# 824-W Isopropyl Alcohol Wipe

## MG Chemicals UK Limited

Version No: **A-1.01**
Safety Data Sheet (Conforms to Regulation (EU) No 2015/830)

Issue Date: **23/07/2019**
Revision Date: **17/03/2020**
L.REACH.GBR.EN

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

### 1.1. Product Identifier

| | |
|---|---|
| **Product name** | 824-W Isopropyl Alcohol Wipe |
| **Synonyms** | SDS Code: 824-Wipes; 824-WX25, 824-WX50, 824-WX500 |
| **Other means of identification** | Not applicable |

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

| | |
|---|---|
| **Relevant identified uses** | For cleaning electronics and high technology components |
| **Uses advised against** | Not Applicable |

### 1.3. Details of the supplier of the safety data sheet

| | | |
|---|---|---|
| **Registered company name** | **MG Chemicals UK Limited** | **MG Chemicals (Head office)** |
| **Address** | Heame House, 23 Bilston Street, Sedgely Dudley DY3 1JA United Kingdom | 9347 - 193 Street Surrey V4N 4E7 British Columbia Canada |
| **Telephone** | +(44) 1663 362888 | +(1) 800-201-8822 |
| **Fax** | Not Available | +(1) 800-708-9888 |
| **Website** | Not Available | www.mgchemicals.com |
| **Email** | sales@mgchemicals.com | Info@mgchemicals.com |

### 1.4. Emergency telephone number

| | |
|---|---|
| **Association / Organisation** | **Verisk 3E (Access code: 335388)** |
| **Emergency telephone numbers** | +(44) 20 35147487 |
| **Other emergency telephone numbers** | +(0) 800 680 0425 |

## SECTION 2 HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

| | |
|---|---|
| **Classification according to regulation (EC) No 1272/2008 [CLP] [1]** | H336 - Specific target organ toxicity - single exposure Category 3 (narcotic effects), H225 - Flammable Liquid Category 2, H319 - Eye Irritation Category 2 |
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI* |

### 2.2. Label elements

| | |
|---|---|
| **Hazard pictogram(s)** |  |
| SIGNAL WORD | **DANGER** |

### Hazard statement(s)

| | |
|---|---|
| **H336** | May cause drowsiness or dizziness. |
| **H225** | Highly flammable liquid and vapour. |
| **H319** | Causes serious eye irritation. |

### Supplementary statement(s)

Not Applicable

### Precautionary statement(s) Prevention

| | |
|---|---|
| **P210** | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |

**Continued...**

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P240** | Ground and bond container and receiving equipment. |
| **P241** | Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment. |
| **P242** | Use non-sparking tools. |
| **P243** | Take action to prevent static discharges. |
| **P261** | Avoid breathing mist/vapours/spray. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

### Precautionary statement(s) Response

| | |
|---|---|
| **P370+P378** | In case of fire: Use water jets to extinguish. |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P312** | Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P303+P361+P353** | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| **P304+P340** | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |

### Precautionary statement(s) Storage

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

### Precautionary statement(s) Disposal

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

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1.Substances

See 'Composition on ingredients' in Section 3.2

### 3.2.Mixtures

| **1.CAS No**<br>**2.EC No**<br>**3.Index No**<br>**4.REACH No** | **%[weight]** | **Name** | **Classification according to regulation (EC) No 1272/2008 [CLP]** |
|---|---|---|---|
| 1.67-63-0<br>2.200-661-7<br>3.603-117-00-0<br>4.01-2119457558-25-XXXX | 99.7 | isopropanol | Flammable Liquid Category 2, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (narcotic effects); H225, H319, H336 [2] |

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available* |

## SECTION 4 FIRST AID MEASURES

### 4.1. Description of first aid measures

| | |
|---|---|
| **Eye Contact** | Test phrase<br>If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ 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.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin or hair contact occurs:<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ Immediately give a glass of water.<br>▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.<br>▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus. |

### 4.2 Most important symptoms and effects, both acute and delayed

See Section 11

### 4.3. Indication of any immediate medical attention and special treatment needed

Continued...

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.

## SECTION 5 FIREFIGHTING MEASURES

### 5.1. Extinguishing media

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

For **SMALL FIRES**:
Dry chemical, CO2, water spray or foam.
For **LARGE FIRES**:
Water-spray, fog or foam.

### 5.2. Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | ‣ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |

### 5.3. Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Wear breathing apparatus plus protective gloves.<br>‣ Prevent, by any means available, spillage from entering drains or water course.<br>‣ Fight fire from a safe distance, with adequate cover.<br>‣ If safe, switch off electrical equipment until vapour fire hazard removed.<br>‣ Use water delivered as a fine spray to control fire and cool adjacent area.<br>‣ Avoid spraying water onto liquid pools.<br>‣ **DO NOT** approach containers suspected to be hot.<br>‣ Cool fire exposed containers with water spray from a protected location.<br>‣ If safe to do so, remove containers from path of fire. |
| **Fire/Explosion Hazard** | ‣ Combustible.<br>‣ Slight fire hazard when exposed to heat or flame.<br>‣ Heating may cause expansion or decomposition leading to violent rupture of containers.<br>‣ On combustion, may emit toxic fumes of carbon monoxide (CO).<br>‣ May emit acrid smoke.<br>‣ Mists containing combustible materials may be explosive.<br>Combustion products include:<br>carbon dioxide (CO2)<br>other pyrolysis products typical of burning organic material.<br>**WARNING**: Long standing in contact with air and light may result in the formation of potentially explosive peroxides. |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

See section 8

### 6.2. Environmental precautions

See section 12

### 6.3. Methods and material for containment and cleaning up

<table>
<tr><td><b>Minor Spills</b></td><td>‣ Remove all ignition sources.<br>‣ <b>DO NOT</b> touch or walk through spilled material.<br>‣ Clean up all spills immediately.<br>‣ Avoid contact with skin and eyes.<br>‣ Prevent dust cloud.<br>‣ With clean shovel (preferably non-sparking) place material into clean, dry container and cover loosely.<br>‣ Move containers from spill area.<br>‣ Control personal contact with the substance, by using protective equipment.</td></tr>
<tr><td><b>Major Spills</b></td><td>Chemical Class: alcohols and glycols<br>For release onto land: recommended sorbents listed in order of priority.
<table>
<tr><th>SORBENT TYPE</th><th>RANK</th><th>APPLICATION</th><th>COLLECTION</th><th>LIMITATIONS</th></tr>
<tr><td colspan="5">LAND SPILL - SMALL</td></tr>
<tr><td>cross-linked polymer - particulate</td><td>1</td><td>shovel</td><td>shovel</td><td>R, W, SS</td></tr>
<tr><td>cross-linked polymer - pillow</td><td>1</td><td>throw</td><td>pitchfork</td><td>R, DGC, RT</td></tr>
</table></td></tr>
</table>

Continued...

| | | | | |
|---|---|---|---|---|
| sorbent clay - particulate | 2 | shovel | shovel | R,I, P |
| wood fiber - pillow | 3 | throw | pitchfork | R, P, DGC, RT |
| treated wood fiber - pillow | 3 | throw | pitchfork | DGC, RT |
| foamed glass - pillow | 4 | throw | pichfork | R, P, DGC, RT |

LAND SPILL - MEDIUM

| | | | | |
|---|---|---|---|---|
| cross-linked polymer - particulate | 1 | blower | skiploader | R,W, SS |
| polypropylene - particulate | 2 | blower | skiploader | W, SS, DGC |
| sorbent clay - particulate | 2 | blower | skiploader | R, I, W, P, DGC |
| polypropylene - mat | 3 | throw | skiploader | DGC, RT |
| expanded mineral - particulate | 3 | blower | skiploader | R, I, W, P, DGC |
| polyurethane - mat | 4 | throw | skiploader | DGC, RT |

Legend
DGC: Not effective where ground cover is dense
R; Not reusable
I: Not incinerable
P: Effectiveness reduced when rainy
RT:Not effective where terrain is rugged
SS: Not for use within environmentally sensitive sites
W: Effectiveness reduced when windy
Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;
R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- **DO NOT** touch or walk through spilled material.
- Control personal contact with the substance, by using protective equipment.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain or cover with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area with water and dike for later disposal; prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

### 6.4. Reference to other sections

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

## SECTION 7 HANDLING AND STORAGE

### 7.1. Precautions for safe handling

**Safe handling**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- **DO NOT** allow material to contact humans, exposed food or food utensils.
- Avoid smoking, naked lights or ignition sources.
- When handling, **DO NOT** eat, drink or smoke.
- Avoid contact with incompatible materials.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Working clothes should be laundered separately. Launder contaminated clothing before re-use.
- 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 are maintained.

**Fire and explosion protection**

See section 5

**Other information**

**FOR MINOR QUANTITIES:**

- Store in an indoor fireproof cabinet or in a room of noncombustible construction.
- Provide adequate portable fire-extinguishers in or near the storage area.

**FOR PACKAGE STORAGE:**

- 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.
- Protect containers from exposure to weather and from direct sunlight unless: (a) the packages are of metal or plastic construction; (b) the packages are securely closed are not opened for any purpose while in the area where they are stored and (c) adequate precautions are taken to ensure that rain water, which might become contaminated by the dangerous goods, is collected and disposed of safely.
- Ensure proper stock-control measures are maintained to prevent prolonged storage of dangerous goods.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

**Continued...**

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

| | |
|---|---|
| **Suitable container** | - **DO NOT** use aluminium or galvanised containers<br>For low viscosity materials and solids:<br>Drums and jerricans must be of the non-removable head type.<br>Where a can is to be used as an inner package, the can must have a screwed enclosure.<br>For materials with a viscosity of at least 2680 cSt. (23 deg. C):<br>- Removable head packaging and<br>- cans with friction closures may be used.<br>-<br>Where combination packages are used, there must be sufficient inert absorbent material to absorb completely any leakage that may occur, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.<br>All combination packages for Packing group I and II must contain cushioning material. |
| **Storage incompatibility** | Isopropanol (syn: isopropyl alcohol, IPA):<br>- forms ketones and unstable peroxides on contact with air or oxygen; the presence of ketones especially methyl ethyl ketone (MEK, 2-butanone) will accelerate the rate of peroxidation<br>- reacts violently with strong oxidisers, powdered aluminium (exothermic), crotonaldehyde, diethyl aluminium bromide (ignition), dioxygenyl tetrafluoroborate (ignition/ ambient temperature), chromium trioxide (ignition), potassium-tert-butoxide (ignition), nitroform (possible explosion), oleum (pressure increased in closed container), cobalt chloride, aluminium triisopropoxide, hydrogen plus palladium dust (ignition), oxygen gas, phosgene, phosgene plus iron salts (possible explosion), sodium dichromate plus sulfuric acid (exothermic/ incandescence), triisobutyl aluminium<br>- reacts with phosphorus trichloride forming hydrogen chloride gas<br>- reacts, possibly violently, with alkaline earth and alkali metals, strong acids, strong caustics, acid anhydrides, halogens,aliphatic amines, aluminium isopropoxide, isocyanates, acetaldehyde, barium perchlorate (forms highly explosive perchloric ester compound), benzoyl peroxide, chromic acid, dialkylzincs, dichlorine oxide, ethylene oxide (possible explosion), hexamethylene diisocyanate (possible explosion), hydrogen peroxide (forms explosive compound), hypochlorous acid, isopropyl chlorocarbonate, lithium aluminium hydride, lithium tetrahydroaluminate, nitric acid, nitrogen dioxide, nitrogen tetraoxide (possible explosion), pentafluoroguanidine, perchloric acid (especially hot), permonosulfuric acid, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium, trinitromethane<br>- attacks some plastics, rubber and coatings<br>- reacts with metallic aluminium at high temperature<br>- may generate electrostatic charges<br>Alcohols<br>- are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.<br>- reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen<br>- 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<br>- should not be heated above 49 deg. C. when in contact with aluminium equipment<br>Secondary alcohols and some branched primary alcohols may produce potentially explosive peroxides after exposure to light and/ or heat. |

### 7.3. Specific end use(s)

See section 1.2

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control parameters

#### DERIVED NO EFFECT LEVEL (DNEL)

Not Available

#### PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| UK Workplace Exposure Limits (WELs) | isopropanol | Propan-2-ol | 400 ppm / 999 mg/m3 | 1250 mg/m3 / 500 ppm | Not Available | Not Available |

#### EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| isopropanol | Isopropyl alcohol | 400 ppm | 2000 ppm | 12000 ppm |

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

#### MATERIAL DATA

Odour Threshold Value: 3.3 ppm (detection), 7.6 ppm (recognition)
Exposure at or below the recommended isopropanol TLV-TWA and STEL is thought to minimise the potential for inducing narcotic effects or significant irritation of the eyes or upper respiratory tract. It is believed, in the absence of hard evidence, that this limit also provides protection against the development of chronic health effects. The limit is intermediate to that set for ethanol, which is less toxic, and n-propyl alcohol, which is more toxic, than isopropanol

### 8.2. Exposure controls

| | |
|---|---|
| **8.2.1. Appropriate engineering controls** | For large scale or continuous use:<br>- Spark-free, earthed ventilation system, venting directly to the outside and separate from usual ventilation systems<br>- Provide dust collectors with explosion vents |

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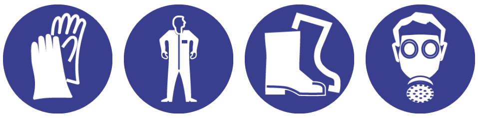
**8.2.2. Personal protection**



**Eye and face protection**

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

**Skin protection**

See Hand protection below

**Hands/feet protection**

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-perfumed moisturiser is recommended.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- · frequency and duration of contact,
- · chemical resistance of glove material,
- · glove thickness and
- · dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US 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.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- · Excellent when breakthrough time > 480 min
- · Good when breakthrough time > 20 min
- · Fair when breakthrough time < 20 min
- · Poor when glove material degrades

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.

- Wear physical protective gloves, e.g. leather.
- Wear safety footwear.

**Body protection**

See Other protection below

**Other protection**

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

## Recommended material(s)

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
**'Forsberg Clothing Performance Index'.**
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
824-W Isopropyl Alcohol Wipe

| Material | CPI |
|---|---|
| NEOPRENE | A |
| NITRILE | A |
| NITRILE+PVC | A |

## Respiratory protection

**Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)**

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

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

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

Continued...

| | |
|---|---|
| PE/EVAL/PE | A |
| PVC | B |
| NAT+NEOPR+NITRILE | C |
| NATURAL RUBBER | C |
| NATURAL+NEOPRENE | 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.

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

- **Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.**
- **The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.**
- **Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used**

### 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

| | |
|---|---|
| Appearance | Colourless |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | 0.785 |
| Odour | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | 0.44 ppm | **Auto-ignition temperature (°C)** | 425 |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | -88 | **Viscosity (cSt)** | 3.1 |
| **Initial boiling point and boiling range (°C)** | 82 | **Molecular weight (g/mol)** | Not Available |
| **Flash point (°C)** | 12 | Taste | Not Available |
| **Evaporation rate** | 1.5 BuAC = 1 | **Explosive properties** | Not Available |
| **Flammability** | HIGHLY FLAMMABLE. | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | 12 | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | 2 | **Volatile Component (%vol)** | Not Available |
| **Vapour pressure (kPa)** | 4.2 | **Gas group** | Not Available |
| **Solubility in water** | Miscible | **pH as a solution (1%)** | Not Available |
| **Vapour density (Air = 1)** | 2.1 | **VOC g/L** | Not Available |

### 9.2. Other information

Not Available

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **10.1.Reactivity** | See section 7.2 |
| **10.2. Chemical stability** | ‣ Unstable in the presence of incompatible materials.<br>‣ Product is considered stable.<br>‣ Hazardous polymerisation will not occur. |
| **10.3. Possibility of hazardous reactions** | See section 7.2 |
| **10.4. Conditions to avoid** | See section 7.2 |
| **10.5. Incompatible materials** | See section 7.2 |
| **10.6. Hazardous decomposition products** | See section 5.3 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

| | |
|---|---|
| **Inhaled** | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |

**Continued...**

| | |
|---|---|
| | Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.<br>Exposure to aliphatic alcohols with more than 3 carbons may produce central nervous system effects such as headache, dizziness, drowsiness, muscle weakness, delirium, CNS depression, coma, seizure, and neurobehavioural changes. Symptoms are more acute with higher alcohols. Respiratory tract involvement may produce irritation of the mucosa, respiratory insufficiency, respiratory depression secondary to CNS depression, pulmonary oedema, chemical pneumonitis and bronchitis. Cardiovascular involvement may result in arrhythmias and hypotension. Gastrointestinal effects may include nausea and vomiting. Kidney and liver damage may result following massive exposures. The alcohols are potential irritants being, generally, stronger irritants than similar organic structures that lack functional groups (e.g. alkanes) but are much less irritating than the corresponding amines, aldehydes or ketones. Alcohols and glycols (diols) rarely represent serious hazards in the workplace, because their vapour concentrations are usually less than the levels which produce significant irritation which, in turn, produce significant central nervous system effects as well.<br>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. The effects in animals subject to a single exposure, by inhalation, included inactivity or anaesthesia and histopathological changes in the nasal canal and auditory canal. |
| **Ingestion** | Effects on the nervous system characterise over-exposure to higher aliphatic alcohols. These include headache, muscle weakness, giddiness, ataxia, (loss of muscle coordination), confusion, delirium and coma. Gastrointestinal effects may include nausea, vomiting and diarrhoea. In the absence of effective treatment, respiratory arrest is the most common cause of death in animals acutely poisoned by the higher alcohols. Aspiration of liquid alcohols produces an especially toxic response as they are able to penetrate deeply in the lung where they are absorbed and may produce pulmonary injury. Those possessing lower viscosity elicit a greater response. The result is a high blood level and prompt death at doses otherwise tolerated by ingestion without aspiration. In general the secondary alcohols are less toxic than the corresponding primary isomers. As a general observation, alcohols are more powerful central nervous system depressants than their aliphatic analogues. In sequence of decreasing depressant potential, tertiary alcohols with multiple substituent OH groups are more potent than secondary alcohols, which, in turn, are more potent than primary alcohols. The potential for overall systemic toxicity increases with molecular weight (up to C7), principally because the water solubility is diminished and lipophilicity is increased.<br>Within the homologous series of aliphatic alcohols, narcotic potency may increase even faster than lethality<br>Only scanty toxicity information is available about higher homologues of the aliphatic alcohol series (greater than C7) but animal data establish that lethality does not continue to increase with increasing chain length. Aliphatic alcohols with 8 carbons are less toxic than those immediately preceding them in the series. 10 -Carbon n-decyl alcohol has low toxicity as do the solid fatty alcohols (e.g. lauryl, myristyl, cetyl and stearyl). However the rat aspiration test suggests that decyl and melted dodecyl (lauryl) alcohols are dangerous if they enter the trachea. In the rat even a small quantity (0.2 ml) of these behaves like a hydrocarbon solvent in causing death from pulmonary oedema.<br>Primary alcohols are metabolised to corresponding aldehydes and acids; a significant metabolic acidosis may occur. Secondary alcohols are converted to ketones, which are also central nervous system depressants and which, in he case of the higher homologues persist in the blood for many hours. Tertiary alcohols are metabolised slowly and incompletely so their toxic effects are generally persistent.<br>Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result.<br>Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis).<br>The material has **NOT** been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.<br>Following ingestion, a single exposure to isopropyl alcohol produced lethargy and non-specific effects such as weight loss and irritation. Ingestion of near-lethal doses of isopropanol produces histopathological changes of the stomach, lungs and kidneys, incoordination, lethargy, gastrointestinal tract irritation, and inactivity or anaesthesia.<br>Swallowing 10 ml. of isopropanol may cause serious injury; 100 ml. may be fatal if not promptly treated. The adult single lethal doses is approximately 250 ml. The toxicity of isopropanol is twice that of ethanol and the symptoms of intoxication appear to be similar except for the absence of an initial euphoric effect; gastritis and vomiting are more prominent. Ingestion may cause nausea, vomiting, and diarrhoea.<br>There is evidence that a slight tolerance to isopropanol may be acquired. |
| **Skin Contact** | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.<br>Most liquid alcohols appear to act as primary skin irritants in humans. Significant percutaneous absorption occurs in rabbits but not apparently in man.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds 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.<br>511ipa |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.<br>Isopropanol vapour may cause mild eye irritation at 400 ppm. Splashes may cause severe eye irritation, possible corneal burns and eye damage. Eye contact may cause tearing or blurring of vision. |
| **Chronic** | Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.<br>Long term or repeated ingestion exposure of isopropanol may produce incoordination, lethargy and reduced weight gain.<br>Repeated inhalation exposure to isopropanol may produce narcosis, incoordination and liver degeneration. Animal data show developmental effects only at exposure levels that produce toxic effects in the adult animals. Isopropanol does not cause genetic damage in bacterial or mammalian cell cultures or in animals.<br>There are inconclusive reports of human sensitisation from skin contact with isopropanol. Chronic alcoholics are more tolerant of systemic isopropanol than are persons who do not consume alcohol; alcoholics have survived as much as 500 ml. of 70% isopropanol.<br>Continued voluntary drinking of a 2.5% aqueous solution through two successive generations of rats produced no reproductive effects.<br>NOTE: Commercial isopropanol does not contain 'isopropyl oil'. An excess incidence of sinus and laryngeal cancers in isopropanol production workers has been shown to be caused by the byproduct 'isopropyl oil'. Changes in the production processes now ensure that no byproduct is formed. Production changes include use of dilute sulfuric acid at higher temperatures. |

**824-W Isopropyl Alcohol Wipe**

| TOXICITY | IRRITATION |
|---|---|
| Not Available | Not Available |

Continued...

| | TOXICITY | IRRITATION |
|---|---|---|
| **isopropanol** | dermal (rat) LD50: =12800 mg/kg[2] | Eye (rabbit): 10 mg - moderate |
| | Inhalation (rat) LC50: 72.6 mg/l/4h[2] | Eye (rabbit): 100 mg - SEVERE |
| | Oral (rat) LD50: =4396 mg/kg[2] | Eye (rabbit): 100mg/24hr-moderate |
| | | Skin (rabbit): 500 mg - mild |

***Legend:*** *1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*

**ISOPROPANOL**

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
The substance is classified by IARC as Group 3:
**NOT** classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

**824-W Isopropyl Alcohol Wipe & ISOPROPANOL**

For isopropanol (IPA):
**Acute toxicity:** Isopropanol has a low order of acute toxicity. It is irritating to the eyes, but not to the skin. Very high vapor concentrations are irritating to the eyes, nose, and throat, and prolonged exposure may produce central nervous system depression and narcosis. Human volunteers reported that exposure to 400 ppm isopropanol vapors for 3 to 5 min. caused mild irritation of the eyes, nose and throat.
Although isopropanol produced little irritation when tested on the skin of human volunteers, there have been reports of isolated cases of dermal irritation and/or sensitization. The use of isopropanol as a sponge treatment for the control of fever has resulted in cases of intoxication, probably the result of both dermal absorption and inhalation. There have been a number of cases of poisoning reported due to the intentional ingestion of isopropanol, particularly among alcoholics or suicide victims. These ingestions typically result in a comatose condition. Pulmonary difficulty, nausea, vomiting, and headache accompanied by various degrees of central nervous system depression are typical. In the absence of shock, recovery usually occurred.
**Repeat dose studies**: The systemic (non-cancer) toxicity of repeated exposure to isopropanol has been evaluated in rats and mice by the inhalation and oral routes. The only adverse effects-in addition to clinical signs identified
from these studies were to the kidney.
**Reproductive toxicity**: A recent two-generation reproductive study characterised the reproductive hazard for isopropanol associated with oral gavage exposure. This study found that the only reproductive parameter apparently affected by isopropanol exposure was a statistically significant decrease in male mating index of the F1 males. It is possible that the change in this reproductive parameter was treatment related and significant, although the mechanism of this effect could not be discerned from the results of the study. However, the lack of a significant effect of the female mating index in either generation, the absence of any adverse effect on litter size, and the lack of histopathological findings of the testes of the high-dose males suggest that the observed reduction in male mating index may not be biologically meaningful.
**Developmental toxicity:** The developmental toxicity of isopropanol has been characterized in rat and rabbit developmental toxicity studies. These studies indicate that isopropanol is not a selective developmental hazard. Isopropanol produced developmental toxicity in rats, but not in rabbits. In the rat, the developmental toxicity occurred only at maternally toxic doses and consisted of decreased foetal body weights, but no teratogenicity
**Genotoxicity:** All genotoxicity assays reported for isopropanol have been negative
**Carcinogenicity:** rodent inhalation studies were conduct to evaluate isopropanol for cancer potential. The only tumor rate increase seen was for interstitial (Leydig) cell tumors in the male rats. Interstitial cell tumors of the testis is typically the most frequently observed spontaneous tumor in aged male Fischer 344 rats. These studies demonstrate that isopropanol does not exhibit carcinogenic potential relevant to humans. Furthermore, there was no evidence from this study to indicate the development of carcinomas of the testes in the male rat, nor has isopropanol been found to be genotoxic. Thus, the testicular tumors seen in the isopropanol exposed male rats are considered of no significance in terms of human cancer risk assessment

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✗ | **Carcinogenicity** | ✗ |
| **Skin Irritation/Corrosion** | ✗ | **Reproductivity** | ✗ |
| **Serious Eye Damage/Irritation** | ✓ | **STOT - Single Exposure** | ✓ |
| **Respiratory or Skin sensitisation** | ✗ | **STOT - Repeated Exposure** | ✗ |
| **Mutagenicity** | ✗ | **Aspiration Hazard** | ✗ |

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

## SECTION 12 ECOLOGICAL INFORMATION

### 12.1. Toxicity

**824-W Isopropyl Alcohol Wipe**

| 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 |
|---|---|---|---|---|
| LC50 | 96 | Fish | 9-640mg/L | 2 |
| EC50 | 48 | Crustacea | 12500mg/L | 5 |
| EC50 | 96 | Algae or other aquatic plants | 993.232mg/L | 3 |
| EC0 | 24 | Crustacea | 5-102mg/L | 2 |
| NOEC | 5760 | Fish | 0.02mg/L | 4 |

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

For isopropanol (IPA):

**Continued...**

log Kow : -0.16- 0.28
Half-life (hr) air : 33-84
Half-life (hr) H2O surface water : 130
Henry's atm m3 /mol: 8.07E-06
BOD 5: 1.19,60%
COD : 1.61-2.30,97%
ThOD : 2.4
BOD 20: >70% * [Akzo Nobel]

**Environmental Fate**

Based on calculated results from a lever 1 fugacity model,IPA is expected to partition primarily to the aquatic compartment (77.7%) with the remainder to the air (22.3%). IPA has been shown to biodegrade rapidly in aerobic, aqueous biodegradation tests and therefore, would not be expected to persist in aquatic habitats. IPA is also not expected to persist in surface soils due to rapid evaporation to the air. In the air, physical degradation will occur rapidly due to hydroxy
radical (OH) attack. Overall, IPA presents a low potential hazard to aquatic or terrestrial biota.

IPA is expected to volatilise slowly from water based on a calculated Henry's Law constant of 7.52 x 10 -6 atm.m 3 /mole. The calculated half-life for the volatilisation from surface water (1 meter depth) is predicted to range from 4 days (from a river) to 31 days (from a lake). Hydrolysis is not considered a significant degradation process for IPA. However, aerobic biodegradation of IPA has been shown to occur rapidly under non-acclimated conditions, based on a result of 49% biodegradation from a 5 day BOD test. Additional biodegradation data developed using standardized test methods show that IPA is readily biodegradable in both freshwater and saltwater media (72 to 78% biodegradation in 20 days).

IPA will evaporate quickly from soil due to its high vapor pressure (43 hPa at 20°C), and is not expected to partition to the soil based on a calculated soil adsorption coefficient (log Koc) of 0.03.
IPA has the potential to leach through the soil due to its low soil adsorption

In the air, isopropanol is subject to oxidation predominantly by hydroxy radical attack. The room temperature rate constants determined by several investigators are in good agreement for the reaction of IPA with hydroxy radicals. The atmospheric half-life is expected to be 10 to 25 hours, based on measured degradation rates ranging from 5.1 to 7.1 x 10 -12 cm3 /molecule-sec, and an OH concentration of 1.5 x 106 molecule/cm3 , which is a commonly used default value for calculating atmospheric half-lives. Using OH concentrations representative of polluted (3 x 106 ) and pristine (3 x 105 ) air, the atmospheric half-life of IPA would range from 9 to 126 hours, respectively. Direct photolysis is not expected to be an important transformation process for the degradation of IPA.

**Ecotoxicity:**

IPA has been shown to have a low order of acute aquatic toxicity. Results from 24- to 96-hour LC50 studies range from 1,400 to more than 10,000 mg/L for freshwater and saltwater fish and invertebrates. In addition, 16-hour to 8-day toxicity threshold levels (equivalent to 3% inhibition in cell growth) ranging from 104 to 4,930 mg/L have been demonstrated for various microorganisms. Chronic aquatic toxicity has also been shown to be of low concern, based on 16- to 21-day NOEC values of 141 to 30 mg/L, respectively, for a freshwater invertebrate. Bioconcentration of IPA in aquatic organisms is not expected to occur based on a measured log octanol/water partition coefficient (log Kow) of 0.05, a calculated bioconcentration factor of 1 for a freshwater fish, and the unlikelihood of constant, long-term exposures.

**Toxicity to Plants**

Toxicity of IPA to plants is expected to be low, based on a 7-day toxicity threshold value of 1,800 mg/L for a freshwater algae, and an EC50 value of 2,100 mg/L from a lettuce seed germination test.
**DO NOT** discharge into sewer or waterways.

### 12.2. Persistence and degradability

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

### 12.3. Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| isopropanol | LOW (LogKOW = 0.05) |

### 12.4. Mobility in soil

| Ingredient | Mobility |
|---|---|
| isopropanol | HIGH (KOC = 1.06) |

### 12.5.Results of PBT and vPvB assessment

| | P | B | T |
|---|---|---|---|
| Relevant available data | Not Applicable | Not Applicable | Not Applicable |
| PBT Criteria fulfilled? | Not Applicable | Not Applicable | Not Applicable |

### 12.6. Other adverse effects

No data available

## SECTION 13 DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.<br>A Hierarchy of Controls seems to be common - the user should investigate:<br>▸ Reduction<br>▸ Reuse<br>▸ Recycling<br>▸ Disposal (if all else fails)<br>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.<br>▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains.<br>▸ It may be necessary to collect all wash water for treatment before disposal.<br>▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.<br>▸ Where in doubt contact the responsible authority.<br>▸ Recycle wherever possible.<br>▸ 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.<br>▸ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material) |

**Continued...**

| | |
|---|---|
| | ▸ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed. |
| **Waste treatment options** | Not Available |
| **Sewage disposal options** | Not Available |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| | NOT REGULATED by Ground ADR Special Provision 216<br>NOT REGULATED by Air IATA Special Provision A46<br>NOT REGULATED by Sea IMDG Special Provision 216<br>NOT REGULATED by ADN Special Provision 216 |

### Land transport (ADR)

| | |
|---|---|
| 14.1. **UN number** | 3175 |
| 14.2. **UN proper shipping name** | SOLIDS or mixtures of solids (such as preparations and wastes) CONTAINING FLAMMABLE LIQUID, N.O.S. having a flash-point up to 60 °C (contains isopropanol) |
| 14.3. **Transport hazard class(es)** | Class: 4.1<br>Subrisk: Not Applicable |
| 14.4. **Packing group** | II |
| 14.5. **Environmental hazard** | Not Applicable |
| 14.6. **Special precautions for user** | Hazard identification (Kemler): 40<br>Classification code: F1<br>Hazard Label: 4.1<br>Special provisions: 216 274 601<br>Limited quantity: 1 kg<br>Tunnel Restriction Code: 2 (E) |

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

| | |
|---|---|
| 14.1. **UN number** | 3175 |
| 14.2. **UN proper shipping name** | Solids containing flammable liquid, n.o.s. * (contains isopropanol) |
| 14.3. **Transport hazard class(es)** | ICAO/IATA Class: 4.1<br>ICAO / IATA Subrisk: Not Applicable<br>ERG Code: 3L |
| 14.4. **Packing group** | II |
| 14.5. **Environmental hazard** | Not Applicable |
| 14.6. **Special precautions for user** | Special provisions: A46<br>Cargo Only Packing Instructions: 448<br>Cargo Only Maximum Qty / Pack: 50 kg<br>Passenger and Cargo Packing Instructions: 445<br>Passenger and Cargo Maximum Qty / Pack: 15 kg<br>Passenger and Cargo Limited Quantity Packing Instructions: Y441<br>Passenger and Cargo Limited Maximum Qty / Pack: 5 kg |

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

| | |
|---|---|
| 14.1. **UN number** | 3175 |
| 14.2. **UN proper shipping name** | SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (contains isopropanol) |
| 14.3. **Transport hazard class(es)** | IMDG Class: 4.1<br>IMDG Subrisk: Not Applicable |
| 14.4. **Packing group** | II |
| 14.5. **Environmental hazard** | Not Applicable |
| 14.6. **Special precautions for user** | EMS Number: F-A , S-I<br>Special provisions: 216 274<br>Limited Quantities: 1 kg |

### Inland waterways transport (ADN)

Continued...

| | |
|---|---|
| 14.1. **UN number** | 3175 |
| 14.2. **UN proper shipping name** | SOLIDS or mixtures of solids (such as preparations and wastes) CONTAINING FLAMMABLE LIQUID, N.O.S. having a flash-point up to 60°C (contains isopropanol); SOLIDS CONTAINING FLAMMABLE LIQUID, MOLTEN, having a flash-point up to 60°C (contains isopropanol) |
| 14.3. **Transport hazard class(es)** | 4.1 \| Not Applicable |
| 14.4. **Packing group** | II |
| 14.5. **Environmental hazard** | Not Applicable |
| 14.6. **Special precautions for user** | Classification code: F1<br>Special provisions: 216; 274; 601; 800<br>Limited quantity: 1 kg<br>Equipment required: PP, EX, A<br>Fire cones number: 1 |

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

| SOURCE | PRODUCT NAME | POLLUTION CATEGORY | SHIP TYPE |
|---|---|---|---|
| | Isopropyl alcohol | Z | Not Applicable |

## SECTION 15 REGULATORY INFORMATION

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

**ISOPROPANOL(67-63-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Europe ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

Europe EC Inventory

Europe ECHA Registered Substances - Classification and Labelling - DSD-DPD

Europe European Agreement concerning the International Carriage of Dangerous Goods by Road

Europe European Customs Inventory of Chemical Substances

European Chemical Agency (ECHA) Classification & Labelling Inventory - Chemwatch Harmonised classification

European Trade Union Confederation (ETUC) Priority List for REACH Authorisation

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

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

GESAMP/EHS Composite List - GESAMP Hazard Profiles

IMO IBC Code Chapter 17: Summary of minimum requirements

IMO IBC Code Chapter 18: List of products to which the Code does not apply

IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances

IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO

IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards

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

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2019 (English)

UK Workplace Exposure Limits (WELs)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2015/830; Regulation (EC) No 1272/2008 as updated through ATPs.

### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

### National Inventory Status

| National Inventory | Status |
|---|---|
| Australia - AICS | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (isopropanol) |
| 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 - ARIPS | Yes |
| Thailand - TECI | Yes |
| ***Legend:*** | *Yes = All CAS declared ingredients are on the inventory*<br>*No = 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

Continued...

| | |
|---|---|
| **Revision Date** | 23/07/2019 |
| **Initial Date** | 24/04/2017 |

## Full text Risk and Hazard codes

## SDS Version Summary

| Version | Issue Date | Sections Updated |
|---|---|---|
| 6.8.1.1.1 | 23/07/2019 | Name |

## Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

## Definitions and abbreviations

PC－TWA: Permissible Concentration-Time Weighted Average
PC－STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
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

## Reason For Change

A-1.01 - Update to the emergency phone number information.