Tecron NC Fleece-backed Membrane Adhesive

2352

NC FLEECE-BACKED SINGLE SIDED FIELD AREA ADHESIVE

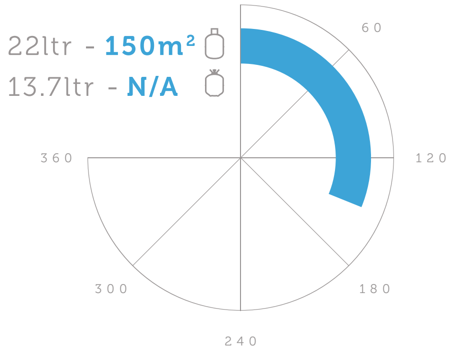
Tecron NC Fleece-backed Membrane Adhesive is a non-chlorinated, polyurethane spray adhesive, designed to be applied single sided to the roof deck only. It has been specifically designed for bonding all fleece-backed single ply membranes including TPO/FPO, EPDM and PVC, to various roof decks such as insulation boards, concrete, plywood, cementitious boards and existing asphalt/bituminous surfaces. Tecron NC Fleece-backed Membrane Adhesive sprays in a unique snowflake spray pattern, designed to give a slight foaming effect to droplets on the surface so that the adhesive keys with the fleece or scrim backing in the membranes for optimum adhesion performance.

BENEFITS

- 100% waterproof.
- Structural curing bond line.
- Non-Chlorinated solvent (NC).
- Compatible with all fleeceback membranes.

SQUARE METRE COVERAGE (m²):

22ltr - **150m²**
13.7ltr - **N/A**



APPLICATION TYPE:

1 sided

OPEN TIME*:

20 mins

FLASH-OFF TIME**:

1 - 2 mins

SPRAY TYPE:

Snowflake Spray

GUN TYPE:

Field Gun

HOSE TYPE:

4m PU MB/HT

COLOUR:

● Red

TECHNICAL DATA:

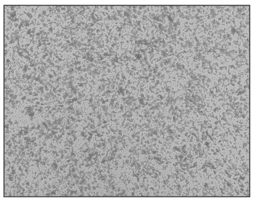
Shelf Life	9 Months
Appearance	Red
Temperature Resistance	-30°c to 140°c
Solvent System	Non-chlorinated
Coverage	150m²
Solids	66% - 70%
VOC Content	Less than 160 grams per litre
Storage	5°c-25°c

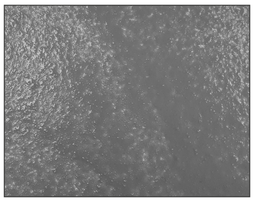
DIRECTIONS FOR USE

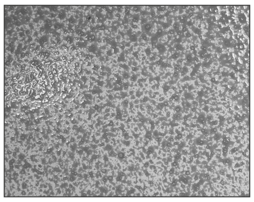
- This product is designed to be applied to the roof deck. For best results, the temperature of the adhesive and the surfaces being bonded should be between 60 ˚F - 80 ˚F (16 ˚C - 27 ˚C).
- Use with adequate ventilation. When possible we recommend shaking the canister well before using.
- Attach and secure hose tightly onto the spray gun with required tip. Attach the other end of the hose onto the canister. Make sure the hose-valve connections are securely tight. Open the valve on the canister slowly and fully, check for leaks during this process. Unlock the trigger on the spray gun to start spraying.
- Prior to use, check compatibility by spraying a small test patch of the adhesive on the substrate. This product may degrade some substrates.

1. Make sure that surfaces are clean, dry and free from dirt, dust, oil, loose paint, wax or grease, etc.
2. Spray about 15 - 30 cm (6” – 12”) away at a 45 degree angle to the surface, applying a uniform, even coat of adhesive to obtain 60% to 80% coverage of the surface. If necessary, spray another coat of adhesive in areas that appear to need more adhesive.
3. Allow 1 - 2 minutes for the adhesive to tack off, make sure to apply membrane within 10 minutes of applying adhesive.
4. Adhere surfaces and press together with adequate pressure. A roller is recommended to apply a uniform pressure to achieve maximum strength. Allow 24 hours for the adhesive to fully cure
5. If the spray tip clogs, unscrew the spray tip from the gun and clean with solvent such as lacquer thinner or acetone. Do not use a pin on the spray tip.

COVERAGE


COVERAGE TOO LIGHT


COVERAGE TOO HEAVY


CORRECT APPLICATION = 50 dry gms/sqm

CANISTER STORAGE/CHANGE OVER

Turn valve on canister into the off position, spray out remaining adhesive left in the hose, disconnect the spray hose and gun from the canister. Reconnect the spray hose to a canister of cleaning solvent (sold separately) and spray out until liquid is clear which indicates that the hose and gun is clean. If you choose to leave the hose and spray gun on the canister, leave the valve on the canister open. Do not disconnect the hose/gun from the canister. Close and lock the spray gun.

HANDLING & STORAGE

- Consult Material Safety Data Sheet prior to use.
- DO NOT store at temperatures over 50°C.
- Avoid exposure to direct sunlight.
- DO NOT store directly on concrete floor.
- For optimum performance, store at 18°C during use, but must always be above 10°C.
- When connected, keep valve open and hose pressurised at all times.
- DO NOT close valve until ready to connect to new cylinder.
- Release pressure in hose before disconnection.
- Always test product to determine suitability for your particular application prior to use in production.

TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER

QUIN GLOBAL (BV) LTD

Chemwatch Hazard Alert Code: **4**

Version No: **2.4**
Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Issue Date: **08/07/2022**
Print Date: **24/08/2022**
S.REACH.IRL.EN

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

1.1. Product Identifier

Product name	TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (contains 1,1-difluoroethane)
Chemical formula	Not Applicable
Other means of identification	UFI:GVK6-9278-200W-RMR0

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

Chemical Product Category	PC1	Adhesives, sealants
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
Sector of Use - Sub Category	SU0	Other
	SU19	Building and construction work
Relevant identified uses	The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.	
Uses advised against	Not Applicable	

1.3. Details of the supplier of the safety data sheet

Registered company name	**QUIN GLOBAL (BV) LTD**	**TECRON**
Address	De Droogmakerij 1851 LX Heiloo Netherlands	Carnmore East Oranmore Co. Galway H91 D294 Ireland
Telephone	0031 72 520 66 97	+353 1 963 9616
Fax	Not Available	Not Available
Website	www.quinglobal.com	Not Available
Email	technicalhelp.uk@quinglobal.com	sales@tecron.ie

1.4. Emergency telephone number

Association / Organisation	**CHEMWATCH EMERGENCY RESPONSE**
Emergency telephone numbers	+353 1 443 4289
Other emergency telephone numbers	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]	H334 - Sensitisation (Respiratory) Category 1, H373 - Specific Target Organ Toxicity - Repeated Exposure Category 2, H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H315 - Skin Corrosion/Irritation Category 2, H319 - Serious Eye Damage/Eye Irritation Category 2, H317 - Sensitisation (Skin) Category 1, H351 - Carcinogenicity Category 2, H222+H229 - Aerosols Category 1
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI*

2.2. Label elements

Page 1 continued...

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

Hazard statement(s)

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H335	May cause respiratory irritation.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H222+H229	Extremely flammable aerosol. Pressurized container: may burst if heated.

Supplementary statement(s)

EUH204	Contains isocyanates. May produce an allergic reaction.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe gas.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
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

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.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P405	Store locked up.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

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

2.3. Other hazards

Inhalation and/or skin contact may produce health damage*.

Cumulative effects may result following exposure*.

May affect fertility*.

May be harmful to the foetus/ embryo*.

Repeated exposure potentially causes skin dryness and cracking*.

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

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Not Applicable

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	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.101-68-8 2.202-966-0|406-550-1 3.615-005-00-9 4.01- 2119457014-47-XXXX	5-20	4,4'-diphenylmethane diisocyanate (MDI)	Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1, Sensitisation (Respiratory) Category 1, Carcinogenicity Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Specific Target Organ Toxicity - Repeated Exposure Category 2; H332, H315, H319, H317, H334, H351, H335, 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 %	Not Available
1.141-78-6 2.205-500-4 3.607-022-00-5 4.01-2119475103-46-0017	10-25	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]	Not Available	Not Available
1.144-19-4 2.205-619-1 3.Not Available 4.01-2119941373-40-0001	<1	2,2,4-trimethyl-1,3-pentanediol	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 [1]	Not Available	Not Available
1.6425-39-4 2.229-194-7 3.Not Available 4.01-2119969278-20-0000	<1	2,2'-dimorpholinodiethyl ether	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1; H302, H315, H319, H317 [1]	Not Available	Not Available
1.4083-64-1 2.223-810-8 3.615-012-00-7 4.01- 2119980050-47-0001	<1	p-toluenesulfonyl isocyanate	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Respiratory) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H315, H319, H334, H335 [2]	Eye Irrit.; H319: C ≥ 5 % | STOT SE 3; H335: C ≥ 5 % | Skin Irrit. 2; H315: C ≥ 5 %	Not Available
1.124-38-9 2.204-696-9 3.Not Available 4.Not Available	1-10	carbon dioxide *	Gases Under Pressure (Liquefied Gas); H280 [1]	Not Available	Not Available
1.75-37-6 2.200-866-1 3.Not Available 4.01-2119474440-43-0000	15-20	1,1-difluoroethane	Flammable Gases Category 1A, Acute Toxicity (Oral) Category 4; H220, H302 [1]	Not Available	Not Available

Legend:	*1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties*

SECTION 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	If poisoning occurs, contact a doctor or Poisons Information Centre. ‣ Avoid giving milk or oils. ‣ Avoid giving alcohol. ‣ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

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	- 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. - Seek medical advice.

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 intoxication due to Freons/ Halons;
A: Emergency and Supportive Measures
- Maintain an open airway and assist ventilation if necessary
- Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
- Monitor the ECG for 4-6 hours

B: Specific drugs and antidotes:
- There is no specific antidote

C: Decontamination
- Inhalation; remove victim from exposure, and give supplemental oxygen if available.
- Ingestion; (a) Prehospital: Administer activated charcoal, if available. **DO NOT** induce vomiting because of rapid absorption and the risk of abrupt onset CNS depression. (b) Hospital: Administer activated charcoal, although the efficacy of charcoal is unknown. Perform gastric lavage only if the ingestion was very large and recent (less than 30 minutes)

D: Enhanced elimination:
- There is no documented efficacy for diuresis, haemodialysis, haemoperfusion, or repeat-dose charcoal.

POISONING and DRUG OVERDOSE, Californian Poison Control System Ed. Kent R Olson; 3rd Edition
- Do not administer sympathomimetic drugs unless absolutely necessary as material may increase myocardial irritability.
- No specific antidote.
- Because rapid absorption may occur through lungs if aspirated and cause systematic effects, the decision of whether to induce vomiting or not should be made by an attending physician.
- If lavage is performed, suggest endotracheal and/or esophageal control.
- Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.
- Treatment based on judgment of the physician in response to reactions of the patient

For gas exposures:

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.
- Anticipate seizures.

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.

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.

SECTION 5 Firefighting measures

5.1. Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

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- Flooding quantities of water only.

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

5.3. Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves in the event of a fire. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Consider evacuation (or protect in place). ▸ Fight fire from a safe distance, with adequate cover. ▸ If safe, switch off electrical equipment until vapour fire hazard removed. ▸ Use water delivered as a fine spray to control the fire and cool adjacent area. ▸ Avoid spraying water onto liquid pools. ▸ **Do not** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	- Combustible. - Moderate fire hazard when exposed to heat or flame. - When heated to high temperatures decomposes rapidly generating vapour which pressures and may then rupture containers with release of flammable and highly toxic isocyanate vapour. - Burns with acrid black smoke and poisonous fumes. - Due to reaction with water producing CO2-gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. - Combustion yields traces of highly toxic hydrogen cyanide HCN, plus toxic nitrogen oxides NOx and carbon monoxide. , carbon dioxide (CO2) , hydrogen cyanide , isocyanates , and minor amounts of , nitrogen oxides (NOx) , hydrogen fluoride , other pyrolysis products typical of burning organic material. BEWARE: Empty solvent, paint, lacquer and flammable liquid drums present a severe explosion hazard if cut by flame torch or welded. Even when thoroughly cleaned or reconditioned the drum seams may retain sufficient solvent to generate an explosive atmosphere in the drum.

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	▸ 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. ▸ Contain and absorb small quantities with vermiculite or other absorbent material. ▸ Wipe up. ▸ Collect residues in a flammable waste container.
Major Spills	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). ▸ Dike the spill to prevent spreading and to contain additions of decontaminating solution. ▸ Prevent the material from entering drains. ▸ Estimate spill pool volume or area. ▸ Absorb and decontaminate. - Completely cover the spill with wet sand, wet earth, vermiculite or other similar absorbent. - Add neutraliser (for suitable formulations: see below) to the adsorbent materials (equal to that of estimated spill pool volume). Intensify contact between spill, absorbent and neutraliser by carefully mixing with a rake and allow to react for 15 minutes ▸ Shovel absorbent/decontaminant solution mixture into a steel drum. ▸ Decontaminate surface. - Pour an equal amount of neutraliser solution over contaminated surface. - Scrub area with a stiff bristle brush, using moderate pressure. - Completely cover decontaminant with vermiculite or other similar absorbent. - After 5 minutes, shovel absorbent/decontamination solution mixture into the same steel drum used above. ▸ Monitor for residual isocyanate. If surface is decontaminated, proceed to next step. If contamination persists, repeat decontaminate procedure immediately above ▸ Place loosely covered drum (release of carbon dioxide) outside for at least 72 hours. Label waste-containing drum appropriately. Remove waste materials for incineration. ▸ Decontaminate and remove personal protective equipment. ▸ Return to normal operation. ▸ Conduct accident investigation and consider measures to prevent reoccurrence.

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Decontamination:
Treat isocyanate spills with sufficient amounts of isocyanate decontaminant preparation ("neutralising fluid"). Isocyanates and polyisocyanates are generally not miscible with water. Liquid surfactants are necessary to allow better dispersion of isocyanate and neutralising fluids/ preparations. Alkaline neutralisers react faster than water/surfactant mixtures alone.
Typically, such a preparation may consist of:
Sawdust: 20 parts by weight Kieselguhr 40 parts by weight plus a mixture of {ammonia (s.g. 0.880) 8% v/v non-ionic surfactant 2% v/v water 90% v/v}.
Let stand for 24 hours
Three commonly used neutralising fluids each exhibit advantages in different situations.
Formulation A :
liquid surfactant 0.2-2%
sodium carbonate 5-10%
water to 100%
Formulation B
liquid surfactant 0.2-2%
concentrated ammonia 3-8%
water to 100%
Formulation C
ethanol, isopropanol or butanol 50%
concentrated ammonia 5%
water to 100%

After application of any of these formulae, let stand for 24 hours.

Formulation B reacts faster than Formulation A. However, ammonia-based neutralisers should be used only under well-ventilated conditions to avoid overexposure to ammonia or if members of the emergency team wear suitable respiratory protection. Formulation C is especially suitable for cleaning of equipment from unreacted isocyanate and neutralizing under freezing conditions. Regard has to be taken to the flammability of the alcoholic solution.

- 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 breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse /absorb vapour.
- Contain spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

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	
Fire and explosion protection	See section 5
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry area protected from environmental extremes. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS. For major quantities: ▸ Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams}. ▸ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities. · Do NOT store halogenated aliphatics in areas containing alkali or alkaline earth metals such as powdered aluminum, zinc, or beryllium

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	▸ **DO NOT** use aluminium or galvanised containers ▸ 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. (23 deg. C) ▸ For manufactured product having a viscosity of at least 250 cSt. (23 deg. C) ▸ Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C): (i) Removable head packaging;

Continued...

	(ii) Cans with friction closures and (iii) low pressure tubes and cartridges may be used. ▸ Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages ▸ In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
Storage incompatibility	Carbon dioxide: ▸ reacts violently with strong bases and alkali metals (especially their dusts) ▸ may ignite or explode when heated or in suspended chemically active metals (and their hydrides) such as aluminium, chromium, manganese, magnesium (above 775 C), titanium (above 550 C), uranium (above 750 C) or zirconium , diethylmagnesium ▸ is incompatible with water, acrolein, acrylaldehyde, amines, anhydrous ammonia, aziridine, metal acetylides (such as lithium acetylide), caesium monoxide (moist), lithium, potassium, sodium, sodium carbide, sodium-potassium alloy, sodium peroxide, titanium ▸ may build up static electricity when discharged at high flow rates from storage cylinders or fire extinguishers - this may produce sparks resulting in ignition of flammables or explosives. ▸ may decompose to toxic carbon monoxide and flammable oxygen when exposed to electrical discharges or very high temperatures 1,1-Difluorethane: ▸ reacts violently with strong oxidisers, barium, sodium and potassium ▸ is incompatible with powdered aluminium, liquid oxygen ▸ may form explosive compounds with divalent light metals and metallic azides ▸ attacks some metals in the presence of moisture ▸ undergoes thermal decomposition when exposed to flame or red-hot surfaces ▸ may generate electrostatic charges due to low conductivity. ▸ 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. ▸ Esters may be incompatible with aliphatic amines and nitrates. ▸ Avoid magnesium, aluminium and their alloys, brass and steel. · 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 di-isocyanate 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. Reaction between a di-isocyanate and a compound containing two or more amine groups, produces long polymer chains known as polyureas. · Isocyanates and thioisocyanates are incompatible with many classes of compounds, reacting exothermically to release toxic gases. Reactions with amines, strong bases, aldehydes, alcohols, alkali metals, ketones, mercaptans, strong oxidisers, hydrides, phenols, and peroxides can cause vigorous releases of heat. Acids and bases initiate polymerisation reactions in these materials. · Isocyanates also can react with themselves. Aliphatic di-isocyanates can form trimers, which are structurally related to cyanuric acid. Isocyanates participate in Diels-Alder reactions, functioning as dienophiles · Isocyanates easily form adducts with carbodiimides, isothiocyanates, ketenes, or with substrates containing activated CC or CN bonds. · Some isocyanates react with water to form amines and liberate carbon dioxide. This reaction may also generate large volumes of foam and heat. Foaming spaces may produce pressure in confined spaces or containers. Gas generation may pressurise drums to the point of rupture. · Do NOT reseal container if contamination is expected · Open all containers with care · Base-catalysed reactions of isocyanates with alcohols should be carried out in inert solvents. Such reactions in the absence of solvents often occur with explosive violence, · Isocyanates will attack and embrittle some plastics and rubbers. · The isocyanate anion is a pseudohalide (syn pseudohalogen) whose chemistry, resembling that of the true halogens, allows it to substitute for halogens in several classes of chemical compounds.. The behavior and chemical properties of the several pseudohalides are identical to that of the true halide ions. ▸ 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. BRETHERICK: Handbook of Reactive Chemical Hazards, 4th Edition

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
4,4'-diphenylmethane diisocyanate (MDI)	Inhalation 0.05 mg/m³ (Local, Chronic) Inhalation 0.1 mg/m³ (Local, Acute) *Inhalation 0.025 mg/m³ (Local, Chronic) ** *Inhalation 0.05 mg/m³ (Local, Acute) **	1 mg/L (Water (Fresh)) 0.1 mg/L (Water - Intermittent release) 10 mg/L (Water (Marine)) 1 mg/kg soil dw (Soil) 1 mg/L (STP)
ethyl acetate	Dermal 63 mg/kg bw/day (Systemic, Chronic) Inhalation 734 mg/m³ (Systemic, Chronic) Inhalation 734 mg/m³ (Local, Chronic) Inhalation 1 468 mg/m³ (Systemic, Acute) Inhalation 1 468 mg/m³ (Local, Acute) *Dermal 37 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 367 mg/m³ (Systemic, Chronic) ** *Oral 4.5 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 367 mg/m³ (Local, Chronic) ** *Inhalation 734 mg/m³ (Systemic, Acute) ** *Inhalation 734 mg/m³ (Local, Acute) **	0.24 mg/L (Water (Fresh)) 0.024 mg/L (Water - Intermittent release) 1.65 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) 0.2 g/kg food (Oral)
2,2,4-trimethyl-1,3-pentanediol	Dermal 7.03 mg/kg bw/day (Systemic, Chronic) Inhalation 6.61 mg/m³ (Systemic, Chronic) *Dermal 6 mg/kg bw/day (Systemic, Chronic) **	0.109 mg/L (Water (Fresh)) 0.011 mg/L (Water - Intermittent release) 1.091 mg/L (Water (Marine))

Continued...

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
	*Inhalation 2.6 mg/m³ (Systemic, Chronic) ** *Oral 6 mg/kg bw/day (Systemic, Chronic) ** *Oral 18 mg/kg bw/day (Systemic, Acute) **	0.903 mg/kg sediment dw (Sediment (Fresh Water)) 0.09 mg/kg sediment dw (Sediment (Marine)) 0.117 mg/kg soil dw (Soil) 20 mg/L (STP)
2,2'-dimorpholinodiethyl ether	Dermal 1 mg/kg bw/day (Systemic, Chronic) Inhalation 7.28 mg/m³ (Systemic, Chronic) *Dermal 0.5 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 1.8 mg/m³ (Systemic, Chronic) ** *Oral 0.5 mg/kg bw/day (Systemic, Chronic) **	0.1 mg/L (Water (Fresh)) 0.01 mg/L (Water - Intermittent release) 1 mg/L (Water (Marine)) 8.2 mg/kg sediment dw (Sediment (Fresh Water)) 0.82 mg/kg sediment dw (Sediment (Marine)) 1.58 mg/kg soil dw (Soil) 100 mg/L (STP) 10 mg/kg food (Oral)
p-toluenesulfonyl isocyanate	Dermal 0.92 mg/kg bw/day (Systemic, Chronic) Inhalation 3.24 mg/m³ (Systemic, Chronic) *Dermal 0.46 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 0.8 mg/m³ (Systemic, Chronic) ** *Oral 0.46 mg/kg bw/day (Systemic, Chronic) **	0.03 mg/L (Water (Fresh)) 0.003 mg/L (Water - Intermittent release) 0.3 mg/L (Water (Marine)) 0.172 mg/kg sediment dw (Sediment (Fresh Water)) 0.017 mg/kg sediment dw (Sediment (Marine)) 0.017 mg/kg soil dw (Soil) 0.4 mg/L (STP)
1,1-difluoroethane	Inhalation 1 085.98 mg/m³ (Systemic, Chronic) *Inhalation 270.14 mg/m³ (Systemic, Chronic) **	0.048 mg/L (Water (Fresh)) 0.005 mg/L (Water - Intermittent release) 0.48 mg/L (Water (Marine)) 0.19 mg/kg sediment dw (Sediment (Fresh Water)) 0.019 mg/kg sediment dw (Sediment (Marine)) 0.096 mg/kg soil dw (Soil) 4.726 mg/L (STP)

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Europe ECHA Occupational exposure limits - Activity list	4,4'-diphenylmethane diisocyanate (MDI)	Not Available	Not Available	Not Available	Not Available	Not Available
Ireland Occupational Exposure Limits	ethyl acetate	Ethyl acetate	200 ppm / 734 mg/m3	1468 mg/m3 / 400 ppm	Not Available	IOELV
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	ethyl acetate	Ethyl acetate	200 ppm / 734 mg/m3	1 468 mg/m3 / 400 ppm	Not Available	Not Available
Ireland Occupational Exposure Limits	carbon dioxide	Carbon dioxide	5000 ppm / 9000 mg/m3	Not Available	Not Available	IOELV
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	carbon dioxide	Carbon dioxide	5000 ppm / 9000 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
4,4'-diphenylmethane diisocyanate (MDI)	0.45 mg/m3	Not Available	Not Available
4,4'-diphenylmethane diisocyanate (MDI)	29 mg/m3	40 mg/m3	240 mg/m3
ethyl acetate	1,200 ppm	1,700 ppm	10000** ppm
1,1-difluoroethane	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
4,4'-diphenylmethane diisocyanate (MDI)	75 mg/m3	Not Available
ethyl acetate	2,000 ppm	Not Available
2,2,4-trimethyl-1,3-pentanediol	Not Available	Not Available
2,2'-dimorpholinodiethyl ether	Not Available	Not Available
p-toluenesulfonyl isocyanate	Not Available	Not Available
carbon dioxide	40,000 ppm	Not Available
1,1-difluoroethane	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
2,2,4-trimethyl-1,3-pentanediol	E	≤ 0.01 mg/m³
2,2'-dimorpholinodiethyl ether	E	≤ 0.1 ppm
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.*	

Continued...

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
p-toluenesulfonyl isocyanate	E	≤ 0.1 ppm
1,1-difluoroethane	E	≤ 0.1 ppm
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.
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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.
For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.
Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.
· Adequate ventilation is typically taken to be that which limits the average concentration to no more than 25% of the LEL within the building, room or enclosure containing the dangerous substance.
· Ventilation for plant and machinery is normally considered adequate if it limits the average concentration of any dangerous substance that might potentially be present to no more than 25% of the LEL. However, an increase up to a maximum 50% LEL can be acceptable where additional safeguards are provided to prevent the formation of a hazardous explosive atmosphere. For example, gas detectors linked to emergency shutdown of the process might be used together with maintaining or increasing the exhaust ventilation on solvent evaporating ovens and gas turbine enclosures.
· Temporary exhaust ventilation systems may be provided for non-routine higher-risk activities, such as cleaning, repair or maintenance in tanks or other confined spaces or in an emergency after a release. The work procedures for such activities should be carefully considered.. The atmosphere should be continuously monitored to ensure that ventilation is adequate and the area remains safe. Where workers will enter the space, the ventilation should ensure that the concentration of the dangerous substance does not exceed 10% of the LEL (irrespective of the provision of suitable breathing apparatus)

8.2.2. Personal protection

Eye and face protection

- Safety glasses with side shields.
- Chemical goggles.
- 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. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

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.
- Butyl rubber gloves
    - Butyl rubber gloves should be used when handling halogenated aliphatics .

Continued...

	· Nitrile, PVC-coated nitrile, and PVC protective equipment are not recommended ‣ 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	· Halogen-selective detectors use a specialized sensor that allows the monitor to detect compounds containing fluorine, chlorine, bromine, and iodine with-out interference from other species.These detectors are typically easy to use, feature higher sensitivity than the nonselective detectors (detection limits are typically <5 ppm when used as an area monitor and <1.4 gm/yr [<0.05 oz/yr] when used as a leak pinpointer). · Compound-Specific Detectors are typically capable of detecting the presence of a single compound without interference from other compounds. ‣ Overalls. ‣ PVC Apron. ‣ PVC protective suit may be required if exposure severe. ‣ Eyewash unit. ‣ Ensure there is ready access to a safety shower. ‣ 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. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn. Personnel who have been issued conductive footwear should not wear them from their place of work to their homes and return.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER

Material	CPI
PE/EVAL/PE	A
BUTYL	C
BUTYL/NEOPRENE	C
CPE	C
HYPALON	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PVA	C
PVC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON/CHLOROBUTYL	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.

Respiratory protection

Type AX 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 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 5 x ES	AX-AUS / Class 1	-	AX-PAPR-AUS / Class 1
up to 25 x ES	Air-line*	AX-2	AX-PAPR-2
up to 50 x ES	-	AX-3	-
50+ x ES	-	Air-line**	-

* - Continuous-flow; ** - Continuous-flow or positive pressure demand
^ - 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	Coloured		
Physical state	Dissolved Gas	**Relative density (Water = 1)**	1.05

Continued...

Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	460
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	>20.5
Initial boiling point and boiling range (°C)	76-78	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	-1	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	HIGHLY FLAMMABLE.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	13	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	1	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (Not Available%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	464.87
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	▸ 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

SECTION 11 Toxicological information

11.1. Information on toxicological effects

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. Animal testing showed a single, high-level exposure to 1,1-difluoroethane by inhalation has caused difficulty breathing, lung irritation, lethargy, inco-ordination, and loss of consciousness, with sensitisation of the heart occurring at a concentration of 15% after adrenaline was given into a vein. Repeated exposure caused increased urinary fluoride, reduced kidney weight and reversible kidney changes. Inhaling high concentrations can depress the central nervous system, which may lead to inco-ordination, impaired judgment and, if exposure is prolonged, unconsciousness and even death. Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved. Depression of the central nervous system is the most outstanding effect of most halogenated aliphatic hydrocarbons. Inebriation and excitation, passing into narcosis, is a typical reaction. In severe acute exposures there is always a danger of death from respiratory failure or cardiac arrest due to a tendency to make the heart more susceptible to catecholamines (adrenalin) Inhalation of the vapour is hazardous and may even be fatal
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. A single high oral dose of 1,1-difluoroethane produced weight loss and lethargy. Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733)

Continued...

Skin Contact	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition 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.
Eye	This material can cause eye irritation and damage in some persons.
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. 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. Following an inhalation exposure of rats to radiolabelled MDI, 79% of the dose was excreted in faeces. The faecal excretion in these animals was considered entirely due to ingestion of radioactivity from grooming and ingestion of deposited material from the nasopharangeal region via the mucociliary escalator, i.e. not following systemic absorption. The faecal radioactivity was tentatively identified as mixed molecular weight polyureas derived from MDI. Diamine was not present. Thus, for MDI and diisocyanates in general the oral gavage dosing route is inappropriate for toxicological studies and risk assessment. It is expected that oral gavage dosing will result in a similar outcome to that produced by TDI or MDI, that is (1) reaction with stomach contents and (2) polymerization to solid polyureas. ‣ Reaction with stomach contents is very plausibly described in case reports of accidental ingestion of polymeric MDI based glue in domestic animals. Extensive polymerization and CO2 liberation resulting in an expansion of the gastric content is described in the stomach, without apparent acute chemical toxicity ‣ Polyurea formation in organic and aqueous phases has been described. In this generally accepted chemistry of hydrolysis of an isocyanate the initially produced carbamate decarboxylates to an amine which. The amine, as a reactive intermediate, then reacts very readily with the present isocyanate to produce a solid and inert polyurea. This urea formation acts as a pH buffer in the stomach, thus promoting transformation of the diisocyanate into polyurea, even under the acidic conditions. At the resorbtive tissues in the small intestine, these high molecular reaction products are likely to be of very low bioavailability, which is substantiated by the absence of systemic toxicity in acute oral bioassays with rats at the OECD limit dose (LC50>2 g/kg bw). The respiratory tract may be regarded as the main entry for systemically available isocyanates as evidenced following MDI.exposures. A detailed summary on urinary, plasma and in vitro metabolite studies is provided below. Taken together, all available studies provide convincing evidence that MDI-protein adduct and MDI-metabolite formation proceeds: ‣ via formation of a labile isocyanate glutathione (GSH)-adduct, ‣ then transfer to a more stable adduct with larger proteins, and ‣ without formation of free MDA. MDA reported as a metabolite is actually formed by analytical workup procedures (strong acid or base hydrolysis) and is not an identified metabolite in urine or blood 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.

	TOXICITY	IRRITATION
TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER	Not Available	Not Available

	TOXICITY	IRRITATION
4,4'-diphenylmethane diisocyanate (MDI)	Dermal (rabbit) LD50: >6200 mg/kg[2]	Dermal Sensitiser *
	Inhalation(Rat) LC50; 0.368 mg/L4h[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50; >2000 mg/kg[1]	Skin (rabbit): 500 mg /24 hours
		Skin: adverse effect observed (irritating)[1]

	TOXICITY	IRRITATION
ethyl acetate	Dermal (rabbit) LD50: >18000 mg/kg[2]	Eye (human): 400 ppm
	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]

	TOXICITY	IRRITATION
2,2,4-trimethyl-1,3-pentanediol	Dermal (rabbit) LD50: 6300 mg/kg[2]	Skin (rabbit): 0.937 mg/24h-mild
	Oral (Rat) LD50; >2000 mg/kg[1]	

	TOXICITY	IRRITATION
2,2'-dimorpholinodiethyl ether	Dermal (rabbit) LD50: 746.24 mg/kg[1]	Eye (rabbit): irritant OECD 405
	Oral (Rat) LD50; >2000 mg/kg[1]	Eye: adverse effect observed (irritating)[1]
		Skin (rabbit): irritant OECD 404
		Skin: no adverse effect observed (not irritating)[1]

	TOXICITY	IRRITATION
p-toluenesulfonyl isocyanate	dermal (rat) LD50: >2000 mg/kg[1]	Not Available
	Inhalation(Rat) LC50; >320 ppm4h[2]	

Continued...

	Oral (Rat) LD50; 2600 mg/kg[2]	
carbon dioxide	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
1,1-difluoroethane	**TOXICITY**	**IRRITATION**
	Inhalation(Rat) LC50; >437500 ppm4h[1]	Not Available
	Oral (Rat) LD50; 484 mg/kg[2]	
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*	

TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER	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. Numerous haloalkanes and haloalkenes have been tested for cancer-causing and mutation-causing activities. In general, the potential to cause genetic toxicity is dependent on the nature, number and position of halogen(s) and the size of the molecule. Haloalkenes are of concern because of the potential to generate genetically toxic intermediates after epoxidation. The concern for haloalkenes may be diminished if the double bond is internal or sterically hindered. The cancer concern levels of the 14 haloalkenes and haloalkanes, have been rated, based on available screening cancer bioassays and data on genetic toxicity. Some individuals may be genetically more susceptible to brominated THMs than others. Six, two and one haloalkanes/haloalkenes have been given low-moderate, marginal and low concern, respectively. 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. In Europe the upper use levels for these flavouring substances are generally 1 to 30 mg/kg foods and in special food categories like candy and alcoholic beverages up to 300 mg/kg foods **Internationl Program on Chemical Safety: the Joint FAO/WHO Expert Committee on Food Additives (JECFA)** **Esters of Aliphatic acyclic primary alcohols with aliphatic linear saturated carboxylic acids.; 1998**
4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI)	Inhalation (human) TCLo: 0.13 ppm/30 mins Eye (rabbit): 0.10 mg moderate 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. 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.
2,2,4-TRIMETHYL-1,3-PENTANEDIOL	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. Alkyl alcohols of chain length C6-13 are absorbed from skin, when inhaled or swallowed but show evidence of little harm. They are broken down and rapidly excreted by the body.
2,2'-DIMORPHOLINODIETHYL ETHER	Overexposure to most of these materials may cause adverse health effects. Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose. Whole-body symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, rapid heartbeat, itching, reddening of the skin, urticaria (hives) and swelling of the face, which are usually transient. There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing. Inhalation: Inhaling vapours may result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs. Higher concentrations of certain amines can produce severe respiratory irritation, characterized by discharge from the nose, coughing, difficulty in breathing and chest pain. Chronic exposure via inhalation may cause headache, nausea, vomiting, drowsiness, sore throat, inflammation of the bronchi and lungs, and possible lung damage. Repeated and/or prolonged exposure to some amines may result in liver disorders, jaundice and liver enlargement. Some amines have been shown to cause kidney, blood and central nervous system disorders in animal studies. While most polyurethane amine catalysts are not sensitisers, some certain individuals may also become sensitized to amines and my experience distress while breathing, including asthma-like attacks, whenever they are subsequently exposed to even very small amounts of vapours. Once sensitized, these individuals must avoid any further exposure to amines. Chronic overexposure may lead to permanent lung injury, including reduction in lung function, breathlessness, chronic inflammation of the bronchi, and immunologic lung disease. Products with higher vapour pressures may reach higher concentrations in the air, and this increases the likelihood of worker exposure. Inhalation hazards are increased when exposure to amine catalysts occurs in situations that produce aerosols, mists or heated vapours. Such situations include leaks in fitting or transfer lines. Medical conditions generally aggravated by inhalation exposure include asthma, bronchitis and emphysema. Skin contact: Skin contact with amine catalysts poses a number of concerns. Direct skin contact can cause moderate to severe irritation and injury, from simple redness and swelling to painful blistering, ulceration, and chemical burns. Repeated or prolonged exposure may also result in severe cumulative skin inflammation. Skin contact with some amines may result in allergic sensitization. Sensitised persons should avoid all contact with amine catalysts. Whole-body effects resulting from the absorption of the amines though skin exposure may include headaches, nausea, faintness, anxiety, decrease in blood pressure, reddening of the skin, hives, and facial swelling. These symptoms may be related to the pharmacological action of the amines, and they are usually temporary. Eye contact: Amine catalysts are alkaline and their vapours are irritating to the eyes, even at low concentrations. Direct contact with liquid amine may cause severe irritation and tissue injury, and the “burning” may lead to blindness. Contact with solid products may result in mechanical irritation, pain and corneal injury. Exposed persons may experience excessive tearing, burning, inflammation of the conjunctiva, and swelling of the cornea, which manifests as a blurred or foggy vision with a blue tint, and sometimes a halo phenomenon around lights. These symptoms are temporary and usually disappear when exposure ends. Some people may experience this effect even when exposed to concentrations that do not cause respiratory irritation. Ingestion: Amine catalysts have moderate to severe toxicity if swallowed. Some amines can cause severe irritation, ulcers and burns of the mouth, throat, gullet and gastrointestinal tract. Material aspirated due to vomiting can damage the bronchial tubes and the lungs. Affected people may also experience pain in the chest or abdomen, nausea, bleeding of the throat and gastrointestinal tract, diarrhea, dizziness, drowsiness,

Continued...

	thirst, collapse of circulation, coma and even death. No experimental evidence available for genotoxicity in vitro (Ames test negative). *BASF
P-TOLUENESULFONYL ISOCYANATE	For p-toluenesulfonyl isocyanate: The acute semi-lethal dose is 2600mg/kg by mouth. Because PTSI is rapidly broken down to PTSA and carbon dioxide, its repeated dose, reproductive, developmental and genetic toxicity are best described by PTSA. For p-toluenesulfonamide (PTSA): Animal testing shows that PTSA at high doses may cause changes in blood count and blood chemistry, with changes in the epithelium of the bladder and accelerated degeneration of the thymus. Sufficient doses may cause developmental effects, early delivery of foetuses or disorders in breast feeding. PTSA does not seem to cause mutations or genetic damage.
1,1-DIFLUOROETHANE	1,1-difluoroethane is practically non-toxic following acute or chronic inhalation exposure. In animal testing, extremely high concentrations (5% and over) may cause reduced contraction of heart muscle and at even higher levels, heartbeat irregularities. It seems to have a weak effect in damaging genetic material in cells. Studies have not shown it to cause developmental or reproductive toxicity, and it has not been shown to cause mutations.
TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER & 4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI) & ETHYL ACETATE & 2,2,4-TRIMETHYL-1,3-PENTANEDIOL & P-TOLUENESULFONYL ISOCYANATE	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. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.
TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER & 4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI) & P-TOLUENESULFONYL ISOCYANATE	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.
TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER & 4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI) & 2,2'-DIMORPHOLINODIETHYL ETHER	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. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.
4,4'-DIPHENYLMETHANE DIISOCYANATE (MDI) & P-TOLUENESULFONYL ISOCYANATE	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 Disruption Properties

Not Available

SECTION 12 Ecological information

12.1. Toxicity

	Endpoint	Test Duration (hr)	Species	Value	Source
TECRON FLEECE BACKED ROOFING MEMBRANE ADHESIVE, RED, CANISTER	Not Available	Not Available	Not Available	Not Available	Not Available
4,4'-diphenylmethane diisocyanate (MDI)	EC50	72h	Algae or other aquatic plants	>1640mg/l	2
	BCF	672h	Fish	61-150	7
	NOEC(ECx)	504h	Crustacea	>=10mg/l	2
	LC50	96h	Fish	95.24-134.37mg/l	Not Available
ethyl acetate	EC50	48h	Crustacea	164mg/l	1
	NOEC(ECx)	72h	Algae or other aquatic plants	>100mg/l	1
	LC50	96h	Fish	>75.6mg/l	2

Continued...

	Endpoint	Test Duration (hr)	Species	Value	Source
2,2,4-trimethyl-1,3-pentanediol	EC50	72h	Algae or other aquatic plants	>110.1mg/l	2
	EC50	48h	Crustacea	>109.1mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	>=100mg/l	2
	LC50	96h	Fish	>700mg/l	2
2,2'-dimorpholinodiethyl ether	NOEC(ECx)	72h	Algae or other aquatic plants	100mg/l	2
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	EC50	48h	Crustacea	>100mg/l	2
	LC50	96h	Fish	>2150mg/l	2
p-toluenesulfonyl isocyanate	EC50	72h	Algae or other aquatic plants	25mg/l	2
	EC50	48h	Crustacea	>100mg/l	2
	LC50	96h	Fish	>45mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	10mg/l	2
carbon dioxide	LC50	96h	Fish	35mg/l	1
1,1-difluoroethane	EC50(ECx)	96h	Algae or other aquatic plants	47.755mg/l	2
	EC50	48h	Crustacea	146.695mg/l	2
	LC50	96h	Fish	291.31mg/l	2
	EC50	96h	Algae or other aquatic plants	47.755mg/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 Haloalkanes:
Atmospheric Fate: Fully, or partially, fluorinated haloalkanes released to the air can restrict heat loss from the Earth's atmosphere by absorbing infrared emissions from the surface. The major fate of haloalkanes in the atmosphere is via breakdown by hydroxyl radicals. These substances react with atmospheric ozone and nitrates, which also causes them to change, (transform). Chlorofluorocarbons, (CFC), haloalkanes can break down into chlorine atoms in the air, which also contribute to ozone destruction.
Terrestrial Fate: Biological breakdown of these substances is expected to be faster than non-biological breakdown, provided that there are sufficient substrates, nutrients and microbial populations. However, because haloalkane-degrading microorganisms are not easily found, biological breakdown of these substances is rare. Several methane-utilizing bacteria have been identified that may use haloalkanes. Biological breakdown may occur through various pathways.
Aquatic Fate: Haloalkanes do not easily break down in water. Biological breakdown of these substances is expected to be faster than non-biological breakdown, provided that there are sufficient substrates, nutrients and microbial populations. In general, alpha- and alpha, omega-chlorinated haloalkanes are de-halogenated by water. Alpha- and alpha, omega-haloalkanes with longer chains, may be de-halogenated by the addition of oxygen, (oxidized). Haloalkanes may break down in water, if certain sulfur ions are present, such as bisulfide ions.
Ecotoxicity: Haloparaffins C12 to C18 may be incorporated into fatty acids in bacteria, yeasts, and fungi, resulting in their build up in the food chain. Haloalkanes are persistent and toxic to fish and wildlife.

For 1,1-Difluorethane: Log Kow: 0.75; BCF: 2.
Environmental Fate: 1,1-difluoroethane is expected to exist solely as a vapor in the ambient atmosphere with a half-life of about 472 days. Some 1,1-difluoroethane is expected to diffuse into the stratosphere above the ozone layer where it will slowly degrade due to direct photolysis from UV-radiation.
Aquatic Fate: The estimated half-life for a model river is 2 hours and model lake is 77 hours. 1,1-Difluoroethane is not expected to adsorb to suspended solids and sediment. The chemical is expected to volatilize rapidly from surface water.
Atmospheric Fate: Ninety-nine percent of 1,1-difluorethane released to air distributes to the atmospheric compartment.
Ecotoxicity: 1,1-difluoroethane is unlikely to represent an unacceptable risk to aquatic organisms or wildlife. Bioconcentration of this chemical tends to be low and is slightly to relatively non-toxic to fish and Daphnia magna water fleas. The substance is moderately toxic to algae.
DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
4,4'-diphenylmethane diisocyanate (MDI)	LOW (Half-life = 1 days)	LOW (Half-life = 0.24 days)
ethyl acetate	LOW (Half-life = 14 days)	LOW (Half-life = 14.71 days)
2,2,4-trimethyl-1,3-pentanediol	LOW	LOW
2,2'-dimorpholinodiethyl ether	HIGH	HIGH
p-toluenesulfonyl isocyanate	HIGH	HIGH
carbon dioxide	LOW	LOW
1,1-difluoroethane	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
4,4'-diphenylmethane diisocyanate (MDI)	LOW (BCF = 15)
ethyl acetate	HIGH (BCF = 3300)

Continued...

Ingredient	Bioaccumulation
2,2,4-trimethyl-1,3-pentanediol	LOW (LogKOW = 1.24)
2,2'-dimorpholinodiethyl ether	LOW (LogKOW = -1.3122)
p-toluenesulfonyl isocyanate	LOW (LogKOW = 2.3424)
carbon dioxide	LOW (LogKOW = 0.83)
1,1-difluoroethane	LOW (LogKOW = 0.75)

12.4. Mobility in soil

Ingredient	Mobility
4,4'-diphenylmethane diisocyanate (MDI)	LOW (KOC = 376200)
ethyl acetate	LOW (KOC = 6.131)
2,2,4-trimethyl-1,3-pentanediol	HIGH (KOC = 1)
2,2'-dimorpholinodiethyl ether	LOW (KOC = 10)
p-toluenesulfonyl isocyanate	LOW (KOC = 882.1)
carbon dioxide	HIGH (KOC = 1.498)
1,1-difluoroethane	LOW (KOC = 35.04)

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

Not Available

SECTION 13 Disposal considerations

13.1. Waste treatment methods

Product / Packaging disposal	‣ **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. ‣ Where in doubt contact the responsible authority. ‣ 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). ‣ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO

Land transport (ADR-RID)

14.1. **UN number**	3501
14.2. **UN proper shipping name**	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (contains 1,1-difluoroethane)
14.3. **Transport hazard class(es)**	Class 2.1 Subrisk Not Applicable

Continued...

14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Hazard identification (Kemler): 23 Classification code: 8F Hazard Label: 2.1 Special provisions: 274 659 Limited quantity: 0 Tunnel Restriction Code: 2 (B/D)

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	3501
14.2. **UN proper shipping name**	Chemical under pressure, flammable, n.o.s. * (contains 1,1-difluoroethane)
14.3. **Transport hazard class(es)**	ICAO/IATA Class: 2.1 ICAO / IATA Subrisk: Not Applicable ERG Code: 10L
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: A1 A187 Cargo Only Packing Instructions: 218 Cargo Only Maximum Qty / Pack: 75 kg Passenger and Cargo Packing Instructions: Forbidden Passenger and Cargo Maximum Qty / Pack: Forbidden Passenger and Cargo Limited Quantity Packing Instructions: Forbidden Passenger and Cargo Limited Maximum Qty / Pack: Forbidden

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	3501
14.2. **UN proper shipping name**	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (contains 1,1-difluoroethane)
14.3. **Transport hazard class(es)**	IMDG Class: 2.1 IMDG Subrisk: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	EMS Number: F-D, S-U Special provisions: 274 362 Limited Quantities: 0

Inland waterways transport (ADN)

14.1. **UN number**	3501
14.2. **UN proper shipping name**	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (contains 1,1-difluoroethane)
14.3. **Transport hazard class(es)**	2.1 | Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Classification code: 8F Special provisions: 274; 659 Limited quantity: 0 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
4,4'-diphenylmethane	Not Available

Continued...

Product name	Group
diisocyanate (MDI)	
ethyl acetate	Not Available
2,2,4-trimethyl-1,3-pentanediol	Not Available
2,2'-dimorpholinodiethyl ether	Not Available
p-toluenesulfonyl isocyanate	Not Available
carbon dioxide	Not Available
1,1-difluoroethane	Not Available

14.9. Transport in bulk in accordance with the ICG Code

Product name	Ship Type
4,4'-diphenylmethane diisocyanate (MDI)	Not Available
ethyl acetate	Not Available
2,2,4-trimethyl-1,3-pentanediol	Not Available
2,2'-dimorpholinodiethyl ether	Not Available
p-toluenesulfonyl isocyanate	Not Available
carbon dioxide	Not Available
1,1-difluoroethane	Not Available

SECTION 15 Regulatory information

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

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

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

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

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

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

Ireland Occupational Exposure Limits

2,2,4-trimethyl-1,3-pentanediol is found on the following regulatory lists

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

2,2'-dimorpholinodiethyl ether is found on the following regulatory lists

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

p-toluenesulfonyl isocyanate is found on the following regulatory lists

Europe EC Inventory

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

carbon dioxide is found on the following regulatory lists

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

FEI Equine Prohibited Substances List - Controlled Medication

FEI Equine Prohibited Substances List (EPSL)

Ireland Occupational Exposure Limits

1,1-difluoroethane is found on the following regulatory lists

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

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.

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
4,4'-diphenylmethane diisocyanate (MDI)	101-68-8	615-005-00-9	01-2119457014-47-XXXX

Continued...

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2; Skin Sens. 1; Eye Irrit. 2; Acute Tox. 4; Resp. Sens. 1; STOT SE 3; Carc. 2; STOT RE 2	GHS08; Dgr	H315; H317; H319; H332; H334; H335; H351; H373
2	Skin Sens. 1; Eye Irrit. 2; Resp. Sens. 1; STOT SE 3; Carc. 2; STOT SE 3; Skin Irrit. 2; Muta. 2; Acute Tox. 2; STOT RE 1; Aquatic Chronic 4	GHS08; Dgr; GHS06	H315; H317; H319; H334; H335; H351; H370; H330; H341; H372; H413
1	Skin Irrit. 2; Skin Sens. 1; Eye Irrit. 2; Acute Tox. 2; Resp. Sens. 1; STOT SE 3; Carc. 2; STOT RE 2	GHS08; GHS06; Dgr	H315; H317; H319; H330; H334; H335; H351; H373
2	Skin Irrit. 2; Skin Sens. 1; Eye Irrit. 2; Acute Tox. 2; Resp. Sens. 1; STOT SE 3; Carc. 2; STOT RE 2; STOT SE 3; Acute Tox. 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.

Ingredient	CAS number	Index No	ECHA Dossier
ethyl acetate	141-78-6	607-022-00-5	01-2119475103-46-0017

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2; Aquatic Chronic 4	GHS07; Wng	H315; H413
2	Skin Irrit. 2; Aquatic Chronic 4	GHS07; Wng	H315; H413

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

Ingredient	CAS number	Index No	ECHA Dossier
2,2,4-trimethyl-1,3-pentanediol	144-19-4	Not Available	01-2119941373-40-0001

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

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

Ingredient	CAS number	Index No	ECHA Dossier
2,2'-dimorpholinodiethyl ether	6425-39-4	Not Available	01-2119969278-20-0000

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Eye Irrit. 2	GHS07; Wng	H319
2	Eye Irrit. 2; Skin Irrit. 2; Acute Tox. 4	GHS07; Wng; GHS09	H319; H315; H302; H413; H317

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

Ingredient	CAS number	Index No	ECHA Dossier
p-toluenesulfonyl isocyanate	4083-64-1	615-012-00-7	01-2119980050-47-0001

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Sens. 1; Aquatic Chronic 3; Skin Irrit. 2; Eye Irrit. 2; Aquatic Chronic 4; Skin Corr. 1C; Acute Tox. 4; Acute Tox. 4; Acute Tox. 4; STOT SE 3	GHS05; Dgr	H317; H412; H319; H314; H302; H312; H332; H335
2	Skin Sens. 1; Aquatic Chronic 3; Eye Irrit. 2; Skin Corr. 1C; Acute Tox. 4; Acute Tox. 4; Acute Tox. 4; STOT SE 3	GHS05; Dgr	H317; H412; H319; H314; H302; H312; H332; H335

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

Ingredient	CAS number	Index No	ECHA Dossier
carbon dioxide	124-38-9	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Comp.	GHS04; Wng	H280
2	Comp.; Ref. Liq.; Acute Tox. 4; STOT SE 3	GHS04; GHS07; Dgr	H280; H281; H332; H335
1	Flam. Liq. 2; Carc. 1A; Aquatic Chronic 3	GHS02; GHS08; Dgr	H225; H350; H412
2	Flam. Liq. 2; Carc. 1A; Aquatic Chronic 3	GHS02; GHS08; Dgr	H225; H350; H412

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

Continued...

Ingredient	**CAS number**	**Index No**	**ECHA Dossier**
1,1-difluoroethane	75-37-6	Not Available	01-2119474440-43-0000

Harmonisation (C&L Inventory)	**Hazard Class and Category Code(s)**	**Pictograms Signal Word Code(s)**	**Hazard Statement Code(s)**
1	Flam. Gas 1; Liq.	GHS02; GHS04; Dgr	H220; H280
2	Flam. Gas 1; Liq.; Muta. 1B; Carc. 1A; Flam. Liq. 1; STOT SE 3; STOT SE 1	GHS02; GHS04; Dgr; GHS08	H220; H280; H224; H336; H370

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

National Inventory Status

National Inventory	**Status**
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (4,4'-diphenylmethane diisocyanate (MDI); ethyl acetate; 2,2,4-trimethyl-1,3-pentanediol; 2,2'-dimorpholinodiethyl ether; p-toluenesulfonyl isocyanate; carbon dioxide; 1,1-difluoroethane)
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 (2,2'-dimorpholinodiethyl ether; p-toluenesulfonyl isocyanate)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
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	08/07/2022
Initial Date	31/03/2022

Full text Risk and Hazard codes

H220	Extremely flammable gas.
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H281	Contains refrigerated gas; may cause cryogenic burns or injury.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

SDS Version Summary

Version	**Date of Update**	**Sections Updated**
1.4	08/07/2022	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.

Continued...

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
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

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end of SDS

Tecron

FLEECE

BACKED ROOFING MEMBRANE ADHESIVE

VOLUME 22 LITRES
COLOUR RED

UN3501 CHEMICAL UNDER PRESSURE N.O.S.
1,1 DIFLUOROETHANE

DANGER

H222 Extremely flammable aerosol. / H229 Pressurised container: may burst if heated. / H315 Causes skin irritation. / H319 Causes serious eye irritation. / H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. / H317 May cause an allergic skin reaction. / H351 Suspected of causing cancer. / H335 May cause respiratory irritation. / H373 May cause damage to organs through prolonged or repeated exposure. / P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. / P211 Do not spray on an open flame or other ignition source. / P251 Do not pierce or burn, even after use. / P271 Use only outdoors or

in a well-ventilated area. / P280 Wear protective gloves/ protective clothing / eye protection/ face protection. / P284 [In case of inadequate ventilation] wear respiratory protection. / P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. / P501 Dispose of contents/ container in accordance with national regulations. /

CONTAINS 4,4’-METHYLENEDIPHENYL DIISOCYANATE, 4-isocyanatosulphonyltoluene.

For professional users only.

**Refer to Technical Data Sheet for more information

Tecron

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H91 D294 / Republic of Ireland

Call 0818 757575
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tecron.ie

DANGER

UFI: GVK6-9278-200W-RMR0

Made in GB

*As from 24th August 2023, adequate training is required before industrial or professional use of this product.

Manufactured by (QDEK) Quin Global UK Ltd.