

# Railtech Thimble

## Railtech International

Chemwatch: 4957-60

Version No: 6.1.1.1

Safety Data Sheet according to WHS and ADG requirements

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S.GHS.AUS.EN

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

### Product Identifier

<b>Product name</b>	Railtech Thimble
<b>Synonyms</b>	Product Code: 81631102
<b>Other means of identification</b>	Not Available

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

<b>Relevant identified uses</b>	Used for self tapping in rail welding
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### Details of the supplier of the safety data sheet

<b>Registered company name</b>	Railtech International	Railtech International
<b>Address</b>	52 Lysaght Street Acacia Ridge QLD 4110 Australia	Z.I. Du Bas Pre Raismes 59590 France
<b>Telephone</b>	+61 7 3344 5444	+33 3 2722 2626
<b>Fax</b>	+61 7 3344 5377	+33 03 2722 2600
<b>Website</b>	w w w.railtech.com.au	Not Available
<b>Email</b>	sales@railtech.com.au	Not Available

### Emergency telephone number

<b>Association / Organisation</b>	Not Available	Not Available
<b>Emergency telephone numbers</b>	+61 0418 781 377	Not Available
<b>Other emergency telephone numbers</b>	Not Available	Not Available

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**

<b>Poisons Schedule</b>	Not Applicable
<b>Classification</b>	Not Applicable

### Label elements

<b>GHS label elements</b>	Not Applicable
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<b>SIGNAL WORD</b>	<b>NOT APPLICABLE</b>
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**Hazard statement(s)**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**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
7631-86-9	60-80	<u>silica amorphous</u>
Not Available	5-10	fire-clay portland, as
65997-15-1		<u>portland cement</u>
Not Available	1-9	sodium silicate, as
6834-92-0		<u>sodium metasilicate, anhydrous</u>
1309-37-1	1-6	<u>ferric oxide</u>
		cardboard, as
9004-34-6	1-6	<u>cellulose</u>
14940-68-2	1-5	<u>zirconium silicate</u>
		marble powder, as
1317-65-3	0.5-3	<u>limestone</u>
1332-37-2	0.5-3	<u>red iron oxide</u>
7429-90-5	1	<u>aluminium</u>

**SECTION 4 FIRST AID MEASURES**

**Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▸ Wash out immediately with fresh running water.</li> <li>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	Brush off dust.
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▸ If dust is inhaled, remove from contaminated area.</li> <li>▸ Encourage patient to blow nose to ensure clear passage of breathing.</li> <li>▸ If irritation or discomfort persists seek medical attention.</li> </ul>
<b>Ingestion</b>	<p>Overexposure is unlikely in this form and quantity.</p> <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

Non combustible

- There is no restriction on the type of extinguisher which may be used.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known
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### Advice for firefighters

<b>Fire Fighting</b>	Product is not combustible. No special firefighting procedures required. Alert Fire Brigade and tell them location and nature of hazard. Use fire fighting procedures suitable for surrounding area.
<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>
<b>HAZCHEM</b>	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

<b>Minor Spills</b>	Clean up all spills immediately. Use dry clean up procedures and avoid generating dust. If exposure to workplace dust is not controlled, respiratory protection is required; wear SAA approved dust respirator. Vacuum up or sweep up. Place in suitable containers for disposal.
<b>Major Spills</b>	<p><b>Minor hazard</b></p> <ul style="list-style-type: none"> <li>▸ Clear area of personnel and move upwind.</li> <li>▸ If inhalation risk of exposure exists, wear SAA approved dust respirator.</li> <li>▸ Collect recoverable product into labelled containers for recycling.</li> </ul>

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

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▸ 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>▸ <b>When handling DO NOT eat, drink or smoke.</b></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>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▸ Store in original containers.</li> <li>▸ Keep containers securely sealed.</li> <li>▸ Store in a cool, dry area protected from environmental extremes.</li> <li>▸ Store away from incompatible materials and foodstuff containers.</li> <li>▸ Protect containers against physical damage and check regularly for leaks.</li> <li>▸ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

For major quantities:

- Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).
- Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▸ Check that containers are clearly labelled</li> <li>▸ Packaging as recommended by manufacturer.</li> </ul>
<b>Storage incompatibility</b>	None known

## 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	silica amorphous	Silica - Amorphous: Precipitated silica / Silica - Amorphous: Silica gel / Precipitated silica / Silica gel	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	silica amorphous	Silica - Amorphous: Diatomaceous earth (uncalcined) / Diatomaceous earth (uncalcined)	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	silica amorphous	Silica - Amorphous: Fume (thermally generated)(respirable dust)	2 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	silica amorphous	Silica - Amorphous: Fumed silica (respirable dust) / Fumed silica (respirable dust)	2 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	portland cement	Portland cement	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	ferric oxide	Iron oxide fume (Fe <sub>2</sub> O <sub>3</sub> ) (as Fe)	5 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	cellulose	Cellulose (paper fibre)	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	zirconium silicate	Zirconium compounds (as Zr)	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	Not Available	Not Available
Australia Exposure Standards	red iron oxide	Iron oxide fume (Fe <sub>2</sub> O <sub>3</sub> ) (as Fe)	5 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Australia Exposure Standards	aluminium	Aluminium (metal dust) / Aluminium (welding fumes) (as Al) / Aluminium, pyro powders (as Al)	10 mg/m <sup>3</sup> / 5 mg/m <sup>3</sup>	Not Available	Not Available	Not Available

#### EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
silica amorphous	Silica gel, amorphous synthetic	18 mg/m <sup>3</sup>	200 mg/m <sup>3</sup>	1,200 mg/m <sup>3</sup>
silica amorphous	Silica, amorphous fumed	18 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>	630 mg/m <sup>3</sup>
silica amorphous	Siloxanes and silicones, dimethyl, reaction products with silica; (Hydrophobic silicon dioxide, amorphous)	120 mg/m <sup>3</sup>	1,300 mg/m <sup>3</sup>	7,900 mg/m <sup>3</sup>
silica amorphous	Silica, amorphous fume	45 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>	3,000 mg/m <sup>3</sup>
silica amorphous	Silica amorphous hydrated	18 mg/m <sup>3</sup>	220 mg/m <sup>3</sup>	1,300 mg/m <sup>3</sup>
sodium metasilicate, anhydrous	Sodium silicate; (Sodium metasilicate)	3.8 mg/m <sup>3</sup>	42 mg/m <sup>3</sup>	250 mg/m <sup>3</sup>


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ferric oxide	Iron oxide; (Ferric oxide)	15 mg/m3	360 mg/m3	2,200 mg/m3
zirconium silicate	Zirconium silicate; (Zirconium silicon oxide; Zircon)	21 mg/m3	170 mg/m3	1,000 mg/m3
limestone	Limestone; (Calcium carbonate; Dolomite)	45 mg/m3	500 mg/m3	3,000 mg/m3
red iron oxide	Iron oxide; (Ferric oxide)	15 mg/m3	360 mg/m3	2,200 mg/m3

Ingredient	Original IDLH	Revised IDLH
silica amorphous	N.E. mg/m3 / N.E. ppm	3,000 mg/m3
fire-clay portland, as	Not Available	Not Available
portland cement	N.E. mg/m3 / N.E. ppm	5,000 mg/m3
sodium silicate, as	Not Available	Not Available
sodium metasilicate, anhydrous	Not Available	Not Available
ferric oxide	N.E. mg/m3 / N.E. ppm	2,500 mg/m3
cellulose	Not Available	Not Available
zirconium silicate	500 mg/m3	25 mg/m3
limestone	Not Available	Not Available
red iron oxide	N.E. mg/m3 / N.E. ppm	2,500 mg/m3
aluminium	Not Available	Not Available

#### Exposure controls

<b>Appropriate engineering controls</b>	<p>Use in a well-ventilated area</p> <ul style="list-style-type: none"> <li>▸ If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection.</li> </ul>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▸ Safety glasses with side shields; or as required,</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>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▸ Wear physical protective gloves, e.g. leather.</li> <li>▸ Wear safety footwear.</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▸ Overalls.</li> <li>▸ Eyewash unit.</li> </ul>
<b>Thermal hazards</b>	Not Available

#### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

#### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<b>Appearance</b>	Odourless red brick covered in its upper part by an aluminium tube		
<b>Physical state</b>	Manufactured	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Applicable
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	Not Applicable	<b>Molecular weight (g/mol)</b>	Not Applicable
<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 Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Applicable	<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>	Not Applicable	<b>pH as a solution (1%)</b>	11.5
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Applicable

**SECTION 10 STABILITY AND REACTIVITY**

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	Product is considered stable and hazardous polymerisation will not occur.
<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>	Not normally a hazard due to physical form of product. The dust may be discomforting
<b>Ingestion</b>	Considered to be non toxic Not normally a hazard due to physical form of product.

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<b>Skin Contact</b>	Not normally a hazard due to physical form of product. 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.
<b>Eye</b>	Not normally a hazard due to physical form of product. The dust may produce eye discomfort and abrasive eye inflammation.
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. One ingredient of the product has caused skin sensitisation reactions, shown as localised reddening and hives, or may produce respiratory sensitisation characterised by asthma-like symptoms and runny nose.

<b>Railtech Thimble</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>silica amorphous</b>	Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup> Inhalation (rat) LC50: >0.139 mg/l/14hr * <sup>[2]</sup> Oral (rat) LD50: 3160 mg/kg <sup>[2]</sup>	Eye (rabbit): non-irritating * Skin (rabbit): non-irritating *
<b>portland cement</b>	Not Available	Not Available
<b>sodium metasilicate, anhydrous</b>	dermal (rat) LD50: >5000 mg/kg <sup>[1]</sup> Oral (rat) LD50: 600 mg/kg <sup>[1]</sup>	Skin (human): 250 mg/24h SEVERE Skin (rabbit): 250 mg/24h SEVERE
<b>ferric oxide</b>	Oral (rat) LD50: >5000 mg/kg <sup>[1]</sup>	Not Available
<b>cellulose</b>	Dermal (rabbit) LD50: >2000 mg/kg <sup>[2]</sup> Inhalation (rat) LC50: >5.8 mg/L/4hr <sup>[2]</sup> Oral (rat) LD50: >5000 mg/kg <sup>[2]</sup>	Not Available
<b>zirconium silicate</b>	Not Available	Not Available
<b>limestone</b>	Oral (rat) LD50: 6450 mg/kg <sup>[2]</sup>	Skin (rabbit): 500 mg/24h-moderate
<b>red iron oxide</b>	Oral (rat) LD50: >5,000 mg/kg <sup>[2]</sup>	Eye (rabbit): non-irritant Skin (rabbit): non-irritant 24h
<b>aluminium</b>	Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>SILICA AMORPHOUS</b>	For silica amorphous: When experimental animals inhale synthetic amorphous silica (SAS) dust, it dissolves in the lung fluid and is rapidly eliminated. If swallowed, the vast majority of SAS is excreted in the faeces and there is little accumulation in the body. Following absorption across the gut, SAS is eliminated via urine without
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	<p>modification in animals and humans. SAS is not expected to be broken down (metabolised) in mammals. After ingestion, there is limited accumulation of SAS in body tissues and rapid elimination occurs. Intestinal absorption has not been calculated, but appears to be insignificant in animals and humans. SASs injected subcutaneously are subjected to rapid dissolution and removal. There is no indication of metabolism of SAS in animals or humans based on chemical structure and available data. In contrast to crystalline silica, SAS is soluble in physiological media and the soluble chemical species that are formed are eliminated via the urinary tract without modification.</p> <p>Both the mammalian and environmental toxicology of SASs are significantly influenced by the physical and chemical properties, particularly those of solubility and particle size. SAS has no acute intrinsic toxicity by inhalation. Adverse effects, including suffocation, that have been reported were caused by the presence of high numbers of respirable particles generated to meet the required test atmosphere. These results are not representative of exposure to commercial SASs and should not be used for human risk assessment. Though repeated exposure of the skin may cause dryness and cracking, SAS is not a skin or eye irritant, and it is not a sensitizer.</p> <p>Repeated-dose and chronic toxicity studies confirm the absence of toxicity when SAS is swallowed or upon skin contact.</p> <p>Long-term inhalation of SAS caused some adverse effects in animals (increases in lung inflammation, cell injury and lung collagen content), all of which subsided after exposure.</p> <p>Numerous repeated-dose, subchronic and chronic inhalation toxicity studies have been conducted with SAS in a number of species, at airborne concentrations ranging from 0.5 mg/m<sup>3</sup> to 150 mg/m<sup>3</sup>. Lowest-observed adverse effect levels (LOAELs) were typically in the range of 1 to 50 mg/m<sup>3</sup>. When available, the no-observed adverse effect levels (NOAELs) were between 0.5 and 10 mg/m<sup>3</sup>. The difference in values may be explained by different particle size, and therefore the number of particles administered per unit dose. In general, as particle size decreases so does the NOAEL/LOAEL.</p> <p>Neither inhalation nor oral administration caused neoplasms (tumours). SAS is not mutagenic in vitro. No genotoxicity was detected in in vivo assays. SAS does not impair development of the foetus. Fertility was not specifically studied, but the reproductive organs in long-term studies were not affected.</p> <p>In humans, SAS is essentially non-toxic by mouth, skin or eyes, and by inhalation. Epidemiology studies show little evidence of adverse health effects due to SAS. Repeated exposure (without personal protection) may cause mechanical irritation of the eye and drying/cracking of the skin.</p> <p>There is no evidence of cancer or other long-term respiratory health effects (for example, silicosis) in workers employed in the manufacture of SAS. Respiratory symptoms in SAS workers have been shown to correlate with smoking but not with SAS exposure, while serial pulmonary function values and chest radiographs are not adversely affected by long-term exposure to SAS.</p> <p>The substance is classified by IARC as Group 3:  <b>NOT</b> classifiable as to its carcinogenicity to humans.</p> <p>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p> <p>Reports indicate high/prolonged exposures to amorphous silicas induced lung fibrosis in experimental animals; in some experiments these effects were reversible. [PATTYS]</p>
<p style="text-align: center;"><b>PORTLAND CEMENT</b></p>	<p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p>
<p style="text-align: center;"><b>SODIUM METASILICATE, ANHYDROUS</b></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 style="text-align: center;"><b>ZIRCONIUM SILICATE</b></p>	<p>OSHA concluded that the recommended TLV-TWA and STEL would protect workers from any significant risk of pulmonary effects. NIOSH conclude that a separate limit should be considered for zirconium tetrachloride (because of the irritancy of hydrogen chloride derived from hydrolysis). This was based on a 60-day inhalation study at 6 mg/m<sup>3</sup> zirconium tetrachloride which found an increase in mortality of rats and guinea pigs due to respiratory infection and reductions of borderline statistical significance in circulating hemoglobin and erythrocyte counts in dogs.</p> <p>The concentration of dust, for application of respirable dust limits, is to be determined from the fraction that penetrates a separator whose size collection efficiency is described by a cumulative log-normal function with a median aerodynamic diameter of 4.0 µm (+-) 0.3 µm and with a geometric standard deviation of 1.5 µm (+-) 0.1 µm, i.e..generally less than 5 µm.</p> <p>Zircon sands may contain trace amounts (106-120 picoCurie per gram or 3.9-4.44 Bq/g) of naturally occurring radioactive uranium and thorium. However, measurements made by US DuPont during the use of similar mineral sands indicated that by observing OSHA Permitted Exposure Limit (PEL) for respirable quartz dust, i.e. 0.05 mg/m<sup>3</sup> ensured the user is below the permitted limits [radioactive dose annual intake] established for uranium and thorium. [North American Refractories Co.]</p>



<b>LIMESTONE</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 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.</p> <p>Eye (rabbit) 0.75: mg/24h - No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects.</p>
<b>PORTLAND CEMENT &amp; SODIUM METASILICATE, ANHYDROUS &amp; FERRIC OXIDE &amp; CELLULOSE</b>	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.</p>
<b>PORTLAND CEMENT &amp; ALUMINIUM</b>	<p>No significant acute toxicological data identified in literature search.</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 available but does not fill the criteria for classification  
✔ – Data available to make classification  
☉ – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
silica amorphous	LC50	96	Fish	120.743mg/L	3
silica amorphous	EC50	48	Crustacea	ca.7600mg/L	1
silica amorphous	EC50	72	Algae or other aquatic plants	440mg/L	1
silica amorphous	EC50	384	Crustacea	28.000mg/L	3
silica amorphous	NOEC	72	Algae or other aquatic plants	60mg/L	1
sodium metasilicate, anhydrous	LC50	96	Fish	180mg/L	1
sodium metasilicate, anhydrous	EC50	96	Crustacea	160mg/L	1
ferric oxide	LC50	96	Fish	0.05mg/L	2
ferric oxide	EC50	72	Algae or other aquatic plants	18mg/L	2
ferric oxide	EC50	504	Crustacea	4.49mg/L	2
ferric oxide	NOEC	504	Fish	0.52mg/L	2

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cellulose	LC50	96	Fish	7.45058mg/L	3
cellulose	EC50	96	Algae or other aquatic plants	17857.93905mg/L	3
cellulose	EC50	384	Crustacea	42.76118mg/L	3
red iron oxide	LC50	96	Fish	0.05mg/L	2
red iron oxide	EC50	72	Algae or other aquatic plants	18mg/L	2
red iron oxide	EC50	504	Crustacea	4.49mg/L	2
red iron oxide	NOEC	504	Fish	0.52mg/L	2
aluminium	LC50	96	Fish	0.078-0.108mg/L	2
aluminium	EC50	48	Crustacea	0.7364mg/L	2
aluminium	EC50	96	Algae or other aquatic plants	0.0054mg/L	2
aluminium	BCF	360	Algae or other aquatic plants	9mg/L	4
aluminium	EC50	120	Fish	0.000051mg/L	5
aluminium	NOEC	72	Algae or other aquatic plants	>=0.004mg/L	2

**Legend:**

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

**Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
silica amorphous	LOW	LOW
cellulose	LOW	LOW

**Bioaccumulative potential**

Ingredient	Bioaccumulation
silica amorphous	LOW (LogKOW = 0.5294)
cellulose	LOW (LogKOW = -5.1249)

**Mobility in soil**

Ingredient	Mobility
silica amorphous	LOW (KOC = 23.74)
cellulose	LOW (KOC = 10)

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

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▪ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▪ Consult State Land Waste Management Authority for disposal.</li> <li>▪ Bury residue in an authorised landfill.</li> </ul>
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**SECTION 14 TRANSPORT INFORMATION****Labels Required**

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

Continued...

**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**

Not Applicable

## SECTION 15 REGULATORY INFORMATION

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

#### **SILICA AMORPHOUS(7631-86-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

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

#### **PORTLAND CEMENT(65997-15-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

#### **SODIUM METASILICATE, ANHYDROUS(6834-92-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

#### **FERRIC OXIDE(1309-37-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

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

#### **CELLULOSE(9004-34-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

#### **ZIRCONIUM SILICATE(14940-68-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

#### **LIMESTONE(1317-65-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Inventory of Chemical Substances (AICS)

#### **RED IRON OXIDE(1332-37-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

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

#### **ALUMINIUM(7429-90-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

National Inventory	Status
Australia - AICS	Y
Canada - DSL	N (limestone)
Canada - NDSL	N (portland cement; red iron oxide; zirconium silicate; aluminium; ferric oxide; sodium metasilicate, anhydrous)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (limestone; portland cement; aluminium; cellulose)
Korea - KECI	Y
New Zealand - NZIoC	Y

Philippines - PICCS	N (portland cement)
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

## SECTION 16 OTHER INFORMATION

### Other information

#### Ingredients with multiple cas numbers

Name	CAS No
silica amorphous	7631-86-9, 112945-52-5, 67762-90-7, 68611-44-9, 68909-20-6, 112926-00-8, 61790-53-2, 60676-86-0, 91053-39-3, 69012-64-2, 844491-94-7
cellulose	9004-34-6, 68442-85-3
zirconium silicate	14940-68-2, 10101-52-7
red iron oxide	1332-37-2, 1309-37-1
aluminium	7429-90-5, 91728-14-2

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  
 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