



## Dy-Mark Spray & Mark Water Based All Colours

### Dy-Mark NZ

Chemwatch: 04-0171

Version No: 14.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 4

Issue Date: 31/08/2020

Print Date: 01/12/2022

S.GHS.NZL.EN.E

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

### Product Identifier

|                               |  |
|-------------------------------|--|
| Product name                  | Dy-Mark Spray & Mark Water Based All Colours   |
| Chemical Name                 | Not Applicable   |
| Synonyms                      | 40063502 Red, 40063503 Blue, 40063505 Yellow, 40063511 White; 40063524 Fluro Green, 40063526 Fluro Orange, 40063529 Fluro Pink |
| Proper shipping name          | AEROSOLS   |
| Chemical formula              | Not Applicable   |
| Other means of identification | Not Available  |

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

|                          |  |
|--------------------------|--|
| Relevant identified uses | Spray paint.<br>Application is by spray atomisation from a hand held aerosol pack<br>Use according to manufacturer's directions. |
|--------------------------|--|

### Details of the manufacturer or supplier of the safety data sheet

|                         |  |   |
|-------------------------|--|---|
| Registered company name | Dy-Mark NZ   | Dy-Mark   |
| Address                 | 1st Floor 178 Hibiscus Highway Orewa Auckland 0932 New Zealand | 89 Formation Street Wacol QLD 4076 Australia                    |
| Telephone               | 0800 143 157   | +61 7 3327 3004   |
| Fax                     | Not Available  | +61 7 3327 3009   |
| Website                 | Not Available  | <a href="http://www.dymark.com.au">http://www.dymark.com.au</a> |
| Email                   | Not Available  | info@dymark.com.au  |

### Emergency telephone number

|                                   |               |                 |
|-----------------------------------|---------------|-----------------|
| Association / Organisation        | Dy-Mark NZ    | Dy-Mark         |
| Emergency telephone numbers       | 0800 143 157  | +61 7 3327 3099 |
| Other emergency telephone numbers | Not Available | Not Available   |

## SECTION 2 Hazards identification

### Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.  
Classified as Dangerous Goods for transport purposes.


### Chemwatch Hazard Ratings

|              |     |     |              |
|--------------|-----|-----|--------------|
|              | Min | Max |              |
| Flammability | 4   |     |              |
| Toxicity     | 1   |     | 0 = Minimum  |
| Body Contact | 2   |     | 1 = Low      |
| Reactivity   | 1   |     | 2 = Moderate |
| Chronic      | 0   |     | 3 = High     |
|              |     |     | 4 = Extreme  |

|   |   |
|---|---|
| Classification [1]                              | Skin Corrosion/Irritation Category 3, Serious Eye Damage/Eye Irritation Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 3, Aerosols Category 1 |
| Legend:   | 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI                            |
| Determined by Chemwatch using GHS/HSNO criteria | 2.1.2A, 6.3B, 6.4A, 9.1D  |

### Label elements

Dy-Mark Spray & Mark Water Based All Colours

|                     |   |
|---------------------|---|
| Hazard pictogram(s) |  |
|---------------------|---|

|             |               |
|-------------|---------------|
| Signal word | <b>Danger</b> |
|-------------|---------------|

**Hazard statement(s)**

|      |                                |
|------|--------------------------------|
| H316 | Causes mild skin irritation.   |
| H319 | Causes serious eye irritation. |
| H402 | Harmful to aquatic life.       |
| H222 | Extremely flammable aerosol.   |

**Precautionary statement(s) Prevention**

|      |  |
|------|--|
| P273 | Avoid release to the environment.  |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P264 | Wash all exposed external body areas thoroughly after handling.                  |

**Precautionary statement(s) Response**

|                |  |
|----------------|--|
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P332+P313      | If skin irritation occurs: Get medical advice/attention.   |
| P337+P313      | If eye irritation persists: Get medical advice/attention.  |

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

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

**SECTION 3 Composition / information on ingredients**

**Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No         | %[weight]   | Name                                       |
|----------------|---|--|
| 67-63-0        | 20-35   | <u>isopropanol</u>                         |
| Not Available  | 1-10  | resin, proprietary                         |
| 1336-21-6      | <1  | <u>ammonia</u>                             |
| Not Available  | balance   | Ingredients determined not to be hazardous |
| 115-10-6       | 30-40   | <u>dimethyl ether</u>                      |
| <b>Legend:</b> | 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available |  |

**SECTION 4 First aid measures**

**Description of first aid measures**

|                     |   |
|---------------------|---|
| <b>Eye Contact</b>  | <p>If aerosols come in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water.</li> <li>▶ 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.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>   |
| <b>Skin Contact</b> | <p>If solids or aerosol mists are deposited upon the skin:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Remove any adhering solids with industrial skin cleansing cream.</li> <li>▶ <b>DO NOT use solvents.</b></li> <li>▶ Seek medical attention in the event of irritation.</li> </ul>   |
| <b>Inhalation</b>   | <p>If aerosols, fumes or combustion products are inhaled:</p> <ul style="list-style-type: none"> <li>▶ Remove to fresh air.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul> |
| <b>Ingestion</b>    | Not considered a normal route of entry.   |

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

Continued...

## Dy-Mark Spray & Mark Water Based All Colours

for lower alkyl ethers:

### BASIC TREATMENT

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

### ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension without signs of hypovolaemia may require vasopressors.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

### EMERGENCY DEPARTMENT

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

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

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

For acute or short term repeated exposures to isopropanol:

- ▶ Rapid onset respiratory depression and hypotension indicates serious ingestions that require careful cardiac and respiratory monitoring together with immediate intravenous access.
- ▶ Rapid absorption precludes the usefulness of emesis or lavage 2 hours post-ingestion. Activated charcoal and cathartics are not clinically useful. Ipecac is most useful when given 30 mins. post-ingestion.
- ▶ There are no antidotes.
- ▶ Management is supportive. Treat hypotension with fluids followed by vasopressors.
- ▶ Watch closely, within the first few hours for respiratory depression; follow arterial blood gases and tidal volumes.
- ▶ Ice water lavage and serial haemoglobin levels are indicated for those patients with evidence of gastrointestinal bleeding.

For acute or short term repeated exposures to ammonia and its solutions:

- ▶ Mild to moderate inhalation exposures produce headache, cough, bronchospasm, nausea, vomiting, pharyngeal and retrosternal pain and conjunctivitis. Severe inhalation produces laryngospasm, signs of upper airway obstruction (stridor, hoarseness, difficulty in speaking) and, in excessively, high doses, pulmonary oedema.
- ▶ Warm humidified air may soothe bronchial irritation.
- ▶ Test all patients with conjunctival irritation for corneal abrasion (fluorescein stain, slit lamp exam)
- ▶ Dyspneic patients should receive a chest X-ray and arterial blood gases to detect pulmonary oedema.

## SECTION 5 Firefighting measures

### Extinguishing media

#### SMALL FIRE:

- ▶ Water spray, dry chemical or CO2

#### LARGE FIRE:

- ▶ Water spray or fog.

### Special hazards arising from the substrate or mixture

|                             |  |
|-----------------------------|--|
| <b>Fire Incompatibility</b> | ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|-----------------------------|--|

### Advice for firefighters

|                              |  |
|------------------------------|--|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ If safe, switch off electrical equipment until vapour fire hazard removed.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>   |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Liquid and vapour are highly flammable.</li> <li>▶ Severe fire hazard when exposed to heat or flame.</li> <li>▶ Vapour forms an explosive mixture with air.</li> <li>▶ Severe explosion hazard, in the form of vapour, when exposed to flame or spark.</li> <li>▶ Vapour may travel a considerable distance to source of ignition.</li> <li>▶ Heating may cause expansion or decomposition with violent container rupture.</li> <li>▶ Aerosol cans may explode on exposure to naked flames.</li> <li>▶ Rupturing containers may rocket and scatter burning materials.</li> <li>▶ Hazards may not be restricted to pressure effects.</li> <li>▶ May emit acrid, poisonous or corrosive fumes.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> </ul> <p>Combustion products include:</p> |

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carbon dioxide (CO<sub>2</sub>)  
 other pyrolysis products typical of burning organic material.  
**Contains low boiling substance:** Closed containers may rupture due to pressure buildup under fire conditions.

### 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

|                     |  |
|---------------------|--|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Wear protective clothing, impervious gloves and safety glasses.</li> <li>▶ Shut off all possible sources of ignition and increase ventilation.</li> <li>▶ Wipe up.</li> <li>▶ If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated.</li> <li>▶ Undamaged cans should be gathered and stowed safely.</li> </ul>  |
| <b>Major Spills</b> | <ul style="list-style-type: none"> <li>▶ Remove leaking cylinders to a safe place if possible.</li> <li>▶ Release pressure under safe, controlled conditions by opening the valve.</li> <li>▶ <b>DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve.</b></li> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Increase ventilation.</li> <li>▶ Stop leak if safe to do so.</li> <li>▶ Water spray or fog may be used to disperse / absorb vapour.</li> <li>▶ Absorb or cover spill with sand, earth, inert materials or vermiculite.</li> <li>▶ If safe, damaged cans should be placed in a container outdoors, away from ignition sources, until pressure has dissipated.</li> <li>▶ Undamaged cans should be gathered and stowed safely.</li> <li>▶ Collect residues and seal in labelled drums for disposal.</li> <li>▶ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.</li> </ul> |

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

### SECTION 7 Handling and storage

#### Precautions for safe handling

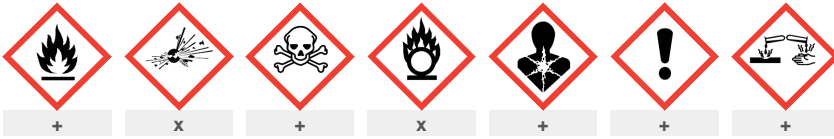
|                          |   |
|--------------------------|---|
| <b>Safe handling</b>     | <ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ Avoid smoking, naked lights or ignition sources.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT eat, drink or smoke.</b></li> <li>▶ <b>DO NOT incinerate or puncture aerosol cans.</b></li> <li>▶ <b>DO NOT spray directly on humans, exposed food or food utensils.</b></li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul> |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can</li> <li>▶ Store in original containers in approved flammable liquid storage area.</li> <li>▶ <b>DO NOT store in pits, depressions, basements or areas where vapours may be trapped.</b></li> <li>▶ No smoking, naked lights, heat or ignition sources.</li> <li>▶ Keep containers securely sealed. Contents under pressure.</li> <li>▶ Store away from incompatible materials.</li> <li>▶ Store in a cool, dry, well ventilated area.</li> <li>▶ Avoid storage at temperatures higher than 40 deg C.</li> <li>▶ Store in an upright position.</li> <li>▶ Protect containers against physical damage.</li> <li>▶ Check regularly for spills and leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>   |

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

|                                |  |
|--------------------------------|--|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Aerosol dispenser.</li> <li>▶ Check that containers are clearly labelled.</li> </ul>  |
| <b>Storage incompatibility</b> | <p>Alcohols</p> <ul style="list-style-type: none"> <li>▶ are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.</li> <li>▶ reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen</li> <li>▶ react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzincs, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium</li> </ul> |

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▸ should not be heated above 49 deg. C. when in contact with aluminium equipment  
Secondary alcohols and some branched primary alcohols may produce potentially explosive peroxides after exposure to light and/ or heat.



X — Must not be stored together

O — May be stored together with specific preventions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

## SECTION 8 Exposure controls / personal protection

## Control parameters

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

| Source   | Ingredient     | Material name     | TWA                             | STEL                             | Peak          | Notes         |
|--|----------------|-------------------|---------------------------------|----------------------------------|---------------|---------------|
| New Zealand Workplace Exposure Standards (WES) | isopropanol    | Isopropyl alcohol | 400 ppm / 983 mg/m <sup>3</sup> | 1230 mg/m <sup>3</sup> / 500 ppm | Not Available | Not Available |
| New Zealand Workplace Exposure Standards (WES) | dimethyl ether | Dimethylether     | 400 ppm / 766 mg/m <sup>3</sup> | 958 mg/m <sup>3</sup> / 500 ppm  | Not Available | Not Available |

## Emergency Limits

| Ingredient     | TEEL-1    | TEEL-2    | TEEL-3      |
|----------------|-----------|-----------|-------------|
| isopropanol    | 400 ppm   | 2000* ppm | 12000** ppm |
| ammonia        | 61 ppm    | 330 ppm   | 2,300 ppm   |
| dimethyl ether | 3,000 ppm | 3800* ppm | 7200* ppm   |

| Ingredient     | Original IDLH | Revised IDLH  |
|----------------|---------------|---------------|
| isopropanol    | 2,000 ppm     | Not Available |
| ammonia        | Not Available | Not Available |
| dimethyl ether | Not Available | Not Available |

## Occupational Exposure Banding


| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|------------|-----------------------------------|----------------------------------|
| ammonia    | E                                 | ≤ 0.1 ppm                        |

**Notes:** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

## 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:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>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.<br>Employers may need to use multiple types of controls to prevent employee overexposure. |                                 |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
|--|---|---------------------------------|------------------------|---|---------------------------------|---|----------------------------------|----------------------------------|-------------------------------|---|----------------------------------|
|  | General exhaust is adequate under normal conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection.<br>Provide adequate ventilation in warehouse or closed storage areas.<br>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 border="1"> <thead> <tr> <th>Type of Contaminant:</th> <th>Speed:</th> </tr> </thead> <tbody> <tr> <td>aerosols, (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, 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>   | Type of Contaminant:            | Speed:                 | aerosols, (released at low velocity into zone of active generation) | 0.5-1 m/s                       | direct spray, spray painting in shallow booths, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.)       |                                  |                               |   |                                  |
|  | Type of Contaminant:  | Speed:                          |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
|  | aerosols, (released at low velocity into zone of active generation)   | 0.5-1 m/s                       |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
|  | direct spray, spray painting in shallow booths, gas discharge (active generation into zone of rapid air motion)   | 1-2.5 m/s (200-500 f/min.)      |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
|  | Within each range the appropriate value depends on:   |                                 |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
|  | <table border="1"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table>  | Lower end of the range          | Upper end of the range | 1: Room air currents minimal or favourable to capture               | 1: Disturbing room air currents | 2: Contaminants of low toxicity or of nuisance value only.  | 2: Contaminants of high toxicity | 3: Intermittent, low production. | 3: High production, heavy use | 4: Large hood or large air mass in motion | 4: Small hood-local control only |
|  | Lower end of the range  | Upper end of the range          |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
|  | 1: Room air currents minimal or favourable to capture   | 1: Disturbing room air currents |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
| 2: Contaminants of low toxicity or of nuisance value only.   | 2: Contaminants of high toxicity  |                                 |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
| 3: Intermittent, low production.   | 3: High production, heavy use   |                                 |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
| 4: Large hood or large air mass in motion  | 4: Small hood-local control only  |                                 |                        |   |                                 |   |                                  |                                  |                               |   |                                  |
| Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of |   |                                 |                        |   |                                 |   |                                  |                                  |                               |   |                                  |

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|                                |   |
|--------------------------------|---|
|                                | 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.   |
| <b>Personal protection</b>     |    |
| <b>Eye and face protection</b> | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</li> </ul>   |
| <b>Skin protection</b>         | See Hand protection below   |
| <b>Hands/feet protection</b>   | <ul style="list-style-type: none"> <li>▶ No special equipment needed when handling small quantities.</li> <li>▶ <b>OTHERWISE:</b></li> <li>▶ For potentially moderate exposures:</li> <li>▶ Wear general protective gloves, eg. light weight rubber gloves.</li> <li>▶ For potentially heavy exposures:</li> <li>▶ Wear chemical protective gloves, eg. PVC. and safety footwear.</li> </ul>  |
| <b>Body protection</b>         | See Other protection below  |
| <b>Other protection</b>        | <ul style="list-style-type: none"> <li>▶ The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials including cotton.</li> <li>▶ Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost.</li> </ul> <p>BREThERICK: Handbook of Reactive Chemical Hazards.</p> <ul style="list-style-type: none"> <li>▶ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.</li> <li>▶ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets).</li> <li>▶ 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 and 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.</li> </ul> |

### Recommended material(s)

#### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

**"Forsberg Clothing Performance Index".**

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

Dy-Mark Spray & Mark Water Based All Colours

| Material          | CPI |
|-------------------|-----|
| NEOPRENE          | A   |
| BUTYL             | C   |
| HYPALON           | C   |
| NAT+NEOPR+NITRILE | C   |
| NATURAL RUBBER    | C   |
| NATURAL+NEOPRENE  | C   |
| NEOPRENE/NATURAL  | C   |
| NITRILE           | C   |
| NITRILE+PVC       | C   |
| PE/EVAL/PE        | C   |
| PVA               | 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 KAX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES                      | Air-line*            | KAX-2                | KAX-PAPR-2 ^           |
| up to 20 x ES                      | -                    | KAX-3                | -                      |
| 20+ x ES                           | -                    | Air-line**           | -                      |

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

^ - Full-face

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

- ▶ Positive pressure, full face, air-supplied breathing apparatus should be used for work in enclosed spaces if a leak is suspected or the primary containment is to be opened (e.g. for a cylinder change)
- ▶ Air-supplied breathing apparatus is required where release of gas from primary containment is either suspected or demonstrated.

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

## Dy-Mark Spray & Mark Water Based All Colours

|   |   |  |                |
|---|---|--|----------------|
| <b>Appearance</b>                                   | Coloured flammable liquid; partly miscible with water.<br>Supplied as an aerosol pack. Contents under <b>PRESSURE</b> . Contains highly flammable hydrocarbon propellant. |  |                |
| <b>Physical state</b>                               | Liquid  | <b>Relative density (Water = 1)</b>            | 1.0-1.2        |
| <b>Odour</b>  | Not Available   | <b>Partition coefficient n-octanol / water</b> | Not Available  |
| <b>Odour threshold</b>                              | Not Available   | <b>Auto-ignition temperature (°C)</b>          | Not Available  |
| <b>pH (as supplied)</b>                             | Not Available   | <b>Decomposition temperature (°C)</b>          | Not Available  |
| <b>Melting point / freezing point (°C)</b>          | Not Available   | <b>Viscosity (cSt)</b>                         | Not Available  |
| <b>Initial boiling point and boiling range (°C)</b> | Not Available   | <b>Molecular weight (g/mol)</b>                | Not Applicable |
| <b>Flash point (°C)</b>                             | -41 (propellant)  | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | Not Applicable  | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | HIGHLY FLAMMABLE.   | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | Not Available   | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available  |
| <b>Lower Explosive Limit (%)</b>                    | Not Available   | <b>Volatile Component (%vol)</b>               | Not Available  |
| <b>Vapour pressure (kPa)</b>                        | Not Available   | <b>Gas group</b>                               | Not Available  |
| <b>Solubility in water</b>                          | Partly miscible   | <b>pH as a solution (1%)</b>                   | Not Available  |
| <b>Vapour density (Air = 1)</b>                     | Not Available   | <b>VOC g/L</b>                                 | Not Available  |

### SECTION 10 Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | See section 7  |
| <b>Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Elevated temperatures.</li> <li>▶ Presence of open flame.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| <b>Possibility of hazardous reactions</b> | See section 7  |
| <b>Conditions to avoid</b>                | See section 7  |
| <b>Incompatible materials</b>             | See section 7  |
| <b>Hazardous decomposition products</b>   | See section 5  |

### SECTION 11 Toxicological information

#### Information on toxicological effects

|                  |  |
|------------------|--|
| <b>Inhaled</b>   | <p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.</p> <p>Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>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.</p> <p>Aliphatic alcohols with more than 3-carbons cause headache, dizziness, drowsiness, muscle weakness and delirium, central depression, coma, seizures and behavioural changes. Secondary respiratory depression and failure, as well as low blood pressure and irregular heart rhythms, may follow.</p> <p>Inhalation of toxic gases may cause:</p> <ul style="list-style-type: none"> <li>▶ Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures;</li> <li>▶ respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest;</li> <li>▶ heart: collapse, irregular heartbeats and cardiac arrest;</li> <li>▶ gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain.</li> </ul> <p>The highly irritant properties of ammonia vapour result as the gas dissolves in mucous fluids and forms irritant, even corrosive solutions.</p> <p>Inhalation of the ammonia fumes causes coughing, vomiting, reddening of lips, mouth, nose, throat and conjunctiva while higher concentrations can cause temporary blindness, restlessness, tightness in the chest, pulmonary oedema (lung damage), weak pulse and cyanosis.</p> <p>Inhalation of high concentrations of vapour may cause breathing difficulty, tightness in chest, pulmonary oedema and lung damage. Brief exposure to high concentrations &gt; 5000 ppm may cause death due to asphyxiation (suffocation) or fluid in the lungs.</p> <p>Prolonged or regular minor exposure to the vapour may cause persistent irritation of the eyes, nose and upper respiratory tract. Massive ammonia exposures may produce chronic airway hyperactivity and asthma with associated pulmonary function changes. The average nasal retention of ammonia by human subjects was found to be 83%.</p> <p>Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure.</p> <p>Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.</p> <p>Following inhalation, ethers cause lethargy and stupor. Inhaling lower alkyl ethers results in headache, dizziness, weakness, blurred vision, seizures and possible coma.</p> <p><b>WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.</b></p> <p>The odour of isopropanol may give some warning of exposure, but odour fatigue may occur. Inhalation of isopropanol may produce irritation of the nose and throat with sneezing, sore throat and runny nose.</p> |
| <b>Ingestion</b> | <p>Accidental ingestion of the material may be damaging to the health of the individual.</p> <p>Not normally a hazard due to physical form of product.</p> <p>Considered an unlikely route of entry in commercial/industrial environments</p>  |



## Dy-Mark Spray & Mark Water Based All Colours

|                     |  |
|---------------------|--|
| <b>Skin Contact</b> | <p>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 this material can cause inflammation of the skin on contact in some persons. Spray mist may produce discomfort</p> <p>Alkyl ethers may defat and dehydrate the skin producing dermatoses. Absorption may produce headache, dizziness, and central nervous system depression.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Mild skin reaction is seen with contact of the vapour of this material on moist skin. High concentrations or direct contact with solutions produces severe pain, a stinging sensation, burns and blisters and possible brown stains. Death could result from extensive burning. Vapour exposure may rarely, produce an itchy rash.</p> <p>511ipa</p>  |
| <b>Eye</b>          | <p>This material can cause eye irritation and damage in some persons. Not considered to be a risk because of the extreme volatility of the gas. Eye contact with alkyl ethers (vapour or liquid) may produce irritation, redness and tears.</p> <p>Isopropanol vapour may cause mild eye irritation at 400 parts per million. Splashes may cause severe eye irritation, possible burns to the cornea and eye damage. Eye contact may cause tearing and blurring of vision.</p>   |
| <b>Chronic</b>      | <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Main route of exposure to the gas in the workplace is by inhalation.</p> <p>Chronic exposure to alkyl ethers may result in loss of appetite, excessive thirst, fatigue, and weight loss.</p> <p>Prolonged or repeated minor exposure to ammonia gas/vapour may cause long-term irritation to the eyes, nose and upper airway. Repeated exposure or prolonged contact may produce skin inflammation and conjunctivitis. Other effects may include ulcers in the mouth and disturbances to the bronchi and gastrointestinal tract. In animals, repeated exposure to sublethal levels produces adverse effects on the airways, liver, kidneys and spleen, as well as eye irritation and clouding of the cornea.</p> <p>Long term, or repeated exposure of isopropanol may cause inco-ordination and tiredness.</p> <p>Repeated inhalation exposure to isopropanol may produce sleepiness, inco-ordination and liver degeneration. Animal data show developmental effects only at exposure levels that produce toxic effects in adult animals. Isopropanol does not cause genetic damage.</p> <p>There are inconclusive reports of human sensitisation from skin contacts with isopropanol. Chronic alcoholics are more tolerant of the whole-body effects of isopropanol.</p> <p>Animal testing showed the chronic exposure did not produce reproductive effects.</p> <p>NOTE: Commercial isopropanol does not contain "isopropyl oil", which caused an excess incidence of sinus and throat cancers in isopropanol production workers in the past. "Isopropyl oil" is no longer formed during production of isopropanol.</p> |

|   |   |                                   |
|---|---|-----------------------------------|
| <b>Dy-Mark Spray &amp; Mark Water Based All Colours</b> | <b>TOXICITY</b>   | <b>IRRITATION</b>                 |
|   | Not Available   | Not Available                     |
| <b>isopropanol</b>                                      | <b>TOXICITY</b>   | <b>IRRITATION</b>                 |
|   | Dermal (rabbit) LD50: 12800 mg/kg <sup>[2]</sup>  | Eye (rabbit): 10 mg - moderate    |
|   | Inhalation(Mouse) LC50; 53 mg/L4h <sup>[2]</sup>  | Eye (rabbit): 100 mg - SEVERE     |
|   | Oral (Mouse) LD50; 3600 mg/kg <sup>[2]</sup>  | Eye (rabbit): 100mg/24hr-moderate |
|   |   | Skin (rabbit): 500 mg - mild      |
| <b>ammonia</b>  | <b>TOXICITY</b>   | <b>IRRITATION</b>                 |
|   | Inhalation(Rat) LC50: 2000 ppm4h <sup>[2]</sup>   | Eye (rabbit): 0.25 mg SEVERE      |
|   | Oral (Rat) LD50; 350 mg/kg <sup>[2]</sup>   | Eye (rabbit): 1 mg/30s SEVERE     |
| <b>dimethyl ether</b>                                   | <b>TOXICITY</b>   | <b>IRRITATION</b>                 |
|   | Inhalation(Rat) LC50: >20000 ppm4h <sup>[1]</sup>   | Not Available                     |
| <b>Legend:</b>  | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances |                                   |

|   |  |
|---|--|
| <b>ISOPROPANOL</b>  | <p>Isopropanol is irritating to the eyes, nose and throat but generally not to the skin. Prolonged high dose exposure may also produce depression of the central nervous system and drowsiness. Few have reported skin irritation. It can be absorbed from the skin or when inhaled. Intentional swallowing is common particularly among alcoholics or suicide victims and also leads to fainting, breathing difficulty, nausea, vomiting and headache. In the absence of unconsciousness, recovery usually occurred. Repeated doses may damage the kidneys. A decrease in the frequency of mating has been found in among animals, and newborns have been found to have a greater incidence of low birth weight. Tumours of the testes have been observed in the male rat.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p> <p>The substance is classified by IARC as Group 3:<br/><b>NOT</b> classifiable as to its carcinogenicity to humans.<br/>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p>  |
| <b>AMMONIA</b>  | <p>No significant acute toxicological data identified in literature search.</p> <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>  |
| <b>Dy-Mark Spray &amp; Mark Water Based All Colours &amp; ISOPROPANOL &amp; AMMONIA</b> | <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> |

|                                      |          |                               |          |
|--------------------------------------|----------|-------------------------------|----------|
| <b>Acute Toxicity</b>                | <b>✗</b> | <b>Carcinogenicity</b>        | <b>✗</b> |
| <b>Skin Irritation/Corrosion</b>     | <b>✓</b> | <b>Reproductivity</b>         | <b>✗</b> |
| <b>Serious Eye Damage/Irritation</b> | <b>✓</b> | <b>STOT - Single Exposure</b> | <b>✗</b> |



Dy-Mark Spray & Mark Water Based All Colours

|                                   |   |                          |   |
|-----------------------------------|---|--------------------------|---|
| Respiratory or Skin sensitisation | ✗ | STOT - Repeated Exposure | ✗ |
| Mutagenicity                      | ✗ | Aspiration Hazard        | ✗ |

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
✔ – Data available to make classification

SECTION 12 Ecological information

Toxicity

| Dy-Mark Spray & Mark Water Based All Colours | Endpoint   | Test Duration (hr) | Species                       | Value         | Source        |
|--|--|--------------------|-------------------------------|---------------|---------------|
|  | Not Available  | Not Available      | Not Available                 | Not Available | Not Available |
| isopropanol                                  | Endpoint   | Test Duration (hr) | Species                       | Value         | Source        |
|  | EC50(ECx)  | 24h                | Algae or other aquatic plants | 0.011mg/L     | 4             |
|  | EC50   | 72h                | Algae or other aquatic plants | >1000mg/l     | 1             |
|  | EC50   | 48h                | Crustacea                     | 7550mg/l      | 4             |
|  | LC50   | 96h                | Fish                          | 4200mg/l      | 4             |
|  | EC50   | 96h                | Algae or other aquatic plants | >1000mg/l     | 1             |
| ammonia                                      | Endpoint   | Test Duration (hr) | Species                       | Value         | Source        |
|  | EC50(ECx)  | 96h                | Crustacea                     | 0.83mg/L      | 5             |
|  | LC50   | 96h                | Fish                          | 33.3mg/L      | 4             |
| dimethyl ether                               | Endpoint   | Test Duration (hr) | Species                       | Value         | Source        |
|  | EC50   | 48h                | Crustacea                     | >4400mg/L     | 2             |
|  | NOEC(ECx)  | 48h                | Crustacea                     | >4000mg/l     | 1             |
|  | LC50   | 96h                | Fish                          | 1783.04mg/l   | 2             |
|  | EC50   | 96h                | Algae or other aquatic plants | 154.917mg/l   | 2             |
| <b>Legend:</b>                               | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data |                    |                               |               |               |

Harmful to aquatic organisms.

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

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

For Ammonia:

Atmospheric Fate: Ammonia reacts rapidly with available acids (mainly sulfuric, nitric, and sometimes hydrochloric acid) to form the corresponding salts. Ammonia is persistent in the air.

Aquatic Fate: Biodegrades rapidly to nitrate, producing a high oxygen demand. Non-persistent in water (half-life 2 days).

Ecotoxicity: Moderately toxic to fish under normal temperature and pH conditions and harmful to aquatic life at low concentrations. Does not concentrate in food chain.

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

Persistence and degradability

| Ingredient     | Persistence: Water/Soil   | Persistence: Air         |
|----------------|---------------------------|--------------------------|
| isopropanol    | LOW (Half-life = 14 days) | LOW (Half-life = 3 days) |
| dimethyl ether | LOW                       | LOW                      |

Bioaccumulative potential

| Ingredient     | Bioaccumulation     |
|----------------|---------------------|
| isopropanol    | LOW (LogKOW = 0.05) |
| dimethyl ether | LOW (LogKOW = 0.1)  |

Mobility in soil

| Ingredient     | Mobility           |
|----------------|--------------------|
| isopropanol    | HIGH (KOC = 1.06)  |
| dimethyl ether | HIGH (KOC = 1.292) |

SECTION 13 Disposal considerations

Waste treatment methods

|                              |  |
|------------------------------|--|
| Product / Packaging disposal | <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Consult State Land Waste Management Authority for disposal.</li> <li>▶ Discharge contents of damaged aerosol cans at an approved site.</li> </ul> |
|------------------------------|--|

Continued...

## Dy-Mark Spray &amp; Mark Water Based All Colours

- ▶ Allow small quantities to evaporate.
- ▶ **DO NOT incinerate or puncture aerosol cans.**
- ▶ Bury residues and emptied aerosol cans at an approved site.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

**Disposal Requirements**

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous. Only dispose to the environment if a tolerable exposure limit has been set for the substance.

Only deposit the hazardous substance into or onto a landfill or sewage facility or incinerator, where the hazardous substance can be handled and treated appropriately.

**SECTION 14 Transport information****Labels Required**

|                         |   |
|-------------------------|---|
|                         |  |
| <b>Marine Pollutant</b> | NO  |
| <b>HAZCHEM</b>          | Not Applicable  |

**Land transport (UN)**

|                                     |                    |                             |
|-------------------------------------|--------------------|-----------------------------|
| <b>UN number</b>                    | 1950               |                             |
| <b>UN proper shipping name</b>      | AEROSOLS           |                             |
| <b>Transport hazard class(es)</b>   | Class              | 2.1                         |
|                                     | Subrisk            | Not Applicable              |
| <b>Packing group</b>                | Not Applicable     |                             |
| <b>Environmental hazard</b>         | Not Applicable     |                             |
| <b>Special precautions for user</b> | Special provisions | 63; 190; 277; 327; 344; 381 |
|                                     | Limited quantity   | 1000ml                      |

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

|                                     |   |                |
|-------------------------------------|---|----------------|
| <b>UN number</b>                    | 1950  |                |
| <b>UN proper shipping name</b>      | Aerosols, flammable                                       |                |
| <b>Transport hazard class(es)</b>   | ICAO/IATA Class   | 2.1            |
|                                     | ICAO / IATA Subrisk                                       | Not Applicable |
|                                     | ERG Code  | 10L            |
| <b>Packing group</b>                | Not Applicable  |                |
| <b>Environmental hazard</b>         | Not Applicable  |                |
| <b>Special precautions for user</b> | Special provisions  | A145 A167 A802 |
|                                     | Cargo Only Packing Instructions                           | 203            |
|                                     | Cargo Only Maximum Qty / Pack                             | 150 kg         |
|                                     | Passenger and Cargo Packing Instructions                  | 203            |
|                                     | Passenger and Cargo Maximum Qty / Pack                    | 75 kg          |
|                                     | Passenger and Cargo Limited Quantity Packing Instructions | Y203           |
|                                     | Passenger and Cargo Limited Maximum Qty / Pack            | 30 kg G        |

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

|                                     |                    |                            |
|-------------------------------------|--------------------|----------------------------|
| <b>UN number</b>                    | 1950               |                            |
| <b>UN proper shipping name</b>      | AEROSOLS           |                            |
| <b>Transport hazard class(es)</b>   | IMDG Class         | 2.1                        |
|                                     | IMDG Subrisk       | Not Applicable             |
| <b>Packing group</b>                | Not Applicable     |                            |
| <b>Environmental hazard</b>         | Not Applicable     |                            |
| <b>Special precautions for user</b> | EMS Number         | F-D, S-U                   |
|                                     | Special provisions | 63 190 277 327 344 381 959 |

## Dy-Mark Spray &amp; Mark Water Based All Colours

Limited Quantities | 1000 ml

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

Not Applicable

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

| Product name   | Group         |
|----------------|---------------|
| isopropanol    | Not Available |
| ammonia        | Not Available |
| dimethyl ether | Not Available |

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

| Product name   | Ship Type     |
|----------------|---------------|
| isopropanol    | Not Available |
| ammonia        | Not Available |
| dimethyl ether | Not Available |

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

This substance is to be managed using the conditions specified in an applicable Group Standard

| HSR Number     | Group Standard |
|----------------|----------------|
| Not Applicable | Not Applicable |

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

**isopropanol is found on the following regulatory lists**

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

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**ammonia is found on the following regulatory lists**

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

**dimethyl ether is found on the following regulatory lists**

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**Hazardous Substance Location**

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Hazard Class | Quantity (Closed Containers)       | Quantity (Open Containers)         |
|--------------|------------------------------------|------------------------------------|
| 2.1.2A       | 3 000 L (aggregate water capacity) | 3 000 L (aggregate water capacity) |

**Certified Handler**

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Class of substance | Quantities     |
|--------------------|----------------|
| Not Applicable     | Not Applicable |

Refer Group Standards for further information

**Maximum quantities of certain hazardous substances permitted on passenger service vehicles**

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Hazard Class | Gas (aggregate water capacity in mL) | Liquid (L) | Solid (kg) | Maximum quantity per package for each classification |
|--------------|--------------------------------------|------------|------------|--|
| 2.1.2A       |                                      |            |            | 1L (aggregate water capacity)                        |

**Tracking Requirements**

Not Applicable

**National Inventory Status**

| National Inventory                             | Status |
|--|--------|
| Australia - AIC / Australia Non-Industrial Use | Yes    |

Continued...

## Dy-Mark Spray &amp; Mark Water Based All Colours

| National Inventory            | Status  |
|-------------------------------|---|
| Canada - DSL                  | Yes   |
| Canada - NDSL                 | No (isopropanol; ammonia; dimethyl ether)   |
| China - IECSC                 | Yes   |
| Europe - EINEC / ELINCS / NLP | Yes   |
| Japan - ENCS                  | Yes   |
| Korea - KECI                  | Yes   |
| New Zealand - NZIoC           | Yes   |
| Philippines - PICCS           | Yes   |
| USA - TSCA                    | Yes   |
| Taiwan - TCSI                 | Yes   |
| Mexico - INSQ                 | Yes   |
| Vietnam - NCI                 | Yes   |
| Russia - FBEPH                | Yes   |
| <b>Legend:</b>                | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

## SECTION 16 Other information

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 31/08/2020 |
| <b>Initial Date</b>  | 19/11/2007 |

## SDS Version Summary

| Version | Date of Update | Sections Updated   |
|---------|----------------|--|
| 13.1    | 01/11/2019     | One-off system update. NOTE: This may or may not change the GHS classification |
| 14.1    | 31/08/2020     | Classification   |

## Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

## Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average  
 PC – STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit.  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL: No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index  
 AIIC: Australian Inventory of Industrial Chemicals  
 DSL: Domestic Substances List  
 NDSL: Non-Domestic Substances List  
 IECSC: Inventory of Existing Chemical Substance in China  
 EINECS: European Inventory of Existing Commercial chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 NLP: No-Longer Polymers  
 ENCS: Existing and New Chemical Substances Inventory  
 KECI: Korea Existing Chemicals Inventory  
 NZIoC: New Zealand Inventory of Chemicals  
 PICCS: Philippine Inventory of Chemicals and Chemical Substances  
 TSCA: Toxic Substances Control Act  
 TCSI: Taiwan Chemical Substance Inventory  
 INSQ: Inventario Nacional de Sustancias Químicas  
 NCI: National Chemical Inventory  
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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