SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>2 PACK COLOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Product code: 2P</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

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

Relevant identified uses

Use according to manufacturer’s directions.

Details of the supplier of the safety data sheet

Registered company name | HiChem Paint Technologies Pty Ltd
Address                  | 73 Hallam South Road Hallam VIC 3803 Australia
Telephone                | +61 3 9796 3400
Fax                       | +61 3 9796 4500
Website                   | www.hichem.com.au
Email                     | info@hichem.com.au

Emergency telephone number

Association / Organisation | HiChem Paint Technologies
Emergency telephone numbers

In Australia: HiChem: +61 3 9796 3400

Other emergency telephone numbers

In New Zealand: SRGS Pty Ltd: 0800 500 605

CHEMWATCH EMERGENCY RESPONSE

<table>
<thead>
<tr>
<th>Primary Number</th>
<th>Alternative Number 1</th>
<th>Alternative Number 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800 039 008</td>
<td>1800 039 008</td>
<td>+612 9186 1132</td>
</tr>
</tbody>
</table>

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

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Body Contact</th>
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<tbody>
<tr>
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<table>
<thead>
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<th>Reactivity</th>
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<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Chronic</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Poisons Schedule | Not Applicable
Classification [1] | Flammable Liquid Category 2, Germ cell mutagenicity Category 1B, Carcinogenicity Category 1B, Specific target organ toxicity - single exposure Category 3 (narcotic effects), Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3


Label elements

GHS label elements

Continued...
Hazard statement(s)

H225 Highly flammable liquid and vapour.
H340 May cause genetic defects.
H350 May cause cancer.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.
AUH066 Repeated exposure may cause skin dryness and cracking

Precautionary statement(s) Prevention

P201 Obtain special instructions before use.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P271 Use in a well-ventilated area.
P281 Use personal protective equipment as required.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P308+P313 IF exposed or concerned: Get medical advice/attention.
P370+P378 In case of fire: Use alcohol resistant foam or normal protein foam for extinction.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P373 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Storage

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

Precautionary statement(s) Disposal

P501 Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances
See section below for composition of Mixtures

Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
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<td>&gt;60</td>
<td>n-butyl acetate</td>
</tr>
<tr>
<td>1330-20-7</td>
<td>5-15</td>
<td>xylene</td>
</tr>
<tr>
<td>64742-95-6</td>
<td>1-10</td>
<td>naphtha petroleum, light aromatic solvent</td>
</tr>
<tr>
<td>108-65-6</td>
<td>1-10</td>
<td>propylene glycol monomethyl ether acetate, alpha-isomer</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>1-5</td>
<td>titanium dioxide</td>
</tr>
</tbody>
</table>

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.
If fumes or combustion products are inhaled remove from contaminated area.

- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.

If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

Transport to hospital, or doctor.

If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.

- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casually can comfortably drink.
- Seek medical advice.
- Avoid giving milk or oils.
- Avoid giving alcohol.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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

While aspirates such as esters:

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

- Give activated charcoal.

**ADVANCED TREATMENT**

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TIKO. 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.
- Monitor and treat, where necessary, for pulmonary oedema.
- Propranolol hydrochloride should be used to assist eye irrigation.

**LABORATORY ANALYSIS**

- 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 (ABG), chest radiographs and electrocardiograph.
- 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 TIKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
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- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Monitor and treat, where necessary, for pulmonary oedema.
- Proparacaine hydrochloride should be used to assist eye irrigation.

**EMERGENCY DEPARTMENT**

- Consult a toxicologist as necessary.

**SECTION 5 FIREFIGHTING MEASURES**

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control the fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- **Do not approach containers suspected to be hot.**
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

**Fire/Explosion Hazard**

- Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.

**Extinguishing media**

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.
Heating may cause expansion or decomposition leading to violent rupture of containers. On combustion, may emit toxic fumes of carbon monoxide (CO).
Combustion products include: carbon dioxide (CO₂) other pyrolysis products typical of burning organic material.

HAZCHEM <3YE

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
See section 8

Environmental precautions
See section 12

Methods and material for containment and cleaning up

**Minor Spills**
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

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

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

**Safe handling**
- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- Do NOT allow clothing wet with material to stay in contact with skin.
- Electrostatic discharge may be generated during pumping - this may result in fire.
- Ensure electrical continuity by bonding and grounding (earthing) all equipment.
- Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec).
- Avoid splash filling.
- Do NOT use compressed air for filling discharging or handling operations.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- Do NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights, heat or ignition sources.
- When handling, Do NOT eat, drink or smoke.
- Vapour may ignite on pumping or pouring due to static electricity.
- Do NOT use plastic buckets.
- Earth and secure metal containers when dispensing or pouring product.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- Keep containers securely sealed.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

**Other information**
- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- Do NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer’s storage and handling recommendations contained within this SDS.

Continued...
Conditions for safe storage, including any incompatibilities

Suitable container

- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- For low viscosity materials: (i) Drums and jerry cans must be of the non-removable head type. (ii) Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C)
- For manufactured product having a viscosity of at least 250 cSt. (23 deg. C)
- Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C); (i) Removable head packaging; (ii) Cans with friction closures and (iii) low pressure tubes and cartridges may be used.
- Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages.
- In addition, where inner packagings are glass and contain liquids of packaging group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

Storage incompatibility

- Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.
- Aromatics can react exothermically with bases and with diazo compounds.
- For alkyl aromatics:
  - The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms. The most common and dominant one is the attack by benzenoid carbon as the intermediate formed is stabilised by resonance structure of the ring.
  - Following reaction with oxygen and under the influence of sunlight, a hydroperoxide at the alpha-position to the aromatic ring, is the primary oxidation product formed (provided a hydrogen atom is initially available at this position) - this product is often short-lived but may be stable dependent on the nature of the aromatic substitution; a secondary C-H bond is more easily attacked than a primary C-H bond whilst a tertiary C-H bond is even more susceptible to attack by oxygen.
  - Monoalkylbenzenes may subsequently form monocarboxylic acids; alkyl naphthalenes mainly produce the corresponding naphthalene carboxylic acids.
  - Oxidation in the presence of transition metal salts not only accelerates but also selectively decomposes the hydroperoxides.
  - Hock-rearrangement by the influence of strong acids converts the hydroperoxides to hemiacetals. Peresters formed from the hydroperoxides undergo Criegee rearrangement easily.
  - Alkal metals accelerate the oxidation while CO2 as co-oxidant enhances the selectivity.
  - Microwave conditions give improved yields of the oxidation products.
  - Photo-oxidation products may occur following reaction with hydroxyl radicals and NOx - these may be components of photochemical smogs.


SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>OCCUPATIONAL EXPOSURE LIMITS (OEL)</th>
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**INGREDIENT DATA**

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<th>Peak</th>
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<td>Australia Exposure Standards</td>
<td>n-butyl acetate</td>
<td>n-Butyl acetate</td>
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<td>Australia Exposure Standards</td>
<td>xylene</td>
<td>Xylene (α-, β-, p- isomers)</td>
<td>350 mg/m3 / 80 ppm</td>
<td>655 mg/m3 / 150 ppm</td>
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<tr>
<td>Australia Exposure Standards</td>
<td>propylene glycol monomethyl ether acetate, α-isomer</td>
<td>1-Methoxy-2-propanol acetate</td>
<td>274 mg/m3 / 50 ppm</td>
<td>548 mg/m3 / 100 ppm</td>
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<td>Australia Exposure Standards</td>
<td>titanium dioxide</td>
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<td>10 mg/m3</td>
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**EMERGENCY LIMITS**

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<th>TEEL-3</th>
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<tbody>
<tr>
<td>n-butyl acetate</td>
<td>Butyl acetate, n-</td>
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<td>Not Available</td>
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<td>xylene</td>
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<tr>
<td>propylene glycol monomethyl ether acetate, β-isomer</td>
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<td>30 mg/m3</td>
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<td>1,700 [LEL] ppm</td>
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<td>xylene</td>
<td>1,000 ppm</td>
<td>900 ppm</td>
</tr>
<tr>
<td>naphtha petroleum, light aromatic solvent</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>propylene glycol monomethyl ether acetate, α-isomer</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>titanium dioxide</td>
<td>N.E. mg/m3 / N.E. ppm</td>
<td>5,000 mg/m3</td>
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Exposure controls

**Appropriate engineering controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

- Process controls which involve changing the way a job activity or process is done to reduce the risk.
- Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

**Control parameters**

**Storage incompatibility**

- Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.

For alkyl aromatics:

- The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms. The most common and dominant one is the attack by benzenoid carbon as the intermediate formed is stabilised by resonance structure of the ring.

- Following reaction with oxygen and under the influence of sunlight, a hydroperoxide at the alpha-position to the aromatic ring, is the primary oxidation product formed (provided a hydrogen atom is initially available at this position) - this product is often short-lived but may be stable dependent on the nature of the aromatic substitution; a secondary C-H bond is more easily attacked than a primary C-H bond whilst a tertiary C-H bond is even more susceptible to attack by oxygen.

- Monoalkylbenzenes may subsequently form monocarboxylic acids; alkyl naphthalenes mainly produce the corresponding naphthalene carboxylic acids.

- Oxidation in the presence of transition metal salts not only accelerates but also selectively decomposes the hydroperoxides.

- Hock-rearrangement by the influence of strong acids converts the hydroperoxides to hemiacetals. Peresters formed from the hydroperoxides undergo Criegee rearrangement easily.

- Alkal metals accelerate the oxidation while CO2 as co-oxidant enhances the selectivity.

- Microwave conditions give improved yields of the oxidation products.

- Photo-oxidation products may occur following reaction with hydroxyl radicals and NOx - these may be components of photochemical smogs.

Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area.

Work should be undertaken in an isolated system such as a “glove-box”. Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within.

Open- vessel systems are prohibited.

Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation.

Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system.

For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impermeable garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.

Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas).

Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air.

Laboratory hoods must be designed and maintained so as to draw air inwards at an average linear face velocity of 0.76 m/sec with a minimum of 0.64 m/sec.

Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed.

Garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.

Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should be consulted thoroughly. Application of a non-perfumed moisturizer is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F793, AS/NZS ISO 374, or national equivalent).

When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS ISO 374, or national equivalent) is recommended.

Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves should be replaced.

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will depend on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:
- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZ ISO 6592:2006 or national equivalent]

Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent]

Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.

Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and at the point of exit for purposes of decontamination or disposal. The contents of such impermeable containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impermeable garments, including gloves, boots and continuous-air supplied hood.

Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.

Overalls.

PVC Apron.

PVC protective suit may be required if exposure severe.

Eyewash unit.

Ensure there is ready access to a safety shower.
### 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:

#### Material

<table>
<thead>
<tr>
<th>Material</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTYL</td>
<td>C</td>
</tr>
<tr>
<td>BUTYL/NEOPRENE</td>
<td>C</td>
</tr>
<tr>
<td>HYPALON</td>
<td>C</td>
</tr>
<tr>
<td>NAT+NEOP+NITRILE</td>
<td>C</td>
</tr>
<tr>
<td>NATURAL RUBBER</td>
<td>C</td>
</tr>
<tr>
<td>NATURAL+NEOPRENE</td>
<td>C</td>
</tr>
<tr>
<td>NEOPRENE</td>
<td>C</td>
</tr>
<tr>
<td>NEOPRENE/NATURAL</td>
<td>C</td>
</tr>
<tr>
<td>NITRILE</td>
<td>C</td>
</tr>
<tr>
<td>NITRILE+PVC</td>
<td>C</td>
</tr>
<tr>
<td>PE</td>
<td>C</td>
</tr>
<tr>
<td>PE/EVALPE</td>
<td>C</td>
</tr>
<tr>
<td>PVA</td>
<td>C</td>
</tr>
<tr>
<td>PVC</td>
<td>C</td>
</tr>
<tr>
<td>PVDC/PE/PVDC</td>
<td>C</td>
</tr>
<tr>
<td>TEFLOMN</td>
<td>C</td>
</tr>
<tr>
<td>VITON</td>
<td>C</td>
</tr>
<tr>
<td>VITON/BUTYL</td>
<td>C</td>
</tr>
</tbody>
</table>

* 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.

- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
- For large scale or continuous use wear loose weave non-static clothing (no metallic fasteners, cuffs or pockets).
- Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot if an electrical static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms.
  Conductive shoes should be stored in lockers close to the room in which they are worn. Personnel who have been issued conductive footwear should not wear them from their place of work to their homes and return.

#### Thermal hazards

Not Available

#### Respiratory protection

**Type A 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.

<table>
<thead>
<tr>
<th>Required Minimum Protection Factor</th>
<th>Half-Face Respirator</th>
<th>Full-Face Respirator</th>
<th>Powered Air Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 10 x ES</td>
<td>A-AUS / Class 1</td>
<td>-</td>
<td>A-PAPR-AUS / Class 1</td>
</tr>
<tr>
<td>up to 50 x ES</td>
<td>Air-line*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>up to 100 x ES</td>
<td>-</td>
<td>A-3</td>
<td>-</td>
</tr>
<tr>
<td>100+ x ES</td>
<td>-</td>
<td>Air-line**</td>
<td>-</td>
</tr>
</tbody>
</table>

* Continuous-flow; ** - Continuous-flow or positive pressure demand

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

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Highly flammable liquid; not miscible with water.</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Not Available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH (as supplied)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Melting point / freezing point (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Flash point °C</td>
<td>22 (butyl acetate)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Available</td>
</tr>
<tr>
<td>Flammability</td>
<td>HIGHLY FLAMMABLE.</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Relative density (Water = 1)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Partition coefficient n-octanol / water</td>
<td>Not Available</td>
</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not Available</td>
</tr>
<tr>
<td>Viscosity (cSt)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Molecular weight (g/mol)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Taste</td>
<td>Not Available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not Available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not Available</td>
</tr>
<tr>
<td>Surface Tension (dyn/cm or mN/m)</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Continued...
SECTION 10 STABILITY AND REACTIVITY

Reactivity

- See section 7

Chemical stability

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

Possibility of hazardous reactions

- See section 7

Conditions to avoid

- See section 7

Incompatible materials

- See section 7

Hazardous decomposition products

- See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled

- 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.
- 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.
- The main effects of simple esters are irritation, stupor and insensibility. Headache, drowsiness, dizziness, coma and behavioural changes may occur.
- Prolonged exposure may cause headache, nausea and ultimately loss of consciousness.

Ingestion

- Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733)

Skin Contact

- Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.
- Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.
- There is some evidence to suggest that the material may cause moderate inflammation of the skin either following direct contact or after a delay of some time.
- Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Eye

- There is some evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with redness.

Chronic

- There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information.
- Based on experiments and other information, there is ample evidence to presume that exposure to this material can cause genetic defects that can be inherited.
- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

2 PACK COLOURS

<table>
<thead>
<tr>
<th>Component</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-butyl acetate</td>
<td>Dermal (rabbit) LD50: &gt;14000 mg/kg [1]</td>
<td>Eye (human): 300 mg</td>
</tr>
<tr>
<td></td>
<td>Inhalation (rat) LC50: 2000 ppm/4hr [2]</td>
<td>Eye (rabbit): 20 mg (open) - SEVERE</td>
</tr>
<tr>
<td></td>
<td>Inhalation (rat) LC50: 590 ppm/4hr [3]</td>
<td>Eye (rabbit): 20 mg/24h - moderate</td>
</tr>
<tr>
<td></td>
<td>Oral (rat) LD50: 10736 mg/kg [1]</td>
<td>Skin (rabbit): 500 mg/24h - moderate</td>
</tr>
<tr>
<td>xylene</td>
<td>Dermal (rabbit) LD50: &gt;1700 mg/kg [2]</td>
<td>Eye (human): 200 ppm irritant</td>
</tr>
<tr>
<td></td>
<td>Inhalation (rat) LC50: 5000 ppm/4hr [2]</td>
<td>Eye (rabbit): 5 mg/24h - SEVERE</td>
</tr>
<tr>
<td></td>
<td>Oral (rat) LD50: 4300 mg/kg [2]</td>
<td>Eye (rabbit): 87 mg mild</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin (rabbit): 500 mg/24h moderate</td>
</tr>
<tr>
<td>naphtha petroleum, light aromatic solvent</td>
<td>Dermal (rabbit) LD50: &gt;1900 mg/kg [1]</td>
<td>Not Available</td>
</tr>
<tr>
<td></td>
<td>Inhalation (rat) LC50: &gt;3670 ppm/8 h [2]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oral (rat) LD50: &gt;4500 mg/kg [1]</td>
<td></td>
</tr>
<tr>
<td>propylene glycol monomethyl ether acetate, alpha-isomer</td>
<td>Dermal (rat) LD50: &gt;2000 mg/kg [1]</td>
<td>Not Available</td>
</tr>
<tr>
<td></td>
<td>Inhalation (rat) LC50: 4345 ppm/4hr [2]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oral (rat) LD50: &gt;14.1 ml [1]</td>
<td></td>
</tr>
</tbody>
</table>

Continued...
Acute toxicity

1,2,4-Trimethylbenzene can cause drowsiness, and vertigo (U.S. EP A). Headache, fatigue, and drowsiness were reported for workers exposed (no dose given) to paint thinner containing 80% 1,2,4- and 1,3,5-trimethylbenzenes.

Developmental/Reproductive Toxicity:

Reproductive toxicity was studied in a three-generation reproductive study on the C9 fraction conducted with CD rats (30/sex/group) exposed by inhalation. A three-generation reproductive study on the C9 fraction was conducted  CD rats (30/sex/group) were exposed by

Repeated Dose Toxicity

Inhalation: The results from a subchronic (3 month) neurotoxicity study and a one-year chronic study (6 hr/day, 5 days/week) indicate that effects from inhalation of the C9 aromatic naphtha have been observed in rats treated dermally with up to 0.3 mL/rat/day of a mixture of trimethylbenzenes, 4-6 hours/day, 5 days/week over one generation.

For C9 aromatics (typically trimethylbenzenes - TMBs):

Acute toxicity studies (oral, dermal and inhalation routes of exposure) have been conducted in rats using various solvent products containing predominantly mixed C9 aromatic hydrocarbons (CAS RN 64742-95-6). Inhalation LD50’s range from 6,000 to 10,000 mg/kg for C9 aromatic naphtha and 18,000 to 24,000 mg/kg for 1,2,4- and 1,3,5-TMB, respectively. A rat oral LD50 reported for 1,2-TMB is 5 grams/kg body weight.

No effects on fertility or fertility occurred in rats treated dermally with up to 0.3 mL/day of a mixture of trimethylbenzenes, 4-6 hours/day, 5 days/week over one generation.

The substance is classified by IARC as Group 3:

The absence of systemic intoxication from dermal absorption is not likely to occur due to the dermal irritation caused by the chemical promoting quick removal. Following oral administration of the chemical to rats, 62.6% of the dose was recovered as urinary metabolites indicating substantial absorption.

The acute oral toxicity of 1,2,4-Trimethylbenzene is biphaphic and may accumulate in fat and fatty tissues. In the blood stream, approximately 6% of the chemical is bound to red blood cells. Metabolism occurs by side-chain oxidation to form alcohols and carboxylic acids which are then conjugated with glucuronic acid, glycine, or sulfates for urinary excretion. After a single oral dose to rats of 1200 mg/kg, urinary metabolites consisted of approximately 43.2% glycine, 6.6% glucuronic, and 12.9% sulfuric acid conjugates. The two principle metabolites excreted by rabbits after oral administration of 438 mg/kg/day for 5 days were 2,4-dimethylhippuric acid and 3,4-dimethylhippuric acid. The major routes of excretion of 1,2,4-trimethylbenzene are excretion of parent compound and elimination of urinary metabolites. Half-times for urinary metabolites were reported as 9.5 hours for glycine, 22.9 hours for glucuronide, and 37.6 hours for sulfuric acid conjugates.

Acute Toxicity Direct contact with liquid 1,2,4-trimethylbenzene is irritating to the skin and breathing the vapor is irritating to the respiratory tract causing pneumoconiosis. Breathing high concentrations of the chemical vapor causes headache, fatigue, and drowsiness. In humans liquid 1,2,4-trimethylbenzene is irritating to the skin and inhalation of vapor causes chemical pneumonitis. High concentrations of vapor (5000-100 ppm) cause headache, fatigue, and drowsiness. The concentration of 5000 ppm is roughly equivalent to a total of 221 mg/kg assuming a 30 minute exposure period (see end note 1). 2. Animals - Mice exposed to 1830-9140 ppm 1,2,4-trimethylbenzene (no duration given) had loss of righting response and loss of reflexes. Direct dermal contact with the chemical (no species given) causes vasodilation, erythema, and irritation (U.S. EP A). Seven of 10 rats died after an oral dose of 2.5 mL of a mixture of trimethylbenzenes in olive oil (average dose approximately 4.4 g/kg). Rats and mice were exposed by inhalation to a coal tar distillate containing about 70% 1,3,5- and 1,2,4-trimethylbenzene; no pathological changes were noted in either species after exposure to 1800-2000 ppm for up to 48 continuous hours, or in rats after 14 exposures of 8 hours each at the same exposure levels. No effects were reported for rats exposed to a mixture of trimethylbenzenes at 1700 ppm for 10 to 21 days.

Neurotoxicity: 1,2,4-Trimethylbenzene depresses the central nervous system. Exposure to solvent mixtures containing the central nervous system provides headache, fatigue, tremulousness, and drowsiness. Occupationally, workers exposed to a solvent containing 50% 1,2,4-trimethylbenzene had nervousness, headaches, drowsiness, and vertigo (U.S. EP A). Headache, fatigue, and drowsiness were reported for workers exposed (no dose given) to paint thinner containing 80% 1,2,4- and 1,3,5-trimethylbenzenes.

Results of the developmental toxicity study indicate that the C9 fraction caused adverse neurological effects at the highest dose (1500 ppm) tested.

Subchronic/Chronic Toxicity:

Long-term exposure to solvents containing 1,2,4-trimethylbenzene may cause nervousness, tension, and bronchitis. Painters and other workers exposed to the C9 fraction have reported nervousness, headaches, and dizziness. The NOAEL was considered to be the high exposure level of 373 ppm, or 1830 mg/m3. In two subchronic rat inhalation studies, both of three months duration, transient weight reduction in the high exposure group (not statistically significant at termination of exposures), no effects were reported on neuropathology or bone marrow of Sprague-Dawley rats exposed by inhalation (6 hours/day for 5 days); and does not induce sister chromatid exchange in Chinese hamster ovary cells with and without activation. The C9 fraction does not induce chromosome mutations in Chinese hamster ovary cells with and without activation; does not induce chromosome aberrations in the bone marrow of Sprague-Dawley rats exposed by inhalation (6 hours/day for 5 days); and does not induce sister chromatid exchange in Chinese hamster ovary cells with and without activation.

Developmental/Reproductive Toxicity:

A three-generation reproductive study on the C9 fraction was conducted CD rats (30/sex/group) exposed by inhalation to the C9 fraction at concentrations of 0, 100, 500, or 1500 ppm (0, 100, 500, or 1500 mg/kg/day) for 6 hours/day, 5 days/week. There was evidence of parental and reproductive toxicity including reduced fecundity at all dose levels. Indicators of parental toxicity included reduced conception rates, reduced pregnancy rates, and increased embryonic deaths. Effects on parental reproduction included reduced weight gain, lymphopenia and neutrophilia. Genotoxicity: Results of mutagenicity testing, indicate that the C9 fraction does not induce gene mutations in prokaryotes (Salmonella typhimurium/mammalian microsome assay); or in mammalian cells in culture (in Chinese hamster ovary cells with and without activation). The C9 fraction does not induce chromosome mutations in Chinese hamster ovary cells with and without activation; does not induce chromosome aberrations in the bone marrow of Sprague-Dawley rats exposed by inhalation (6 hours/day for 5 days); and does not induce sister chromatid exchange in Chinese hamster ovary cells with and without activation.

Several irritation studies, including skin, eye, and lung/respiratory system, have been conducted on members of the category. The results indicate that C9 aromatic hydrocarbon solvents are mildly to moderately irritating to the skin, minimally irritating to the eye, and have the potential to irritate the respiratory tract and cause depression of respiratory rates in mice. Respiratory irritation is a key endpoint in the current occupational exposure limits established for C9 aromatic hydrocarbon solvents and trimethylbenzenes. No evidence of skin sensitization was identified.

Repeated Dose Toxicity

Inhalation: The results from a subchronic (3 month) neurotoxicity study and a one-year chronic study (6 hr/day, 5 days/week) indicate that effects from inhalation exposure to C9 Aromatic Hydrocarbon Solvents on systemic toxicity are slight. A battery of neurotoxicity and neurobehavioral endpoints were evaluated in the 3-month inhalation study on C9 aromatic naphtha tested at concentrations of 0, 101, 452, or 1320 ppm (0, 500, 2200, or 6500 mg/m3) in this study, other than a transient weight reduction in the high exposure group (not statistically significant at termination of exposures), no effects were reported on neuropathy or neurobehavioral parameters. The NOAEL for systemic and/or neurotoxicity tested. In an inhalation study of a commercial blend, rats were exposed to C9 aromatic naphtha concentrations of 0, 96, 198, or 373 ppm (0, 470, 970, 1800 mg/m3) for 6 hr/day, 5 days/week, for 12 months. Liver and kidney weights were increased in the high exposure group but no accompanying histopathology was observed in these organs.

The NOAEL was considered to be the high exposure level of 373 ppm, or 1800 mg/m3. In two subchronic inhalation studies, both of three months duration, rats were exposed to the individual TMB isomers (1,2,4 and 1,3,5- TMB) to nominal concentrations of 0, 120, 492, or 1200 mg/m3. Respiratory irritation was observed at 492 (100 ppm) and 1200 mg/m3 (250 ppm) and no systemic toxicity was observed in either study. For both pure isomers, the NOELs are 25 ppm or 123 mg/m3 for respiratory irritation and 250 ppm or 1200 mg/m3 for systemic effects.

Oral: The C9 aromatic naphtha has not been tested via the oral route of exposure. Individual TMB isomers have been evaluated in a series of repeated dose oral studies ranging from 14 days to 3 months over a wide range of doses. The effects observed in these studies included increased liver and kidney weights,
changes in blood chemistry, increased salivation, and decreased weight gain at higher doses. Organ weight changes appeared to be adaptive as they were not accompanied by histopathological effects. Blood changes appeared sporadic and without pattern. One study reported hyaline droplet nephropathy in male rats at the highest dose (1000 mg/kg bw-day), an effect that is often associated with alpha 2mu-globulin-induced nephropathy and not considered relevant to humans. The doses at which effects were observed above an exception were 100 mg/kg bw/day or above. An exception was made for the follow up three month study had a LOAEL of 600 mg/kg bw-day with a NOAEL of 200 mg/kg bw-day). Since effects generally were not severe and could be considered adaptive or spurious, oral exposure does not appear to pose a high toxicity hazard for pure trimethylolpropane isomers.

Mutagenicity

In vitro genotoxicity testing of a variety of C9 aromatics has been conducted in both bacterial and mammalian cells. In vitro point mutation tests were conducted with Salmonella typhimurium and Escherichia coli bacterial strains, as well as with cultured mammalian cells such as the Chinese hamster ovary cell cytos (HGPSRT assay) without and with metabolic activation. In addition, several types of in vitro chromosomal aberration tests have been performed (chromosome aberration frequency in Chinese hamster ovary and lung cells, sister chromatid exchange in CHO cells). Results were negative both with and without metabolic activation for all category members. For the supporting chemical, cell-mitotic figure tests, rats were exposed to C9 aromatic naphtha at concentrations of 0, 153, 471, or 1540 ppm (0, 750, 2,310, or 7,560 mg/m3) (24 hr/day, 6 days/week) for 2 weeks, then continued at the highest concentration for 14 weeks. In each generation, both sexes were exposed for 10 weeks prior to two weeks during mating for 6 hrs/day, 5 days/week. Female rats were then exposed during gestation days 0-20 and lactation days 5-21 for 6 hrs/day, 5 days/week. A potential developmental effect (reduction in mean pup weight and weight gain) was observed at a concentration that was significantly below the LOAEL. A no-observed-effect level (NOEL) could not be determined. A no-effect level (NEL) was determined for the NOAEL (7560 mg/m3).

Conclusion: There were no significant pathological changes or adverse effects on reproduction. The reproductive effects that were observed were not considered to be adverse. This is not considered to be a reproductive hazard.
TABLE 1: key acute toxicity endpoints for propylene glycol ethers (PGEs)

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Endpoint</th>
<th>Test Duration (hr)</th>
<th>Species</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-butyl acetate</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>18mg/L</td>
<td>2</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>&lt;32mg/L</td>
<td>1</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>1.675mg/L</td>
<td>3</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>EC50</td>
<td>96</td>
<td>Fish</td>
<td>18mg/L</td>
<td>2</td>
</tr>
<tr>
<td>xylene</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>2.6mg/L</td>
<td>2</td>
</tr>
<tr>
<td>xylene</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>&lt;3.4mg/L</td>
<td>2</td>
</tr>
<tr>
<td>xylene</td>
<td>EC50</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>4.6mg/L</td>
<td>2</td>
</tr>
<tr>
<td>xylene</td>
<td>EC50</td>
<td>24</td>
<td>Crustacea</td>
<td>0.71mg/L</td>
<td>4</td>
</tr>
<tr>
<td>xylene</td>
<td>NOEC</td>
<td>73</td>
<td>Algae or other aquatic plants</td>
<td>0.44mg/L</td>
<td>2</td>
</tr>
<tr>
<td>naphtha petroleum, light aromatic solvent</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>&lt;6.14mg/L</td>
<td>1</td>
</tr>
<tr>
<td>naphtha petroleum, light aromatic solvent</td>
<td>EC50</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>3.29mg/L</td>
<td>1</td>
</tr>
<tr>
<td>naphtha petroleum, light aromatic solvent</td>
<td>EC10</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>1.13mg/L</td>
<td>1</td>
</tr>
<tr>
<td>naphtha petroleum, light aromatic solvent</td>
<td>NOEC</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>&lt;1mg/L</td>
<td>1</td>
</tr>
<tr>
<td>propylene glycol monomethyl ether acetate, alpha-isomer</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>100mg/L</td>
<td>1</td>
</tr>
</tbody>
</table>

**Legend:**
- Data available but does not fill the criteria for classification
- Data required to make classification available
- Data Not Available to make classification

### SECTION 12 ECOLOGICAL INFORMATION

**Acute Toxicity**

- **Skin Irritation/Corrosion**
- **Serious Eye Damage/Irritation**
- **Respiratory or Skin Sensitisation**
- **Mutagenicity**

**Carcinogenicity**

**Reproductivity**

**STOT - Single Exposure**

**STOT - Repeated Exposure**

**Aspiration Hazard**

**TITANIUM DIOXIDE**

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Exposure to titanium dioxide is via inhalation, swallowing or skin contact. When inhaled, it may deposit in lung tissue and lymph nodes causing dysfunction of the lungs and immune system. Absorption by the stomach and intestines depends on the size of the particle. It penetrated only the outermost layer of the skin, suggesting that healthy skin may be an effective barrier. There is no substantive data on genetic damage, though cases have been reported in experimental animals. Studies have differing conclusions on its cancer-causing potential.

**WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

*I.C.I.*

**N-BUTYL ACETATE & XYLENE**

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

In developmental toxicity studies many PGEs have been tested by various routes of exposure and in various species at significant exposure levels and show no frank developmental effects. Due to the rapid hydrolysis of DPMA to DPM, DPMA would not be expected to show teratogenic effects. At high doses where maternal toxicity occurs (e.g., significant body weight loss), an increased incidence of some anomalies such as delayed skeletal ossification or increased 13th ribs, have been reported. Commericially available PGEs showed no teratogenicity.

The weight of the evidence indicates that propylene glycol ethers are not likely to be genotoxic. In vitro, negative results have been seen in a number of assays for PnB, DPnB, DPMA and TPM. Positive results were only seen in 3 out of 5 chromosome aberration assays in mammalian cells with DPnB. However, negative results were seen in a mouse micronucleus assay with DPnB and PM. Thus, there is no evidence to suggest these PGEs would be genotoxic in vivo.

In a 2-year bioassay on PM, there were no statistically significant increases in tumors in rats and mice.

A BASF report (in ECETOC) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. Hazard appears low but emphasizes the need for care in handling this chemical.

A BASF report (in ECETOC) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. Hazard appears low but emphasizes the need for care in handling this chemical.
<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-butyl acetate</td>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>xylene</td>
<td>HIGH (Half-life = 360 days)</td>
<td>LOW (Half-life = 1.83 days)</td>
</tr>
<tr>
<td>propylene glycol monomethyl ether acetate, alpha-isomer</td>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>titanium dioxide</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-butyl acetate</td>
<td>LOW (BCF = 14)</td>
</tr>
<tr>
<td>xylene</td>
<td>MEDIUM (BCF = 740)</td>
</tr>
<tr>
<td>propylene glycol monomethyl ether acetate, alpha-isomer</td>
<td>LOW (LogKOW = 0.56)</td>
</tr>
<tr>
<td>titanium dioxide</td>
<td>LOW (BCF = 10)</td>
</tr>
</tbody>
</table>

### Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-butyl acetate</td>
<td>LOW (KOC = 20.86)</td>
</tr>
<tr>
<td>propylene glycol monomethyl ether acetate, alpha-isomer</td>
<td>HIGH (KOC = 1.838)</td>
</tr>
<tr>
<td>titanium dioxide</td>
<td>LOW (KOC = 23.74)</td>
</tr>
</tbody>
</table>

### SECTION 13 DISPOSAL CONSIDERATIONS

#### Waste treatment methods

- **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

### SECTION 14 TRANSPORT INFORMATION

#### Labels Required
### Land transport (ADG)

<table>
<thead>
<tr>
<th>UN number</th>
<th>1263</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)</td>
</tr>
</tbody>
</table>
| Transport hazard class(es) | Class: 3  
Subrisk: Not Applicable |
| Packing group | II |
| Environmental hazard | Not Applicable |
| Special precautions for user | Special provisions: 163 367  
Limited quantity: 5 L |

### Air transport (ICAO-IATA / DGR)

<table>
<thead>
<tr>
<th>UN number</th>
<th>1263</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Paint (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base); Paint related material (including paint thinning or reducing compounds)</td>
</tr>
</tbody>
</table>
| Transport hazard class(es) | ICAO/IATA Class: 3  
ICAO / IATA Subrisk: Not Applicable  
ERG Code: 3L |
| Packing group | II |
| Environmental hazard | Not Applicable |
| Special precautions for user | Special provisions: A3 A72 A192  
Cargo Only Packing Instructions: 364  
Cargo Only Maximum Qty / Pack: 60 L  
Passenger and Cargo Packing Instructions: 353  
Passenger and Cargo Maximum Qty / Pack: 5 L  
Passenger and Cargo Limited Quantity Packing Instructions: Y341  
Passenger and Cargo Limited Maximum Qty / Pack: 1 L |

### Sea transport (IMDG-Code / GGVSee)

<table>
<thead>
<tr>
<th>UN number</th>
<th>1263</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>PAINT (including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)</td>
</tr>
</tbody>
</table>
| Transport hazard class(es) | IMDG Class: 3  
IMDG Subrisk: Not Applicable |
| Packing group | II |
| Environmental hazard | Not Applicable |
| Special precautions for user | EMS Number: F-E, S-E  
Special provisions: 163 367  
Limited Quantities: 5 L |

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

Not Applicable

### SECTION 15 REGULATORY INFORMATION

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

- **N-BUTYL ACETATE** (123-86-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS
  - Australia Exposure Standards
  - Australia Inventory of Chemical Substances (AICS)
- **XYLENE** (1330-20-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Continued...
NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT (64742-95-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER (108-65-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

TITANIUM DIOXIDE (13463-67-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AICS</td>
<td>Y</td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>Y</td>
</tr>
<tr>
<td>Canada - NDSL</td>
<td>N (propylene glycol monomethyl ether acetate, alpha-isomer; naphtha petroleum, light aromatic solvent; xylenes; n-butyl acetate)</td>
</tr>
<tr>
<td>China - IECSC</td>
<td>Y</td>
</tr>
<tr>
<td>Europe - EINEC / ELINCS / NLP</td>
<td>Y</td>
</tr>
<tr>
<td>Japan - ENCS</td>
<td>Y</td>
</tr>
<tr>
<td>Korea - KECI</td>
<td>Y</td>
</tr>
<tr>
<td>New Zealand - NZIoC</td>
<td>Y</td>
</tr>
<tr>
<td>Philippines - PICCS</td>
<td>Y</td>
</tr>
<tr>
<td>USA - TSCA</td>
<td>Y</td>
</tr>
</tbody>
</table>

Legend:
Y = All ingredients are on the inventory
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No</th>
</tr>
</thead>
<tbody>
<tr>
<td>naphtha petroleum, light aromatic solvent</td>
<td>64742-95-6, 25550-14-5</td>
</tr>
<tr>
<td>propylene glycol monomethyl ether acetate, alpha-isomer</td>
<td>108-65-6, 84540-57-8, 142300-82-1</td>
</tr>
</tbody>
</table>

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.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net

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.

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
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

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