

# Frigid Standard

## Frigid Fluid Company

Chemwatch: 5184-09  
Version No: 3.1.1.1  
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 3

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S.GHS.USA.EN

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

### Product Identifier

|                               |                                   |
|-------------------------------|-----------------------------------|
| Product name                  | Frigid Standard                   |
| Synonyms                      | Not Available                     |
| Proper shipping name          | Formaldehyde solutions, flammable |
| Other means of identification | Not Available                     |

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

|                          |   |
|--------------------------|---|
| Relevant identified uses | Use according to manufacturer's directions. |
|--------------------------|---|

### Details of the manufacturer/importer

|                         |   |
|-------------------------|---|
| Registered company name | Frigid Fluid Company                                  |
| Address                 | 11631 W Grand Ave Melrose Park 60164 IL United States |
| Telephone               | +1 708-836-1215                                       |
| Fax                     | Not Available   |
| Website                 | Not Available   |
| Email                   | Not Available   |

### Emergency telephone number

|                                   |                |
|-----------------------------------|----------------|
| Association / Organisation        | Not Available  |
| Emergency telephone numbers       | 1-800-424-9300 |
| Other emergency telephone numbers | Not Available  |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Classified as Dangerous Goods for transport purposes.



|                    |   |
|--------------------|---|
| GHS Classification | Flammable Liquid Category 3, Metal Corrosion Category 1, Acute Toxicity (Oral) Category 3, Acute Toxicity (Dermal) Category 3, Acute Toxicity (Inhalation) Category 2, Skin Corrosion/Irritation Category 1B, Serious Eye Damage Category 1, Skin Sensitizer Category 1, Germ Cell Mutagen Category 2, Carcinogen Category 1A, Reproductive Toxicity Category 1B, STOT - SE Category 2, Acute Aquatic Hazard Category 3 |
|--------------------|---|

### Label elements

|                    |  |
|--------------------|--|
| GHS label elements |  |
|--------------------|--|

|             |        |
|-------------|--------|
| SIGNAL WORD | DANGER |
|-------------|--------|

### Hazard statement(s)

|      |                             |
|------|-----------------------------|
| H226 | Flammable liquid and vapour |
| H290 | May be corrosive to metals  |
| H301 | Toxic if swallowed          |
| H311 | Toxic in contact with skin  |

Continued...

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|      |  |
|------|--|
| H330 | Fatal if inhaled                         |
| H314 | Causes severe skin burns and eye damage  |
| H318 | Causes serious eye damage                |
| H317 | May cause an allergic skin reaction      |
| H341 | Suspected of causing genetic defects     |
| H350 | May cause cancer                         |
| H360 | May damage fertility or the unborn child |
| H371 | May cause damage to organs               |
| H402 | Harmful to aquatic life                  |

## Precautionary statement(s) Prevention

|      |  |
|------|--|
| P201 | Obtain special instructions before use.  |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray.   |
| P270 | Do not eat, drink or smoke when using this product.  |
| P271 | Use only outdoors or in a well-ventilated area.  |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection.                     |

## Precautionary statement(s) Response

|                |  |
|----------------|--|
| P301+P310      | IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider  |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.   |
| 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.   |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P313      | IF exposed or concerned: Get medical advice/attention.   |

## Precautionary statement(s) Storage

|           |  |
|-----------|--|
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P403+P235 | Store in a well-ventilated place. Keep cool.                     |
| P405      | Store locked up.   |

## Precautionary statement(s) Disposal

|      |  |
|------|--|
| P501 | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |
|------|--|

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No     | %[weight] | Name                  |
|------------|-----------|-----------------------|
| 50-00-0    | 20-30     | <u>formaldehyde</u>   |
| 10043-35-3 | <10       | <u>boric acid</u>     |
| 7631-99-4  | <10       | <u>sodium nitrate</u> |
| 67-56-1    | <5        | <u>methanol</u>       |

## SECTION 4 FIRST AID MEASURES

## Description of first aid measures

|              |  |
|--------------|--|
| Eye Contact  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with 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>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</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> |
| Skin Contact | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>▶ Quickly remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>   |
| Inhalation   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</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> </ul>  |

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|                  |  |
|------------------|--|
|                  | <ul style="list-style-type: none"> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> <li>▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.</li> <li>▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).</li> <li>▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.</li> <li>▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.</li> </ul> <p><b>This must definitely be left to a doctor or person authorised by him/her.</b><br/>(ICSC13719)</p> |
| <b>Ingestion</b> | <ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul>   |

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

For acute or short-term repeated exposures to formaldehyde:

**INGESTION:**

- ▶ Patients present early with severe corrosion of the gastro-intestinal tract and systemic effects.
- ▶ Inflammation and ulceration may progress to strictures.
- ▶ Severe acidosis results from rapid conversion of formaldehyde to formic acid. Coma, hypotension, renal failure and apnoea complicate ingestion.
- ▶ Decontaminate by dilution with milk or water containing ammonium acetate; vomiting should be induced. Follow with gastric lavage using a weak ammonia solution (converts formaldehyde to relatively inert pentamethylenetetramine)
- ▶ Gastric lavage is warranted only in first 15 minutes following ingestion.

**SKIN:**

- ▶ Formaldehyde can combine with epidermal protein to produce a hapten-protein couple capable of sensitising T-lymphocytes. Subsequent exposures cause a type IV hypersensitivity reaction (i.e. allergic contact dermatitis). [Ellenhorn & Barceloux: Medical Toxicology]

For acute and short term repeated exposures to methanol:

- ▶ Toxicity results from accumulation of formaldehyde/formic acid.
- ▶ Clinical signs are usually limited to CNS, eyes and GI tract Severe metabolic acidosis may produce dyspnea and profound systemic effects which may become intractable. All symptomatic patients should have arterial pH measured. Evaluate airway, breathing and circulation.
- ▶ Stabilise obtunded patients by giving naloxone, glucose and thiamine.
- ▶ Decontaminate with Ipecac or lavage for patients presenting 2 hours post-ingestion. Charcoal does not absorb well; the usefulness of cathartic is not established.
- ▶ Forced diuresis is not effective; haemodialysis is recommended where peak methanol levels exceed 50 mg/dL (this correlates with serum bicarbonate levels below 18 mEq/L).
- ▶ Ethanol, maintained at levels between 100 and 150 mg/dL, inhibits formation of toxic metabolites and may be indicated when peak methanol levels exceed 20 mg/dL. An intravenous solution of ethanol in D5W is optimal.
- ▶ Folate, as leucovorin, may increase the oxidative removal of formic acid. 4-methylpyrazole may be an effective adjunct in the treatment. 8-Phenytoin may be preferable to diazepam for controlling seizure.

[Ellenhorn Barceloux: Medical Toxicology]

## BIOLOGICAL EXPOSURE INDEX - BEI

| Determinant             | Index               | Sampling Time                       | Comment |
|-------------------------|---------------------|-------------------------------------|---------|
| 1. Methanol in urine    | 15 mg/l             | End of shift                        | B, NS   |
| 2. Formic acid in urine | 80 mg/gm creatinine | Before the shift at end of workweek | B, NS   |

B: Background levels occur in specimens collected from subjects **NOT** exposed.

NS: Non-specific determinant - observed following exposure to other materials.

Depending on the degree of exposure, periodic medical examination is indicated. The symptoms of lung oedema often do not manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorised by him/her should be considered.  
(ICSC24419/24421)

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>▶ Water spray or fog.</li> <li>▶ Foam.</li> <li>▶ Dry chemical powder.</li> <li>▶ BCF (where regulations permit).</li> <li>▶ Carbon dioxide.</li> </ul> |
|--|--|

**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 in the event of a fire.</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> </ul> |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Liquid and vapour are flammable.</li> <li>▶ Moderate fire hazard when exposed to heat or flame.</li> <li>▶ Vapour forms an explosive mixture with air.</li> <li>▶ Moderate explosion hazard when exposed to heat or flame.</li> </ul>  |

- ▶ Vapour may travel a considerable distance to source of ignition.
- ▶ Heating may cause expansion or decomposition leading to violent rupture of containers.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

|                     |  |
|---------------------|--|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb small quantities with vermiculite or other absorbent material.</li> <li>▶ Wipe up.</li> </ul>  |
| <b>Major Spills</b> | <ul style="list-style-type: none"> <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 full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ No smoking, naked lights or ignition sources.</li> </ul> |

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

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

|                          |  |
|--------------------------|--|
| <b>Safe handling</b>     | <ul style="list-style-type: none"> <li>▶ Containers, even those that have been emptied, may contain explosive vapours.</li> <li>▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers.</li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of overexposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> </ul>  |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers in approved flammable liquid storage area.</li> <li>▶ Store away from incompatible materials in a cool, dry, well-ventilated 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>▶ Storage areas should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorised personnel - adequate security must be provided so that unauthorised personnel do not have access.</li> <li>▶ Store according to applicable regulations for flammable materials for storage tanks, containers, piping, buildings, rooms, cabinets, allowable quantities and minimum storage distances.</li> </ul> |

### Conditions for safe storage, including any incompatibilities

|                                |  |
|--------------------------------|--|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Packing as supplied by manufacturer.</li> <li>▶ Plastic containers may only be used if approved for flammable liquid.</li> <li>▶ Check that containers are clearly labelled and free from leaks.</li> <li>▶ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> <li>▶ For materials with a viscosity of at least 2680 cSt.</li> </ul>  |
| <b>Storage incompatibility</b> | <ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> <li>▶ Avoid strong acids, bases.</li> <li>▶ Incidents involving interaction of active oxidants and reducing agents, either by design or accident, are usually very energetic and examples of so-called redox reactions.</li> </ul> <p>Formaldehyde:</p> <ul style="list-style-type: none"> <li>▶ is a strong reducing agent</li> <li>▶ may polymerise in air unless properly inhibited (usually with methanol up to 15%) and stored at controlled temperatures</li> <li>▶ will polymerize with active organic material such as phenol</li> <li>▶ reacts violently with strong oxidisers, hydrogen peroxide, potassium permanganate, acrylonitrile, caustics (sodium hydroxide, yielding formic acid and flammable hydrogen), magnesium carbonate, nitromethane, nitrogen oxides (especially at elevated temperatures), peroxyformic acid</li> <li>▶ is incompatible with strong acids (hydrochloric acid forms carcinogenic bis(chloromethyl)ether*), amines, ammonia, aniline, bisulfides, gelatin, iodine, magnesite, phenol, some monomers, tannins, salts of copper, iron, silver.</li> <li>▶ acid catalysis can produce impurities: methylal, methyl formate</li> </ul> <p>Aqueous solutions of formaldehyde:</p> <ul style="list-style-type: none"> <li>▶ slowly oxidise in air to produce formic acid</li> <li>▶ attack carbon steel</li> </ul> <p>Concentrated solutions containing formaldehyde are:</p> <ul style="list-style-type: none"> <li>▶ unstable, both oxidising slowly to form formic acid and polymerising; in dilute aqueous solutions formaldehyde appears as monomeric hydrate (methylene glycol) - the more concentrated the solution the more polyoxymethylene glycol occurs as oligomers and polymers (methanol and amine-containing compounds inhibit polymer formation)</li> <li>▶ readily subject to polymerisation, at room temperature, in the presence of air and moisture, to form paraformaldehyde (8-100 units of formaldehyde), a solid mixture of linear polyoxymethylene glycols containing 90-99% formaldehyde; a cyclic trimer, trioxane (CH<sub>2</sub>O<sub>3</sub>), may also form</li> </ul> <p>Flammable and/or toxic gases are generated by the combination of aldehydes with azo, diazo compounds, dithiocarbamates, nitrides, and strong reducing agents</p> <p>*The empirical equation may be used to determine the concentration of bis(chloromethyl)ether (BCME) formed by reaction with HCl:<br/> <math>\log(\text{BCME})\text{ppb} = -2.25 + 0.67 \cdot \log(\text{HCHO})\text{ppm} + 0.77 \cdot \log(\text{HCl})\text{ppm}</math><br/>     Assume values for formaldehyde, in air, of 1 ppm and for HCl of 5 ppm, resulting BCME concentration, in air, would be 0.02 ppb.</p> |

### PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

## Control parameters

## OCCUPATIONAL EXPOSURE LIMITS (OEL)

## INGREDIENT DATA


| Source  | Ingredient    | Material name  | TWA                 | STEL                | Peak          | Notes   |
|---|---------------|--|---------------------|---------------------|---------------|---|
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | formaldehyde. | Formaldehyde   | 0.75 ppm            | 2 ppm               | Not Available | see 1910.1048   |
| US OSHA Permissible Exposure Levels (PELs) - Table Z2 | formaldehyde. | Formaldehyde   | 0.75 ppm            | 2 ppm               | Not Available | see 1910.1048   |
| US ACGIH Threshold Limit Values (TLV)                 | formaldehyde. | ‡ Formaldehyde   | Not Available       | Not Available       | 0.3 ppm       | TLV® Basis: URT & eye irr                             |
| US NIOSH Recommended Exposure Limits (RELs)           | formaldehyde. | Methanal, Methyl aldehyde, Methylene oxide / Formaldehyde solution [Note: Formalin is an aqueous solution that is 37% formaldehyde by weight; inhibited solutions usually contain 6-12% methyl alcohol. Also see specific listings for Formaldehyde and Methyl alcohol.] | 0.016 ppm           | Not Available       | 0.1 ppm       | Ca See Appendix A                                     |
| US ACGIH Threshold Limit Values (TLV)                 | boric acid    | Borate compounds, inorganic  | 2 mg/m3             | 6 mg/m3             | Not Available | TLV® Basis: URT irr                                   |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | methanol      | Methyl alcohol   | 260 mg/m3 / 200 ppm | Not Available       | Not Available | Not Available   |
| US ACGIH Threshold Limit Values (TLV)                 | methanol      | Methanol   | 200 ppm             | 250 ppm             | Not Available | TLV® Basis: Headache; eye dam; dizziness; nausea; BEI |
| US NIOSH Recommended Exposure Limits (RELs)           | methanol      | Carbinol, Columbian spirits, Methanol, Pyroigneous spirit, Wood alcohol, Wood naphtha, Wood spirit   | 260 mg/m3 / 200 ppm | 325 mg/m3 / 250 ppm | Not Available | [skin]  |

## EMERGENCY LIMITS

| Ingredient     | Material name              | TEEL-1        | TEEL-2        | TEEL-3        |
|----------------|----------------------------|---------------|---------------|---------------|
| formaldehyde.  | Formaldehyde               | Not Available | Not Available | Not Available |
| boric acid     | Boric acid                 | 6 mg/m3       | 78 mg/m3      | 230 mg/m3     |
| sodium nitrate | Sodium nitrate             | 12 mg/m3      | 130 mg/m3     | 250 mg/m3     |
| methanol       | Methyl alcohol; (Methanol) | Not Available | Not Available | Not Available |

| Ingredient     | Original IDLH | Revised IDLH  |
|----------------|---------------|---------------|
| formaldehyde.  | 30 ppm        | 20 ppm        |
| boric acid     | Not Available | Not Available |
| sodium nitrate | Not Available | Not Available |
| methanol       | 25,000 ppm    | 6,000 ppm     |

## Exposure controls

|   |   |
|---|---|
| <b>Appropriate engineering controls</b> | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> |
| <b>Personal protection</b>              |    |
| <b>Eye and face protection</b>          | <ul style="list-style-type: none"> <li>▶ Chemical goggles.</li> <li>▶ Full face shield may be required for supplementary but never for primary protection of eyes.</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.</li> </ul>   |
| <b>Skin protection</b>                  | See Hand protection below   |
| <b>Hands/feet protection</b>            | <ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> <li>▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</li> </ul> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>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.</p>                               |
| <b>Body protection</b>                  | See Other protection below  |

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|                         |  |
|-------------------------|--|
| <b>Other protection</b> | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ PVC Apron.</li> <li>▶ PVC protective suit may be required if exposure severe.</li> <li>▶ Eyewash unit.</li> <li>▶ Ensure there is ready access to a safety shower.</li> </ul> <p>Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.</p> |
| <b>Thermal hazards</b>  | Not Available  |

## Recommended material(s)

## GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

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

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| Material          | CPI  |
|-------------------|------|
| ##boric           | acid |
| BUTYL             | C    |
| BUTYL/NEOPRENE    | C    |
| NAT+NEOPR+NITRILE | C    |
| NATURAL RUBBER    | C    |
| NATURAL+NEOPRENE  | C    |
| NEOPRENE          | C    |
| NEOPRENE/NATURAL  | C    |
| NITRILE           | C    |
| PE                | C    |
| PE/EVAL/PE        | C    |
| PVA               | C    |
| PVC               | C    |
| PVDC/PE/PVDC      | C    |
| SARANEX-23        | C    |
| SARANEX-23 2-PLY  | C    |
| TEFLON            | C    |
| VITON             | C    |
| VITON/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.

## Respiratory protection

Type BAX 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                      | BAX-AUS              | -                    | BAX-PAPR-AUS / Class 1 |
| up to 50 x ES                      | -                    | BAX-AUS / Class 1    | -                      |
| up to 100 x ES                     | -                    | BAX-2                | BAX-PAPR-2 ^           |

^ - 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)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

|   |   |  |                |
|---|---|--|----------------|
| <b>Appearance</b>                                   | Red flammable liquid with mild odour; mixes with water. |  |                |
| <b>Physical state</b>                               | Liquid  | <b>Relative density (Water = 1)</b>            | 1.14           |
| <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</b>               | Not Available  |
| <b>Melting point / freezing point (°C)</b>          | Not Applicable  | <b>Viscosity (cSt)</b>                         | Not Available  |
| <b>Initial boiling point and boiling range (°C)</b> | 64  | <b>Molecular weight (g/mol)</b>                | Not Applicable |
| <b>Flash point (°C)</b>                             | 37 (PMCC)   | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | <1 (Ether = 1)  | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | Flammable.  | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | 73  | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available  |

Continued...

## Frigid Standard

|                           |               |                           |               |
|---------------------------|---------------|---------------------------|---------------|
| Lower Explosive Limit (%) | 6             | Volatile Component (%vol) | >70           |
| Vapour pressure (kPa)     | Not Available | Gas group                 | Not Available |
| Solubility in water (g/L) | Miscible      | pH as a solution (1%)     | Not Available |
| Vapour density (Air = 1)  | Not Available | VOC g/L                   | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

|                                    |  |
|------------------------------------|--|
| Reactivity                         | See section 7  |
| Chemical stability                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| Possibility of hazardous reactions | See section 7  |
| Conditions to avoid                | See section 7  |
| Incompatible materials             | See section 7  |
| Hazardous decomposition products   | See section 5  |

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

|              |  |
|--------------|--|
| Inhaled      | <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. 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>Inhalation of quantities of liquid mist may be extremely hazardous, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and pulmonary oedema.</p> <p>Inhalation of vapour at low concentrations may cause a tingling sensation in the nose and airway. Slightly higher concentrations may cause burning sensation and headache.</p>  |
| Ingestion    | <p><b>Toxic effects</b> may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p> <p>The lethal oral dose of nitrite for adults has been variously reported to be between 0.7 and 6 g NO<sub>2</sub>- (approximately 10 to 100 mg NO<sub>2</sub>-/kg). Lower doses may apply for children (especially neonates), the elderly and people with certain enzyme deficiencies. The first symptoms of oral nitrite poisoning develop within 15 to 45 minutes</p> <p>In humans, inorganic nitrites produce smooth muscle relaxation, methaemoglobinaemia and cyanosis. The primary effect of nitrite intoxication in animals is methaemoglobinaemia whilst secondary effects include vasodilation, relaxation of smooth muscle and lowering of blood pressure. Other nitrite-induced toxic effects include abdominal pain, diarrhoea, atrophied intestinal villi and apoptotic cell death in the intestinal crypts.</p> |
| Skin Contact | <p>Skin contact with the material may produce toxic effects; systemic effects may result following absorption.</p> <p>The material can produce chemical burns following direct contact with the skin.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Minor regular skin contact results in hardening of skin, making it feel like leather. It may also cause skin inflammation and an itchy rash especially among workers exposed to formaldehyde in hospitals, in the production of resins, textiles, shampoos and laminated furniture.</p>   |
| Eye          | <p>The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p> <p>If applied to the eyes, this material causes severe eye damage.</p> <p>Irritation of the eyes may produce a heavy secretion of tears (lachrymation).</p>  |
| Chronic      | <p>Studies show that inhaling this substance for over a long period (e.g. in an occupational setting) may increase the risk of cancer.</p> <p>Strong evidence exists that this substance may cause irreversible mutations (though not lethal) even following a single exposure.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material.</p> <p>Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material.</p> <p>Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.</p>   |

|                 |   |   |
|-----------------|---|---|
| Frigid Standard | TOXICITY  | IRRITATION  |
|                 | Not Available                                       | Not Available   |
| formaldehyde.   | TOXICITY  | IRRITATION  |
|                 | Dermal (rabbit) LD50: 270 mg/kg <sup>[2]</sup>      | Eye (human): 4 ppm/5m   |
|                 | Inhalation (rat) LC50: 250 ppm/4h <sup>[2]</sup>    | Eye (rabbit): 0.75 mg/24H SEVERE                                  |
|                 | Oral (rat) LD50: 100 mg/kgm <sup>[2]</sup>          | Skin (human): 0.15 mg/3d-I mild<br>Skin (rabbit): 2 mg/24H SEVERE |
| boric acid      | TOXICITY  | IRRITATION  |
|                 | Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup>    | Skin (human): 15 mg/3d -I- mild                                   |
|                 | Inhalation (rat) LC50: >0.16 mg/14 h <sup>[1]</sup> |   |
|                 | Oral (rat) LD50: 2500 mg/kg <sup>[2]</sup>          |   |

## Frigid Standard

|                |  |   |
|----------------|--|---|
| sodium nitrate | <b>TOXICITY</b>  | <b>IRRITATION</b>   |
|                | dermal (rat) LD50: >5000 mg/kg <sup>[1]</sup><br>Oral (rat) LD50: 1267 mg/kg <sup>[2]</sup>  | Nil reported  |
| methanol       | <b>TOXICITY</b>  | <b>IRRITATION</b>   |
|                | Dermal (rabbit) LD50: 15800 mg/kg <sup>[2]</sup><br>Inhalation (rat) LC50: 64000 ppm/4h <sup>[2]</sup>   | Eye (rabbit): 100 mg/24h-moderate<br>Eye (rabbit): 40 mg-moderate |
|                | Oral (rat) LD50: >11872769 mg/kg <sup>[1]</sup>  | Skin (rabbit): 20 mg/24 h-moderate                                |
| <b>Legend:</b> | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's msds. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances |   |

|  |  |
|--|--|
| <b>SODIUM NITRATE</b>                      | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. 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. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. |
| <b>Frigid Standard &amp; FORMALDEHYDE.</b> | The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact.   |
| <b>BORIC ACID &amp; METHANOL</b>           | 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.   |

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

**Legend:** ✓ – Data required to make classification available  
 ✗ – Data available but does not fill the criteria for classification  
 ⊖ – Data Not Available to make classification

## CMR STATUS

|                    |               |  |   |
|--------------------|---------------|--|---|
| <b>CARCINOGEN</b>  | formaldehyde. | US Environmental Defense Scorecard Recognized Carcinogens US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors US NIOSH Recommended Exposure Limits (RELs) - Carcinogens  | P65 2A Ca See Appendix A  |
| <b>EYE</b>         | formaldehyde. | US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Eye   | Toxic Air Contaminant: The Air Resources Board has identified this substance as a Toxic Air Contaminant. FORMALDEHYDE X |
| <b>RESPIRATORY</b> | formaldehyde. | US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) - Respiratory  | X   |
| <b>SKIN</b>        | methanol      | US - Hawaii Air Contaminant Limits - Skin Designation US - Alaska Limits for Air Contaminants - Skin Designation US NIOSH Recommended Exposure Limits (RELs) - Skin US - Washington Permissible exposure limits of air contaminants - Skin US - Michigan Exposure Limits for Air Contaminants - Skin US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin US ACGIH Threshold Limit Values (TLV) - Skin US - California Permissible Exposure Limits for Chemical Contaminants - Skin US - North Carolina Permissible Exposure Limits (PELs) for Air Contaminants - Skin Designation [NLV] US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants - Skin US - Minnesota Permissible Exposure Limits (PELs) - Skin | X [skin] Yes S  |

## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

Harmful to aquatic organisms.

For Formaldehyde:

Environmental Fate: Formaldehyde is common in the environment as a contaminant of smoke and as photochemical smog. Concentrated solutions containing formaldehyde are unstable and oxidize slowly. In the presence of air and moisture, polymerization takes place readily in concentrated solutions at room temperature to form paraformaldehyde.

Atmospheric Fate: In the atmosphere, formaldehyde both photolysis and reacts with reactive free radicals (primarily hydroxyl radicals). Reaction with nitrate radicals, insignificant during the day, may be an important removal process at night.

## Persistence and degradability

Continued...



| Ingredient     | Persistence: Water/Soil   | Persistence: Air            |
|----------------|---------------------------|-----------------------------|
| formaldehyde.  | LOW (Half-life = 14 days) | LOW (Half-life = 2.97 days) |
| boric acid     | LOW                       | LOW                         |
| sodium nitrate | LOW                       | LOW                         |
| methanol       | LOW                       | LOW                         |

**Bioaccumulative potential**

| Ingredient     | Bioaccumulation      |
|----------------|----------------------|
| formaldehyde.  | LOW (LogKOW = 0.35)  |
| boric acid     | LOW (BCF = 0)        |
| sodium nitrate | LOW (LogKOW = 0.209) |
| methanol       | LOW (BCF = 10)       |



**Mobility in soil**

| Ingredient     | Mobility          |
|----------------|-------------------|
| formaldehyde.  | HIGH (KOC = 1)    |
| boric acid     | LOW (KOC = 35.04) |
| sodium nitrate | LOW (KOC = 14.3)  |
| methanol       | HIGH (KOC = 1)    |

**SECTION 13 DISPOSAL CONSIDERATIONS****Waste treatment methods**

|                                     |  |
|-------------------------------------|--|
| <b>Product / Packaging disposal</b> | <ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>▶ Where possible retain label warnings and MSDS and observe all notices pertaining to the product.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.</p> |
|-------------------------------------|--|

**SECTION 14 TRANSPORT INFORMATION****Labels Required**

|                         |   |
|-------------------------|---|
| <b>Labels Required</b>  |   |
| <b>Marine Pollutant</b> | NO  |

**Land transport (DOT)**

|                                     |  |       |   |         |   |
|-------------------------------------|--|-------|---|---------|---|
| <b>UN number</b>                    | 1198   |       |   |         |   |
| <b>Packing group</b>                | III  |       |   |         |   |
| <b>UN proper shipping name</b>      | Formaldehyde solutions, flammable  |       |   |         |   |
| <b>Environmental hazard</b>         | No relevant data   |       |   |         |   |
| <b>Transport hazard class(es)</b>   | <table border="0" style="width: 100%;"> <tr> <td style="text-align: right;">Class</td> <td style="border-left: 1px dashed black; padding-left: 5px;">3</td> </tr> <tr> <td style="text-align: right;">Subrisk</td> <td style="border-left: 1px dashed black; padding-left: 5px;">8</td> </tr> </table> | Class | 3 | Subrisk | 8 |
| Class                               | 3  |       |   |         |   |
| Subrisk                             | 8  |       |   |         |   |
| <b>Special precautions for user</b> | Special provisions   176, B1, IB3, T4, TP1   |       |   |         |   |

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

|                                     |   |                    |      |                                 |     |                               |      |
|-------------------------------------|---|--------------------|------|---------------------------------|-----|-------------------------------|------|
| <b>UN number</b>                    | 1198  |                    |      |                                 |     |                               |      |
| <b>Packing group</b>                | III   |                    |      |                                 |     |                               |      |
| <b>UN proper shipping name</b>      | Formaldehyde solution, flammable  |                    |      |                                 |     |                               |      |
| <b>Environmental hazard</b>         | No relevant data  |                    |      |                                 |     |                               |      |
| <b>Transport hazard class(es)</b>   | <table border="0" style="width: 100%;"> <tr> <td style="text-align: right;">ICAO/IATA Class</td> <td style="border-left: 1px dashed black; padding-left: 5px;">3</td> </tr> <tr> <td style="text-align: right;">ICAO / IATA Subrisk</td> <td style="border-left: 1px dashed black; padding-left: 5px;">8</td> </tr> <tr> <td style="text-align: right;">ERG Code</td> <td style="border-left: 1px dashed black; padding-left: 5px;">3Ci</td> </tr> </table>   | ICAO/IATA Class    | 3    | ICAO / IATA Subrisk             | 8   | ERG Code                      | 3Ci  |
| ICAO/IATA Class                     | 3   |                    |      |                                 |     |                               |      |
| ICAO / IATA Subrisk                 | 8   |                    |      |                                 |     |                               |      |
| ERG Code                            | 3Ci   |                    |      |                                 |     |                               |      |
| <b>Special precautions for user</b> | <table border="0" style="width: 100%;"> <tr> <td style="text-align: right;">Special provisions</td> <td style="border-left: 1px dashed black; padding-left: 5px;">A180</td> </tr> <tr> <td style="text-align: right;">Cargo Only Packing Instructions</td> <td style="border-left: 1px dashed black; padding-left: 5px;">365</td> </tr> <tr> <td style="text-align: right;">Cargo Only Maximum Qty / Pack</td> <td style="border-left: 1px dashed black; padding-left: 5px;">60 L</td> </tr> </table> | Special provisions | A180 | Cargo Only Packing Instructions | 365 | Cargo Only Maximum Qty / Pack | 60 L |
| Special provisions                  | A180  |                    |      |                                 |     |                               |      |
| Cargo Only Packing Instructions     | 365   |                    |      |                                 |     |                               |      |
| Cargo Only Maximum Qty / Pack       | 60 L  |                    |      |                                 |     |                               |      |

## Frigid Standard

|   |      |
|---|------|
| Passenger and Cargo Packing Instructions                  | 354  |
| Passenger and Cargo Maximum Qty / Pack                    | 5 L  |
| Passenger and Cargo Limited Quantity Packing Instructions | Y342 |
| Passenger and Cargo Limited Maximum Qty / Pack            | 1 L  |

## Sea transport (IMDG-Code / GGVSee)

|                              |                                   |
|------------------------------|-----------------------------------|
| UN number                    | 1198                              |
| Packing group                | III                               |
| UN proper shipping name      | FORMALDEHYDE SOLUTION, FLAMMABLE  |
| Environmental hazard         | Not Applicable                    |
| Transport hazard class(es)   | IMDG Class 3                      |
|                              | IMDG Subrisk 8                    |
| Special precautions for user | EMS Number F-E , S-C              |
|                              | Special provisions Not Applicable |
|                              | Limited Quantities 5 L            |

## Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

| Source  | Ingredient    | Pollution Category |
|---|---------------|--------------------|
| IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk | formaldehyde. | Y                  |
| IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk | methanol      | Y                  |

## SECTION 15 REGULATORY INFORMATION

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

|  |   |
|--|---|
| formaldehyde.(50-00-0) is found on the following regulatory lists    | "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)","US - Hawaii Air Contaminant Limits","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens","US - Idaho - Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US National Toxicology Program (NTP) 13th Report Part A Known to be Human Carcinogens","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US EPA Carcinogens Listing","US - Oregon Permissible Exposure Limits (Z-2)","US - Oregon Permissible Exposure Limits (Z-1)","International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs","US - Michigan Exposure Limits for Air Contaminants","US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Mutagens","US - California - Proposition 65 - Priority List for the Development of MADLs for Chemicals Causing Reproductive Toxicity","US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)","US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values","US - Alaska Limits for Air Contaminants","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Carcinogens Listing","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z-2 Acceptable ceiling concentration, Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift","US OSHA Permissible Exposure Levels (PELs) - Table Z2","US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants","US - Minnesota Permissible Exposure Limits (PELs)","US - California Proposition 65 - Carcinogens","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Idaho - Acceptable Maximum Peak Concentrations","US ACGIH Threshold Limit Values (TLV)","US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens" |
| boric acid(10043-35-3) is found on the following regulatory lists    | "US ACGIH Threshold Limit Values (TLV) - Carcinogens","US EPA Carcinogens Listing","International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs","US ACGIH Threshold Limit Values (TLV)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"  |
| sodium nitrate(7631-99-4) is found on the following regulatory lists | "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"   |
| methanol(67-56-1) is found on the following regulatory lists         | "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Hawaii Air Contaminant Limits","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens","US - Idaho - Limits for Air Contaminants","US - California Proposition 65 - Reproductive Toxicity","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Oregon Permissible Exposure Limits (Z-1)","US - Michigan Exposure Limits for Air Contaminants","US - California - Proposition 65 - Priority List for the Development of MADLs for Chemicals Causing Reproductive Toxicity","US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)","US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values","US - Alaska Limits for Air Contaminants","US NIOSH Recommended Exposure Limits (RELs)","US - Washington Permissible exposure limits of air contaminants","US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants","US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity","US - Minnesota Permissible Exposure Limits (PELs)","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US OSHA Permissible Exposure Levels (PELs) - Table Z1"  |

| National Inventory | Status |
|--------------------|--------|
| Australia - AICS   | Y      |
| Canada - DSL       | Y      |
| China - IECSC      | Y      |

|                               |  |
|-------------------------------|--|
| Europe - EINEC / ELINCS / NLP | Y  |
| Japan - ENCS                  | Y  |
| Korea - KECI                  | Y  |
| New Zealand - NZIoC           | Y  |
| Philippines - PICCS           | Y  |
| USA - TSCA                    | Y  |
| <b>Legend:</b>                | <i>Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</i> |

## SECTION 16 OTHER INFORMATION

### Other information

#### Ingredients with multiple cas numbers

| Name       | CAS No                             |
|------------|------------------------------------|
| boric acid | 10043-35-3, 11113-50-1, 41685-84-1 |

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

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net](http://www.chemwatch.net)

The (M)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.

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