

# Tecron

## Self Adhesive Membrane Primer



# 2400

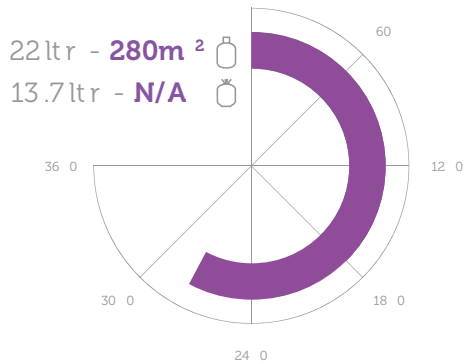
### SELF ADHESIVE MEMBRANE PRIMER

Tecron Self Adhesive Membrane Primer is a solvent based primer based on synthetic rubber and resins and is specifically designed for use with all self-adhesive membranes and vapour barriers. Tecron Self Adhesive Membrane Primer can be applied to metallic substrates, bituminous materials, wood-based materials, and insulation boards. Tecron Self Adhesive Membrane Primer once applied to the roof deck, is dry within 1-2 minutes and can be walked on without transfer to the soles of safety tools.

#### BENEFITS

- EPS compatible.
- Non-MECL.
- Walk on primed surface immediately.
- Controllable and adjustable spray application

#### SQUARE METRE COVERAGE (m<sup>2</sup>):



#### APPLICATION TYPE:



1 sided

#### OPEN TIME\*:



30 mins

#### FLASH-OFF TIME\*\*:



2 mins

#### SPRAY TYPE:



Web Spray

#### GUN TYPE:



Detail Gun

#### HOSE TYPE:



4m Black Rubber



Field Gun



8m Black Rubber

#### COLOUR:

Black

#### TECHNICAL DATA:

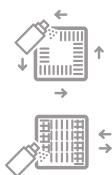
Shelf Life	18 Months
Appearance	Black
Temperature Resistance	-30°C - 90°C
Solvent System	Non-Chlorinated
Coverage	280m <sup>2</sup>
Solids	35%
VOC Content	574 grams per litre
Storage	5°C - 25°C

**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 primer 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 10-20 cm (4" - 8") away at a 90 degree angle to the surface, with 50% overlaps applying a uniform, even coat of adhesive to obtain 80% to 100% coverage of the surface. If necessary, spray another coat of primer in areas that appear to need more primer.



3. Allow 2 minutes for the primer to tack off until no primer transfers to the knuckle when touched.



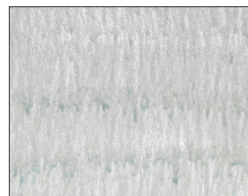
4. Adhere surfaces and press together with adequate pressure. A roller is recommended to apply a uniform pressure to achieve maximum strength. Allow 24 hours for the adhesive to fully cure.

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 = 20 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.

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# TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

## QUIN GLOBAL (BV) LTD

Chemwatch Hazard Alert Code: 4

Version No: 2.2  
Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Issue Date: 06/07/2022  
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 - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (contains dimethyl ether)
Chemical formula	Not Applicable
Other means of identification	UFI:31K6-72A9-000Y-46WC

#### 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	Use according to manufacturer's directions.
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	Carrmore East Oranmore Co. Galway H91 D294 Ireland
Telephone	0031 72 520 66 97	+353 1 963 9616
Fax	Not Available	Not Available
Website	<a href="http://www.quinglobal.com">www.quinglobal.com</a>	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]	H336 - Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, H223+H229 - Aerosols Category 2, H400 - Hazardous to the Aquatic Environment Acute Hazard Category 1, H315 - Skin Corrosion/Irritation Category 2, H410 - Hazardous to the Aquatic Environment Long-Term Hazard Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

#### 2.2. Label elements

Hazard pictogram(s)	
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## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

<b>Signal word</b>	<b>Warning</b>
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### Hazard statement(s)

<b>H336</b>	May cause drowsiness or dizziness.
<b>H223+H229</b>	Flammable aerosol; Pressurized container: may burst if heated.
<b>H315</b>	Causes skin irritation.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.

### Supplementary statement(s)

Not Applicable

### Precautionary statement(s) Prevention

<b>P210</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
<b>P211</b>	Do not spray on an open flame or other ignition source.
<b>P251</b>	Do not pierce or burn, even after use.
<b>P271</b>	Use only outdoors or in a well-ventilated area.
<b>P261</b>	Avoid breathing gas
<b>P273</b>	Avoid release to the environment.
<b>P280</b>	Wear protective gloves and protective clothing.
<b>P264</b>	Wash all exposed external body areas thoroughly after handling.

### Precautionary statement(s) Response

<b>P312</b>	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
<b>P391</b>	Collect spillage.
<b>P302+P352</b>	IF ON SKIN: Wash with plenty of water and soap.
<b>P304+P340</b>	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
<b>P332+P313</b>	If skin irritation occurs: Get medical advice/attention.
<b>P362+P364</b>	Take off contaminated clothing and wash it before reuse.

### Precautionary statement(s) Storage

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

### Precautionary statement(s) Disposal

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

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

Cumulative effects may result following exposure\*.

May produce discomfort of the eyes and respiratory tract\*.

Possible respiratory sensitizer\*.

Repeated exposure potentially causes skin dryness and cracking\*.

<b>cyclohexane</b>	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
<b>ethyl acetate</b>	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
<b>Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, &lt;5% n-hexane</b>	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
<b>Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, &lt;5% n-hexane</b>	Listed in the Europe Regulation (EU) 2018/1881 Specific Requirements for Endocrine Disruptors
<b>dimethyl ether</b>	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

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	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
Continued...					

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

4.REACH No					
1.110-82-7 2.203-806-2 3.601-017-00-1 4.01-2119463273-41-0000	20-30	<u>cyclohexane</u> *	Flammable Liquids Category 2, Skin Corrosion/Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Aspiration Hazard Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H225, H315, H336, H304, H400, H410 [2]	Not Available	Not Available
1.141-78-6 2.205-500-4 3.607-022-00-5 4.01-2119475103-46-0017	1-5	<u>ethyl acetate</u> *	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
1.64742-49-0.* 2.265-151-9 3.649-328-00-1 4.01-2119475514-35-0001	10-25	<u>Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, &lt;5% n-hexane</u> [e]	Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 2, Flammable Liquids Category 2, Skin Corrosion/Irritation Category 2, Aspiration Hazard Category 1; H336, H411, H225, H315, H304 [1]	0	Not Available
1.115-10-6 2.204-065-8 3.603-019-00-8 4.01-2119472128-37-XXXX	30-60	<u>dimethyl ether</u> *	Flammable Gases Category 1, Gases Under Pressure; H220, H280 [2]	Not Available	Not Available
<b>Legend:</b>		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

<b>Eye Contact</b>	<ul style="list-style-type: none"> <li>▶ If product comes in contact with eyes remove the patient from gas source or contaminated area.</li> <li>▶ Take the patient to the nearest eye wash, shower or other source of clean water.</li> <li>▶ Open the eyelid(s) wide to allow the material to evaporate.</li> <li>▶ Gently rinse the affected eye(s) with clean, cool water for at least 15 minutes. Have the patient lie or sit down and tilt the head back. Hold the eyelid(s) open and pour water slowly over the eyeball(s) at the inner corners, letting the water run out of the outer corners.</li> <li>▶ The patient may be in great pain and wish to keep the eyes closed. It is important that the material is rinsed from the eyes to prevent further damage.</li> <li>▶ Ensure that the patient looks up, and side to side as the eye is rinsed in order to better reach all parts of the eye(s)</li> <li>▶ Transport to hospital or doctor.</li> <li>▶ Even when no pain persists and vision is good, a doctor should examine the eye as delayed damage may occur.</li> <li>▶ If the patient cannot tolerate light, protect the eyes with a clean, loosely tied bandage.</li> <li>▶ Ensure verbal communication and physical contact with the patient.</li> </ul> <p><b>DO NOT</b> allow the patient to rub the eyes  <b>DO NOT</b> allow the patient to tightly shut the eyes  <b>DO NOT</b> introduce oil or ointment into the eye(s) without medical advice  <b>DO NOT</b> use hot or tepid water.</p>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>▶ Quickly remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ Following exposure to gas, remove the patient from the gas source or contaminated area.</li> <li>▶ NOTE: Personal Protective Equipment (PPE), including positive pressure self-contained breathing apparatus may be required to assure the safety of the rescuer.</li> <li>▶ Prostheses such as false teeth, which may block the airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ If the patient is not breathing spontaneously, administer rescue breathing.</li> <li>▶ If the patient does not have a pulse, administer CPR.</li> <li>▶ If medical oxygen and appropriately trained personnel are available, administer 100% oxygen.</li> <li>▶ Summon an emergency ambulance. If an ambulance is not available, contact a physician, hospital, or Poison Control Centre for further instruction.</li> <li>▶ Keep the patient warm, comfortable and at rest while awaiting medical care.</li> <li>▶ <b>MONITOR THE BREATHING AND PULSE, CONTINUOUSLY.</b></li> <li>▶ Administer rescue breathing (preferably with a demand-valve resuscitator, bag-valve mask-device, or pocket mask as trained) or CPR if necessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Avoid giving milk or oils.</li> <li>▶ Avoid giving alcohol.</li> </ul> <p>Not considered a normal route of entry.</p> <ul style="list-style-type: none"> <li>▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> </ul>

## 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 petroleum distillates

- In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption - decontamination (induced emesis or lavage) is controversial and should be considered on the merits of each individual case; of course the usual precautions of an endotracheal tube should be considered prior to lavage, to prevent aspiration.
- Individuals intoxicated by petroleum distillates should be hospitalized immediately, with acute and continuing attention to neurologic and cardiopulmonary function.
- Positive pressure ventilation may be necessary.
- Acute central nervous system signs and symptoms may result from large ingestions of aspiration-induced hypoxia.
- After the initial episode, individuals should be followed for changes in blood variables and the delayed appearance of pulmonary oedema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment. Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated.
- Gastrointestinal symptoms are usually minor and pathological changes of the liver and kidneys are reported to be uncommon in acute intoxications.
- Chlorinated and non-chlorinated hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration

Continued...

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

BP America Product Safety & Toxicology Department

for lower alkyl ethers:

### 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.
- ▶ A low-stimulus environment must be maintained.
- ▶ Monitor and treat, where necessary, for shock.
- ▶ Anticipate and treat, where necessary, for seizures.
- ▶ **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

### 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 without signs of hypovolaemia may require vasopressors.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

### EMERGENCY DEPARTMENT

- ▶ Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- ▶ Ethers may produce anion gap acidosis. Hyperventilation and bicarbonate therapy might be indicated.
- ▶ Haemodialysis might be considered in patients with impaired renal function.
- ▶ Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

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

## 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.

### 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

#### GENERAL

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ Wear full body protective clothing with breathing apparatus.
- ▶ 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 fire and cool adjacent area.
- ▶ **DO NOT approach cylinders suspected to be hot.**
- ▶ Cool fire exposed cylinders with water spray from a protected location.
- ▶ If safe to do so, remove cylinders from path of fire.

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

	<ul style="list-style-type: none"> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul> <p>-----</p> <p><b>FIRE FIGHTING PROCEDURES:</b></p> <p>-----</p> <ul style="list-style-type: none"> <li>▶ Excessive pressures may develop in a gas cylinder exposed in a fire; this may result in explosion.</li> <li>▶ Cylinders with pressure relief devices may release their contents as a result of fire and the released gas may constitute a further source of hazard for the fire-fighter.</li> <li>▶ Cylinders without pressure-relief valves have no provision for controlled release and are therefore more likely to explode if exposed to fire.</li> </ul> <p>-----</p> <p><b>FIRE FIGHTING REQUIREMENTS:</b></p> <p>-----</p> <ul style="list-style-type: none"> <li>▶ Positive pressure, self-contained breathing apparatus is required for fire-fighting of hazardous materials.</li> <li>▶ Full structural fire-fighting (bunker) gear is the minimum acceptable attire.</li> <li>▶ The need for proximity, entry and special protective clothing should be determined for each incident, by a competent fire-fighting safety professional.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Containers may explode when heated - Ruptured cylinders may rocket</li> <li>▶ May burn but does not ignite easily.</li> <li>▶ Fire exposed cylinders may vent contents through pressure relief devices thereby increasing vapour concentration..</li> <li>▶ Fire may produce irritating, poisonous or corrosive gases.</li> <li>▶ Runoff may create fire or explosion hazard.</li> <li>▶ May decompose explosively when heated or involved in fire.</li> <li>▶ Contact with gas may cause burns, severe injury and/ or frostbite.</li> <li>▶ <b>POISONOUS: MAY BE FATAL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN</b></li> </ul> <p>Decomposition may produce toxic fumes of:</p> <ul style="list-style-type: none"> <li>, carbon monoxide (CO)</li> <li>, carbon dioxide (CO<sub>2</sub>)</li> <li>, other pyrolysis products typical of burning organic material.</li> </ul> <p><b>Contains low boiling substance:</b> Closed containers may rupture due to pressure buildup under fire conditions.</p>

### 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

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Avoid breathing vapour and any contact with liquid or gas. Protective equipment including respirator should be used.</li> <li>▶ <b>DO NOT enter confined spaces where gas may have accumulated.</b></li> <li>▶ Increase ventilation.</li> <li>▶ Clear area of personnel.</li> <li>▶ Stop leak only if safe to do so.</li> <li>▶ Remove leaking cylinders to safe place. Release pressure under safe controlled conditions by opening valve.</li> <li>▶ Do not exert excessive pressure on the valve; do not attempt to operate a damaged valve</li> <li>▶ Orientate cylinder so that the leak is gas, not liquid, to minimise rate of leakage</li> <li>▶ Keep area clear of personnel until gas has dispersed.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of all unprotected personnel and move upwind.</li> <li>▶ Alert Emergency Authority and advise them of the location and nature of hazard.</li> <li>▶ Wear full body clothing with breathing apparatus.</li> <li>▶ Prevent by any means available, spillage from entering drains and water-courses.</li> <li>▶ Consider evacuation.</li> <li>▶ Increase ventilation.</li> <li>▶ No smoking or naked lights within area.</li> <li>▶ Stop leak only if safe to do so.</li> <li>▶ Water spray or fog may be used to disperse vapour.</li> <li>▶ <b>DO NOT enter confined space where gas may have collected.</b></li> <li>▶ Keep area clear until gas has dispersed.</li> <li>▶ Remove leaking cylinders to a safe place.</li> <li>▶ Fit vent pipes. Release pressure under safe, controlled conditions</li> <li>▶ Burn issuing gas at vent pipes.</li> <li>▶ <b>DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve.</b></li> </ul>

#### 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

<b>Safe handling</b>	<p>The conductivity of this material may make it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid.</p> <ul style="list-style-type: none"> <li>▶ Containers, even those that have been emptied, may contain explosive vapours.</li> <li>▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers.</li> <li>▶ Electrostatic discharge may be generated during pumping - this may result in fire.</li> <li>▶ Ensure electrical continuity by bonding and grounding (earthing) all equipment.</li> <li>▶ Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (&lt;=1 m/sec until fill pipe submerged to twice its</li> </ul>
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## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

	<p>diameter, then <math>\leq 7</math> m/sec).</p> <ul style="list-style-type: none"> <li>▶ Avoid splash filling.</li> <li>▶ Do NOT use compressed air for filling discharging or handling operations.</li> </ul> <ul style="list-style-type: none"> <li>· Consider use in closed pressurised systems, fitted with temperature, pressure and safety relief valves which are vented for safe dispersal. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature</li> <li>· The tubing network design connecting gas cylinders to the delivery system should include appropriate pressure indicators and vacuum or suction lines.</li> <li>· Fully-welded types of pressure gauges, where the bourdon tube sensing element is welded to the gauge body, are recommended.</li> <li>· Before connecting gas cylinders, ensure manifold is mechanically secure and does not contain another gas. Before disconnecting gas cylinder, isolate supply line segment proximal to cylinder, remove trapped gas in supply line with aid of vacuum pump</li> <li>· When connecting or replacing cylinders take care to avoid airborne particulates violently ejected when system pressurises.</li> <li>· Consider the use of doubly-contained piping; diaphragm or bellows sealed, soft seat valves; backflow prevention devices; flash arrestors; and flow monitoring or limiting devices. Gas cabinets, with appropriate exhaust treatment, are recommended, as is automatic monitoring of the secondary enclosures and work areas for release.</li> <li>· Use a pressure reducing regulator when connecting cylinder to lower pressure (&lt;100 psig) piping or systems</li> <li>· Use a check valve or trap in the discharge line to prevent hazardous back-flow into the cylinder</li> <li>· Check regularly for spills or leaks. Keep valves tightly closed but do not apply extra leverage to hand wheels or cylinder keys.</li> <li>· Open valve slowly. If valve is resistant to opening then contact your supervisor</li> <li>· Valve protection caps must remain in place must remain in place unless container is secured with valve outlet piped to use point.</li> <li>· Never insert a pointed object (e.g hooks) into cylinder cap openings as a means to open cap or move cylinder. Such action can inadvertently turn the valve and gas a gas leak. Use an adjustable strap instead of wrench to free an over-tight or rusted cap.</li> <li>· A bubble of gas may buildup behind the outlet dust cap during transportation, after prolonged storage, due to defective cylinder valve or if a dust cap is inserted without adequate evacuation of gas from the line. When loosening dust cap, preferably stand cylinder in a suitable enclosure and take cap off slowly. Never face the dust cap directly when removing it; point cap away from any personnel or any object that may pose a hazard. under negative pressure (relative to atmospheric gas)</li> <li>· Suck back of water into the container must be prevented. Do not allow backfeed into the container.</li> <li>· Do NOT drag, slide or roll cylinders - use a suitable hand truck for cylinder movement</li> <li>· Test for leakage with brush and detergent - <b>NEVER use a naked flame.</b></li> <li>· <b>Do NOT heat cylinder by any means to increase the discharge rate of product from cylinder.</b></li> <li>· Leaking gland nuts may be tightened if necessary.</li> <li>· If a cylinder valve will not close completely, remove the cylinder to a well ventilated location (e.g. outside) and, when empty, tag as FAULTY and return to supplier.</li> <li>· Obtain a work permit before attempting any repairs.</li> <li>· <b>DO NOT attempt repair work on lines, vessels under pressure.</b></li> <li>· Atmospheres must be tested and O.K. before work resumes after leakage. <ul style="list-style-type: none"> <li>▶ <b>DO NOT transfer gas from one cylinder to another.</b></li> </ul> </li> </ul>
Fire and explosion protection	See section 5
Other information	<ul style="list-style-type: none"> <li>▶ Cylinders should be stored in a purpose-built compound with good ventilation, preferably in the open.</li> <li>▶ Such compounds should be sited and built in accordance with statutory requirements.</li> <li>▶ The storage compound should be kept clear and access restricted to authorised personnel only.</li> <li>▶ Cylinders stored in the open should be protected against rust and extremes of weather.</li> <li>▶ Cylinders in storage should be properly secured to prevent toppling or rolling.</li> <li>▶ Cylinder valves should be closed when not in use.</li> <li>▶ Where cylinders are fitted with valve protection this should be in place and properly secured.</li> <li>▶ Gas cylinders should be segregated according to the requirements of the Dangerous Goods Act.</li> <li>▶ Preferably store full and empty cylinders separately.</li> <li>▶ Check storage areas for hazardous concentrations of gases prior to entry.</li> <li>▶ Full cylinders should be arranged so that the oldest stock is used first.</li> <li>▶ Cylinders in storage should be checked periodically for general condition and leakage.</li> <li>▶ Protect cylinders against physical damage. Move and store cylinders correctly as instructed for their manual handling.</li> </ul> <p><b>NOTE:</b> A 'G' size cylinder is usually too heavy for an inexperienced operator to raise or lower.</p>

## 7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> <li>▶ Cylinder:</li> <li>▶ Ensure the use of equipment rated for cylinder pressure.</li> <li>▶ Ensure the use of compatible materials of construction.</li> <li>▶ Valve protection cap to be in place until cylinder is secured, connected.</li> <li>▶ Cylinder must be properly secured either in use or in storage.</li> <li>▶ Cylinder valve must be closed when not in use or when empty.</li> <li>▶ Segregate full from empty cylinders.</li> </ul> <p><b>WARNING:</b> Suckback into cylinder may result in rupture. Use back-flow preventive device in piping.</p>
Storage incompatibility	<p>Dimethyl ether:</p> <ul style="list-style-type: none"> <li>▶ is a peroxidisable gas</li> <li>▶ may be heat and shock sensitive</li> <li>▶ is able to form unstable peroxides on prolonged exposure to air</li> <li>▶ reacts violently with oxidisers, aluminium hydride, lithium aluminium hydride</li> <li>▶ is incompatible with strong acids, metal salts</li> </ul> <p>Low molecular weight alkanes:</p> <ul style="list-style-type: none"> <li>▶ May react violently with strong oxidisers, chlorine, chlorine dioxide, dioxygenyl tetrafluoroborate.</li> <li>▶ May react with oxidising materials, nickel carbonyl in the presence of oxygen, heat.</li> <li>▶ Are incompatible with nitronium tetrafluoroborate(1-), halogens and interhalogens</li> <li>▶ may generate electrostatic charges, due to low conductivity, on flow or agitation.</li> <li>▶ Avoid flame and ignition sources</li> </ul> <p>Redox reactions of alkanes, in particular with oxygen and the halogens, are possible as the carbon atoms are in a strongly reduced condition. Reaction with oxygen (if present in sufficient quantity to satisfy the reaction stoichiometry) leads to combustion without any smoke, producing carbon dioxide and water. Free radical halogenation reactions occur with halogens, leading to the production of haloalkanes. In addition, alkanes have been shown to interact with, and bind to, certain transition metal complexes</p> <p>Interaction between chlorine and ethane over activated carbon at 350 deg C has caused explosions, but added carbon dioxide reduces the risk. The violent interaction of liquid chlorine injected into ethane at 80 deg C/10 bar becomes very violent if ethylene is also present. A mixture prepared at -196 deg C with either methane or ethane exploded when the temp was raised to -78 deg C. Addition of nickel carbonyl to an n-butane-oxygen mixture causes an explosion at 20-40 deg C.</p> <p>Alkanes will react with steam in the presence of a nickel catalyst to give hydrogen.</p> <p>Cyclohexane</p> <ul style="list-style-type: none"> <li>▶ reacts violently with strong oxidisers, nitrogen tetraoxide</li> </ul>



## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

- ▶ may generate electrostatic charges, due to low conductivity, following flow or agitation
  - ▶ Esters react with acids to liberate heat along with alcohols and acids.
  - ▶ Strong oxidising acids may cause a vigorous reaction with esters that is sufficiently exothermic to ignite the reaction products.
  - ▶ Heat is also generated by the interaction of esters with caustic solutions.
  - ▶ Flammable hydrogen is generated by mixing esters with alkali metals and hydrides.
  - ▶ Esters may be incompatible with aliphatic amines and nitrates.
- Ethers
- may react violently with strong oxidising agents and acids.
  - can act as bases.- they form salts with strong acids and addition complexes with Lewis acids; the complex between diethyl ether and boron trifluoride is an example.
  - are generally stable to water under neutral conditions and ambient temperatures.
  - are hydrolysed by heating in the presence of halogen acids, particularly hydrogen iodide
  - are relatively inert in other reactions, which typically involve the breaking of the carbon-oxygen bond
    - ▶ The tendency of many ethers to form explosive peroxides is well documented.
    - ▶ Ethers lacking non-methyl hydrogen atoms adjacent to the ether link are thought to be relatively safe.
    - ▶ When solvents have been freed from peroxides (by percolation through a column of activated alumina for example), the absorbed peroxides must promptly be desorbed by treatment with the polar solvents methanol or water, which should be discarded safely.
    - ▶ Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances

## 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
cyclohexane	Dermal 2 016 mg/kg bw/day (Systemic, Chronic) Inhalation 700 mg/m <sup>3</sup> (Systemic, Chronic) Inhalation 700 mg/m <sup>3</sup> (Local, Chronic) Inhalation 1 400 mg/m <sup>3</sup> (Systemic, Acute) Inhalation 1 400 mg/m <sup>3</sup> (Local, Acute) Dermal 1 186 mg/kg bw/day (Systemic, Chronic) * Inhalation 206 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 59.4 mg/kg bw/day (Systemic, Chronic) * Inhalation 206 mg/m <sup>3</sup> (Local, Chronic) * Inhalation 412 mg/m <sup>3</sup> (Systemic, Acute) * Inhalation 412 mg/m <sup>3</sup> (Local, Acute) *	0.207 mg/L (Water (Fresh)) 0.207 mg/L (Water - Intermittent release) 0.207 mg/L (Water (Marine)) 16.68 mg/kg sediment dw (Sediment (Fresh Water)) 16.68 mg/kg sediment dw (Sediment (Marine)) 3.38 mg/kg soil dw (Soil) 3.24 mg/L (STP)
ethyl acetate	Dermal 63 mg/kg bw/day (Systemic, Chronic) Inhalation 734 mg/m <sup>3</sup> (Systemic, Chronic) Inhalation 734 mg/m <sup>3</sup> (Local, Chronic) Inhalation 1 468 mg/m <sup>3</sup> (Systemic, Acute) Inhalation 1 468 mg/m <sup>3</sup> (Local, Acute) Dermal 37 mg/kg bw/day (Systemic, Chronic) * Inhalation 367 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 4.5 mg/kg bw/day (Systemic, Chronic) * Inhalation 367 mg/m <sup>3</sup> (Local, Chronic) * Inhalation 734 mg/m <sup>3</sup> (Systemic, Acute) * Inhalation 734 mg/m <sup>3</sup> (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)
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	Dermal 13 964 mg/kg bw/day (Systemic, Chronic) Inhalation 2 085 mg/m <sup>3</sup> (Systemic, Chronic) Inhalation 837.5 mg/m <sup>3</sup> (Local, Chronic) Inhalation 1 286.4 mg/m <sup>3</sup> (Systemic, Acute) Inhalation 1 066.67 mg/m <sup>3</sup> (Local, Acute) Dermal 1 377 mg/kg bw/day (Systemic, Chronic) * Inhalation 1 131 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 1 301 mg/kg bw/day (Systemic, Chronic) * Inhalation 178.57 mg/m <sup>3</sup> (Local, Chronic) * Inhalation 1 152 mg/m <sup>3</sup> (Systemic, Acute) * Inhalation 640 mg/m <sup>3</sup> (Local, Acute) *	Not Available
dimethyl ether	Inhalation 1 894 mg/m <sup>3</sup> (Systemic, Chronic) Inhalation 471 mg/m <sup>3</sup> (Systemic, Chronic) *	0.155 mg/L (Water (Fresh)) 0.016 mg/L (Water - Intermittent release) 1.549 mg/L (Water (Marine)) 0.681 mg/kg sediment dw (Sediment (Fresh Water)) 0.069 mg/kg sediment dw (Sediment (Marine)) 0.045 mg/kg soil dw (Soil) 160 mg/L (STP)

\* Values for General Population

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Ireland Occupational Exposure Limits	cyclohexane	Cyclohexane	200 ppm / 700 mg/m <sup>3</sup>	Not Available	Not Available	IOELV
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	cyclohexane	Cyclohexane	200 ppm / 700 mg/m <sup>3</sup>	Not Available	Not Available	Not Available

Continued...

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
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	dimethyl ether	Dimethyl ether	1000 ppm / 1920 mg/m3	Not Available	Not Available	IOELV
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	dimethyl ether	Dimethyl ether	1000 ppm / 1920 mg/m3	Not Available	Not Available	Not Available

## Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
cyclohexane	300 ppm	1700* ppm	10000** ppm
ethyl acetate	1,200 ppm	1,700 ppm	10000** ppm
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	1,000 mg/m3	11,000 mg/m3	66,000 mg/m3
dimethyl ether	3,000 ppm	3800* ppm	7200* ppm

Ingredient	Original IDLH	Revised IDLH
cyclohexane	1,300 ppm	Not Available
ethyl acetate	2,000 ppm	Not Available
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	Not Available	Not Available
dimethyl ether	Not Available	Not Available


## Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	E	≤ 0.1 ppm
<b>Notes:</b>	<i>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.</i>	

## 8.2. Exposure controls

<b>8.2.1. Appropriate engineering controls</b>	<p><b>CARE:</b> Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear</p> <p>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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <ul style="list-style-type: none"> <li>▶ Areas where cylinders are stored require good ventilation and, if enclosed, need discrete/controlled exhaust ventilation.</li> <li>▶ Secondary containment and exhaust gas treatment may be required by certain jurisdictions</li> <li>▶ Local exhaust ventilation is required in work areas.</li> <li>▶ Consideration should be given to the use of doubly-contained piping; diaphragm or bellows-sealed, soft-seat valves; backflow prevention devices; and flow- monitoring or limiting devices.</li> <li>▶ Gas cabinets, with appropriate exhaust treatment, are recommended, as is automatic monitoring of the secondary enclosures and workplaces, for potential release.</li> <li>▶ Automated alerting systems with automatic shutdown of gas-flow may be appropriate and may in fact be mandatory in certain jurisdictions.</li> <li>▶ Respiratory protection in the form of air-supplied or self-contained breathing equipment must be worn if the oxygen concentration in the workplace air is less than 19%.</li> <li>▶ Cartridge respirators do NOT give protection and may result in rapid suffocation.</li> </ul> <p>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.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table> <p>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</p>	Type of Contaminant:	Air Speed:	gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)	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
Type of Contaminant:	Air Speed:														
gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)														
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														

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

	1-2.5 m/s (200-500 f/min.) for extraction of gases discharged 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.
8.2.2. Personal protection	
Eye and face protection	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ 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]</li> </ul>
Skin protection	See Hand protection below
Hands/feet protection	<p>For esters:</p> <ul style="list-style-type: none"> <li>▶ Do NOT use natural rubber, butyl rubber, EPDM or polystyrene-containing materials.</li> <li>▶ When handling sealed and suitably insulated cylinders wear cloth or leather gloves.</li> </ul>
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> <li>▶ Protective overalls, closely fitted at neck and wrist.</li> <li>▶ Eye-wash unit.</li> <li>▶ Ensure availability of lifeline in confined spaces.</li> <li>▶ Staff should be trained in all aspects of rescue work.</li> <li>▶ Rescue gear: Two sets of SCBA breathing apparatus Rescue Harness, lines etc.</li> </ul>

## 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 - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

Material	CPI
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
PE/EVAL/PE	C
PVA	C
PVC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), 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
- ▶ Positive pressure, full face, air-supplied breathing apparatus should be used for work in enclosed spaces if a leak is suspected or the primary containment is to be opened (e.g. for a cylinder change)
- ▶ Air-supplied breathing apparatus is required where release of gas from primary containment is either suspected or demonstrated.

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	AX-AUS / Class 1	-
up to 50	1000	-	AX-AUS / Class 1
up to 50	5000	Airline *	-

Continued...

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

up to 100	5000	-	AX-2
up to 100	10000	-	AX-3
100+		-	Airline**

\*\* - Continuous-flow or positive pressure demand.

A(All classes) = Organic vapours, B AUS or B1 = Acid gases, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 deg C)

### 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Coloured		
<b>Physical state</b>	Dissolved Gas	<b>Relative density (Water = 1)</b>	0.84
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	200
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	>20.5
<b>Initial boiling point and boiling range (°C)</b>	62-100	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	-35	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	HIGHLY FLAMMABLE.	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	1.3	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	0.6	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (Not Available%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	701.40
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

### 9.2. Other information

Not Available

## SECTION 10 Stability and reactivity

<b>10.1.Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

## SECTION 11 Toxicological information

### 11.1. Information on toxicological effects

<b>Inhaled</b>	<p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>The main effects of simple esters are irritation, stupor and insensibility. Headache, drowsiness, dizziness, coma and behavioural changes may occur.</p> <p>Inhaling high concentrations of mixed hydrocarbons can cause narcosis, with nausea, vomiting and lightheadedness. Low molecular weight (C<sub>2</sub>-C<sub>12</sub>) hydrocarbons can irritate mucous membranes and cause incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and stupor.</p> <p>Inhalation of the vapour is hazardous and may even be fatal</p>
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## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

	<p>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.</p> <p>Inhalation of toxic gases may cause:</p> <ul style="list-style-type: none"> <li>▶ Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures;</li> <li>▶ respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest;</li> <li>▶ heart: collapse, irregular heartbeats and cardiac arrest;</li> <li>▶ gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain.</li> </ul> <p>Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.</p> <p>Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.</p> <p>Following inhalation, ethers cause lethargy and stupor. Inhaling lower alkyl ethers results in headache, dizziness, weakness, blurred vision, seizures and possible coma.</p> <p>Nerve damage can be caused by some non-ring hydrocarbons. Symptoms are temporary, and include weakness, tremors, increased saliva, some convulsions, excessive tears with discolouration and inco-ordination lasting up to 24 hours.</p> <p>Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure.</p> <p>Rabbits survived 8 hour exposures to cyclohexane at 18500 ppm but 26600 ppm was lethal after 1 hour exposure. A concentration of 12600 ppm produced severe weakness, unconsciousness, increased breathing and convulsions while 3330 ppm failed to elicit an effect. 300 ppm is reported to be irritating to human eyes and mucous membranes.</p> <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</p>
<b>Ingestion</b>	<p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Ingestion of alkyl ethers may produce stupor, blurred vision, headache, dizziness and irritation of the nose and throat. Respiratory distress and asphyxia may result.</p> <p>Not normally a hazard due to physical form of product.</p> <p>Considered an unlikely route of entry in commercial/industrial environments</p> <p>Isoparaffinic hydrocarbons cause temporary lethargy, weakness, inco-ordination and diarrhoea.</p> <p>Not a likely route of entry into the body in commercial or industrial environments. The liquid may produce considerable gastrointestinal discomfort and be harmful or toxic if swallowed.</p> <p>Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.</p>
<b>Skin Contact</b>	<p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.</p> <p>Skin exposure to isoparaffins may produce slight to moderate irritation in animals and humans. Rare sensitisation reactions in humans have occurred.</p> <p>Alkyl ethers may defat and dehydrate the skin producing dermatoses. Absorption may produce headache, dizziness, and central nervous system depression.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
<b>Eye</b>	<p>This material can cause eye irritation and damage in some persons.</p> <p>Instillation of isoparaffins into rabbit eyes produces only slight irritation.</p> <p>Not considered to be a risk because of the extreme volatility of the gas. Eye contact with alkyl ethers (vapour or liquid) may produce irritation, redness and tears.</p>
<b>Chronic</b>	<p>Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.</p> <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.</p> <p>Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin.</p> <p>Main route of exposure to the gas in the workplace is by inhalation.</p> <p>Chronic exposure to alkyl ethers may result in loss of appetite, excessive thirst, fatigue, and weight loss.</p> <p>Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS]</p> <p>Chronic inhalation or skin exposure to n-hexane may cause damage to nerve ends in extremities, e.g. finger, toes with loss of sensation.</p>

TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER	TOXICITY	IRRITATION
	Not Available	Not Available
<b>cyclohexane</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup> Inhalation(Rat) LC50; >5540 ppm/4h <sup>[1]</sup> Oral (Rat) LD50; 12705 mg/kg <sup>[2]</sup>	<b>IRRITATION</b> Eye: no adverse effect observed (not irritating) <sup>[1]</sup> Skin(rabbit): 1548 mg/48hr - mild Skin: adverse effect observed (irritating) <sup>[1]</sup> Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>ethyl acetate</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: >18000 mg/kg <sup>[2]</sup> Inhalation(Mouse) LC50; >18 mg/l4h <sup>[1]</sup> Oral (Mouse) LD50; 4100 mg/kg <sup>[2]</sup>	<b>IRRITATION</b> Eye (human): 400 ppm Eye: no adverse effect observed (not irritating) <sup>[1]</sup> Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, &lt;5% n-hexane</b>	<b>TOXICITY</b> Dermal (rabbit) LD50: >1900 mg/kg <sup>[1]</sup> Inhalation(Rat) LC50; >4.42 mg/L4h <sup>[1]</sup>	<b>IRRITATION</b> Eye: no adverse effect observed (not irritating) <sup>[1]</sup> Skin: adverse effect observed (irritating) <sup>[1]</sup>

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

	Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup>	
dimethyl ether	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation(Rat) LC50; >20000 ppm4h <sup>[1]</sup>	Not Available
<b>Legend:</b>	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	

<b>TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER</b>	<p>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</p> <p>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</p> <p>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.</p> <p>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</p> <p><b>International Program on Chemical Safety: the Joint FAO/WHO Expert Committee on Food Additives (JECFA)</b> <b>Esters of Aliphatic acyclic primary alcohols with aliphatic linear saturated carboxylic acids.; 1998</b></p>
<b>CYCLOHEXANE</b>	Bacteria mutagen
<b>Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, &lt;5% n-hexane</b>	<p>For Low Boiling Point Naphthas (LBPNS):</p> <p><b>Acute toxicity:</b> LBPNS generally have low acute toxicity by the oral (median lethal dose [LD50] in rats &gt; 2000 mg/kg-bw), inhalation (LD50 in rats &gt; 5000 mg/m3) and dermal (LD50 in rabbits &gt; 2000 mg/kg-bw) routes of exposure</p> <p>Most LBPNS are mild to moderate eye and skin irritants in rabbits, with the exception of heavy catalytic cracked and heavy catalytic reformed naphthas, which have higher primary skin irritation indices.</p> <p><b>Sensitisation:</b> LBPNS do not appear to be skin sensitizers, but a poor response in the positive control was also noted in these studies</p> <p><b>Repeat dose toxicity:</b> The lowest-observed-adverse-effect concentration (LOAEC) and lowest-observed-adverse-effect level (LOAEL) values identified following short-term (2-89 days) and subchronic (greater than 90 days) exposure to the LBPNS substances. These values were determined for a variety of endpoints after considering the toxicity data for all LBPNS in the group. Most of the studies were carried out by the inhalation route of exposure. Renal effects, including increased kidney weight, renal lesions (renal tubule dilation, necrosis) and hyaline droplet formation, observed in male rats exposed orally or by inhalation to most LBPNS, were considered species- and sex-specific These effects were determined to be due to a mechanism of action not relevant to humans -specifically, the interaction between hydrocarbon metabolites and alpha-2-microglobulin, an enzyme not produced in substantial amounts in female rats, mice and other species, including humans. The resulting nephrotoxicity and subsequent carcinogenesis in male rats were therefore not considered in deriving LOAEC/LOAEL values.</p> <p>Only a limited number of studies of short-term and subchronic duration were identified for site-restricted LBPNS. The lowest LOAEC identified in these studies, via the inhalation route, is 5475 mg/m3, based on a concentration-related increase in liver weight in both male and female rats following a 13-week exposure to light catalytic cracked naphtha. Shorter exposures of rats to this test substance resulted in nasal irritation at 9041 mg/m3</p> <p>No systemic toxicity was reported following dermal exposure to light catalytic cracked naphtha, but skin irritation and accompanying histopathological changes were increased, in a dose-dependent manner, at doses as low as 30 mg/kg-bw per day when applied 5 days per week for 90 days in rats</p> <p>No non-cancer chronic toxicity studies (= 1 year) were identified for site-restricted LBPNS and very few non-cancer chronic toxicity studies were identified for other LBPNS. An LOAEC of 200 mg/m3 was noted in a chronic inhalation study that exposed mice and rats to unleaded gasoline (containing 2% benzene). This inhalation LOAEC was based on ocular discharge and ocular irritation in rats. At the higher concentration of 6170 mg/m3, increased kidney weight was observed in male and female rats (increased kidney weight was also observed in males only at 870 mg/m3). Furthermore, decreased body weight in male and female mice was also observed at 6170 mg/m3</p> <p>A LOAEL of 714 mg/kg-bw was identified for dermal exposure based on local skin effects (inflammatory and degenerative skin changes) in mice following application of naphtha for 105 weeks. No systemic toxicity was reported.</p> <p><b>Genotoxicity:</b> Although few genotoxicity studies were identified for the site-restricted LBPNS, the genotoxicity of several other LBPNS substances has been evaluated using a variety of in vivo and in vitro assays. While in vivo genotoxicity assays were negative overall, the in vitro tests exhibited mixed results.</p> <p>For in vivo genotoxicity tests, LBPNS exhibited negative results for chromosomal aberrations and micronuclei induction, but exhibited positive results in one sister chromatid exchange assay although this result was not considered definitive for clastogenic activity as no genetic material was unbalanced or lost. Mixtures that were tested, which included a number of light naphthas, displayed mixed results (i.e., both positive and negative for the same assay) for chromosomal aberrations and negative results for the dominant lethal mutation assay. Unleaded gasoline (containing 2% benzene) was tested for its ability to induce unscheduled deoxyribonucleic acid (DNA) synthesis (UDS) and replicative DNA synthesis (RDS) in rodent hepatocytes and kidney cells. UDS and RDS were induced in mouse hepatocytes via oral exposure and RDS was induced in rat kidney cells via oral and inhalation exposure. Unleaded gasoline (benzene content not stated) exhibited negative results for chromosomal aberrations and the dominant lethal mutation assay and mixed results for atypical cell foci in rodent renal and hepatic cells.</p> <p>For in vitro genotoxicity studies, LBPNS were negative for six out of seven Ames tests, and were also negative for UDS and for forward mutations LBPNS exhibited mixed or equivocal results for the mouse lymphoma and sister chromatid exchange assays, as well as for cell transformation and positive results for one bacterial DNA repair assay. Mixtures that were tested, which included a number of light naphthas, displayed negative results for the Ames and mouse lymphoma assays Gasoline exhibited negative results for the Ames test battery, the sister chromatid exchange assay and for one mutagenicity assay . Mixed results were observed for UDS and the mouse lymphoma assay.</p> <p>While the majority of in vivo genotoxicity results for LBPNS substances are negative, the potential for genotoxicity of LBPNS as a group cannot be discounted based on the mixed in vitro genotoxicity results.</p> <p><b>Carcinogenicity:</b> Although a number of epidemiological studies have reported increases in the incidence of a variety of cancers, the majority of these studies are considered to contain incomplete or inadequate information. Limited data, however, are available for skin cancer and leukemia incidence, as well as mortality among petroleum refinery workers. It was concluded that there is limited evidence supporting the view that working in petroleum refineries entails a carcinogenic risk (Group 2A carcinogen). IARC (1989a) also classified gasoline as a Group 2B carcinogen; it considered the evidence for carcinogenicity in humans from gasoline to be inadequate and noted that published epidemiological studies had several limitations, including a lack of exposure data and the fact that it was not possible to separate the effects of combustion products from those of gasoline itself. Similar conclusions were drawn from other reviews of epidemiological studies for gasoline (US EPA 1987a, 1987b). Thus, the evidence gathered from these epidemiological studies is considered to be inadequate to conclude on the effect s of human exposure to LBPNS substances.</p> <p>No inhalation studies assessing the carcinogenicity of the site-restricted LBPNS were identified. Only unleaded gasoline has been examined for</p>



## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

its carcinogenic potential, in several inhalation studies. In one study, rats and mice were exposed to 0, 200, 870 or 6170 mg/m<sup>3</sup> of a 2% benzene formulation of the test substance, via inhalation, for approximately 2 years. A statistically significant increase in hepatocellular adenomas and carcinomas, as well as a non-statistical increase in renal tumours, were observed at the highest dose in female mice. A dose-dependent increase in the incidence of primary renal neoplasms was also detected in male rats, but this was not considered to be relevant to humans, as discussed previously. Carcinogenicity was also assessed for unleaded gasoline, via inhalation, as part of initiation/promotion studies. In these studies, unleaded gasoline did not appear to initiate tumour formation, but did show renal cell and hepatic tumour promotion ability, when rats and mice were exposed, via inhalation, for durations ranging from 13 weeks to approximately 1 year using an initiation/promotion protocol. However, further examination of data relevant to the composition of unleaded gasoline demonstrated that this is a highly-regulated substance; it is expected to contain a lower percentage of benzene and has a discrete component profile when compared to other substances in the LBP group.

Both the European Commission and the International Agency for Research on Cancer (IARC) have classified LBP substances as carcinogenic. All of these substances were classified by the European Commission (2008) as Category 2 (R45: may cause cancer) (benzene content = 0.1% by weight). IARC has classified gasoline, an LBP, as a Group 2B carcinogen (possibly carcinogenic to humans) and "occupational exposures in petroleum refining" as Group 2A carcinogens (probably carcinogenic to humans).

Several studies were conducted on experimental animals to investigate the dermal carcinogenicity of LBPNs. The majority of these studies were conducted through exposure of mice to doses ranging from 694-1351 mg/kg-bw, for durations ranging from 1 year to the animals lifetime or until a tumour persisted for 2 weeks. Given the route of exposure, the studies specifically examined the formation of skin tumours. Results for carcinogenicity via dermal exposure are mixed. Both malignant and benign skin tumours were induced with heavy catalytic cracked naphtha, light catalytic cracked naphtha, light

straight-run naphtha and naphtha. Significant increases in squamous cell carcinomas were also observed when mice were dermally treated with Stoddard solvent, but the latter was administered as a mixture (90% test substance), and the details of the study were not available. In contrast, insignificant increases in tumour formation or no tumours were observed when light alkylate naphtha, heavy catalytic reformed naphtha, sweetened naphtha, light catalytically cracked naphtha or unleaded gasoline was dermally applied to mice. Negative results for skin tumours were also observed in male mice dermally exposed to sweetened naphtha using an initiation/promotion protocol.

**Reproductive/ Developmental toxicity:**

No reproductive or developmental toxicity was observed for the majority of LBP substances evaluated. Most of these studies were carried out by inhalation exposure in rodents.

NOAEC values for reproductive toxicity following inhalation exposure ranged from 1701 mg/m<sup>3</sup> (CAS RN 8052-41-3) to 27 687 mg/m<sup>3</sup> (CAS RN 64741-63-5) for the LBPNs group evaluated, and from 7690 mg/m<sup>3</sup> to 27 059 mg/m<sup>3</sup> for the site-restricted light catalytic cracked and full-range catalytic reformed naphthas. However, a decreased number of pups per litter and higher frequency of post-implantation loss were observed following inhalation exposure of female rats to hydrotreated heavy naphtha (CAS RN 64742-48-9) at a concentration of 4679 mg/m<sup>3</sup>, 6 hours per day, from gestational days 7-20. For dermal exposures, NOAEL values of 714 mg/kg-bw (CAS RN 8030-30-6) and 1000 mg/kg-bw per day (CAS RN 68513-02-0) were noted. For oral exposures, no adverse effects on reproductive parameters were reported when rats were given site-restricted light catalytic cracked naphtha at 2000 mg/kg on gestational day 13.

For most LBPNs, no treatment-related developmental effects were observed by the different routes of exposure. However, developmental toxicity was observed for a few naphthas. Decreased foetal body weight and an increased incidence of ossification variations were observed when rat dams were exposed to light aromatized solvent naphtha, by gavage, at 1250 mg/kg-bw per day. In addition, pregnant rats exposed by inhalation to hydrotreated heavy naphtha at 4679 mg/m<sup>3</sup> delivered pups with higher birth weights. Cognitive and memory impairments were also observed in the offspring.

**Low Boiling Point Naphthas [Site-Restricted]**

For petroleum: This product contains benzene, which can cause acute myeloid leukaemia, and n-hexane, which can be metabolized to compounds which are toxic to the nervous system. This product contains toluene, and animal studies suggest high concentrations of toluene lead to hearing loss. This product contains ethyl benzene and naphthalene, from which animal testing shows evidence of tumour formation.

**Cancer-causing potential:** Animal testing shows inhaling petroleum causes tumours of the liver and kidney; these are however not considered to be relevant in humans.

**Mutation-causing potential:** Most studies involving gasoline have returned negative results regarding the potential to cause mutations, including all recent studies in living human subjects (such as in petrol service station attendants).

**Reproductive toxicity:** Animal studies show that high concentrations of toluene (>0.1%) can cause developmental effects such as lower birth weight and developmental toxicity to the nervous system of the foetus. Other studies show no adverse effects on the foetus.

**Human effects:** Prolonged or repeated contact may cause defatting of the skin which can lead to skin inflammation and may make the skin more susceptible to irritation and penetration by other materials.

Animal testing shows that exposure to gasoline over a lifetime can cause kidney cancer, but the relevance in humans is questionable.

<b>TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER &amp; ETHYL ACETATE</b>	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.	
<b>TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER &amp; Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, &lt;5% n-hexane</b>	Animal studies indicate that normal, branched and cyclic paraffins are absorbed from the gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins. The major classes of hydrocarbons are well absorbed into the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with fats in the diet. Some hydrocarbons may appear unchanged as in the lipoprotein particles in the gut lymph, but most hydrocarbons partly separate from fats and undergo metabolism in the gut cell. The gut cell may play a major role in determining the proportion of hydrocarbon that becomes available to be deposited unchanged in peripheral tissues such as in the body fat stores or the liver.	

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

**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

Many chemicals may mimic or interfere with the body's hormones, known as the endocrine system. Endocrine disruptors are chemicals that can interfere with endocrine (or hormonal) systems.

Endocrine disruptors interfere with the synthesis, secretion, transport, binding, action, or elimination of natural hormones in the body. Any system in the body controlled by hormones

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## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

can be derailed by hormone disruptors. Specifically, endocrine disruptors may be associated with the development of learning disabilities, deformations of the body various cancers and sexual development problems.

Endocrine disrupting chemicals cause adverse effects in animals. But limited scientific information exists on potential health problems in humans. Because people are typically exposed to multiple endocrine disruptors at the same time, assessing public health effects is difficult.

### SECTION 12 Ecological information

#### 12.1. Toxicity

TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER	Endpoint	Test Duration (hr)	Species	Value	Source
		Not Available	Not Available	Not Available	Not Available
cyclohexane	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1344h	Fish	31-102	7
	EC50	72h	Algae or other aquatic plants	3.428mg/l	2
	EC50	48h	Crustacea	0.9mg/l	2
	EC50(ECx)	48h	Crustacea	0.9mg/l	2
	LC50	96h	Fish	4.53mg/l	2
ethyl acetate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	164mg/l	1
	NOEC(ECx)	72h	Algae or other aquatic plants	>100mg/l	1
LC50	96h	Fish	>75.6mg/l	2	
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	504h	Crustacea	0.17mg/l	2
	EC50	48h	Crustacea	0.64mg/l	2
	LC50	96h	Fish	4.26mg/l	2
EC50	96h	Algae or other aquatic plants	64mg/l	2	
dimethyl ether	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	>4400mg/L	2
	NOEC(ECx)	48h	Crustacea	>4000mg/l	1
	LC50	96h	Fish	1783.04mg/l	2
EC50	96h	Algae or other aquatic plants	154.917mg/l	2	
<b>Legend:</b>	<i>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</i>				

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

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

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

When released in the environment, alkanes don't undergo rapid biodegradation, because they have no functional groups (like hydroxyl or carbonyl) that are needed by most organisms in order to metabolize the compound.

However, some bacteria can metabolise some alkanes (especially those linear and short), by oxidizing the terminal carbon atom. The product is an alcohol, that could be next oxidised to an aldehyde, and finally to a carboxylic acid. The resulting fatty acid could be metabolised through the fatty acid degradation pathway.

For petroleum distillates:

Environmental fate:

When petroleum substances are released into the environment, four major fate processes will take place: dissolution in water, volatilization, biodegradation and adsorption. These processes will cause changes in the composition of these UVCB substances. In the case of spills on land or water surfaces, photodegradation-another fate process-can also be significant.

As noted previously, the solubility and vapour pressure of components within a mixture will differ from those of the component alone. These interactions are complex for complex UVCBs such as petroleum hydrocarbons.

Each of the fate processes affects hydrocarbon families differently. Aromatics tend to be more water-soluble than aliphatics of the same carbon number, whereas aliphatics tend to be more volatile. Thus, when a petroleum mixture is released into the environment, the principal water contaminants are likely to be aromatics, whereas aliphatics will be the principal air contaminants. The trend in volatility by component class is as follows: alkenes = alkanes > aromatics = cycloalkanes.

The most soluble and volatile components have the lowest molecular weight; thus there is a general shift to higher molecular weight components in residual materials.

Biodegradation:

Biodegradation is almost always operative when petroleum mixtures are released into the environment. It has been widely demonstrated that nearly all soils and sediments have populations of bacteria and other organisms capable of degrading petroleum hydrocarbons. Degradation occurs both in the presence and absence of oxygen. Two key factors that determine degradation rates are oxygen supply and molecular structure. In general, degradation is more rapid under aerobic conditions. Decreasing trends in degradation rates according to structure are as follows:

- (1) n-alkanes, especially in the C10-C25 range, which are degraded readily;
- (2) isoalkanes;
- (3) alkenes;
- (4) benzene, toluene, ethylbenzene, xylenes (BTEX) (when present in concentrations that are not toxic to microorganisms);
- (5) monoaromatics;
- (6) polynuclear (polycyclic) aromatic hydrocarbons (PAHs); and
- (7) higher molecular weight cycloalkanes (which may degrade very slowly).

Three weathering processes-dissolution in water, volatilization and biodegradation-typically result in the depletion of the more readily soluble, volatile and degradable compounds and the accumulation of those most resistant to these processes in residues.

When large quantities of a hydrocarbon mixture enter the soil compartment, soil organic matter and other sorption sites in soil are fully saturated and the hydrocarbons will begin to

Continued...

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

form a separate phase (a non-aqueous phase liquid, or NAPL) in the soil. At concentrations below the retention capacity for the hydrocarbon in the soil, the NAPL will be immobile this is referred to as residual NAPL. Above the retention capacity, the NAPL becomes mobile and will move within the soil

### Bioaccumulation:

Bioaccumulation potential was characterized based on empirical and/or modelled data for a suite of petroleum hydrocarbons expected to occur in petroleum substances.

Bioaccumulation factors (BAFs) are the preferred metric for assessing the bioaccumulation potential of substances, as the bioconcentration factor (BCF) may not adequately account for the bioaccumulation potential of substances via the diet, which predominates for substances with  $\log Kow > -4.5$

In addition to fish BCF and BAF data, bioaccumulation data for aquatic invertebrate species were also considered. Biota-sediment/soil accumulation factors (BSAFs), trophic magnification factors and biomagnification factors were also considered in characterizing bioaccumulation potential.

Overall, there is consistent empirical and predicted evidence to suggest that the following components have the potential for high bioaccumulation, with BAF/BCF values greater than 5000: C13–C15 isoalkanes, C12 alkenes, C12–C15 one-ring cycloalkanes, C12 and C15 two-ring cycloalkanes, C14 polycycloalkanes, C15 one-ring aromatics, C15 and C20 cycloalkane monoaromatics, C12–C13 diaromatics, C20 cycloalkane diaromatics, and C14 and C20 three-ring PAHs

These components are associated with a slow rate of metabolism and are highly lipophilic. Exposures from water and diet, when combined, suggest that the rate of uptake would exceed that of the total elimination rate. Most of these components are not expected to biomagnify in aquatic or terrestrial foodwebs, largely because a combination of metabolism, low dietary assimilation efficiency and growth dilution allows the elimination rate to exceed the uptake rate from the diet; however, one study suggests that some alkyl-PAHs may biomagnify. While only BSAFs were found for some PAHs, it is possible that BSAFs will be  $> 1$  for invertebrates, given that they do not have the same metabolic competency as fish.

In general, fish can efficiently metabolize aromatic compounds. There is some evidence that alkylation increases bioaccumulation of naphthalene but it is not known if this can be generalized to larger PAHs or if any potential increase in bioaccumulation due to alkylation will be sufficient to exceed a BAF/BCF of 5000.

Some lower trophic level organisms (i.e., invertebrates) appear to lack the capacity to efficiently metabolize aromatic compounds, resulting in high bioaccumulation potential for some aromatic components as compared to fish.

This is the case for the C14 three-ring PAH, which was bioconcentrated to a high level (BCF  $> 5000$ ) by invertebrates but not by fish. There is potential for such bioaccumulative components to reach toxic levels in organisms if exposure is continuous and of sufficient magnitude, though this is unlikely in the water column following a spill scenario due to relatively rapid dispersal

Bioaccumulation of aromatic compounds might be lower in natural environments than what is observed in the laboratory. PAHs may sorb to organic material suspended in the water column (dissolved humic material), which decreases their overall bioavailability primarily due to an increase in size. This has been observed with fish

### Ecotoxicity:

Diesel fuel studies in salt water are available. The values varied greatly for aquatic species such as rainbow trout and *Daphnia magna*, demonstrating the inherent variability of diesel fuel compositions and its effects on toxicity. Most experimental acute toxicity values are above 1 mg/L. The lowest 48-hour LC50 for salmonids was 2.4 mg/L. *Daphnia magna* had a 24-hour LC50 of 1.8 mg/L. The values varied greatly for aquatic species such as rainbow trout and *Daphnia magna*, demonstrating the inherent variability of diesel fuel compositions and its effects on toxicity. Most experimental acute toxicity values are above 1 mg/L. The lowest 48-hour LC50 for salmonids was 2.4 mg/L. *Daphnia magna* had a 24-hour LC50 of 1.8 mg/L

The tropical mysid *Metamysidopsis insularis* was shown to be very sensitive to diesel fuel, with a 96-hour LC50 value of 0.22 mg/L this species has been shown to be as sensitive as temperate mysids to toxicants. However, this study used nominal concentrations, and therefore was not considered acceptable. In another study involving diesel fuel, the effect on brown or common shrimp (*Crangon crangon*) a 96-hour LC50 of 22 mg/L was determined. A "gas oil" was also tested and a 96-hour LC50 of 12 mg/L was determined. The steady state cell density of marine phytoplankton decreased with increasing concentrations of diesel fuel, with different sensitivities between species. The diatom *Phaeodactylum tricornutum* showed a 20% decrease in cell density in 24 hours following a 3 mg/L exposure with a 24-hour no-observed effect concentration (NOEC) of 2.5 mg/L. The microalga *Isochrysis galbana* was more tolerant to diesel fuel, with a 24-hour lowest-observed-effect concentration (LOEC) of 26 mg/L (14% decrease in cell density), and a NOEC of 25 mg/L. Finally, the green algae *Chlorella salina* was relatively insensitive to diesel fuel contamination, with a 24-hour LOEC of 170 mg/L (27% decrease in cell density), and a NOEC of 160 mg/L. All populations of phytoplankton returned to a steady state within 5 days of exposure

In sandy soils, earthworm (*Eisenia fetida*) mortality only occurred at diesel fuel concentrations greater than 10 000 mg/kg, which was also the concentration at which sub-lethal weight loss was recorded

Nephrotoxic effects of diesel fuel have been documented in several animal and human studies. Some species of birds (mallard ducks in particular) are generally resistant to the toxic effects of petrochemical ingestion, and large amounts of petrochemicals are needed in order to cause direct mortality

Most ethers are very resistant to hydrolysis, and the rate of cleavage of the carbon-oxygen bond by abiotic processes is expected to be insignificant.

Direct photolysis will not be an important removal process since aliphatic ethers do not absorb light at wavelengths  $>290$  nm

For n-Heptane: Log Kow: 4.66; Koc: 2400-8100; Half-life (hr) Air: 52.8; Half-life (hr) Surface Water: 2.9-312; Henry's atm m<sup>3</sup>/mol: 2.06; BOD 5 (if unstated): 1.92; COD: 0.06; BCF: 340-2000; Log BCF: 2.53-3.31.

Atmospheric Fate: Breakdown of n-heptane by sunlight is not expected to be an important fate process. If released to the atmosphere, n-heptane is expected to exist entirely in the vapor phase, in ambient air. Reactions hydroxyl radicals in the atmosphere have been shown to be important. Night-time reactions with nitrate radicals may contribute to the atmospheric transformation of n-heptane, especially in urban environments. n-Heptane is not expected to be susceptible to direct breakdown by sunlight

Terrestrial Fate: n-Heptane is expected to be broken down by biological processes in the soil; however, evaporation and adsorption from soil are expected to be a more important fate processes. n-Heptane will be slightly mobile to immobile in soil.

Aquatic Fate: Breakdown of n-heptane by water is not expected to be an important fate process.

Biological breakdown may occur in water; however, evaporation is expected to be a more important fate process. The evaporation half-life for the substance from a model river is 2.9 hours and from a model pond is 13 days. In aquatic systems, n-heptane may partition from the water column to organic matter in sediments and suspended solids.

Ecotoxicity: Concentration of the substance in aquatic life may be important in aquatic environments. The substance is moderately toxic to goldfish; however n-heptane has low toxicity to golden orfe, western mosquitofish, *Daphnia magna* water fleas, and snail. The substance is toxic to opossum shrimp.

For n-Hexane: Log Kow: 3.17-3.94; Henry's Law Constant: 1.69 atm-m<sup>3</sup>/mol; Vapor Pressure: 150 mm Hg @ 25 C; Log Koc: 2.90 to 3.61. BOD 5, (if unstated): 2.21; COD: 0.04; ThOD: 3.52.

Atmospheric Fate: n-Hexane is not expected to be directly broken down by sunlight. The main atmospheric removal mechanism is through reactions with hydroxyl radicals, with an approximate half-life of 2.9 days. The smog-producing potential of n-hexane is very low, compared to other alkanes, or chlorinated VOCs. Hydroxyl ion reactions in the upper troposphere, therefore, are probably the primary mechanisms for n-hexane degradation in the atmosphere.

Terrestrial Fate: Surface evaporation is expected to be the main fate process of this substance in soil. The substance has a moderate ability to sorb to soil particles but, is expected to have low potential for leaching into the lower soil depths. n-Hexane is expected to generally stay near the soil surface and, if not appreciably sorbed into the soil matrix, will eventually evaporate. Exceptions would involve locations with shallow groundwater tables where large spills occur - in such cases, n-hexane would spread out to contaminate a large volume of soil. Once introduced into groundwater, n-hexane may be fairly persistent, since its degradation by water is slow and opportunities for biodegradation may be limited, (due to low oxygen conditions), or, where nutrients, such as nitrogen or phosphorus, are in limited supply. Biological breakdown is probably the most significant degradation mechanism in groundwater. *Pseudomonas mendocina* bacteria have been shown to break the substance down in groundwater and mixed/pure bacterial cultures can utilize the substance, in the presence of oxygen. The most important biological breakdown process involves the conversion of n-hexane to primary alcohols, aldehydes and, ultimately, into fatty acids. In general, unless the n-hexane is buried at some depth within a soil or sediment, evaporation is generally assumed to occur at a much more rapid rate than chemical or biochemical degradation processes.

Aquatic Fate: The dominant transport process from water is evaporation, with an estimated half-life of  $<3$  hours. For standing bodies of water, a half-life no longer than 6.8 days is estimated. The substance has very low water solubility and is resistant to breakdown by water. Few data exist for the biological breakdown of n-hexane in water, however; this process is not considered to be as rapid as evaporation. n-Hexane may be persistent if released to deep sediment.

Ecotoxicity: This substance is not expected to concentrate/accumulate in aquatic organisms or the food chain. These substances are considered to be the most readily biodegradable fractions in petroleum, particularly when oxygen is present in solution. The substance is moderately toxic to rainbow trout, fathead minnow, bluegill, and *Daphnia* water fleas.

For Cyclohexanes: log Kow: 3.44; Water Solubility: 54.8 mg/L (25 C); Vapor Pressure: 97.6 mm Hg (25 C); Henry's Law Constant: 0.193 atm-m<sup>3</sup>/mole; Koc: 480; Half-life (hr) air: 6-52; Half-life (hr) H<sub>2</sub>O surface water: 2; ThOD: 3.42. BCF: 242.

Atmospheric Fate: In the atmosphere, cyclohexane will degrade by reaction with photochemically produced hydroxyl radicals (half-life 52 hours). Photodegradation occurs in about 6 hours in the presence of nitrogen oxides (photochemical smog conditions). The reactivity of cyclohexane is relatively low. Cyclohexanes should not be subject to direct photolysis.

Aquatic Fate: Volatilization from water should be the most important fate process in aquatic systems and is expected to be rapid with the rate being controlled by diffusion through the liquid phase.

Terrestrial Fate: Cyclohexane will volatilize and is expected to leach into the ground. Cyclohexane is resistant to biodegradation but may slowly biodegrade in the presence of other hydrocarbons that are themselves biodegraded. Moderate soil absorbability is expected. Small interactions with soil adsorbents and absorptivity was only casually related to the organic carbon content of sediment.

Biodegradation: Cyclohexanes are highly resistant to biodegradation and do not support growth of the degrading organism themselves but are metabolized during the course of the

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

microorganisms growth on another, usually similar substrate.

Ecotoxicity: Some bioconcentration is expected. Significant risk of bioaccumulation is likely. Cyclohexanes are slightly toxic to fathead minnow, bluegill sunfish and guppy and not acutely toxic to Daphnia magna water flea, algae or Photobacterium phosphoreum bacteria.

**DO NOT discharge into sewer or waterways.**

### 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
cyclohexane	HIGH (Half-life = 360 days)	LOW (Half-life = 3.63 days)
ethyl acetate	LOW (Half-life = 14 days)	LOW (Half-life = 14.71 days)
dimethyl ether	LOW	LOW

### 12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
cyclohexane	LOW (BCF = 242)
ethyl acetate	HIGH (BCF = 3300)
dimethyl ether	LOW (LogKOW = 0.1)

### 12.4. Mobility in soil

Ingredient	Mobility
cyclohexane	LOW (KOC = 165.5)
ethyl acetate	LOW (KOC = 6.131)
dimethyl ether	HIGH (KOC = 1.292)

### 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

The evidence linking adverse effects to endocrine disruptors is more compelling in the environment than it is in humans. Endocrine disruptors profoundly alter reproductive physiology of ecosystems and ultimately impact entire populations. Some endocrine-disrupting chemicals are slow to break-down in the environment. That characteristic makes them potentially hazardous over long periods of time. Some well established adverse effects of endocrine disruptors in various wildlife species include; eggshell-thinning, displayed of characteristics of the opposite sex and impaired reproductive development. Other adverse changes in wildlife species that have been suggested, but not proven include; reproductive abnormalities, immune dysfunction and skeletal deformities.

### 12.7. Other adverse effects

Not Available



## SECTION 13 Disposal considerations

### 13.1. Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Evaporate residue at an approved site.</li> <li>▶ Return empty containers to supplier. If containers are marked non-returnable establish means of disposal with manufacturer prior to purchase.</li> <li>▶ Ensure damaged or non-returnable cylinders are gas-free before disposal.</li> </ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

## SECTION 14 Transport information

### Labels Required

	
<b>Marine Pollutant</b>	

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

### Land transport (ADR-RID)

14.1. UN number	3501	
14.2. UN proper shipping name	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (contains dimethyl ether)	
14.3. Transport hazard class(es)	Class	2.1
	Subrisk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Environmentally hazardous	
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 dimethyl ether)	
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	Environmentally hazardous	
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 dimethyl ether)	
14.3. Transport hazard class(es)	IMDG Class	2.1
	IMDG Subrisk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Marine Pollutant	
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 dimethyl ether)	
14.3. Transport hazard class(es)	2.1	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Classification code	8F
	Special provisions	274; 659
	Limited quantity	0
	Equipment required	PP, EX, A

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

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
cyclohexane	Not Available
ethyl acetate	Not Available
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	Not Available
dimethyl ether	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
cyclohexane	Not Available
ethyl acetate	Not Available
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	Not Available
dimethyl ether	Not Available

**SECTION 15 Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****cyclohexane 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

**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

**Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List  
 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  
 EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 2) Carcinogens: Category 1 B  
 EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 4) Germ cell mutagens: Category 1 B

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

**dimethyl ether 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

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	
cyclohexane	110-82-7	601-017-00-1	<span style="color:#444444;font-family:Calibri, sans-serif, 'Mongolian Baiti', 'Microsoft Yi Baiti', 'Javanese Text', 'Yu Gothic';font-size:14.6667px;white-space:pre-wrap;background-color:#fffff; ">01-2119463273-41-0000</span>	
Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)		Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 2; Asp. Tox. 1; Skin Irrit. 2; STOT SE 3; Aquatic Acute 1		GHS02; GHS09;	H225; H304; H315; H336; H400; H410

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

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## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
		GHS08; Dgr	
2	Flam. Liq. 2; Asp. Tox. 1; Skin Irrit. 2; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 1; STOT SE 3; Eye Irrit. 2; Acute Tox. 4; Repr. 2; STOT SE 2	GHS09; GHS08; Dgr; GHS01	H225; H304; H315; H336; H400; H410; H319; H332; H335; H361; H371

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	<span style="color:#444444;font-family:Calibri, sans-serif, 'Mongolian Baiti', 'Microsoft Yi Baiti', 'Javanese Text', 'Yu Gothic';font-size:14.6667px;white-space:pre-wrap;background-color:#fffff;">01-2119475103-46-0017</span>

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
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	64742-49-0.*	649-328-00-1	01-2119475514-35-0001

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Asp. Tox. 1; Muta. 1B; Carc. 1B	GHS08; Dgr	H304; H340; H350
2	Flam. Liq. 1; Asp. Tox. 1; Skin Irrit. 2; STOT SE 3; Repr. 2; Muta. 1B; Carc. 1B; Eye Irrit. 2; STOT RE 1; Acute Tox. 4; STOT SE 3; Acute Tox. 4; Aquatic Acute 1; Aquatic Chronic 1	GHS02; GHS09; GHS08; Dgr; GHS03; GHS05	H224; H304; H315; H336; H361; H340; H350; H319; H372; H332; H335; H302; H400; H410

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

Ingredient	CAS number	Index No	ECHA Dossier
dimethyl ether	115-10-6	603-019-00-8	<span style="color:#444444;font-family:Calibri, sans-serif, 'Mongolian Baiti', 'Microsoft Yi Baiti', 'Javanese Text', 'Yu Gothic';font-size:14.6667px;white-space:pre-wrap;background-color:#fffff;">01-2119472128-37-XXXX</span>

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Gas 1	GHS02; GHS04; Dgr	H220
2	Flam. Gas 1; Comp.; Muta. 1B; Carc. 1A; STOT SE 3; STOT SE 1; Skin Irrit. 2; Eye Irrit. 2	GHS04; Dgr; GHS01; GHS08	H220; H280; H336; H370; H315; H319

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

## National Inventory Status

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (cyclohexane; ethyl acetate; Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane; dimethyl ether)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
<b>Legend:</b>	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	06/07/2022
Initial Date	28/03/2022

## TECRON - SELF ADHESIVE MEMBRANE PRIMER, BLACK, CANISTER

### Full text Risk and Hazard codes

<b>H220</b>	Extremely flammable gas.
<b>H224</b>	Extremely flammable liquid and vapour.
<b>H225</b>	Highly flammable liquid and vapour.
<b>H280</b>	Contains gas under pressure; may explode if heated.
<b>H302</b>	Harmful if swallowed.
<b>H304</b>	May be fatal if swallowed and enters airways.
<b>H319</b>	Causes serious eye irritation.
<b>H332</b>	Harmful if inhaled.
<b>H335</b>	May cause respiratory irritation.
<b>H340</b>	May cause genetic defects.
<b>H350</b>	May cause cancer.
<b>H361</b>	Suspected of damaging fertility or the unborn child.
<b>H370</b>	Causes damage to organs.
<b>H371</b>	May cause damage to organs.
<b>H372</b>	Causes damage to organs through prolonged or repeated exposure.
<b>H400</b>	Very toxic to aquatic life.
<b>H411</b>	Toxic to aquatic life with long lasting effects.
<b>H413</b>	May cause long lasting harmful effects to aquatic life.

### SDS Version Summary

Version	Date of Update	Sections Updated
1.2	06/07/2022	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.

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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## SELF ADHESIVE MEMBRANE

# PRIMER

VOLUME 22 LITRES  
COLOUR BLACK

**UN3501** CHEMICAL UNDER PRESSURE, FLAMMABLE,  
N.O.S.(DIMETHYL ETHER, CYCLOHEXANE)

### DANGER

H229 Extremely flammable aerosol. H229 Pressurised container: may burst if heated. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H410 Very toxic to aquatic life with long lasting effects.# 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. P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

\*\*Refer to Technical Data Sheet for more information



Carnmore / Oranmore / Galway  
H91 D294 / Republic of Ireland

Call 0818 757575  
email info@tecron.ie

**tecron.ie**

P501 Dispose of contents/ container in accordance with national regulations. Contains cyclohexane, Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane, ethyl acetate

For Professional Users Only



**DANGER**

UFI: 31K6-72A9-000Y-46WC

Made in GB

Manufactured by (GDEK) Quin Global UK Ltd.