





### Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

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Chemical Identity of Ingredients	CAS No.	Prop'n	Risk Phrases as 100%
Sodium Borosilicate Powder	50815-87-7 or 1344-09-8 and 7775-19-1	>99.5%	-
Moisture (loss on drying at 105 °C)	7732-18-5	<0.5%	-
Loss on Ignition at 900 °C		3-7%	

### Section 4. FIRST AID MEASURES

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Swallowed	Immediately rinse mouth with water. Repeat until product is thoroughly removed. Give water to drink. Get medical attention if effects develop or persist.
Eye	Immediately rinse with plenty of water for at least 15 minutes. Eyelids to be held open. Obtain medical attention if physical irritation persists.
Skin	Wash contaminated skin with plenty of water. Get medical attention if irritation effects develop or persist.
Inhaled	Remove victim to fresh air. Get medical attention if health effects develop or persist.
<b>First-Aid Facilities</b>	Safety shower and eye wash facilities nearby.
<b>Advice to Doctor</b>	Treat symptomatically as for physical irritation.

### Section 5 - FIRE FIGHTING MEASURES

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Fire or Explosion Hazard:	Solid, non combustible powder. Electrostatic discharges may occur when pumping / transferring / pouring the dry powder.
Extinguishing Media:	Any extinguishing media suitable for the surrounding area.
Combustion Product Hazards	No significant hazardous combustion products. Fire conditions may release siloxane decomposition products and dust clouds containing the microspheres.
Special Protective Precautions & Equipment	Eye and Respiratory protection where dust clouds are formed. No other special precautions required.

### Section 6 - ACCIDENTAL RELEASE MEASURES

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Emergency Procedures	Do not breathe dust. Avoid contact with skin and eyes. <b>Small spill cleanup:</b> Vacuum, shovel, sweep or mop up. Avoid raising dust clouds. <b>Large spill cleanup:</b> Keep unnecessary people away. Avoid walking through the spilled material. Vacuum, scoop or shovel up. Avoid raising dust clouds. Place spillages in clean labeled containers for reuse, recycling or disposal. See <i>Section 13</i> for Disposal Considerations
Special Issues	Spilled material may be a slipping hazard.



**Section 7 - HANDLING and STORAGE**

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Safe Handling      Avoid contact with eyes, skin and clothing. Avoid breathing dusts.  
Keep container closed. Use only in well ventilated areas.  
Promptly clean up any spills or residues.

Safe Storage      Keep containers closed at all times. Store in original containers or in clean metal or plastic containers and keep dry.

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

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National Exposure Standards      No exposure standards have been established for the borosilicate glass or siloxane surface coating ingredients in this product by NOHSC (Worksafe Australia).

SUBSTANCE	TWA		STEL	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Nuisance Dust, Inspirable	-	10	-	-

This standard is the manufacturer's recommendation for good practice.  
All atmospheric contamination should be minimised.

Design and Engineering Control Measures      Use in well ventilated area. Avoid generating and inhaling dusts. When transferring the product consider the potential for electrostatic charge build up and the need to dissipate.

Personal Protective Equipment      Avoid skin and eye contact. Avoid inhaling the dust. Follow normal industrial safety practices. The use of protective clothing and equipment depends on the degree and nature of exposure. The following personal protective equipment should be used:

- (1) Safety glasses, goggles or faceshield as appropriate.
- (2) Plastic, Rubber, Leather or Cotton gloves as appropriate.
- (3) Safety boots.
- (4) Overalls, splash apron or similar protective apparel.
- (5) Respiratory protection to AS1715/1716 when dusts levels are present.

Wash contaminated clothing and protective equipment before storing and re-using.  
The use of barrier cream is recommended to minimise the skin drying effects of this material.

Where applicable refer to the following Standards:

- AS/NZS1337 Eye protectors for industrial applications
- AS1715 Selection, use & maintenance of respiratory protective devices
- AS1716 Respiratory protective devices
- AS2161 Industrial safety gloves and mittens
- AS2210 Safety footwear
- AS3765 Clothing for protection against hazardous chemicals.

**Section 9 - PHYSICAL and CHEMICAL PROPERTIES**

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Appearance and Odour      Fine, white powder with no odour.

Chemical Formula      Na<sub>2</sub>SiO<sub>3</sub> / NaBO<sub>2</sub> (fused ingredients general formulae)

Melting Point / Boiling Point      MP: >350°C      BP: Not determined

Decomposition Temperature

Vapour Pressure      Not determined

Relative Vapour Density      Not applicable

Specific Gravity or Density      Not applicable (as the microsphere is hollow)

Bulk Density      150-500 kg/m<sup>3</sup> (with narrow ranges for each grade)



Solubility	Insoluble in water.
pH	7 to 9 (of a 5% slurry when left for several hours) (estimated)
Percent Volatile	<0.5%
Octanol/Water Partition	Not applicable (not soluble in either fraction)
Co-efficient	
Corrosiveness	No corrosive effects known
<b>Flammable Properties</b>	Non combustible solid.
Flashpoint	Not applicable
Flammability Limits (FL) (%)	Not applicable
Autoignition Temp	Not applicable
Particle Size	Mean: 30-125 micrometres (with a narrower range for each grade) Inspirable/Respirable Particles <7 micrometres: <2% (estimated)

### Section 10 - STABILITY AND REACTIVITY

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Chemical Stability	Stable.
Conditions To Avoid:	Dust cloud formation.
Incompatible Materials:	None in particular. Strong bases may eventually dissolve the microspheres. Hydrofluoric Acid solutions will dissolve these microspheres.
Unsuitable Container Materials:	None in particular. Containers should allow any electrostatic charges built up to dissipate.
Hazardous Decomposition Products:	
Hazardous Reactions:	None known.

### Section 11 - TOXICOLOGICAL INFORMATION

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Toxicity Data: **Acute Oral Toxicity** LD50 (rat): >5000 mg/kg (estimated)

**Eye Irritation:** May cause physical eye irritation.

**Skin Irritation:** May cause physical skin irritation.

**Oral Toxicity:** When a similar product was tested for acute oral toxicity to rats at a dosage level of 500 mg/kg body weight, all animals survived and gained weight.

**Respiratory Toxicity:** When a similar product was tested for respiratory toxicity in a 6-month intratracheal study in rats, no mortalities, untoward reactions, or observations correlated with exposure to the product. Minimal multifocal inflammation of the lung occurred in 90% of males and 80% of females. No appreciable increase in fibrous tissue was present in these lesions.



**Eye Irritation:** Not an Eye Irritant requiring labelling with R36.

When similar materials were tested for acute eye irritation in rabbits they caused iritis grade 1, redness was observed grade 1-2, chemosis grade 2 was observed as well as fluorescein stain retention.

*Two Q-CEL Microsphere products were tested for Eye Irritation in the USA in 2000:*  
Test 1/ 5mg placed into the conjunctival sac: No corneal opacity was noted in any observation period. Iritis of 1 noted in 1 of 3 eyes at 1hr, cleared by 24 hrs. Conjunctival irritation scores of 2 (redness), 2 (chemosis), 2 (discharge) at 1hr noted in 3 eyes that had cleared by 24hrs.

Test 2/ 5mg placed into the conjunctival sac: No corneal opacity or iritis was noted in any observation period. Conjunctival irritation scores of 1-2 (redness), 0-2 (chemosis), 0-2 (discharge) at 1hr noted in 3 eyes that had cleared by 24hrs.

**Human Experience:** 20 years experience handling the product in a manufacturing facility have not lead to any reported skin, eye or respiratory irritation effects.

**Skin Irritation:** When a similar product was tested for skin irritation potential, it caused very slight erythema to abraded skin. Its primary skin irritation index was 0.04, and so was not considered to be a primary skin irritant.

**Carcinogenic Effects:** Not listed as a Carcinogen by the WHO IARC, USA NTP or USA OSHA.

## Section 12 - ECOLOGICAL INFORMATION

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General:	Avoid contaminating waterways. Insoluble in water. Will float on water due to its hollow nature. Not expected to be an environmental hazard, but may physically block systems.
Ecotoxicity Data:	The Boron content in this borosilicate matrix, is not able to be released into the environment in quantities that cause harm. <i>Note:</i> Boron is an essential element for growth of plants, but at higher levels, greater than 0.75 mg/l, boron is toxic to some plants, particularly citrus crops.
Persistence & Degradability	This material is stable and does not readily degrade (dissolve). It is not expected to bioaccumulate.
Mobility	Will float on water. Expected to be immobile in soil.

## Section 13 - DISPOSAL CONSIDERATIONS

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Disposal Methods & Containers	Disposal to be in accordance with Local, State & Federal EPA waste regulations. Normally suitable for disposal at approved land waste .
Landfill, Incineration	May be landfilled. Not suitable for incineration.

## Section 14 - TRANSPORT INFORMATION

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<b>ROAD &amp; RAIL:</b>	Not defined as a Dangerous Good: by the Australian Code for the Transport of Dangerous Goods by Road & Rail.
<b>SEA:</b>	Not a Dangerous Good according to the International Maritime Dangerous Goods Code (IMDG Code).
<b>AIR:</b>	Not a Dangerous Good according to the International Air Transport Association (IATA) Dangerous Goods Regulations.



**Section 15 - REGULATORY INFORMATION**

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**Labelling:**           **Not a Workplace Hazardous**  
                          **Not a Scheduled Poison**  
                          **Not a Dangerous Good**

**Packaging**           Any type. However, consider the potential for electrostatic charge dissipation.

**Australian Chemical Control Schemes**

NICNAS – AICS       *All ingredients are on the Australian Inventory of Chemical Substances.*

Aust. Pesticides & Veterinary Medicine Authority -	Ag & Vet Chemicals	<i>Not applicable</i>
Therapeutic Goods Administration -	Medicines	<i>Not applicable</i>
Food Standards Australian & New Zealand -	Food	<i>Not applicable</i>
Chemicals	Ozone Depleting	<i>Not applicable</i>
Weapons Act	Substance Act	

**Section 16 - OTHER INFORMATION**

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**MSDS Dates and Revisions**

MSDS Original Preparation Date    : 10<sup>th</sup> November 2004 (Draft 2)  
MSDS Latest Revision Date         : 4<sup>th</sup> November 2009  
Sections Changed in Latest Revision : -

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MSDS APPROVED :                   4<sup>th</sup> November 2009

**Acronyms Used**

ADG Code	Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road & Rail
NOHSC	Australian National Occupational Health and Safety Commission
WHS	Workplace Hazardous Substance
CAS No.	Chemical Abstracts Service Registry Number
UN No.	United Nations Dangerous Goods Number

**MSDS Code Used**   This MSDS has been prepared according to the National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC:2011(2003)]

This MSDS summarises to the best of our knowledge the health and safety hazard information on the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace, including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.