4
LC50	96h	Fish	>75.6mg/l	2
EC50	72h	Algae or other aquatic plants	1800-3200mg/L	4
EC50	48h	Crustacea	164mg/l	1

methyl ethyl ketone				
End Point	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	1220mg/l	2
EC50	48h	Crustacea	308mg/l	2
EC50	96h	Algae or other aquatic plants	>500mg/L	4
NOEC(ECx)	48h	Crustacea	68mg/l	2
LC50	96h	Fish	>324mg/L	4

toluene diisocyanate trimethylolpropane diethylene glycol				
End Point	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

4-isocyanatophenol phosphorothioate (3:1)				
End Point	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>100mg/l	2
NOEC(ECx)	48h	Crustacea	100mg/l	2
LC50	96h	Fish	>100mg/l	2

tris(3-trimethoxysilylpropyl)isocyanurate				
End Point	Test Duration (hr)	Species	Value	Source
EC50(ECx)	48h	Crustacea	>100mg/l	2
EC50	48h	Crustacea	>100mg/l	2
EC50	96h	Algae or other aquatic plants	>100mg/l	2
LC50	96h	Fish	>100mg/l	2

4,4'-diphenylmethane diisocyanate (MDI)				
End Point	Test Duration (hr)	Species	Value	Source
BCF	672h	Fish	61-150	7
EC50	48h	Crustacea	>100mg/l	2
NOEC(ECx)	504h	Crustacea	>=10mg/l	2
LC50	96h	Fish	>100mg/l	2

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

For Methyl Ethyl Ketone:

log Kow: 0.26-0.69;

log Koc: 0.69;

Koc: 34;

Half-life (hr) air: 2.3;

Half-life (hr) H₂O surface water: 72-288;

Henry's atm m³ /mol: 1.05E-05;

BOD 5: 1.5-2.24, 46%;

COD: 2.2-2.31, 100%;

ThOD: 2.44;

BCF: 1.

Environmental Fate: Terrestrial Fate - Measured Koc values of 29 and 34 were obtained for methyl ethyl ketone in silt loams. Methyl ethyl ketone is expected to have very high mobility in soil. Volatilization of methyl ethyl ketone from moist and dry soil surfaces is expected.

For Isocyanate Monomers:

Environmental Fate: Isocyanates, (di- and polyfunctional isocyanates), are commonly used to make various polymers, such as polyurethanes. Polyurethanes find significant application in the manufacture of rigid and flexible foams. They are also used in the production of adhesives, elastomers, and coatings.

Atmospheric Fate: These substances are not expected to be removed from the air via precipitation washout or dry deposition.

Studies on various thiophosphates indicated complete mineralization within three weeks by acclimation. A water stability study demonstrated the nature of hydrolysis involves the attack of water molecule on the phosphorus ester involving P-O bond fission. .

For Ketones: Ketones, unless they are alpha, beta--unsaturated ketones, can be considered as narcosis or baseline toxicity compounds.

Aquatic Fate: Hydrolysis of ketones in water is thermodynamically favourable only for low molecular weight ketones.

Reactions with water are reversible with no permanent change in the structure of the ketone substrate. Ketones are stable to water under ambient environmental conditions.

DO NOT discharge into sewer or waterways.

12.2 Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
ethyl acetate	LOW (Half-life = 14 days)	LOW (Half-life = 14.71 days)
methyl ethyl ketone	LOW (Half-life = 14 days)	LOW (Half-life = 26.75 days)
tris(3-trimethoxysilylpropyl)isocyanurate	HIGH	HIGH
4,4'-diphenylmethane diisocyanate (MDI)	LOW (Half-life = 1 days)	LOW (Half-life = 0.24 days)

12.3 Bioaccumulation potential

Ingredient	Bioaccumulation
ethyl acetate	HIGH (BCF = 3300)
methyl ethyl ketone	LOW (LogKOW = 0.29)
tris(3-trimethoxysilylpropyl)isocyanurate	LOW (LogKOW = 1.0204)
4,4'-diphenylmethane diisocyanate (MDI)	LOW (BCF = 15)

12.4. Mobility in soil

Ingredient	Bioaccumulation
ethyl acetate	LOW (Log KOC = 6.131)
methyl ethyl ketone	MEDIUM (Log KOC = 3.827)
tris(3-trimethoxysilylpropyl)isocyanurate	LOW (Log KOC = 189100000)
4,4'-diphenylmethane diisocyanate (MDI)	LOW (Log KOC = 376200)

12.5 Results of PBT and vPvB assessment

	P	B	T	PBT criteria fulfilled?	vP	vB	vPvB criteria fulfilled?
Caltech Metprime Detail	✗	✗	✗	No	✗	✗	No
ethyl acetate	No data available	No data available	No data available	No	No data available	No data available	No
methyl ethyl ketone	No data available	No data available	No data available	No	No data available	No data available	No
toluene diisocyanate	No data available	No data available	No data available	No	No data available	No data available	No
trimethylolpropane diethylene glycol	No data available	No data available	No data available	No	No data available	No data available	No
4-isocyanatophenol	✗	✓	✗	No	✗	✓	No
phosphorothioate (3:1)	✓	✗	✗	No	✓	✗	No
tris(3-trimethoxysilylpropyl)isocyanurate	✓	✗	✓	No	✓	✗	No
4,4'-diphenylmethane diisocyanate (MDI)	✓	✗	✓	No	✓	✗	No

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal Considerations:	Disposal of this product and its packaging must comply with all applicable environmental protection and waste disposal legislation, including any requirements set by local authorities. Any unwanted or non-recyclable material should be disposed of through a licensed waste disposal contractor. Transportation of such waste may be subject to ADR (International Carriage of Dangerous Goods by Road) regulations and must be managed in accordance with those requirements.
Waste code:	Uncured product: 08 01 11* waste paint and varnish containing organic solvents or other hazardous substances. Cured product inert residue: 17 09 04 mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 Empty metal paint tins with only hardened, inert residue: 15 01 04 metallic packaging
Special precautions:	This material and its container must be disposed of in a safe way. Caution should be exercised when handling empty containers that have not been properly cleaned or rinsed, as they may retain hazardous residues. Spillage and wash water from cleaning tools must be prevented from entering soil, watercourses, drains, or sewer systems. Empty containers should be directed to authorised waste disposal or appropriate local recycling facilities. DO NOT seal or stopper drums being decontaminated as CO2 gas is generated and may pressurise containers.
Further information available via:	https://www.alumascroofing.com/downloads/disposal-guides/ 

14. TRANSPORT INFORMATION

Labels required:



Marine Pollutant NO
Hazchem: ●3YE

Land transport (ADR):

14.1 UN number	1866
14.2 UN proper shipping name	RESIN SOLUTION, flammable
14.3 Transport hazard class(es)	Class: 3 Subsidiary Hazard: N/A
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 640D Limited quantity: 5 L Transport Category: 2 Tunnel restriction code: D/E

Air transport (ICAO-IATA/DGR):

14.1 UN number	1866
14.2 UN proper shipping name	RESIN SOLUTION, flammable
14.3 Transport hazard class(es)	ICAO/IATA class: 3 ICAO/IATA Subsidiary Hazard: N/A 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 instruction: 364 Cargo only maximum qty/pack: 60 L Passenger and cargo packing instruction: 353 Passenger and cargo maximum qty/pack: 5L Passenger and cargo limited qty packing instructions: Y341 Passenger and cargo limited maximum qty/pack: 1 L

Sea transport (IMDG-Code/GGVSee):

14.1 UN number	1866
14.2 UN proper shipping name	RESIN SOLUTION, flammable
14.3 Transport hazard class(es)	IMDG class: 3 IMDG Subsidiary Hazard: Not applicable
14.4 Packing group	II
14.5 Environmental hazard	Not Applicable
14.6 Special precautions for user	EMS number: F-E, S-E Special provisions: Not Applicable Limited quantities: 5 L

Inland waterways transport (ADN):

14.1 UN number	1866
14.2 UN proper shipping name	RESIN SOLUTION, flammable
14.3 Transport hazard class(es)	Class: 3 Subsidiary Hazard: N/A
14.4 Packing group	II
14.5 Environmental hazard	Not Applicable
14.6 Special precautions for user	Classification code: F1 Special provisions: 640C; 640D Limited quantity: 5 L Equipment required: PP, EX, A Fire cones numbers: 1

14.7. Maritime transport in bulk according to IMO instruments

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

Not applicable.

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

Product name	Group
ethyl acetate	Not Available
methyl ethyl ketone	Not Available
toluene diisocyanate trimethylolpropane diethylene glycol	Not Available
4-isocyanatophenol phosphorothioate (3:1)	Not Available
tris(3-trimethoxysilylpropyl)isocyanurate	Not Available
4,4'-diphenylmethane diisocyanate (MDI)	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
ethyl acetate	Not Available
methyl ethyl ketone	Not Available
toluene diisocyanate trimethylolpropane diethylene glycol	Not Available
4-isocyanatophenol phosphorothioate (3:1)	Not Available
tris(3-trimethoxysilylpropyl)isocyanurate	Not Available
4,4'-diphenylmethane diisocyanate (MDI)	Not Available

15. REGULATORY INFORMATION

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

ethyl acetate is found on the following regulatory lists

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Europe EC Inventory
Europe European Customs Inventory of Chemical Substances- ECICS
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

methyl ethyl ketone is found on the following regulatory lists

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)
EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Europe EC Inventory
Europe European Customs Inventory of Chemical Substances- ECICS
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

toluene diisocyanate trimethylolpropane diethylene glycol is found on the following regulatory lists

Europe EC Inventory

4-isocyanatophenol phosphorothioate (3:1) is found on the following regulatory lists

Europe EC Inventory
Europe European Customs Inventory of Chemical Substances- ECICS
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work - Annex I: List of Binding
Occupational Exposure Limit Values

tris(3-trimethoxysilylpropyl)isocyanurate is found on the following regulatory lists

Europe EC Inventory
Europe European Customs Inventory of Chemical Substances- ECICS
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work - Annex I: List of Binding
Occupational Exposure Limit Values

4,4'-diphenylmethane diisocyanate (MDI) is found on the following regulatory lists

EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Europe EC Inventory
Europe European Customs Inventory of Chemical Substances- ECICS
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work - Annex I: List of Binding
Occupational Exposure Limit Values
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

Additional Regulatory Information

Not Applicable

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
ethyl acetate	141-78-6	607-022-00-5	01-21194575103-46

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flammable Liquids Category 2; Serious Eye Damage/Eye Irritation Category 2; Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3	GHS07; GHS02; Dgr	H225; H319; H336
2	Serious Eye Damage/Eye Irritation Category 2; Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; Hazardous to the Aquatic Environment Long-Term Hazard Category 1; Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3; Acute Toxicity (Oral) Category 4; Aspiration Hazard Category 1; Sensitisation (Skin) Category 1; Skin Corrosion/Irritation Category 1; Flammable Liquids Category 1	Dgr; GHS01; GHS05; GHS09	H319; H336; H335; H314; H332; H224; H411
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
methyl ethyl ketone	78-93-3	606-002-00-3	01-2119457290-43- XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flammable Liquids Category 2; Serious Eye Damage/Eye Irritation Category 2; Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3	GHS02; GHS07; Dgr	H225; H319; H336
2	Flammable Liquids Category 2; Serious Eye Damage/Eye Irritation Category 2; Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3; Skin Corrosion/Irritation Category 2	Dgr; GHS01; GHS08	H225; H319; H336; H371; H335; H302; H312; H341; H361; H314
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
toluene diisocyanate trimethylolpropane diethylene glycol	53317-61-6	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Sensitisation (Skin) Category 1; Serious Eye Damage/Eye Irritation Category 2	GHS07; Wng	H317; H319
2	Sensitisation (Skin) Category 1; Serious Eye Damage/Eye Irritation Category 2; Hazardous to the Aquatic Environment Long-Term Hazard Category 1; Hazardous to the Aquatic Environment Long-Term Hazard Category 4	Wng; GHS09; GHS08	H317; H319; H410
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
4-isocyanatophenol phosphorothioate (3:1)	4151-51-3	Not Available	01-2119948848-16-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)

1	Acute Toxicity (Oral) Category 4	GHS07; Wng	H302
2	Acute Toxicity (Oral) Category 4; Sensitisation (Respiratory) Category 1	GHS08; Dgr	H302; H334
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
tris(3-trimethoxysilylpropyl)isocyanurate	26115-70-8	Not Available	01-2120807606-55- XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Toxicity (Oral) Category 3; Skin Corrosion/Irritation Category 2; Serious Eye Damage/Eye Irritation Category 2; Acute Toxicity (Inhalation) Category 3	GHS06; Dgr	H301; H315; H319; H331
2	Acute Toxicity (Oral) Category 3; Skin Corrosion/Irritation Category 2; Serious Eye Damage/Eye Irritation Category 2; Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; Acute Toxicity (Oral) Category 4; Acute Toxicity (Oral) Category 2	GHS06; Dgr	H301; H315; H319; H335; H312; H330
Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.			

Ingredient	CAS number	Index No	ECHA Dossier
4,4'-diphenylmethane diisocyanate (MDI)	101-68-8	615-005-00-9 616-071-00-1	01-2119457014-47- XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Corrosion/Irritation Category 2; Sensitisation (Skin) Category 1; Serious Eye Damage/Eye Irritation Category 2; Acute Toxicity (Inhalation) Category 4; Sensitisation (Respiratory) Category 1; Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; Carcinogenicity Category 2; Specific Target Organ Toxicity - Repeated Exposure Category 2	GHS08; Dgr	H315; H317; H319; H332; H334; H335; H351; H373
2	Sensitisation (Skin) Category 1; Serious Eye Damage/Eye Irritation Category 2; Sensitisation (Respiratory) Category 1; Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; Carcinogenicity Category 2; Skin Corrosion/Irritation Category 2; Germ Cell Mutagenicity Category 2; Acute Toxicity (Oral) Category 2; Specific Target Organ Toxicity - Repeated Exposure Category 1; Hazardous to the Aquatic Environment Long-Term Hazard Category 4	GHS08; Dgr; GHS06	H315; H317; H319; H334; H335; H351; H370; H330; H341; H372; H413
1	Skin Corrosion/Irritation Category 2; Sensitisation (Skin) Category 1; Serious Eye Damage/Eye Irritation Category 2; Acute Toxicity (Inhalation) Category 2; Sensitisation (Respiratory) Category 1; Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; Carcinogenicity Category 2; Specific Target Organ Toxicity - Repeated Exposure Category 2	GHS08; GHS06; Dgr	H315; H317; H319; H330; H334; H335; H351; H373
2	Skin Corrosion/Irritation Category 2; Sensitisation (Skin) Category 1; Serious Eye Damage/Eye Irritation Category 2; Acute Toxicity (Inhalation) Category 2; Sensitisation (Respiratory) Category 1; Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; Carcinogenicity Category 2; Specific Target Organ Toxicity - Repeated Exposure Category 2; Acute Toxicity (Oral) Category 4	GHS08; GHS06; Dgr	H315; H317; H319; H330; H334; H335; H351; H373; H370
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
Canada - NDSL	No (ethyl acetate; methyl ethyl ketone; toluene diisocyanate trimethylolpropane diethylene glycol; 4-isocyanatophenol phosphorothioate (3:1); tris(3-trimethoxysilylpropyl)isocyanurate; 4,4'-diphenylmethane diisocyanate (MDI))
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (toluene diisocyanate trimethylolpropane diethylene glycol)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	No (toluene diisocyanate trimethylolpropane diethylene glycol; 4-isocyanatophenol phosphorothioate (3:1); tris(3-trimethoxysilylpropyl)isocyanurate)
Vietnam - NCI	Yes
Russia - FBEPH	No (toluene diisocyanate trimethylolpropane diethylene glycol; 4-isocyanatophenol phosphorothioate (3:1); tris(3-trimethoxysilylpropyl)isocyanurate)
UAE - Control List (Banned/RestrictedSubstances)	No (ethyl acetate; methyl ethyl ketone; toluene diisocyanate trimethylolpropane diethylene glycol; 4-isocyanatophenol phosphorothioate (3:1); tris(3-trimethoxysilylpropyl)isocyanurate; 4,4'-diphenylmethane diisocyanate (MDI))
Legend:	Yes = All CAS declared ingredients are on the inventory. No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets).

16. OTHER INFORMATION

SDS version summary:

Version	Date of Update	Section Updated
1.0	13/11/2025	Template Change
2.0	13/04/2026	Toxicological information - Acute Health (inhaled), Toxicological information - Acute Health (skin), Toxicological information - Acute Health (swallowed), Toxicological information - Chronic Health, Hazards identification - Classification, Disposal considerations - Disposal, Exposure controls / personal protection - Engineering Control, Firefighting measures - Fire Fighter (fire/explosion hazard), Firefighting measures - Fire Fighter (fire fighting), First Aid measures - First Aid (eye), First Aid measures - First Aid (inhaled), First Aid measures - First Aid (swallowed), Handling and storage - Handling Procedure, Composition / information on ingredients - Ingredients, Exposure controls / personal protection - Personal Protection (other), Accidental release measures - Spills (major), Handling and storage - Storage (storage requirement), Handling and storage - Storage (suitable container), Identification of the substance / mixture and of the company / undertaking - Supplier Information, Transport information - Transport, Name

Full text Risk and Hazard codes

H224: Extremely flammable liquid and vapour.
H301: Toxic if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H315: Causes skin irritation.
H330: Fatal if inhaled.
H331: Toxic if inhaled.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H341: Suspected of causing genetic defects.
H361: Suspected of damaging fertility or 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.
H410: Very toxic to aquatic life with long lasting effects.
H411: Toxic to aquatic life with long lasting effects.
H413: May cause long lasting harmful effects to aquatic life.

Other information

As from 24 August 2023 adequate training is required before industrial or professional use.
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. Scale of use, frequency of use and current or available engineering controls must be considered. 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
DNEL: Derived No-Effect Level
PNEC: Predicted no-effect concentration
MARPOL: International Convention for the Prevention of Pollution from Ships
IMSBC: International Maritime Solid Bulk Cargoes Code
IGC: International Gas Carrier Code
IBC: International Bulk Chemical Code

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	On basis of test data
Acute Toxicity (Oral) Category 4, H302	On basis of test data
Sensitisation (Skin) Category 1, H317	Calculation method
Serious Eye Damage/Eye Irritation Category 2, H319	Calculation method
Sensitisation (Respiratory) Category 1, H334	Minimum classification
Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, H336	Calculation method
Carcinogenicity Category 2, H351	Calculation method
, EUH066	On basis of test data
, EUH204	Calculation method

The contents and format of this Safety Data Sheet comply with UK REACH (UK Regulation (EC) No 1907/2006 as amended) and UK CLP Regulation (UK Regulation (EC) No 1272/2008 as amended), including the requirements of Annex II of UK REACH

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