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

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Isolator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>ISO</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 | Applied by spray for sealing old, unstable painted surfaces prior to refinishing.

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 | +800 2436 225

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 039 006</td>
<td>+612 9196 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>CHEMWATCH HAZARD RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
</tr>
<tr>
<td>Toxicity</td>
</tr>
<tr>
<td>Body Contact</td>
</tr>
<tr>
<td>Reactivity</td>
</tr>
<tr>
<td>Chronic</td>
</tr>
</tbody>
</table>

Poisons Schedule | Not Applicable
Classification | Flammable Liquid Category 2, Eye Irritation Category 2A


Label elements

Continued...
GHS label elements

**SIGNAL WORD**  DANGER

**Hazard statement(s)**

- **H225**  Highly flammable liquid and vapour.
- **H319**  Causes serious eye irritation.
- **AUH066**  Repeated exposure may cause skin dryness and cracking

**Precautionary statement(s) Prevention**

- **P210**  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- **P233**  Keep container tightly closed.
- **P240**  Ground/bond container and receiving equipment.
- **P241**  Use explosion-proof electrical/ventilating/lighting/internally safe equipment.
- **P242**  Use only non-sparking tools.
- **P243**  Take precautionary measures against static discharge.
- **P280**  Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary statement(s) Response**

- **P370+P378**  In case of fire: Use alcohol resistant foam or normal protein foam for extinction.
- **P305+P351+P338**  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P337+P313**  If eye irritation persists: Get medical advice/attention.
- **P303+P361+P353**  IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**Precautionary statement(s) Storage**

- **P403+P235**  Store in a well-ventilated place. Keep cool.

**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>
<th>%[weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>30-60</td>
<td>ethanol</td>
</tr>
<tr>
<td>Not Available</td>
<td>10-30</td>
<td>pigments</td>
</tr>
<tr>
<td>78-63-1</td>
<td>1-5</td>
<td>isobutanol</td>
</tr>
<tr>
<td>Not Available</td>
<td>10-20</td>
<td>Ingredients determined not to be hazardous</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.

**Inhalation**

- If fumes or combustion products are inhaled remove from contaminated area.
  - Lay patient down. Keep warm and rested.
  - Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
  - Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
  - Transport to hospital, or doctor.

**Ingestion**

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

For acute or short term repeated exposures to ethanol:
- Acute ingestion in non-tolerant patients usually responds to supportive care with special attention to prevention of aspiration, replacement of fluid and correction of nutritional deficiencies (magnesium, thiamine pyridoxine, Vitamins C and K).
- Give 50% dextrose (50-100 ml) IV to obtunded patients following blood draw for glucose determination.
- Comatose patients should be treated with intubation and mechanical ventilation to ensure adequate oxygenation and protect the airway.
- Decontamination is probably unnecessary more than 1 hour after a single observed ingestion. Cathartics and charcoal may be given but are probably not effective in single ingestions.
- For ketosis, administer magnesium, thiamine, 250 ml of 5% dextrose IV, and vitamins C and K.
- Fructose administration is contra-indicated due to side effects.

SECTION 5 FIREFIGHTING MEASURES

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

Special hazards arising from the substrate or mixture

<table>
<thead>
<tr>
<th>Fire Incompatibility</th>
<th>Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result</th>
</tr>
</thead>
</table>

Advice for firefighters

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

Fire/Explosion Hazard
- Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- Combustion products include: carbon dioxide (CO2) and other pyrolysis products typical of burning organic material.

HAZCHEM
- CYE

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.
- Wear full protective clothing.
- 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 and 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.

Continued...
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

- 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
- 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.
- 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.

Conditions for safe storage, including any incompatibilities

- 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 packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

<table>
<thead>
<tr>
<th>INGREDIENT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>Australia Exposure Standards</td>
</tr>
<tr>
<td>Australia Exposure Standards</td>
</tr>
</tbody>
</table>

EMERGENCY LIMITS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Material name</th>
<th>TEEL-1</th>
<th>TEEL-2</th>
<th>TEEL-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>Ethyl alcohol; (Ethanol)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>15000 ppm</td>
</tr>
<tr>
<td>isobutanol</td>
<td>Isobutyl alcohol</td>
<td>150 ppm</td>
<td>1300 ppm</td>
<td>8000 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Original IDLH</th>
<th>Revised IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>15,000 ppm</td>
<td>3,300 [LEL] ppm</td>
</tr>
<tr>
<td>pigments</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>isobutanol</td>
<td>8,000 ppm</td>
<td>1,600 ppm</td>
</tr>
<tr>
<td>Ingredients determined not to be hazardous</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Continued...
Exposure 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.

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

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

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

<table>
<thead>
<tr>
<th>Type of Contaminant:</th>
<th>Air Speed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td>
<td>0.25-0.5 m/s (50-100 f/min.)</td>
</tr>
<tr>
<td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyor transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td>
<td>0.5-1 m/s (100-200 f/min.)</td>
</tr>
<tr>
<td>direct spray, spray painting in shallow booths, drum filling, conveyor loading, crusher dusts, 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>

Within each range the appropriate value depends on:

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

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Appropriate engineering controls

- Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
- The basic types of engineering controls are:
  - Process controls which involve changing the way a job activity or process is done to reduce the risk.
  - Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

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

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

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  - 4: Large hood or large air mass in motion
- Upper end of the range
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Personal protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59, [AS/NZS 1336 or national equivalent]

Eye and face protection

- Chemical goggles.
- Safety glasses with side shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59, [AS/NZS 1336 or national equivalent]

Skin protection

- See Hand protection below.
- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber.
- The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
- Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-terrified 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.

Hands/feet protection

- Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- 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 2161.10.1 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 be dependent 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.

Body protection

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

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

Thermal hazards

Not Available

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:

Isolator

Material | CPI
---|---
BUTYL | C
BUTYL/NEOPRENE | C
NATURAL RUBBER | C
NATURAL-NEOPRENE | C
NEOPRENE | C
NITRILE | C
NITRILE-PVC | C
PE/EVALPE | C
PVC | C
VITON | 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 A Filter of sufficient capacity (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

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.

<table>
<thead>
<tr>
<th>Required minimum protection factor</th>
<th>Maximum gas/vapour concentration present in air p.p.m. (by volume)</th>
<th>Half-face Respirator</th>
<th>Full-Face Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 10</td>
<td>1000</td>
<td>A-AUS / Class1</td>
<td>-</td>
</tr>
<tr>
<td>up to 50</td>
<td>1000</td>
<td>-</td>
<td>A-AUS / Class 1</td>
</tr>
<tr>
<td>up to 50</td>
<td>5000</td>
<td>Airline*</td>
<td>-</td>
</tr>
<tr>
<td>up to 100</td>
<td>5000</td>
<td>-</td>
<td>A-2</td>
</tr>
<tr>
<td>up to 100</td>
<td>10000</td>
<td>-</td>
<td>A-3</td>
</tr>
<tr>
<td>100+</td>
<td>-</td>
<td>Airline**</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>Appearance</th>
<th>Highly flammable coloured liquid with strong odour; not miscible with water.</th>
</tr>
</thead>
<tbody>
<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>78-117</td>
</tr>
<tr>
<td>Flash point (°C)</td>
<td>12</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>&lt;1 BuAC = 1</td>
</tr>
<tr>
<td>Flammability</td>
<td>HIGHLY FLAMMABLE.</td>
</tr>
<tr>
<td>Relative density (Water = 1)</td>
<td>1.09</td>
</tr>
<tr>
<td>Partition coefficient n-octanol / water</td>
<td>Not Available</td>
</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>340</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>
</tbody>
</table>
### 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 may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.
- There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
- 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.

#### Ingestion
- Accidental ingestion of the material may be damaging to the health of the individual.
- Ingestion of ethanol (ethyl alcohol, "alcohol") may produce nausea, vomiting, bleeding from the digestive tract, abdominal pain, and diarrhoea. Effects on the body:

<table>
<thead>
<tr>
<th>Blood concentration</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1.5 g/L</td>
<td>Mild: impaired vision, co-ordination and reaction time; emotional instability</td>
</tr>
<tr>
<td>1.5-3.0 g/L</td>
<td>Moderate: Slurred speech, confusion, inco-ordination, emotional instability, disturbances in perception and senses, possible blackouts, and impaired objective performance in standardized tests. Possible double vision, flushing, fast heart rate, sweating and incontinence. Slow breathing may occur rarely and fast breathing may develop in cases of metabolic acidosis, low blood sugar and low blood potassium. Central nervous system depression may progress to coma.</td>
</tr>
<tr>
<td>3.5 g/L</td>
<td>Severe: cold clammy skin, low body temperature and low blood pressure. Atrial fibrillation and heart block have been reported. Depression of breathing may occur, respiratory failure may follow serious poisoning, choking on vomit may result in lung inflammation and swelling. Convulsions due to severe low blood sugar may also occur. Acute liver inflammation may develop.</td>
</tr>
</tbody>
</table>

#### Skin Contact
- Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.
- 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 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 pain.

#### Chronic
- Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.
- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
- Prolonged exposure to ethanol may cause damage to the liver and cause scarring. It may also worsen damage caused by other agents.

#### Isolator
- **TOXICITY**
  - Not Available
- **IRRITATION**
  - Not Available
### Toxicity

<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>ethanol</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>42mg/L</td>
<td>4</td>
</tr>
<tr>
<td>ethanol</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>2mg/L</td>
<td>4</td>
</tr>
<tr>
<td>ethanol</td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>17.921mg/L</td>
<td>4</td>
</tr>
<tr>
<td>ethanol</td>
<td>EC50</td>
<td>24</td>
<td>Algae or other aquatic plants</td>
<td>0.012904mg/L</td>
<td>4</td>
</tr>
<tr>
<td>ethanol</td>
<td>NOEC</td>
<td>2016</td>
<td>Fish</td>
<td>0.000375mg/L</td>
<td>4</td>
</tr>
<tr>
<td>isobutanol</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>99.508mg/L</td>
<td>3</td>
</tr>
<tr>
<td>isobutanol</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>ca.600mg/L</td>
<td>1</td>
</tr>
<tr>
<td>isobutanol</td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>451.344mg/L</td>
<td>3</td>
</tr>
<tr>
<td>isobutanol</td>
<td>EC50</td>
<td>384</td>
<td>Crustacea</td>
<td>23.204mg/L</td>
<td>3</td>
</tr>
<tr>
<td>isobutanol</td>
<td>NOEC</td>
<td>504</td>
<td>Crustacea</td>
<td>4mg/L</td>
<td>4</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

**Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA Ecotoxic database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data**

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

### Persistence and degradability

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>LOW (Half-life = 2.17 days)</td>
<td>LOW (Half-life = 5.08 days)</td>
</tr>
<tr>
<td>isobutanol</td>
<td>LOW (Half-life = 14.42 days)</td>
<td>LOW (Half-life = 4.15 days)</td>
</tr>
</tbody>
</table>

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td></td>
</tr>
<tr>
<td>isobutanol</td>
<td></td>
</tr>
</tbody>
</table>
Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>HIGH (KOC = 1)</td>
</tr>
<tr>
<td>isobutanol</td>
<td>MEDIUM (KOC = 2.048)</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

<table>
<thead>
<tr>
<th>Marine Pollutant</th>
<th>HAZCHEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>&lt;3YE</td>
</tr>
</tbody>
</table>

Land transport (ADG)

| UN number | 1263 |
| UN proper shipping name | 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) |
| 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)

| UN number | 1263 |
| UN proper shipping name | Paint (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base); Paint related material (including paint thinning or reducing compounds) |
| Transport hazard class(es) | ICAO/IATA Class: 3, ICAO / IATA Subrisk: Not Applicable, ERG Code: 3L |
| Packing group | II |
| Environmental hazard | Not Applicable |

Sea transport (IMDG-Code / GGVSee)
UN number 1263

UN proper shipping name 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)

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

ETHANOL(64-17-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS
Australia Exposure Standards
Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)

ISOBUTANOL(78-83-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS
Australia Exposure Standards
Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)

National Inventory Status
Australia - AICS Y
Canada - DSL Y
Canada - NDSL N (ethanol; isobutanol)
China - IECSC Y
Europe - EINEC / ELINCS / NLP Y
Japan - ENCS Y
Korea - KECI Y
New Zealand - NZIoC Y
Philippines - PICCS Y
USA - TSCA Y

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

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
NOAE: No Observed Adverse Effect Level
LOAE: 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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