

## YSI 2787 Ethanol Buffer Kit

### GFS Chemicals, Inc.

Part Number: YSI 2787  
Version No: 2.2  
Safety Data Sheet according to OSHA HazCom Standard (2024) requirements

Initial Date: 09/20/2018  
Revision Date: 09/27/2018  
Print Date: 03/16/2026  
S.GHS.USA.EN

#### SECTION 1 Identification

##### Product Identifier

|                               |                             |
|-------------------------------|-----------------------------|
| Product name                  | YSI 2787 Ethanol Buffer Kit |
| Chemical Name                 | Not Applicable              |
| Synonyms                      | YSI 2787                    |
| Chemical formula              | Not Applicable              |
| Other means of identification | Not Available               |

##### Recommended use of the chemical and restrictions on use

|                          |                           |
|--------------------------|---------------------------|
| Relevant identified uses | Analysis Standard/Reagent |
|--------------------------|---------------------------|

##### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

|                         |  |  |
|-------------------------|--|--|
| Registered company name | GFS Chemicals, Inc.  | YSI Inc.   |
| Address                 | PO Box 245 Powell OH 43065 United States                       | 1700/1725 Brannum Ln Yellow Springs OH 45387 United States |
| Telephone               | 740-881-5501 800-858-9682                                      | (937) 767-7241   |
| Fax                     | 740-881-5989   | Not Available  |
| Website                 | <a href="http://www.gfschemicals.com">www.gfschemicals.com</a> | <a href="http://www.ysi.com">www.ysi.com</a>               |
| Email                   | service@gfschemicals.com                                       | MSDSinfo@ysi.com   |

##### Emergency phone number

|                                     |               |                  |
|-------------------------------------|---------------|------------------|
| Association / Organisation          | ChemTrec      | CHEMTREC         |
| Emergency telephone number(s)       | 800-424-9300  | (800) 424-9300   |
| Other emergency telephone number(s) | Not Available | 011 703-527-3887 |

#### SECTION 2 Hazard(s) identification

##### Classification of the substance or mixture

**Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.**


##### NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health, Red = Fire, Yellow = Reactivity and White = Special (Oxidizer or water reactive substances)

|                |   |
|----------------|---|
| Classification | Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2A, Sensitisation (Respiratory) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Reproductive Toxicity Category 1B |
|----------------|---|

##### Label elements

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

|             |        |
|-------------|--------|
| Signal word | Danger |
|-------------|--------|

**Hazard statement(s)**

|      |  |
|------|--|
| H315 | Causes skin irritation.  |
| H317 | May cause an allergic skin reaction.                                       |
| H319 | Causes serious eye irritation.   |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation.  |
| H360 | May damage fertility or the unborn child.                                  |

**Hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

|      |  |
|------|--|
| P201 | Obtain special instructions before use.  |
| P261 | Avoid breathing dust/fumes.  |
| P271 | Use only outdoors or in a well-ventilated area.                                  |
| P284 | [In case of inadequate ventilation] wear respiratory protection.                 |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P202 | Do not handle until all safety precautions have been read and understood.        |
| P264 | Wash all exposed external body areas thoroughly after handling.                  |
| P272 | Contaminated work clothing must not be allowed out of the workplace.             |

**Precautionary statement(s) Response**

|                |  |
|----------------|--|
| P304+P340      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |
| P308+P313      | IF exposed or concerned: Get medical advice/ attention.  |
| P342+P311      | If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider.   |
| 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.  |
| P333+P313      | If skin irritation or rash occurs: Get medical advice/attention.   |
| P337+P313      | If eye irritation persists: Get medical advice/attention.  |
| P302+P352      | IF ON SKIN: Wash with plenty of water.   |
| P332+P313      | If skin irritation occurs: Get medical advice/attention.   |
| P362+P364      | Take off contaminated clothing and wash it before reuse.   |

**Precautionary statement(s) Storage**

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

**Precautionary statement(s) Disposal**

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

No further product hazard information.

**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No     | %[weight] | Name  |
|------------|-----------|---|
| 7558-79-4  | 60-65     | <u>sodium phosphate, dibasic</u>              |
| 7647-14-5  | 16-22     | <u>sodium chloride</u>                        |
| 25102-12-9 | <10       | <u>EDTA dipotassium salt</u>                  |
| 532-32-1.  | <10       | <u>Sodium Benzoate (contains 99.9%)</u>       |
| 7558-80-7  | 3-4       | <u>sodium phosphate, monobasic, anhydrous</u> |
| 1405-41-0  | <1        | <u>gentamicin sulfate</u>                     |

**SECTION 4 First-aid measures****Description of first aid measures**

|                     |   |
|---------------------|---|
| <b>Eye Contact</b>  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul> |
| <b>Skin Contact</b> | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> </ul>  |

Continued...

|            |  |
|------------|--|
|            | <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</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> <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> </ul>       |
| Ingestion  | <ul style="list-style-type: none"> <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>▶ Seek medical advice.</li> </ul> |

**Most important symptoms and effects, both acute and delayed**

See Section 11

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

for phosphate salts intoxication:

- ▶ All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
- ▶ Ingestion of large quantities of phosphate salts (over 1.0 grams for an adult) may cause an osmotic catharsis resulting in diarrhoea and probable abdominal cramps. Larger doses such as 4-8 grams will almost certainly cause these effects in everyone. In healthy individuals most of the ingested salt will be excreted in the faeces with the diarrhoea and, thus, not cause any systemic toxicity. Doses greater than 10 grams hypothetically may cause systemic toxicity.
- ▶ Treatment should take into consideration both anionic and cation portion of the molecule.
- ▶ All phosphate salts, except calcium salts, have a hypothetical risk of hypocalcaemia, so calcium levels should be monitored.

Treat symptomatically.

Aminoglycoside antibiotics may be removed by haemodialysis or to a lesser extent by peritoneal dialysis. Calcium salts given intravenously have been used to counter neuromuscular blockade; the effectiveness of neostigmine has been variable.

MARTINDALE: The Extra Pharmacopoeia, 29th Edition.

**SECTION 5 Fire-fighting measures****Extinguishing media**

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

**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 |
|-----------------------------|--|

**Special protective equipment and precautions for fire-fighters**

|                              |  |
|------------------------------|--|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>   |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).</li> <li>▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.</li> <li>▶ In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL) are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Explosible Concentration", MEC).</li> <li>▶ When processed with flammable liquids/vapors/mists, ignitable (hybrid) mixtures may be formed with combustible dusts. Ignitable mixtures will increase the rate of explosion pressure rise and the Minimum Ignition Energy (the minimum amount of energy required to ignite dust clouds - MIE) will be lower than the pure dust in air mixture. The Lower Explosive Limit (LEL) of the vapour/dust mixture will be lower than the individual LELs for the vapors/mists or dusts.</li> <li>▶ A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.</li> <li>▶ Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.</li> <li>▶ Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.</li> <li>▶ Build-up of electrostatic charge may be prevented by bonding and grounding.</li> <li>▶ Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.</li> <li>▶ All movable parts coming in contact with this material should have a speed of less than 1-meter/sec.</li> <li>▶ A sudden release of statically charged materials from storage or process equipment, particularly at elevated temperatures and/ or pressure, may result in ignition especially in the absence of an apparent ignition source.</li> <li>▶ One important effect of the particulate nature of powders is that the surface area and surface structure (and often moisture content) can vary widely from sample to sample, depending of how the powder was manufactured and handled; this means that it is virtually</li> </ul> |

Continued...

impossible to use flammability data published in the literature for dusts (in contrast to that published for gases and vapours).

- ▶ Autoignition temperatures are often quoted for dust clouds (minimum ignition temperature (MIT)) and dust layers (layer ignition temperature (LIT)); LIT generally falls as the thickness of the layer increases.

Combustion products include:

- ▶ carbon monoxide (CO)
- ▶ carbon dioxide (CO<sub>2</sub>)
- ▶ hydrogen chloride
- ▶ phosgene
- ▶ nitrogen oxides (NO<sub>x</sub>)
- ▶ phosphorus oxides (PO<sub>x</sub>)
- ▶ other pyrolysis products typical of burning organic material.

May emit poisonous fumes.  
May emit corrosive fumes.

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

|                     |   |
|---------------------|---|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>   |
| <b>Major Spills</b> | <p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ <b>CAUTION:</b> Advise personnel in area.</li> <li>▶ Alert Emergency Services and tell them location and nature of hazard.</li> <li>▶ Control personal contact by wearing protective clothing.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ <b>IF DRY:</b> Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. <b>IF WET:</b> Vacuum/shovel up and place in labelled containers for disposal.</li> <li>▶ <b>ALWAYS:</b> Wash area down with large amounts of water and prevent runoff into drains.</li> <li>▶ If contamination of drains or waterways occurs, advise Emergency Services.</li> </ul> |

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

## SECTION 7 Handling and storage

### Precautions for safe handling

|                      |   |
|----------------------|---|
| <b>Safe handling</b> | <ul style="list-style-type: none"> <li>▶ Avoid skin contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ <b>DO NOT</b> allow material to come in direct contact with human skin or eyes.</li> <li>▶ <b>DO NOT</b> allow material to come in contact with exposed food or food contact surfaces.</li> <li>▶ Suitable PPE must be worn at all times.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)</li> <li>▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.</li> <li>▶ Establish good housekeeping practices.</li> <li>▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</li> <li>▶ Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion. According to NFPA Standard 654, dust layers 1/32 in. (0.8 mm) thick can be sufficient to warrant immediate cleaning of the area.</li> <li>▶ Do not use air hoses for cleaning.</li> <li>▶ Minimise dry sweeping to avoid generation of dust clouds. Vacuum dust-accumulating surfaces and remove to a chemical disposal area. Vacuums with explosion-proof motors should be used.</li> <li>▶ Control sources of static electricity. Dusts or their packages may accumulate static charges, and static discharge can be a source of ignition.</li> <li>▶ Solids handling systems must be designed in accordance with applicable standards (e.g. NFPA including 654 and 77) and other national guidance.</li> <li>▶ Do not empty directly into flammable solvents or in the presence of flammable vapors.</li> <li>▶ The operator, the packaging container and all equipment must be grounded with electrical bonding and grounding systems. Plastic bags and plastics cannot be grounded, and antistatic bags do not completely protect against development of static charges.</li> </ul> |
|----------------------|---|

Continued...

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|                                 |   |
|---------------------------------|---|
|                                 | <p>Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.</p> <ul style="list-style-type: none"> <li>▶ <b>Do NOT cut, drill, grind or weld such containers.</b></li> <li>▶ In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.</li> </ul>  |
| <p><b>Other information</b></p> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul> <p>For major quantities:</p> <ul style="list-style-type: none"> <li>▶ Consider storage in banded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).</li> <li>▶ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</li> </ul> |

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

|                                       |   |
|---------------------------------------|---|
| <p><b>Suitable container</b></p>      | <ul style="list-style-type: none"> <li>▶ Glass container is suitable for laboratory quantities</li> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>   |
| <p><b>Storage incompatibility</b></p> | <p>Salts of ethylenediaminetetraacetic acid (EDTA):</p> <ul style="list-style-type: none"> <li>▶ should not come into contact with strong oxidisers</li> <li>▶ are incompatible with metals such as zinc, aluminum, carbon steel, copper, copper alloys, galvanized metals and nickel.</li> <li>▶ in contact with metals, such as aluminum, may generate flammable hydrogen gas</li> <li>▶ in contact with bases, may evolve hydrogen and oxygen</li> <li>▶ Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.</li> <li>▶ These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.</li> <li>▶ The state of subdivision may affect the results.</li> <li>▶ Phosphates are incompatible with oxidising and reducing agents.</li> <li>▶ Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides.</li> <li>▶ Partial oxidation of phosphates by oxidizing agents may result in the release of toxic phosphorus oxides.</li> <li>▶ Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.</li> </ul> |

**SECTION 8 Exposure controls / personal protection**

**Control parameters**

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Not Available

**Emergency Limits**


| Ingredient            | TEEL-1    | TEEL-2   | TEEL-3   |
|-----------------------|-----------|----------|----------|
| sodium chloride       | 0.5 ppm   | 2 ppm    | 20 ppm   |
| EDTA dipotassium salt | 1.5 mg/m3 | 16 mg/m3 | 97 mg/m3 |

| Ingredient                             | Original IDLH | Revised IDLH  |
|--|---------------|---------------|
| sodium phosphate, dibasic              | Not Available | Not Available |
| sodium chloride                        | Not Available | Not Available |
| EDTA dipotassium salt                  | Not Available | Not Available |
| Sodium Benzoate (contains 99.9%)       | Not Available | Not Available |
| sodium phosphate, monobasic, anhydrous | Not Available | Not Available |
| gentamicin sulfate                     | Not Available | Not Available |

**Exposure controls**

|  |  |
|--|--|
| <p><b>Appropriate engineering controls</b></p> | <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. 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> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <ul style="list-style-type: none"> <li>▶ Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.</li> <li>▶ Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.</li> <li>▶ If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of: <ul style="list-style-type: none"> <li>(a): particle dust respirators, if necessary, combined with an absorption cartridge;</li> <li>(b): filter respirators with absorption cartridge or canister of the right type;</li> <li>(c): fresh-air hoods or masks</li> </ul> </li> <li>▶ Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.</li> <li>▶ Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.</li> </ul> <p>Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.</p> <p>Type of Contaminant: _____ Air Speed: _____</p> |
|--|--|

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|   | <p>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</p> <p>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</p> <p>Within each range the appropriate value depends on:</p> <table border="1"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 ft/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>  | Lower end of the range | Upper end of the range | 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | 2: Contaminants of low toxicity or of nuisance value only | 2: Contaminants of high toxicity | 3: Intermittent, low production. | 3: High production, heavy use | 4: Large hood or large air mass in motion | 4: Small hood-local control only | <p>1-2.5 m/s (200-500 ft/min)</p> <p>2.5-10 m/s (500-2000 ft/min)</p> |
|---|--|------------------------|------------------------|---|---------------------------------|---|----------------------------------|----------------------------------|-------------------------------|---|----------------------------------|---|
| Lower end of the range  | Upper end of the range   |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| 1: Room air currents minimal or favourable to capture                               | 1: Disturbing room air currents  |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| 2: Contaminants of low toxicity or of nuisance value only                           | 2: Contaminants of high toxicity   |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| 3: Intermittent, low production.  | 3: High production, heavy use  |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| 4: Large hood or large air mass in motion   | 4: Small hood-local control only   |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| <p><b>Individual protection measures, such as personal protective equipment</b></p> |   |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| <p><b>Eye and face protection</b></p>   | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].</li> </ul>   |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| <p><b>Skin protection</b></p>   | <p>See Hand protection below</p>   |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| <p><b>Hands/feet protection</b></p>   | <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. 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.</p> <p>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.</p> <p>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.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>- frequency and duration of contact,</li> <li>- chemical resistance of glove material,</li> <li>- glove thickness and</li> <li>- dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- 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.</li> <li>- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>- Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>- Excellent when breakthrough time &gt; 480 min</li> <li>- Good when breakthrough time &gt; 20 min</li> <li>- Fair when breakthrough time &lt; 20 min</li> <li>- Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>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.</p> <p>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.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- 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</li> </ul> <p>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.</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>▶ polychloroprene.</li> <li>▶ nitrile rubber.</li> <li>▶ butyl rubber.</li> <li>▶ fluorocautchouc.</li> <li>▶ polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/ or degradation constantly.</p> |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| <p><b>Body protection</b></p>   | <p>See Other protection below</p>  |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |
| <p><b>Other protection</b></p>  | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C apron.</li> <li>▶ Barrier cream.</li> </ul>  |                        |                        |   |                                 |   |                                  |                                  |                               |   |                                  |   |

- ▶ Skin cleansing cream.
- ▶ Eye wash unit.

**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:

YSI 2787 Ethanol Buffer Kit

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

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

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

**SECTION 9 Physical and chemical properties****Information on basic physical and chemical properties**

| Appearance                                     | White                |   |                |
|--|----------------------|---|----------------|
| Physical state                                 | Divided Solid Powder | Relative density (Water = 1)                        | >1             |
| Odour  | Not Available        | Partition coefficient n-octanol / water             | Not Available  |
| Odour threshold                                | Not Available        | Auto-ignition temperature (°C)                      | Not Available  |
| pH (as supplied)                               | 6.5-7.5              | Decomposition temperature (°C)                      | Not Available  |
| Melting point / freezing point (°C)            | >260                 | Viscosity (cSt)                                     | Not Available  |
| Initial boiling point and boiling range (°C)   | Not Available        | Molecular weight (g/mol)                            | Not Available  |
| Flash point (°C)                               | Not Available        | Taste   | Not Available  |
| Evaporation rate                               | Not Available        | Explosive properties                                | Not Available  |
| Flammability                                   | Not Applicable       | Oxidising properties                                | Not Available  |
| Upper Explosive Limit (%)                      | Not Available        | Surface Tension (dyn/cm or mN/m)                    | Not Applicable |
| Lower Explosive Limit (%)                      | Not Available        | Volatile Component (%vol)                           | Not Available  |
| Vapour pressure (kPa)                          | Not Available        | Gas group   | Not Available  |
| Solubility in water                            | Miscible             | pH as a solution (1%)                               | Not Available  |
| Vapour density (Air = 1)                       | Not Available        | VOC g/L   | Not Available  |
| Heat of Combustion (kJ/g)                      | Not Available        | Ignition Distance (cm)                              | Not Available  |
| Flame Height (cm)                              | Not Available        | Flame Duration (s)                                  | Not Available  |
| Enclosed Space Ignition Time Equivalent (s/m3) | Not Available        | Enclosed Space Ignition Deflagration Density (g/m3) | Not Available  |
| Nanoform Solubility                            | Not Available        | Nanoform Particle Characteristics                   | Not Available  |
| Particle Size                                  | 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

|   |  |
|---|--|
| <b>a) Acute Toxicity</b>                    | Based on available data, the classification criteria are not met.  |
| <b>b) Skin Irritation/Corrosion</b>         | There is sufficient evidence to classify this material as skin corrosive or irritating.                    |
| <b>c) Serious Eye Damage/Irritation</b>     | There is sufficient evidence to classify this material as eye damaging or irritating                       |
| <b>d) Respiratory or Skin sensitisation</b> | There is sufficient evidence to classify this material as sensitising to skin or the respiratory system    |
| <b>e) Mutagenicity</b>                      | Based on available data, the classification criteria are not met.  |
| <b>f) Carcinogenicity</b>                   | Based on available data, the classification criteria are not met.  |
| <b>g) Reproductivity</b>                    | There is sufficient evidence to classify this material as toxic to reproductivity                          |
| <b>h) STOT - Single Exposure</b>            | There is sufficient evidence to classify this material as toxic to specific organs through single exposure |
| <b>i) STOT - Repeated Exposure</b>          | Based on available data, the classification criteria are not met.  |
| <b>j) Aspiration Hazard</b>                 | Based on available data, the classification criteria are not met.  |

|                     |  |
|---------------------|--|
| <b>Inhaled</b>      | The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.<br>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.   |
| <b>Ingestion</b>    | Accidental ingestion of the material may be damaging to the health of the individual.<br>When given by mouth, injected, or applied as an aerosol to open wounds, aminoglycoside antibiotics may cause irreversible, total or partial deafness. This deafness is dose-related.<br>As absorption of phosphates from the bowel is poor, poisoning this way is less likely. Effects can include vomiting, tiredness, fever, diarrhoea, low blood pressure, slow pulse, cyanosis, spasms of the wrist, coma and severe body spasms.   |
| <b>Skin Contact</b> | The material may accentuate any pre-existing dermatitis condition<br>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.<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 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>The material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.  |
| <b>Eye</b>          | Alkaline salts may cause severe irritation to the eyes and precautions should be taken to avoid direct eye contact.<br>This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.  |
| <b>Chronic</b>      | Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.<br>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.<br>Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material.<br>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.<br>Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung.<br>Sodium phosphate dibasic can cause stones in the kidney, loss of mineral from the bones and loss of thyroid gland function. |

|   | TOXICITY   | IRRITATION   |
|---|--|--|
| <b>YSI 2787 Ethanol Buffer Kit</b>      | Not Available                                      | Not Available  |
| <b>sodium phosphate, dibasic</b>        | Dermal (rabbit) LD50: >300 mg/kg <sup>[1]</sup>    | Eye (Rodent - rabbit): 500mg/24H - Mild                          |
|   | Inhalation (Rat) LC50: >0.83 mg/l4h <sup>[1]</sup> | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |
|   | Oral (Rat) LD50: >500 mg/kg <sup>[1]</sup>         | Skin (Rodent - rabbit): 500mg/24H - Mild                         |
|   |  | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |
| <b>sodium chloride</b>                  | Dermal (rabbit) LD50: >10000 mg/kg <sup>[1]</sup>  | Eye (Rodent - rabbit): 100mg/24H - Moderate                      |
|   | Inhalation (Rat) LC50: >10.5 mg/l4h <sup>[1]</sup> | Eye (Rodent - rabbit): 10mg - Moderate                           |
|   | Oral (Rat) LD50: 3000 mg/kg <sup>[2]</sup>         | Eye: adverse effect observed (irritating) <sup>[1]</sup>         |
|   |  | Skin (Rodent - rabbit): 500mg/24H - Mild                         |
|   |  | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |
| <b>EDTA dipotassium salt</b>            | Inhalation (Rat) LC50: >5.8 mg/l4h <sup>[1]</sup>  | Eye (Rodent - rabbit): 100mg                                     |
|   | Oral (Rat) LD50: 2800 mg/kg <sup>[1]</sup>         | Eye (Rodent - rabbit): 100mg/30S - Mild                          |
|   |  | Eye: adverse effect observed (irritating) <sup>[1]</sup>         |
|   |  | Skin (Rodent - rabbit): 500mg - Mild                             |
|   |  | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |
| <b>Sodium Benzoate (contains 99.9%)</b> | Not Available                                      | Not Available  |

## YSI 2787 Ethanol Buffer Kit

|   |  |  |
|---|--|--|
| <b>sodium phosphate, monobasic, anhydrous</b> | <b>TOXICITY</b>                                    | <b>IRRITATION</b>  |
|   | Dermal (rabbit) LD50: >300 mg/kg <sup>[1]</sup>    | Eye (Human): 50mg - Mild   |
|   | Inhalation (Rat) LC50: >0.83 mg/l4h <sup>[1]</sup> | Eye (Rodent - rabbit): 150mg - Mild                              |
|   | Oral (Rat) LD50: >500 mg/kg <sup>[1]</sup>         | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |
|   |  | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |
| <b>gentamicin sulfate</b>                     | <b>TOXICITY</b>                                    | <b>IRRITATION</b>  |
|   | Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>        | Not Available  |

**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

|  |   |
|--|---|
| <b>SODIUM CHLORIDE</b>   | The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.   |
| <b>EDTA DIPOTASSIUM SALT</b>   | No significant acute toxicological data identified in literature search.<br>For ethylenediaminetetraacetic acid (EDTA) and its salts:<br>EDTA is a strong organic acid, with a high affinity for alkaline-earth ions (for example, calcium and magnesium) and heavy-metal ions (such as lead and mercury), resulting in highly stable chelate complexes. The ability of EDTA to complex is used commercially to either promote or inhibit chemical reactions, depending on application.<br>EDTA and its salts are expected to be absorbed by the lungs and the gastrointestinal tract; absorption through skin is unlikely. They cause mild skin irritation, and severe eye irritation. The greatest risk in the human body will occur when the EDTA attempts to scavenge the trace metals used and required by the body. The binding of divalent and trivalent cations by EDTA can cause mineral deficiencies, such as zinc deficiency. These appear to be responsible for all of the known pharmacological effects.<br>EDTA and its salts are mostly eliminated through the urine, with 5% eliminated via the bile, along with the metal ions which are bound to it. Trisodium EDTA has not been found to cause cancer. EDTA and its salts are not likely to cause harm to children and infants at levels likely to be encountered.   |
| <b>GENTAMICIN SULFATE</b>  | Most neuromuscular blocking agents facilitate histamine release in susceptible patients. Adverse reactions include skin flushing, temporary low blood pressure, high blood pressure, fast or slow heart beat, spasm of the bronchi and anaphylaxis-like (extreme allergic) reactions.<br>A potential ototoxin<br>A substantial number of medications and common industrial chemicals can also cause hearing loss themselves or exacerbate the effects of noise. These chemicals are said to be ototoxic (oto = ear, toxic = poisonous).<br>Otoxicity specifically involves the cochlea or auditory nerve and sometimes the vestibular system, for example, as a side effect of a drug. The effects of ototoxicity can be reversible and temporary, or irreversible and permanent.<br>Symptoms of ototoxicity include partial or profound hearing loss, vertigo, and tinnitus.<br>Otoxicity in the cochlea may cause hearing loss of the high-frequency pitch ranges or complete deafness, or losses at points between. It may present with bilaterally symmetrical symptoms, or asymmetrically, with one ear developing the condition after the other or not at all. The time frames for progress of the disease vary greatly and symptoms of hearing loss may be temporary or permanent.<br>Currently it is thought that more than 750 different groups of chemicals are potentially ototoxic, but only a few of these have been studied in any depth.<br>No specific treatment may be available, but withdrawal of the ototoxic substance may be warranted. Co-administration of anti-oxidants may limit the ototoxic effects. There is no cure or restoration capability if the damage becomes permanent, although cochlear nerve terminal regeneration has been observed in chickens, which suggests that there may be a way to accomplish this in humans.<br>It is difficult to distinguish between nerve damage and structural damage due to similarity of the symptoms. Diagnosis of ototoxicity typically results from ruling out all other possible sources of hearing loss and is often the catchall explanation for the symptoms. Treatment options vary depending on the patient and the diagnosis. Some patients experience only temporary symptoms that do not require drastic treatment while others can be treated with medication. Physical therapy may prove useful for regaining balance and walking abilities.<br>Aminoglycosides have bactericidal activity in which they bind to the bacteria ribosomal 30S subunit. Specifically, they are believed to bind to the A-site (aminoacyl) on the 16S rRNA, a component of the ribosomal 30S subunit. Through this binding, the genetic code gets misread, and the translation is disrupted, leading to the bacteria being unable to carry out protein synthesis<br>Acquired resistance of aminoglycosides may arise through over expression of efflux pumps and ribosomal modification by bacteria, which results from amino acid or rRNA sequence mutations aminoglycosides, are ineffective against bacterial isolates that produce 16S rRNA methyltransferases.<br>The main noted adverse effects of aminoglycosides are ototoxicity, nephrotoxicity, and neuromuscular blockade.<br>Aminoglycoside-induced ototoxicity has been reported to occur in 2 to 45% of adults. The ototoxicity can be vestibular and/or cochlear and is typically dose-dependent. Gentamicin, streptomycin, and tobramycin more commonly cause vestibular damage, while amikacin and kanamycin result in more cochlear damage. Studies have found that aminoglycosides seem to create reactive oxygen species within the inner ear; this, in turn, causes damage to the vestibular and cochlear sensory cells along with cochlear neurons. Often the vestibular loss is salvageable while hearing loss is irreversible<br>nephrotoxicity due to aminoglycosides may appear in up to 10 to 25% of patients. In patients receiving aminoglycoside therapy, renal tubular toxicity decreased blood flow to the kidneys, and reduced GFR most commonly causes the nephrotoxicity seen. Renal effects with aminoglycosides generally are reversible. Furthermore, there are risk factors associated with the development of aminoglycoside-induced nephrotoxicity, including dehydration, pregnancy, and hepatic dysfunction. Taking other medications concurrently with aminoglycosides that can cause nephrotoxicity, such as NSAIDs, cyclosporine, and diuretics, also puts a patient at risk for renal problems. It is important to monitor patient renal function when taking aminoglycosides.<br>Aminoglycosides have also demonstrated correlations with neuromuscular blockade. Although this is less common than ototoxicity and nephrotoxicity, patients with diseases affecting the neuromuscular junction and patients using medications prolonging neuromuscular blockade, most notably calcium channel blockers, should be cautious when using aminoglycoside.<br>Aminoglycosides should be avoided in patients with myasthenia gravis because of the risk of prolonged neuromuscular blockade. |
| <b>YSI 2787 Ethanol Buffer Kit &amp; SODIUM PHOSPHATE, DIBASIC &amp; SODIUM CHLORIDE &amp; EDTA DIPOTASSIUM SALT &amp; SODIUM PHOSPHATE, MONOBASIC, ANHYDROUS &amp; GENTAMICIN SULFATE</b> | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.   |
| <b>YSI 2787 Ethanol Buffer Kit &amp; GENTAMICIN SULFATE</b>  | Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.   |

## YSI 2787 Ethanol Buffer Kit

|   |  |                                 |          |
|---|--|---------------------------------|----------|
| <b>YSI 2787 Ethanol Buffer Kit &amp; EDTA DIPOTASSIUM SALT &amp; GENTAMICIN SULFATE</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. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested. |                                 |          |
| <b>SODIUM PHOSPHATE, DIBASIC &amp; SODIUM PHOSPHATE, MONOBASIC, ANHYDROUS</b>           | The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.  |                                 |          |
| <b>SODIUM PHOSPHATE, DIBASIC &amp; SODIUM CHLORIDE</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>✗</b>   | <b>Carcinogenicity</b>          | <b>✗</b> |
| <b>Skin Irritation/Corrosion</b>  | <b>✓</b>   | <b>Reproductivity</b>           | <b>✓</b> |
| <b>Serious Eye Damage/Irritation</b>  | <b>✓</b>   | <b>STOT - Single Exposure</b>   | <b>✓</b> |
| <b>Respiratory or Skin sensitisation</b>  | <b>✓</b>   | <b>STOT - Repeated Exposure</b> | <b>✗</b> |
| <b>Mutagenicity</b>   | <b>✗</b>   | <b>Aspiration Hazard</b>        | <b>✗</b> |

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

## SECTION 12 Ecological information

## Toxicity

| YSI 2787 Ethanol Buffer Kit            | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|--|---------------|--------------------|-------------------------------|-----------------|---------------|
|  | Not Available | Not Available      | Not Available                 | Not Available   | Not Available |
| sodium phosphate, dibasic              | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | EC50          | 72h                | Algae or other aquatic plants | >100mg/l        | 2             |
|  | EC50          | 48h                | Crustacea                     | >100mg/l        | 2             |
|  | NOEC(ECx)     | 48h                | Crustacea                     | <59mg/L         | 4             |
| sodium chloride                        | LC50          | 96h                | Fish                          | >100mg/l        | 2             |
|  | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | LC50          | 96h                | Fish                          | 1000mg/L        | 4             |
|  | EC50          | 72h                | Algae or other aquatic plants | 20.76-36.17mg/L | 4             |
|  | EC50          | 48h                | Crustacea                     | 0.004-0.006mg/L | 4             |
| EDTA dipotassium salt                  | EC50          | 96h                | Algae or other aquatic plants | 1110.36mg/L     | 4             |
|  | NOEC(ECx)     | 6h                 | Fish                          | 0.001mg/L       | 4             |
|  | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | EC50          | 72h                | Algae or other aquatic plants | 2.77mg/l        | 2             |
|  | EC50          | 48h                | Crustacea                     | 140mg/l         | 2             |
| Sodium Benzoate (contains 99.9%)       | LC50          | 96h                | Fish                          | 41mg/l          | 2             |
|  | NOEC(ECx)     | 72h                | Algae or other aquatic plants | 0.39mg/l        | 2             |
|  | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | Not Available | Not Available      | Not Available                 | Not Available   | Not Available |
| sodium phosphate, monobasic, anhydrous | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | EC50          | 72h                | Algae or other aquatic plants | >100mg/l        | 2             |
|  | EC50          | 48h                | Crustacea                     | >100mg/l        | 2             |
|  | NOEC(ECx)     | 96h                | Fish                          | 100mg/l         | 2             |
| gentamicin sulfate                     | LC50          | 96h                | Fish                          | >100mg/l        | 2             |
|  | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | EC50          | 48h                | Crustacea                     | 16.1-28.4mg/L   | 4             |
|  | EC50(ECx)     | 48h                | Crustacea                     | 16.1-28.4mg/L   | 4             |
| LC50                                   | 96h           | Fish               | >955mg/L                      | 4               |               |

Continued...

|                |  |
|----------------|--|
| <b>Legend:</b> | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data |
|----------------|--|

For ethylenediaminetetraacetic acid (EDTA) (and its salts):

Environmental Fate: Based on its physical and chemical properties and test results, EDTA is not expected to volatilize from soil or water. When released to the atmosphere, EDTA should adhere to particulate matter, and appears to have the potential to photolyse. In water, EDTA may react with photochemically generated hydroxyl radicals (half-life of approximately 230 days or 8 months). When released to soil, EDTA is mobile and expected to complex trace metals and alkaline earth metals, thereby causing an increase in the total solubility of the metals. EDTA may eventually predominate as the Fe(III) chelate in acidic soils and as the Ca chelate in alkaline soils. When released to water, EDTA is also expected to form soluble complexes with trace metals and alkaline earth metals. There is no significant adsorption to sediments or suspended solids in water, and it is not retained or altered chemically in typical water treatment facilities. Degradation is slow in soil and water, with aerobic biodegradation (mineralisation) being the dominant mechanism. Possible biodegradation products include ethylenediamine triacetic acid, iminodiacetic acid, N,N-ethylenediamine diacetic acid, ethylenediamine monoacetic acid, nitrioltriacetic acid and glycine. Resistance to degradation is associated with the high thermodynamic stability of metal complexes and is problematic for treatment facilities. In a variety of representative soils, common values for the degree of aerobic metabolism of EDTA at a temperature of 30 C and soil concentrations of 2-4 ppm are 13-45% after 15 weeks and 65-70% after 45 weeks. Biodegradation in subsoil or under anaerobic conditions is negligible, as is abiotic degradation in the environment, except for photolysis. Results in sediments were similar to those for soil. Although EDTA is slow to degrade under typical environmental conditions, it is not expected to bioconcentrate.

Ecotoxicity: For EDTA and various salts: Fish LC50 (96 h): 20-430 mg/l; Daphnia LC50 (48 h): 14-100 mg/l; Green algae EC50 (96 h): 3-60 mg/l. EDTA compounds range from practically non-toxic to moderately toxic on an acute basis depending on the salt. Depending on the compound, models for acute and chronic toxicity show that algae and invertebrates are among the most sensitive species. EDTA and its salts also do not appear to be very toxic for terrestrial wild mammals and adverse effects from reasonably expected agricultural uses are not expected.

For Phosphate: The principal problems of phosphate contamination of the environment relates to eutrophication processes in lakes and ponds. Phosphorus is an essential plant nutrient and is usually the limiting nutrient for blue-green algae.

Aquatic Fate: Lakes overloaded with phosphates is the primary catalyst for the rapid growth of algae in surface waters. Planktonic algae cause turbidity and flotation films. Shore algae cause ugly muddying, films and damage to reeds. Decay of these algae causes oxygen depletion in the deep water and shallow water near the shore. The process is self-perpetuating because an anoxic condition at the sediment/water interface causes the release of more adsorbed phosphates from the sediment. The growth of algae produces undesirable effects on the treatment of water for drinking purposes, on fisheries, and on the use of lakes for recreational purposes.

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

#### Persistence and degradability

| Ingredient      | Persistence: Water/Soil | Persistence: Air |
|-----------------|-------------------------|------------------|
| sodium chloride | LOW                     | LOW              |

#### Bioaccumulative potential

| Ingredient                             | Bioaccumulation      |
|--|----------------------|
| sodium phosphate, dibasic              | LOW (LogKOW = -5.8)  |
| sodium chloride                        | LOW (LogKOW = 0.54)  |
| sodium phosphate, monobasic, anhydrous | LOW (LogKOW = -3.96) |

#### Mobility in soil

| Ingredient      | Mobility             |
|-----------------|----------------------|
| sodium chloride | LOW (Log KOC = 14.3) |

#### Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

### 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 SDS 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. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. 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. In most instances the supplier of the material should be consulted.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> </ul> |
|-------------------------------------|--|

### SECTION 14 Transport information

#### Labels Required

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

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Continued...

**14.7. Maritime transport in bulk according to IMO instruments****14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

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

| Product name                           | Group          |
|--|----------------|
| sodium phosphate, dibasic              | Not Applicable |
| sodium chloride                        | Not Applicable |
| EDTA dipotassium salt                  | Not Applicable |
| Sodium Benzoate (contains 99.9%)       | Not Applicable |
| sodium phosphate, monobasic, anhydrous | Not Applicable |
| gentamicin sulfate                     | Not Applicable |

**14.7.3. Transport in bulk in accordance with the IGC Code**

| Product name                           | Ship Type      |
|--|----------------|
| sodium phosphate, dibasic              | Not Applicable |
| sodium chloride                        | Not Applicable |
| EDTA dipotassium salt                  | Not Applicable |
| Sodium Benzoate (contains 99.9%)       | Not Applicable |
| sodium phosphate, monobasic, anhydrous | Not Applicable |
| gentamicin sulfate                     | Not Applicable |

**SECTION 15 Regulatory information****Safety, health and environmental regulations / legislation specific for the substance or mixture****sodium phosphate, dibasic is found on the following regulatory lists**

US - Massachusetts - Right To Know Listed Chemicals  
 US - New Jersey Right to Know Hazardous Substances  
 US - Pennsylvania - Hazardous Substance List  
 US CWA (Clean Water Act) - List of Hazardous Substances  
 US EPA Pesticide Chemical Search - Antimicrobial  
 US EPA Pesticide Chemical Search - Conventional Chemical  
 US New York City Community Right-to-Know: List of Hazardous Substances  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**sodium chloride is found on the following regulatory lists**

US DOE Temporary Emergency Exposure Limits (TEELs)  
 US EPA Pesticide Chemical Search - Antimicrobial  
 US EPA Pesticide Chemical Search - Biopesticides  
 US EPA Pesticide Chemical Search - Conventional Chemical  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**EDTA dipotassium salt is found on the following regulatory lists**

US DOE Temporary Emergency Exposure Limits (TEELs)  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**Sodium Benzoate (contains 99.9%) is found on the following regulatory lists**

Not Applicable

**sodium phosphate, monobasic, anhydrous is found on the following regulatory lists**

US EPA Pesticide Chemical Search - Antimicrobial  
 US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**gentamicin sulfate is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List  
 US - California Proposition 65 - Reproductive Toxicity  
 US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List

**Additional Regulatory Information**

Not Applicable

**Federal Regulations****Superfund Amendments and Reauthorization Act of 1986 (SARA)****Section 311/312 hazard categories**

|   |    |
|---|----|
| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
| Gas under pressure                              | No |
| Explosive                                       | No |

|  |     |
|--|-----|
| Self-heating   | No  |
| Pyrophoric (Liquid or Solid)                                 | No  |
| Pyrophoric Gas   | No  |
| Corrosive to metal   | No  |
| Oxidizer (Liquid, Solid or Gas)                              | No  |
| Organic Peroxide   | No  |
| Self-reactive  | No  |
| In contact with water emits flammable gas                    | No  |
| Combustible Dust   | No  |
| Carcinogenicity  | No  |
| Acute toxicity (any route of exposure)                       | No  |
| Reproductive toxicity  | Yes |
| Skin Corrosion or Irritation                                 | Yes |
| Respiratory or Skin Sensitization                            | Yes |
| Serious eye damage or eye irritation                         | Yes |
| Specific target organ toxicity (single or repeated exposure) | No  |
| Aspiration Hazard  | No  |
| Germ cell mutagenicity                                       | No  |
| Simple Asphyxiant  | No  |
| Hazards Not Otherwise Classified                             | No  |

**US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)**

| Name                      | Reportable Quantity in Pounds (lb) | Reportable Quantity in kg |
|---------------------------|------------------------------------|---------------------------|
| sodium phosphate, dibasic | 5000                               | 2270                      |

**US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)**

None Reported

**Additional Federal Regulatory Information**

Not Applicable

**State Regulations****US. California Proposition 65**

**⚠ WARNING:** This product can expose you to chemicals including **gentamicin sulfate**, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**Additional State Regulatory Information**

Not Applicable

**National Inventory Status**

| National Inventory                                | Status  |
|---|---|
| Australia - AIIIC / Australia Non-Industrial Use  | Yes   |
| Canada - DSL                                      | No (gentamicin sulfate)   |
| Canada - NDSL                                     | No (sodium phosphate, dibasic; sodium chloride; EDTA dipotassium salt; sodium phosphate, monobasic, anhydrous; gentamicin sulfate)  |
| China - IECSC                                     | Yes   |
| Europe - EINEC / ELINCS / NLP                     | Yes   |
| Japan - ENCS                                      | Yes   |
| Korea - KECI                                      | Yes   |
| New Zealand - NZIoC                               | Yes   |
| Philippines - PICCS                               | Yes   |
| USA - TSCA  | TSCA Inventory 'Active' substance(s) (sodium phosphate, dibasic; sodium chloride; EDTA dipotassium salt; sodium phosphate, monobasic, anhydrous); No (gentamicin sulfate)                         |
| Taiwan - TCSI                                     | Yes   |
| Mexico - INSQ                                     | No (EDTA dipotassium salt)  |
| Vietnam - NCI                                     | Yes   |
| Russia - FBEPH                                    | No (gentamicin sulfate)   |
| UAE - Control List (Banned/Restricted Substances) | No (sodium phosphate, dibasic; sodium chloride; EDTA dipotassium salt; sodium phosphate, monobasic, anhydrous; gentamicin sulfate)  |
| <b>Legend:</b>                                    | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

**SECTION 16 Other information**

|               |            |
|---------------|------------|
| Revision Date | 09/27/2018 |
| Initial Date  | 09/20/2018 |

**Other information**

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

**Definitions and abbreviations**

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

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