

# Rowe Scientific ICP/AAS nontoxic metal standards in 0.1-2% nitric acid

## ROWE SCIENTIFIC

Chemwatch: 4690-61

Version No: 17.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Chemwatch Hazard Alert Code: 2

Issue Date: 11/07/2022

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L.GHS.AUS.EN.E

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

#### Product Identifier

|                               |                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name                  | Rowe Scientific ICP/AAS nontoxic metal standards in 0.1-2% nitric acid                                                                                                                                                                                                                                                                                                           |
| Chemical Name                 | Not Applicable                                                                                                                                                                                                                                                                                                                                                                   |
| Synonyms                      | BA0980, BB20015, BC0990, BC1010, BC1585, BP1510, BP1515, BC1590, BC2005, BC2010, BI2050, BL0990, BL1000, BL1002, BM1005, BM1501, BM2010, BN0990, BN1050, BP1517, BP2070, BS1080, BS1505, BS2005, BZ1390, BZ1810, CC0869, CG0252, CI0257, CN0390, CN0395, CN1187, CP1141, CQ4000, CQ4010, CQ4015, CQ4020, CS1692, CS1741, CY1025, CZ0047, ST1956, SS0125, CZ0047, CH0366, CH0367. |
| Chemical formula              | Not Applicable                                                                                                                                                                                                                                                                                                                                                                   |
| Other means of identification | Not Available                                                                                                                                                                                                                                                                                                                                                                    |

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

|                          |                     |
|--------------------------|---------------------|
| Relevant identified uses | Laboratory reagent. |
|--------------------------|---------------------|

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

|                         |                                                       |
|-------------------------|-------------------------------------------------------|
| Registered company name | ROWE SCIENTIFIC                                       |
| Address                 | 11 Challenge Boulevard Wangara WA 6065 Australia      |
| Telephone               | +61 8 9302 1911                                       |
| Fax                     | +61 8 9302 1905                                       |
| Website                 | <a href="http://rowe.com.au/">http://rowe.com.au/</a> |
| Email                   | rowewa@rowe.com.au                                    |

#### Emergency telephone number

|                                   |                          |
|-----------------------------------|--------------------------|
| Association / Organisation        | ROWE SCIENTIFIC          |
| Emergency telephone numbers       | +61 8 9302 1911 (24 Hrs) |
| Other emergency telephone numbers | Not Available            |

### SECTION 2 Hazards identification

#### Classification of the substance or mixture

|                    |                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Poisons Schedule   | S5                                                                                                                                  |
| Classification [1] | Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2A                                                 |
| Legend:            | 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |

#### Label elements

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

|             |         |
|-------------|---------|
| Signal word | Warning |
|-------------|---------|

#### Hazard statement(s)

|      |                                |
|------|--------------------------------|
| H315 | Causes skin irritation.        |
| H319 | Causes serious eye irritation. |

#### Precautionary statement(s) Prevention

|      |                                                                                  |
|------|----------------------------------------------------------------------------------|
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P264 | Wash all exposed external body areas thoroughly after handling.                  |

#### Precautionary statement(s) Response

|                |                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|

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

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

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

See section below for composition of Mixtures

**Mixtures**

| CAS No                                                                                                                                                                                                      | %[weight] | Name                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------|
| 7697-37-2                                                                                                                                                                                                   | 0.1-2     | <u>nitric acid</u>      |
| Not Available                                                                                                                                                                                               | 0.1       | non-toxic metal nitrate |
| 7732-18-5                                                                                                                                                                                                   | >97       | <u>water</u>            |
| <b>Legend:</b> 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available |           |                         |

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

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>  | <p>If 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.</li> </ul>                    |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>If swallowed do <b>NOT</b> induce vomiting.</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> |

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

Treat symptomatically.

**SECTION 5 Firefighting measures****Extinguishing media**

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

**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> <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> |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|                       |                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire/Explosion Hazard | <ul style="list-style-type: none"><li>Non combustible.</li><li>Not considered to be a significant fire risk.</li><li>Expansion or decomposition on heating may lead to violent rupture of containers.</li><li>Decomposes on heating and may produce toxic/ irritating fumes.</li><li>May emit acrid smoke.</li></ul> Decomposition may produce toxic fumes of: nitrogen oxides (NOx) |
| HAZCHEM               | Not Applicable                                                                                                                                                                                                                                                                                                                                                                       |

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

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minor Spills | <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><li>Place in a suitable, labelled container for waste disposal.</li></ul>                                                                                                                                                                                                                                                                                                                         |
| Major Spills | Minor hazard. <ul style="list-style-type: none"><li>Clear area of personnel.</li><li>Alert Fire Brigade and tell them location and nature of hazard.</li><li>Control personal contact with the substance, by using protective equipment as required.</li><li>Prevent spillage from entering drains or water ways.</li><li>Contain spill with sand, earth or vermiculite.</li><li>Collect recoverable product into labelled containers for recycling.</li><li>Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.</li><li>Wash area and prevent runoff into drains or waterways.</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

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safe handling     | <ul style="list-style-type: none"><li>Limit all unnecessary personal contact.</li><li>Wear protective clothing when risk of exposure occurs.</li><li>Use in a well-ventilated area.</li><li>When handling DO NOT eat, drink or smoke.</li><li>Always wash hands with soap and water after handling.</li><li>Avoid physical damage to containers.</li><li>Use good occupational work practice.</li><li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li></ul> |
| Other information | <ul style="list-style-type: none"><li>Store in original containers.</li><li>Keep containers securely sealed.</li><li>Store in a cool, dry, well-ventilated area.</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>                                                                   |

Conditions for safe storage, including any incompatibilities

|                         |                                                                                                                                                                                                                                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable container      | <ul style="list-style-type: none"><li>Glass container is suitable for laboratory quantities</li><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> |
| Storage incompatibility | <ul style="list-style-type: none"><li>Segregate from alkalis, oxidising agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.</li></ul>                                                                                                      |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

| Source                       | Ingredient  | Material name | TWA               | STEL             | Peak          | Notes         |
|------------------------------|-------------|---------------|-------------------|------------------|---------------|---------------|
| Australia Exposure Standards | nitric acid | Nitric acid   | 2 ppm / 5.2 mg/m3 | 10 mg/m3 / 4 ppm | Not Available | Not Available |

Emergency Limits

| Ingredient  | TEEL-1        | TEEL-2        | TEEL-3        |
|-------------|---------------|---------------|---------------|
| nitric acid | Not Available | Not Available | Not Available |

| Ingredient | Original IDLH | Revised IDLH |
|------------|---------------|--------------|
|------------|---------------|--------------|

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| Ingredient  | Original IDLH | Revised IDLH  |
|-------------|---------------|---------------|
| nitric acid | 25 ppm        | Not Available |
| water       | Not Available | Not Available |

## MATERIAL DATA

## Exposure controls

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appropriate engineering controls | General exhaust is adequate under normal operating conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Personal protection              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Eye and face protection          | <ul style="list-style-type: none"> <li>Safety glasses with side shields</li> <li>Chemical goggles.</li> <li>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</li> </ul> |
| Skin protection                  | See Hand protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Hands/feet protection            | Wear general protective gloves, eg. light weight rubber gloves.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Body protection                  | See Other protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Other protection                 | <ul style="list-style-type: none"> <li>Overalls.</li> <li>Eyewash unit.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## Recommended material(s)

## GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

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

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| Material         | CPI |
|------------------|-----|
| BUTYL            | A   |
| NEOPRENE         | A   |
| HYPALON          | C   |
| NATURAL RUBBER   | C   |
| NATURAL+NEOPRENE | C   |
| NEOPRENE/NATURAL | C   |
| NITRILE+PVC      | C   |
| PE/EVAL/PE       | C   |
| PVA              | C   |
| PVC              | C   |
| SARANEX-23       | C   |
| VITON            | C   |

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

## Respiratory protection

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

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator  |
|------------------------------------|----------------------|----------------------|-------------------------|
| up to 10 x ES                      | E-AUS P2             | -                    | E-PAPR-AUS / Class 1 P2 |
| up to 50 x ES                      | -                    | E-AUS / Class 1 P2   | -                       |
| up to 100 x ES                     | -                    | E-2 P2               | E-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(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 Physical and chemical properties

## Information on basic physical and chemical properties

|                 |                                             |                                         |                |
|-----------------|---------------------------------------------|-----------------------------------------|----------------|
| Appearance      | Colourless acidic liquid; mixes with water. |                                         |                |
| Physical state  | Liquid                                      | Relative density (Water = 1)            | 1.0 approx.    |
| Odour           | Not Available                               | Partition coefficient n-octanol / water | Not Available  |
| Odour threshold | Not Available                               | Auto-ignition temperature (°C)          | Not Applicable |

Continued...

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|                                              |                |                                   |                |
|----------------------------------------------|----------------|-----------------------------------|----------------|
| pH (as supplied)                             | Not Available  | Decomposition temperature (°C)    | Not Available  |
| Melting point / freezing point (°C)          | Not Available  | Viscosity (cSt)                   | Not Available  |
| Initial boiling point and boiling range (°C) | 100 approx.    | Molecular weight (g/mol)          | Not Applicable |
| Flash point (°C)                             | Not Applicable | Taste                             | Not Available  |
| Evaporation rate                             | Not Available  | Explosive properties              | Not Available  |
| Flammability                                 | Not Applicable | Oxidising properties              | Not Available  |
| Upper Explosive Limit (%)                    | Not Applicable | Surface Tension (dyn/cm or mN/m)  | Not Available  |
| Lower Explosive Limit (%)                    | Not Applicable | Volatile Component (%vol)         | Not Available  |
| Vapour pressure (kPa)                        | Not Available  | Gas group                         | Not Available  |
| Solubility in water                          | Miscible       | pH as a solution (Not Available%) | Not Available  |
| Vapour density (Air = 1)                     | Not Available  | VOC g/L                           | Not Applicable |

## SECTION 10 Stability and reactivity

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

## SECTION 11 Toxicological information

## Information on toxicological effects

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhaled      | Not normally a hazard due to non-volatile nature of product                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Ingestion    | 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. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.                                                                                                                                                       |
| Skin Contact | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| Eye          | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.                                                                                                                                                                                                                                                                                                                                       |
| Chronic      | Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                                                        |                                                                                                                                                                                                                             |                                                                                                                      |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Rowe Scientific ICP/AAS nontoxic metal standards in 0.1-2% nitric acid | TOXICITY                                                                                                                                                                                                                    | IRRITATION                                                                                                           |
|                                                                        | Not Available                                                                                                                                                                                                               | Not Available                                                                                                        |
| nitric acid                                                            | TOXICITY                                                                                                                                                                                                                    | IRRITATION                                                                                                           |
|                                                                        | Inhalation(Rat) LC50; 0.13 mg/L4h <sup>[2]</sup>                                                                                                                                                                            | Eye: adverse effect observed (irritating) <sup>[1]</sup><br>Skin: adverse effect observed (corrosive) <sup>[1]</sup> |
| water                                                                  | TOXICITY                                                                                                                                                                                                                    | IRRITATION                                                                                                           |
|                                                                        | Oral (Rat) LD50; >90000 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 |                                                                                                                      |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NITRIC ACID | Oral (?) LD50: 50-500 mg/kg * [Various Manufacturers]<br>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 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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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.

for acid mists, aerosols, vapours

Data from assays for genotoxic activity *in vitro* suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5.

Cells from the respiratory tract have not been examined in this respect. Mucous secretion may protect the cells of the airways from direct exposure to inhaled acidic mists, just as mucous plays an important role in protecting the gastric epithelium from its auto-secreted hydrochloric acid. In considering whether pH itself induces genotoxic events *in vivo* in the respiratory system, comparison should be made with the human stomach, in which gastric juice may be at pH 1-2 under fasting or nocturnal conditions, and with the human urinary bladder, in which the pH of urine can range from <5 to > 7 and normally averages 6.2. Furthermore, exposures to low pH *in vivo* differ from exposures *in vitro* in that, *in vivo*, only a portion of the cell surface is subjected to the adverse conditions, so that perturbation of intracellular homeostasis may be maintained more readily than *in vitro*.

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.

Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).

The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange, the primary function of the lungs. Therefore prolonged exposure to respiratory irritants may cause sustained breathing difficulties.

The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.

**WATER** No significant acute toxicological data identified in literature search.

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

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

## SECTION 12 Ecological information

## Toxicity

| Rowe Scientific ICP/AAS nontoxic metal standards in 0.1-2% nitric acid | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species       | Value         | Source        |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|---------------|---------------|
|                                                                        | Not Available                                                                                                                                                                                                                                                                                                            | Not Available      | Not Available | Not Available | Not Available |
| nitric acid                                                            | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species       | Value         | Source        |
|                                                                        | EC50(ECx)                                                                                                                                                                                                                                                                                                                | 96h                | Crustacea     | 39mg/l        | 2             |
|                                                                        | EC50                                                                                                                                                                                                                                                                                                                     | 48h                | Crustacea     | 490mg/l       | 2             |
|                                                                        | LC50                                                                                                                                                                                                                                                                                                                     | 96h                | Fish          | 102.24mg/L    | 4             |
| water                                                                  | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species       | Value         | Source        |
|                                                                        | Not Available                                                                                                                                                                                                                                                                                                            | Not Available      | Not Available | Not Available | Not Available |
| <b>Legend:</b>                                                         | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data |                    |               |               |               |

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

## Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|-------------------------|------------------|
| water      | LOW                     | LOW              |

## Bioaccumulative potential

| Ingredient | Bioaccumulation                       |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

## Mobility in soil

| Ingredient | Mobility                              |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

Continued...

## SECTION 13 Disposal considerations

### Waste treatment methods

|                              |                                                                            |
|------------------------------|----------------------------------------------------------------------------|
| Product / Packaging disposal | ▶ Recycle wherever possible or consult manufacturer for recycling options. |
|                              | ▶ Consult State Land Waste Management Authority for disposal.              |
|                              | ▶ Treat and neutralise at an effluent treatment plant.                     |
|                              | ▶ Use soda ash or slaked lime to neutralise.                               |
|                              | ▶ Recycle containers, otherwise dispose of in an authorised landfill.      |

## SECTION 14 Transport information

### Labels Required

|                  |                |
|------------------|----------------|
| Marine Pollutant | NO             |
| HAZCHEM          | Not Applicable |

Land transport (ADG): 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

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

| Product name                | Pollution Category | Ship Type |
|-----------------------------|--------------------|-----------|
| Nitric acid (less than 70%) | Y                  | 2         |

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

| Product name | Group         |
|--------------|---------------|
| nitric acid  | Not Available |
| water        | Not Available |

Transport in bulk in accordance with the ICG Code

| Product name | Ship Type     |
|--------------|---------------|
| nitric acid  | Not Available |
| water        | Not Available |

## SECTION 15 Regulatory information

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

nitric acid is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals  
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australian Inventory of Industrial Chemicals (AIIC)

water is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

### National Inventory Status

| National Inventory                              | Status                  |
|-------------------------------------------------|-------------------------|
| Australia - AIIC / Australia Non-Industrial Use | Yes                     |
| Canada - DSL                                    | Yes                     |
| Canada - NDSL                                   | No (nitric acid; water) |
| China - IECSC                                   | Yes                     |
| Europe - EINEC / ELINCS / NLP                   | Yes                     |
| Japan - ENCS                                    | Yes                     |
| Korea - KECI                                    | Yes                     |
| New Zealand - NZIoC                             | Yes                     |
| Philippines - PICCS                             | Yes                     |
| USA - TSCA                                      | Yes                     |
| Taiwan - TCSI                                   | Yes                     |
| Mexico - INSQ                                   | Yes                     |
| Vietnam - NCI                                   | Yes                     |
| Russia - FBEPH                                  | Yes                     |

#### Legend:

Yes = All CAS declared ingredients are on the inventory

No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## Rowe Scientific ICP/AAS nontoxic metal standards in 0.1-2% nitric acid

## SECTION 16 Other information

|               |            |
|---------------|------------|
| Revision Date | 11/07/2022 |
| Initial Date  | 15/10/2007 |

## SDS Version Summary

| Version | Date of Update | Sections Updated                                                      |
|---------|----------------|-----------------------------------------------------------------------|
| 16.1    | 03/09/2020     | Classification change due to full database hazard calculation/update. |
| 17.1    | 11/07/2022     | Classification                                                        |

## Other information

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

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

## Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average  
 PC—STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit.  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index  
 AIC: 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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TEL (+61 3) 9572 4700.