

Scroll down for all Safety Data Sheets (SDS) for this product.

Total Enclosures: 2



Simplicity in Water Analysis

## Cover Page for Safety Data Sheet

Thank you for choosing CHEMetrics, Inc. We appreciate your business. In order to best serve your needs for accurate and complete Safety Data, we offer the following information as supplemental to the attached SDS.

**SDS No.:** R1605

**Version No.:** 2.5

**Product Name:** Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone and Peracetic Acid CHEMets® Refills & Vacu-vials® Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets® Refill

**Part Nos.:** R-1605, K-1613 Ampoules, R-2500, R-2504, R-2509, K-2513 Ampoules, K-2523 Ampoules, K-2703 Ampoules, R-2705, R-5502, K-5513 Ampoules, R-5808, R-7404, K-7423 Ampoules, R-7904, R-7904A, R-7904B, R-7904C, R-7904D, K-7913 Ampoules

### Product Descriptions:

*CHEMets Refills:* Sealed glass ampoules, 7 mm OD, for visual colorimetric water analysis. Each CHEMet™ ampoule contains approximately 0.22 mL of liquid reagent sealed under vacuum. Refills contain 30 ampoules, test kits contain 1 refill.

*VACUettes Refills:* Sealed glass ampoules, 7 mm OD, with small glass capillary attached, for visual colorimetric water analysis. Each VACUette™ ampoule contains approximately 0.22 mL of liquid reagent sealed under vacuum. Refills contain 30 ampoules, test kits contain 1 refill.

*Vacu-vials Ampoules:* Sealed glass ampoules, 13 mm OD, for instrumental colorimetric water analysis. Each Vacu-vial™ ampoule contains approximately 0.8 mL of liquid reagent sealed under vacuum. Test kits contain 30 ampoules.

### Addendum to Section 14 Transport Information:

Shipping container markings and labels for this product, as received, may vary from the contents of section 14 of the SDS for one or both of the following reasons:

- CHEMetrics has packaged this product as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations.
- CHEMetrics has packaged this product as part of a test kit or reagent set composed of various chemical reagents and elected to ship as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and markings in accordance with applicable transportation regulations.

### Additional Information:

- "Print Date" = Revision Date (expressed as DD/MM/YYYY)
- Test kits and reagents sets may contain additional chemical reagents. See separate SDS(s).

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## Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid CHEMets Refills & Vacu-vials Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets Refill

CHEMetrics, Inc.

Chemwatch Hazard Alert Code: 0

Chemwatch: 9-87748

SDS No: R1605

Version No: 2.5

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 19/11/2014  
Print (Revision) Date: 09/04/2018  
S.GHS.USA.EN

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

#### Product Identifier

|                               |  |
|-------------------------------|--|
| Product name                  | Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid CHEMets Refills & Vacu-vials Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets Refill   |
| Synonyms                      | Part Nos.: R-1605, K-1613 Ampoules, R-2500, R-2504, R-2509, K-2513 Ampoules, K-2523 Ampoules, K-2703 Ampoules, R-2705, R-5502, K-5513 Ampoules, R-5808, R-7404, K-7423 Ampoules, R-7904, R-7904A, R-7904B, R-7904C, R-7904D, K-7913 Ampoules |
| Proper shipping name          | Not Applicable   |
| Chemical formula              | Not Applicable   |
| Other means of identification | Not Available  |
| CAS number                    | Not Applicable   |

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

|                          |  |
|--------------------------|--|
| Relevant identified uses | Component of water analysis test kits I-2001, I-2005, I-2019, I-2020, K-1605, K-1613, K-2500, K-2504, K-2504A, K-2504B, K-2504C, K-2504D, K-2513, K-2523, K-2703, K-2705, K-5502, K-5513, K-5808, K-5816, K-7404, K-7423, K-7904, K-7904A, K-7904B, K-7904C, K-7904D, K-7913 |
|--------------------------|--|

#### Details of the manufacturer/importer

|                         |   |
|-------------------------|---|
| Registered company name | CHEMetrics, Inc.                                    |
| Address                 | 4295 Catlett Road, Midland, VA. 22728 United States |
| Telephone               | 1-540-788-9026                                      |
| Fax                     | 1-540-788-4856                                      |
| Website                 | www.chemetrics.com                                  |
| Email                   | technical@chemetrics.com                            |

#### Emergency telephone number

|                                   |                  |
|-----------------------------------|------------------|
| Association / Organisation        | ChemTel Inc.     |
| Emergency telephone numbers       | 1-800-255-3924   |
| Other emergency telephone numbers | +01-813-248-0585 |

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

|                    |                             |
|--------------------|-----------------------------|
| GHS Classification | Flammable Liquid Category 4 |
|--------------------|-----------------------------|

#### Label elements

|                    |                |
|--------------------|----------------|
| GHS label elements | Not Applicable |
|--------------------|----------------|

|             |                |
|-------------|----------------|
| SIGNAL WORD | <b>WARNING</b> |
|-------------|----------------|

#### Hazard statement(s)

|      |                    |
|------|--------------------|
| H227 | Combustible liquid |
|------|--------------------|

#### Precautionary statement(s) Prevention

|      |  |
|------|--|
| P101 | If medical advice is needed, have product container or label at hand.                          |
| P102 | Keep out of reach of children.   |
| P103 | Read label before use.   |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |

Continued...

## Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid CHEMets Refills & Vacu-vials Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets Refill

|             |  |
|-------------|--|
| <b>P280</b> | Wear protective gloves/protective clothing/eye protection/face protection. |
|-------------|--|

### Precautionary statement(s) Response

|                  |  |
|------------------|--|
| <b>P370+P378</b> | In case of fire: Use... to extinguish. |
|------------------|--|

### Precautionary statement(s) Storage

|                  |  |
|------------------|--|
| <b>P403+P235</b> | Store in a well-ventilated place. Keep cool. |
|------------------|--|

### Precautionary statement(s) Disposal

|             |  |
|-------------|--|
| <b>P501</b> | 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   |
|---------------|-----------|--|
| 7732-18-5     | >94       | <a href="#">water</a>                                  |
| 67-64-1       | <4        | <a href="#">acetone</a>                                |
| 7778-77-0     | 1         | <a href="#">potassium phosphate, monobasic</a>         |
| 62637-92-7    | 0.1       | <a href="#">N,N-diethyl-p-phenylenediamine oxalate</a> |
| Not Available | <1        | Proprietary ingredient                                 |
| Not Available | <0.1      | Proprietary ingredient                                 |

## SECTION 4 FIRST AID MEASURES

### Description of first aid measures

|                     |  |
|---------------------|--|
| <b>Eye Contact</b>  | <p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, 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 or hair contact occurs:</p> <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>   |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>  |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>  |

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

Treat symptomatically.

## SECTION 5 FIREFIGHTING 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> | None known. |
|-----------------------------|-------------|

### 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>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> </ul> |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit irritating/ toxic fumes.</li> <li>▶ May emit acrid smoke.</li> </ul>   |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

## Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid CHEMets Refills & Vacu-vials Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets Refill

### 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 spill with sand, earth, inert material or vermiculite.</li> </ul> |
| <b>Major Spills</b>   | <p>Moderate hazard.</p> <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>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</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>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> </ul> <p><b>Wear impact- and splash-resistant eyewear. Break the ampoule tip only when it is completely immersed in sample. Breaking the tip in air may cause the glass ampoule to shatter.</b></p> |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> </ul> <p><b>For optimum analytical performance, store in the dark and at room temperature.</b></p>   |

### Conditions for safe storage, including any incompatibilities

|                                |  |
|--------------------------------|--|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Metal can or drum</li> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul> |
| <b>Storage incompatibility</b> | None known   |

### 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 | acetone    | Acetone                                      | 2400 mg/m <sup>3</sup> / 1000 ppm | Not Available | Not Available | Not Available  |
| US ACGIH Threshold Limit Values (TLV)                 | acetone    | ± Acetone                                    | 500 ppm                           | 750 ppm       | Not Available | TLV® Basis: (URT & eye irr CNS impair; hematologic eff); BEI |
| US NIOSH Recommended Exposure Limits (RELs)           | acetone    | Dimethyl ketone, Ketone propane, 2-Propanone | 590 mg/m <sup>3</sup> / 250 ppm   | Not Available | Not Available | Not Available  |

#### EMERGENCY LIMITS


| Ingredient                     | Material name                  | TEEL-1               | TEEL-2                | TEEL-3                 |
|--------------------------------|--------------------------------|----------------------|-----------------------|------------------------|
| acetone                        | Acetone                        | Not Available        | Not Available         | Not Available          |
| potassium phosphate, monobasic | Potassium phosphate, monobasic | 29 mg/m <sup>3</sup> | 320 mg/m <sup>3</sup> | 1900 mg/m <sup>3</sup> |

| Ingredient                             | Original IDLH | Revised IDLH    |
|--|---------------|-----------------|
| water                                  | Not Available | Not Available   |
| acetone                                | 20,000 ppm    | 2,500 [LEL] ppm |
| potassium phosphate, monobasic         | Not Available | Not Available   |
| N,N-diethyl-p-phenylenediamine oxalate | Not Available | Not Available   |
| Proprietary ingredient                 | Not Available | Not Available   |
| Proprietary ingredient                 | Not Available | Not Available   |

Continued...

## Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid CHEMets Refills & Vacu-vials Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets Refill

### 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.</p>  |
| <b>Personal protection</b>              |    |
| <b>Eye and face protection</b>          | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available.</li> </ul>   |
| <b>Skin protection</b>                  | See Hand protection below   |
| <b>Hands/feet protection</b>            | <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>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> |
| <b>Body protection</b>                  | See Other protection below  |
| <b>Other protection</b>                 | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C. apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> </ul>   |
| <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:

Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid, Hypochlorite Refills and Ampoules

| Material          | CPI |
|-------------------|-----|
| BUTYL             | A   |
| BUTYL/NEOPRENE    | C   |
| CPE               | C   |
| HYPALON           | C   |
| NAT+NEOPR+NITRILE | C   |
| NATURAL RUBBER    | C   |
| NATURAL+NEOPRENE  | C   |
| NEOPRENE          | C   |
| NEOPRENE/NATURAL  | C   |
| NITRILE           | C   |
| NITRILE+PVC       | 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/CHLOROBUTYL | C   |
| VITON/NEOPRENE    | C   |

\* CPI - Chemwatch Performance Index

### Respiratory protection

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

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

| Required minimum protection factor | Maximum gas/vapour concentration present in air p.p.m. (by volume) | Half-face Respirator | Full-Face Respirator |
|------------------------------------|--|----------------------|----------------------|
| up to 10                           | 1000   | AX-AUS / Class1      | -                    |
| up to 50                           | 1000   | -                    | AX-AUS / Class 1     |
| up to 50                           | 5000   | Airline *            | -                    |
| up to 100                          | 5000   | -                    | AX-2                 |
| up to 100                          | 10000  | -                    | AX-3                 |
| 100+                               |  |                      | Airline**            |

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

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(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)

Continued...

## Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid CHEMets Refills & Vacu-vials Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets Refill

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.

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

|   |                        |  |               |
|---|------------------------|--|---------------|
| <b>Appearance</b>                                   | Colorless to pale pink |  |               |
| <b>Physical state</b>                               | Liquid                 | <b>Relative density (Water = 1)</b>            | 1.0           |
| <b>Odour</b>  | Odourless              | <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>                             | 6.3                    | <b>Decomposition temperature</b>               | Not Available |
| <b>Melting point / freezing point (°C)</b>          | -7                     | <b>Viscosity (cSt)</b>                         | Not Available |
| <b>Initial boiling point and boiling range (°C)</b> | 94                     | <b>Molecular weight (g/mol)</b>                | Not Available |
| <b>Flash point (°C)</b>                             | >75                    | <b>Taste</b>                                   | Not Available |
| <b>Evaporation rate</b>                             | Not Available          | <b>Explosive properties</b>                    | Not Available |
| <b>Flammability</b>                                 | Combustible.           | <b>Oxidising properties</b>                    | Not Available |
| <b>Upper Explosive Limit (%)</b>                    | Not Available          | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available |
| <b>Lower Explosive Limit (%)</b>                    | Not Available          | <b>Volatile Component (%vol)</b>               | Not Available |
| <b>Vapour pressure (kPa)</b>                        | Not Available          | <b>Gas group</b>                               | Not Available |
| <b>Solubility in water (g/L)</b>                    | Miscible               | <b>pH as a solution</b>                        | Not Available |
| <b>Vapour density (Air = 1)</b>                     | Not Available          | <b>VOC g/L</b>                                 | Not Available |

### SECTION 10 STABILITY AND REACTIVITY

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

### SECTION 11 TOXICOLOGICAL INFORMATION

#### Information on toxicological effects

|                     |  |
|---------------------|--|
| <b>Inhaled</b>      | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product  |
| <b>Ingestion</b>    | The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.   |
| <b>Skin Contact</b> | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. |
| <b>Eye</b>          | Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).   |
| <b>Chronic</b>      | Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.   |

|  |                 |                   |
|--|-----------------|-------------------|
| <b>CHEMets Refills,<br/>VACUettes Refills,<br/>Vacu-vials Ampoules</b> | <b>TOXICITY</b> | <b>IRRITATION</b> |
|  |                 |                   |

Continued...

**Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid CHEMets Refills  
& Vacu-vials Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets Refill**

|   |          |            |
|---|----------|------------|
| CHEMets Refills,<br>VACUettes Refills,<br>Vacu-vials Ampoules | TOXICITY | IRRITATION |
|   |          |            |

|   |  |
|---|--|
| ACETONE                                       | 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.<br>for acetone:<br>The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitiser but is a defatting agent to the skin. Acetone is an eye irritant. The subchronic toxicity of acetone has been examined in mice and rats that were administered acetone in the drinking water and again in rats treated by oral gavage.  |
| POTASSIUM PHOSPHATE,<br>MONOBASIC             | No data of toxicological significance identified in literature search.   |
| N,N-DIETHYL-<br>P-PHENYLENEDIAMINE<br>OXALATE | The following information refers to contact allergens as a group and may not be specific to this product.<br>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. |
| WATER   | No significant acute toxicological data identified in literature search.   |

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

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**

Not Applicable

**SECTION 12 ECOLOGICAL INFORMATION****Toxicity****DO NOT** discharge into sewer or waterways.**Persistence and degradability**

| Ingredient             | Persistence: Water/Soil   | Persistence: Air                 |
|------------------------|---------------------------|----------------------------------|
| water                  | LOW                       | LOW                              |
| acetone                | LOW (Half-life = 14 days) | MEDIUM (Half-life = 116.25 days) |
| Proprietary ingredient | LOW                       | LOW                              |

**Bioaccumulative potential**

| Ingredient             | Bioaccumulation        |
|------------------------|------------------------|
| water                  | LOW (LogKOW = -1.38)   |
| acetone                | LOW (BCF = 69)         |
| Proprietary ingredient | LOW (LogKOW = -3.8796) |

**Mobility in soil**

| Ingredient             | Mobility           |
|------------------------|--------------------|
| water                  | LOW (KOC = 14.3)   |
| acetone                | HIGH (KOC = 1.981) |
| Proprietary ingredient | LOW (KOC = 14.3)   |

**SECTION 13 DISPOSAL CONSIDERATIONS**

Continued...



**Bromine, Chlorine, Chlorine Dioxide, Hydrogen Peroxide, Ozone, Peracetic Acid CHEMets Refills  
& Vacu-vials Ampoules, Peracetic Acid VACUettes Refills, Hypochlorite CHEMets Refill**

**Waste treatment methods**

|                                     |   |
|-------------------------------------|---|
| <b>Product / Packaging disposal</b> | <b>Dispose of according to federal, state, and local regulations.</b> |
|-------------------------------------|---|

**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**

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

|  |   |
|--|---|
| <b>water(7732-18-5) is found on the following regulatory lists</b>                                   | "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"   |
| <b>acetone(67-64-1) is found on the following regulatory lists</b>                                   | "US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)", "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Idaho - Limits for Air Contaminants", "US - Hawaii Air Contaminant Limits", "US - California Permissible Exposure Limits for Chemical Contaminants", "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "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 EPA Carcinogens Listing", "US NIOSH Recommended Exposure Limits (RELs)", "US - Alaska Limits for Air Contaminants", "US - Washington Permissible exposure limits of air contaminants", "US ACGIH Threshold Limit Values (TLV) - Notice of Intended Changes", "US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants", "US - Minnesota Permissible Exposure Limits (PELs)", "US ACGIH Threshold Limit Values (TLV)", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US OSHA Permissible Exposure Levels (PELs) - Table Z1" |
| <b>potassium phosphate, monobasic(7778-77-0) is found on the following regulatory lists</b>          | "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"   |
| <b>N,N-diethyl-p-phenylenediamine oxalate(62637-92-7) is found on the following regulatory lists</b> | "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"   |
| <b>Proprietary ingredient() is found on the following regulatory lists</b>                           | "Not Applicable"  |
| <b>Proprietary ingredient() is found on the following regulatory lists</b>                           | "Not Applicable"  |

**SECTION 16 OTHER INFORMATION****Other information****Ingredients with multiple cas numbers**

| Name          | CAS No        |
|---------------|---------------|
| Not Available | Not Available |

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

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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Simplicity in Water Analysis

## Cover Page for Safety Data Sheet

Thank you for choosing CHEMetrics, Inc. We appreciate your business. In order to best serve your needs for accurate and complete Safety Data, we offer the following information as supplemental to the attached SDS.

**SDS No.:** S1600

**Version No.:** 1.2

**Product Name:** Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

**Part Nos.:** A-1600, A-2500, A-2500V, A-5501, A-7400, A-7900

### Product Descriptions:

*Activator Solution:* Plastic bottle, contains approximately 9 mL of liquid reagent. Test kits contain one (1) bottle of solution. Activator Solution packs contain six (6) bottles of solution.

### Addendum to Section 14 Transport Information:

Shipping container markings and labels for this product, as received, may vary from the contents of section 14 of the SDS for one or both of the following reasons:

- CHEMetrics has packaged this product as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations.
- CHEMetrics has packaged this product as part of a test kit or reagent set composed of various chemical reagents and elected to ship as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and markings in accordance with applicable transportation regulations.

### Additional Information:

- "Print Date" = Revision Date (expressed as DD/MM/YYYY)
- Test kits and reagents sets may contain additional chemical reagents. See separate SDS(s).

*CHEMetrics®, VACUettes®, Vacu-vials®, and Titrets® are registered trademarks of CHEMetrics Inc.*



## Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

CHEMetrics, Inc.

Chemwatch Hazard Alert Code: 2

Chemwatch: 9-76789

SDS No: S1600

Version No: 1.2

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 05/09/2014

Print Date: 12/03/2015

Initial Date: 06/09/2014

S.GHS.USA.EN

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

#### Product Identifier

|                               |  |
|-------------------------------|--|
| Product name                  | Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits |
| Synonyms                      | Part Nos.: A-1600, A-2500, A-2500V, A-5501, A-7400, A-7900                                   |
| Proper shipping name          | Not Applicable   |
| Chemical formula              | Not Applicable   |
| Other means of identification | Not Available  |
| CAS number                    | Not Applicable   |

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

|                          |   |
|--------------------------|---|
| Relevant identified uses | Component of water analysis test kits I-2001, I-2019, I-2020, K-1605, K-1613, K-2500, K-2504, K-2504A, K-2504B, K-2504C, K-2504D, K-2505, K-2505V, K-2511, K-2513, K-5502, K-5513, K-7402, K-7404, K-7423, K-7904, K-7913 |
|--------------------------|---|

#### Details of the manufacturer/importer

|                         |   |
|-------------------------|---|
| Registered company name | CHEMetrics, Inc.                                    |
| Address                 | 4295 Catlett Road, Midland, VA. 22728 United States |
| Telephone               | 1-540-788-9026                                      |
| Fax                     | 1-540-788-4856                                      |
| Website                 | www.chemetrics.com                                  |
| Email                   | technical@chemetrics.com                            |

#### Emergency telephone number

|                                   |                  |
|-----------------------------------|------------------|
| Association / Organisation        | ChemTel Inc.     |
| Emergency telephone numbers       | 1-800-255-3924   |
| Other emergency telephone numbers | +01-813-248-0585 |

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

|                    |  |
|--------------------|--|
| GHS Classification | Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Respiratory Sensitizer Category 1, Skin Sensitizer Category 1, Reproductive Toxicity Category 2, STOT - SE (Resp. Irr.) Category 3 |
|--------------------|--|

#### Label elements

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

SIGNAL WORD **DANGER**

#### Hazard statement(s)

|      |   |
|------|---|
| H315 | Causes skin irritation  |
| H319 | Causes serious eye irritation   |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled |
| H317 | May cause an allergic skin reaction                                       |
| H361 | Suspected of damaging fertility or the unborn child                       |

Continued...

## Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

|             |                                  |
|-------------|----------------------------------|
| <b>H335</b> | May cause respiratory irritation |
|-------------|----------------------------------|

### Precautionary statement(s) Prevention

|             |  |
|-------------|--|
| <b>P101</b> | If medical advice is needed, have product container or label at hand.      |
| <b>P102</b> | Keep out of reach of children.   |
| <b>P103</b> | Read label before use.   |
| <b>P201</b> | Obtain special instructions before use.                                    |
| <b>P261</b> | Avoid breathing dust/fume/gas/mist/vapours/spray.                          |
| <b>P271</b> | Use only outdoors or in a well-ventilated area.                            |
| <b>P280</b> | Wear protective gloves/protective clothing/eye protection/face protection. |
| <b>P284</b> | [In case of inadequate ventilation] wear respiratory protection.           |

### Precautionary statement(s) Response

|                       |  |
|-----------------------|--|
| <b>P304+P340</b>      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |
| <b>P308+P313</b>      | IF exposed or concerned: Get medical advice/attention.   |
| <b>P342+P311</b>      | If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider  |
| <b>P302+P352</b>      | IF ON SKIN: Wash with plenty of water and soap   |
| <b>P305+P351+P338</b> | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

### Precautionary statement(s) Storage

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

### Precautionary statement(s) Disposal

|             |  |
|-------------|--|
| <b>P501</b> | 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                             |
|-----------|-----------|----------------------------------|
| 7681-11-0 | 11        | <a href="#">potassium iodide</a> |
| 1310-73-2 | <0.1      | <a href="#">sodium hydroxide</a> |
| 7732-18-5 | >88       | <a href="#">water</a>            |

## 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> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>  |
| <b>Inhalation</b>   | <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> |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>  |

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

Treat symptomatically.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>▶ There is no restriction on the type of extinguisher which may be used.</li> <li>▶ Use extinguishing media suitable for surrounding area.</li> </ul> |
|--|--|

## Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

### Special hazards arising from the substrate or mixture

|                             |             |
|-----------------------------|-------------|
| <b>Fire Incompatibility</b> | None known. |
|-----------------------------|-------------|

### 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>▶ 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 courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> </ul> |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>Decomposition may produce toxic fumes of; hydrogen iodide. May emit poisonous fumes. May emit corrosive fumes.</p>  |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

|                     |   |
|---------------------|---|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> </ul> |
| <b>Major Spills</b> | <p>Moderate hazard.</p> <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>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</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>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> </ul> <p><b>Wear impact- and splash-resistant eyewear.</b></p> |
| <b>Other information</b> | <b>For optimum analytical performance, store in the dark and at room temperature.</b>   |

### Conditions for safe storage, including any incompatibilities

|                                |   |
|--------------------------------|---|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul> |
| <b>Storage incompatibility</b> | None known  |

### 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 ACGIH Threshold Limit Values (TLV)                 | potassium iodide | Iodine and Iodides - Iodides                | 0.01 ppm      | 0.1 ppm       | Not Available | TLV® Basis: Hypothyroidism; URT irr |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | sodium hydroxide | Sodium hydroxide                            | 2 mg/m3       | Not Available | Not Available | Not Available                       |
| US ACGIH Threshold Limit Values (TLV)                 | sodium hydroxide | Sodium hydroxide                            | Not Available | Not Available | 2 mg/m3       | TLV® Basis: URT, eye, & skin irr    |
| US NIOSH Recommended Exposure Limits (RELs)           | sodium hydroxide | Caustic soda, Lye, Soda lye, Sodium hydrate | Not Available | Not Available | 2 mg/m3       | Not Available                       |

#### EMERGENCY LIMITS


| Ingredient       | Material name    | TEEL-1        | TEEL-2        | TEEL-3        |
|------------------|------------------|---------------|---------------|---------------|
| potassium iodide | Potassium iodide | 0.18 mg/m3    | 1.9 mg/m3     | 140 mg/m3     |
| sodium hydroxide | Sodium hydroxide | Not Available | Not Available | Not Available |

Continued...

## Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

| Ingredient       | Original IDLH | Revised IDLH  |
|------------------|---------------|---------------|
| potassium iodide | Not Available | Not Available |
| sodium hydroxide | 250 mg/m3     | 10 mg/m3      |
| water            | Not Available | Not Available |

### 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.</p> |
| <b>Personal protection</b>              |   |
| <b>Eye and face protection</b>          | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.</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> </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   |
| <b>Other protection</b>                 | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C. apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> </ul>  |
| <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:

Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

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

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, 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                      | -AUS P2              | -                    | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES                      | -                    | -AUS / Class 1 P2    | -                      |
| up to 100 x ES                     | -                    | -2 P2                | -PAPR-2 P2 ^           |

^ - 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)

## Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

"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.

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

|   |                          |  |               |
|---|--------------------------|--|---------------|
| <b>Appearance</b>                                   | colorless to pale yellow |  |               |
| <b>Physical state</b>                               | Liquid                   | <b>Relative density (Water = 1)</b>            | >1            |
| <b>Odour</b>  | Odourless                | <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>                             | 11                       | <b>Decomposition temperature</b>               | Not Available |
| <b>Melting point / freezing point (°C)</b>          | <0                       | <b>Viscosity (cSt)</b>                         | Not Available |
| <b>Initial boiling point and boiling range (°C)</b> | 100                      | <b>Molecular weight (g/mol)</b>                | Not Available |
| <b>Flash point (°C)</b>                             | Not Applicable           | <b>Taste</b>                                   | Not Available |
| <b>Evaporation rate</b>                             | Not Available            | <b>Explosive properties</b>                    | Not Available |
| <b>Flammability</b>                                 | Not Applicable           | <b>Oxidising properties</b>                    | Not Available |
| <b>Upper Explosive Limit (%)</b>                    | Not Available            | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available |
| <b>Lower Explosive Limit (%)</b>                    | Not Available            | <b>Volatile Component (%vol)</b>               | Not Available |
| <b>Vapour pressure (kPa)</b>                        | Not Available            | <b>Gas group</b>                               | Not Available |
| <b>Solubility in water (g/L)</b>                    | Miscible                 | <b>pH as a solution</b>                        | Not Available |
| <b>Vapour density (Air = 1)</b>                     | Not Available            | <b>VOC g/L</b>                                 | Not Available |

### SECTION 10 STABILITY AND REACTIVITY

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

### SECTION 11 TOXICOLOGICAL INFORMATION

#### Information on toxicological effects

|   |  |          |            |
|---|--|----------|------------|
| <b>Inhaled</b>  | <p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p> <p>Not normally a hazard due to non-volatile nature of product</p> <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by inhalation". This is because of the lack of corroborating animal or human evidence.</p>  |          |            |
| <b>Ingestion</b>  | <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.</p>  |          |            |
| <b>Skin Contact</b>   | <p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>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.</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>   |          |            |
| <b>Eye</b>  | <p>This material can cause eye irritation and damage in some persons.</p>  |          |            |
| <b>Chronic</b>  | <p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p> <p>Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</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>Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> |          |            |
| <b>Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits</b> | <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">TOXICITY</td> <td style="width: 50%; border: none;">IRRITATION</td> </tr> </table>   | TOXICITY | IRRITATION |
| TOXICITY  | IRRITATION   |          |            |

## Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

|   |          |            |
|---|----------|------------|
| Activator Solution for<br>Bromine, Chlorine,<br>Hydrogen Peroxide, Ozone,<br>Peracetic Acid Test Kits | TOXICITY | IRRITATION |
|---|----------|------------|

|  |   |
|--|---|
| <b>SODIUM HYDROXIDE</b>  | <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may cause severe 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. Repeated exposures may produce severe ulceration.</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases.</p>   |
| <b>WATER</b>   | No significant acute toxicological data identified in literature search.  |
| Activator Solution for<br>Bromine, Chlorine,<br>Hydrogen Peroxide, Ozone,<br>Peracetic Acid Test Kits,<br>POTASSIUM IODIDE | <p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>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.</p> |

|  |   |                                 |   |
|--|---|---------------------------------|---|
| <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>EYE</b>         | sodium hydroxide | US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Eye         | X SODIUM HYDROXIDE |
| <b>RESPIRATORY</b> | sodium hydroxide | US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Respiratory | X                  |
| <b>SKIN</b>        | sodium hydroxide | US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Skin        | X                  |

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

For Iodine: Iodine is an important element in studies of environmental protection and human health, global-scale hydrologic processes and nuclear non-proliferation. Inorganic and organic species that may be hydrophilic, atmophilic, and biophilic.

Terrestrial Fate: There was an appreciable iodate reduction to iodide, presumably mediated by the structural iron(II), in some clay minerals. Humic acid in soil promotes the electrochemical reduction of iodine(12) to ionic iodide. The different oxidation species of iodine have markedly different sorption properties, hence, changes in iodine redox states can greatly affect the mobility of iodine in the environment.

### Persistence and degradability

| Ingredient       | Persistence: Water/Soil | Persistence: Air |
|------------------|-------------------------|------------------|
| potassium iodide | HIGH                    | HIGH             |
| sodium hydroxide | LOW                     | LOW              |
| water            | LOW                     | LOW              |

### Bioaccumulative potential

| Ingredient       | Bioaccumulation        |
|------------------|------------------------|
| potassium iodide | LOW (LogKOW = 0.0436)  |
| sodium hydroxide | LOW (LogKOW = -3.8796) |
| water            | LOW (LogKOW = -1.38)   |

### Mobility in soil

| Ingredient       | Mobility         |
|------------------|------------------|
| potassium iodide | LOW (KOC = 14.3) |
| sodium hydroxide | LOW (KOC = 14.3) |
| water            | LOW (KOC = 14.3) |

## SECTION 13 DISPOSAL CONSIDERATIONS



## Activator Solution for Bromine, Chlorine, Hydrogen Peroxide, Ozone, Peracetic Acid Test Kits

### Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Product / Packaging disposal</b> | Dispose of according to federal, state, and local regulations. |
|-------------------------------------|--|

### 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**

### SECTION 15 REGULATORY INFORMATION

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

|   |  |
|---|--|
| <b>potassium iodide(7681-11-0) is found on the following regulatory lists</b> | "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "US ACGIH Threshold Limit Values (TLV)", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"  |
| <b>sodium hydroxide(1310-73-2) is found on the following regulatory lists</b> | "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Idaho - Limits for Air Contaminants", "US - Hawaii Air Contaminant Limits", "US - California Permissible Exposure Limits for Chemical Contaminants", "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 - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values", "US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)", "US NIOSH Recommended Exposure Limits (RELs)", "US - Alaska Limits for Air Contaminants", "US - Washington Permissible exposure limits of air contaminants", "US - Minnesota Permissible Exposure Limits (PELs)", "US ACGIH Threshold Limit Values (TLV)", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US OSHA Permissible Exposure Levels (PELs) - Table Z1" |
| <b>water(7732-18-5) is found on the following regulatory lists</b>            | "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"  |

### SECTION 16 OTHER INFORMATION

#### Other information

#### Ingredients with multiple cas numbers

| Name          | CAS No        |
|---------------|---------------|
| Not Available | Not Available |

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

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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