PQ Australia Pty. Ltd.
an affiliate of The PQ Corporation

MATERIAL SAFETY DATA SHEET

Q-CEL INORGANIC MICROSPHERES

Not a Hazardous Substance according to the Criteria of the Australian NOHSC.
Not a Dangerous Good according to the ADG Code.

Section 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

IDENTIFICATION

Product Name **Q-CEL Inorganic Microspheres**

Other Names Hollow Microspheres

Trade Names:
Q-CEL Inorganic Microspheres

Manufacturer:
PQ AUSTRALIA PTY LTD

USE

Specialty engineering additive in plastics. e.g. it is added to modify the density; impact resistance; wear resistance; provide thermal or acoustic insulation.

COMPANY DETAILS

Company Name **PQ Australia Pty Ltd**

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Section 2. HAZARDS IDENTIFICATION

Emergency Overview: Fine, white powder with no odour. Not combustible. Dusts can cause physical irritation to eyes and respiratory system. May cause dry skin and mild irritation.

Dangerous Goods Information: Not a Dangerous Good according to the ADG Code.

Hazardous Substances Information: Not a Hazardous Substance according to the Criteria of the Australian NOHSC.

Poison Schedule Not a Scheduled Poison

Acute Health Effects

Swallowed	May cause slight irritation to mouth, throat and stomach.
Eye	Dusts can cause physical irritation to eyes. May cause redness and tearing.
Skin	May cause dry skin and mild skin irritation.
Inhaled	Dusts may cause respiratory irritation. May cause sneezing. May cause dryness of the mucous membranes.

Chronic Health Effects

All Routes Prolonged or repeated skin contact may cause dry skin. Defatting of the skin can

result in irritation and dermatitis (inflammation of the skin).

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Identity of Ingredients	CAS No.	Prop'n	Risk Phrases as 100%
Sodium Borosilicate Powder	50815-87-7	>99.5%	-
Siloxane, Methyl Hydrogen (bonded to spheres)	63148-57-2	<0.5%	-
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

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.
First-Aid Facilities	Safety shower and eye wash facilities nearby.
Advice to Doctor	Treat symptomatically as for physical irritation.

Section 5 - FIRE FIGHTING MEASURES

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

Emergency Procedures	Do not breathe dust. Avoid contact with skin and eyes. ***Small spill cleanup****:* Vacuum, shovel, sweep or mop up. Avoid raising dust clouds. ***Large spill cleanup:*** 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 *Section 13* for Disposal Considerations
Special Issues	Spilled material may be a slipping hazard.

Section 7 - HANDLING and STORAGE

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

National Exposure Standards

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

SUBSTANCE	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Nuisance Dust, Inspirable	-	10	-	-

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

If heated above 150°C the Siloxane surface coating will start decomposing and release trace amounts of Formaldehyde vapour.

Formaldehyde	1 ppm	1.2 mg/m^3	TWA	2 ppm	2.5 mg/m^3 STEL

Formaldehyde is a Carcinogen Category 2 – Probable Human Carcinogen

Design and Engineering Control Measures

Use in well ventilated area. Avoid generating and inhaling dust. 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

Appearance and Odour	Fine, white powder with no odour.
Chemical Formula	Na_2SiO_3 / $NaBO_2$ (fused ingredients general formulae)
Melting Point / Boiling Point	MP: >350°C BP: Not determined
Decomposition Temperature	At >150°C the Siloxane coating starts to decompose
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^3 (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 Co-efficient	Not applicable (not soluble in either fraction)
Corrosiveness	No corrosive effects known
Flammable Properties	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

Chemical Stability	Stable.
Conditions To Avoid:	Dust cloud formation.
Incompatible Materials:	None in particular. However strong oxidizing agents may react with the Siloxane coating. 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:	If Overheated: The Siloxane coating will start decomposing above 150°C and release trace formaldehyde vapours, that may build up in enclosed areas, and cause irritation.
Hazardous Reactions:	None known.

Section 11 - TOXICOLOGICAL INFORMATION

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

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. *Note:* 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

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

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

Section 15 - REGULATORY INFORMATION

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	*Not applicable*
Therapeutic Goods Administration -		Medicines	*Not applicable*
Food Standards Australian & New Zealand -		Food	*Not applicable*
Chemicals Weapons Act	*Not applicable*	Ozone Depleting Substance Act	*Not applicable*

Section 16 - OTHER INFORMATION

MSDS Dates and Revisons

MSDS Original Preparation Date	:	10th November 2004 (Draft 2)
MSDS Latest Revision Date	:	-5th May 2005
Sections Changed in Latest Revison	:	-

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MSDS APPROVED : 15th December 2004

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.