MATERIAL SAFETY DATA SHEET

MSDS Review Date: April 2007

E - SPHERES®

Not classified as hazardous according to criteria of NOHSC (ASCC).
Not classified as a dangerous good according to ADG Code.

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1	**Identification of the Product:**	E-SPHERES SL Series
1.2	**UN Proper Shipping Name:**	None Allocated
1.3	**Recommended Use:**	Lightweight inert filler
1.4	**Supplier:**	Envirospheres Pty Ltd PO Box 497, Lindfield NSW 2070 Australia
1.5	**ABN:**	93 077 898 849
1.6	**Telephone:**	(+61 2) 9416 5644
1.7	**Fax:**	(+61 2) 9416 1718
1.8	**Emergency Telephone Number:**	(+61 2) 9416 5644
1.9	**E-mail:**	info@envirospheres.com

2. HAZARDS IDENTIFICATION

2.1	**Hazard Classification:**	Non-hazardous Substance. Non-dangerous goods.
2.2	**Risk Phrase(s):**	None Allocated.
2.3	**Safety Phrase(s):**	None Allocated.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hollow spheres approx 100-350 micron in diameter of fused alumino silicate (CAS 68131-74-8) containing the following inseparable phases:

Chemical Name	CAS Number	Proportion
Amorphous alumino silicate	1327-36-2	65 - 85%
Mullite	1302-93-8	20 - 30%
Quartz	14808-60-7	0 - 1%
Calcite	1317-65-3	0 - 5%

Ingredients determined not to be hazardous to 100%.

Quartz is at or less than the analytical detection limit for XRD analysis (less than 1%).
Any quartz is fused into the ceramic matrix and hence it is not biologically available.
The spheres are inert and do not leach detectable levels of heavy metals.

4. FIRST AID MEASURES

4.1 Description of Necessary First Aid Measures:

Ingestion: Drink water, do not induce vomiting.
Eye: Flush continuously with water for 15 minutes, eyelids to be held open, do not rub eyes.
Skin: If skin becomes irritated, remove clothing, wash areas of contact with soap and water. Using a skin cream or lotion may be helpful in reducing irritation.
Inhalation: Remove exposed person to fresh air.

4.2 Medical Attention and Special Treatment:

First Aid Facilities: None should be required.
Comments: Treat according to person's condition and specifics of exposure.
Advice to Doctor: Treat symptomatically for irritant effects.

5. FIRE FIGHTING MEASURES

5.1 Suitable Extinguishing Media: Not applicable. Material not combustible.

5.2 Hazards from Combustion Products: Not applicable. Material not combustible.

5.3 Precautions for Fire Fighters and Special Protective Equipment: Not applicable. Material not combustible.

5.4 Hazchem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

6.1 Emergency Procedures: None required.

6.2 Methods and Materials for Containment and Clean Up Procedures: Shovel up bulk, use vacuum cleaner to clean up residues. Laws and regulations may apply to releases and disposal of this material. You will need to determine which local laws and regulations are applicable.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling: Where possible use local exhaust ventilation.

7.2 Conditions for Safe Storage: Keep dry. No special storage requirements.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 National Exposure Standards:

10 mg/m^3 Dust Not Otherwise Classified (inhalable dust), (NOHSC 1995).
10 mg/m^3 Particulates Not Otherwise Classified (inhalable dust), (ACGIH).

8.2 Biological Limit Values: No biological limit allocated.

8.3 Engineering Controls: Where possible use local exhaust ventilation.

8.4 Personal Protective Equipment:

Respiratory:	A half-face (P1 or P2) respirator should be worn during work in poorly ventilated spaces, or where evidence suggests that inhalable dust levels may exceed 10 mg/m^3. All respiratory devices should be tested for compliance with AS/NZS 1715 & AS/NZS 1716 or local equivalent standard.
Suitable Respirator:	A half-face (P1 or P2) dust type.
Hand:	None should be required.
Eye:	Where overhead work is involved, goggles & head covering should be worn.
Skin:	Washing at mealtime and end of shift is adequate.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Description/Properties:

Physical Form, colour and odour:	Fine white/grey/tan powder, no odour.
Vapour Pressure:	Not applicable.
Boiling Point:	Not applicable.
Melting Point:	1200° - 1400°C
Solubility in Water:	Insoluble.
Specific Gravity @ 25°C:	0.75 – 0.95
Flash Point:	Not applicable.
Lower Flammability Limit:	Not applicable.
Upper Flammability Limit:	Not applicable.
Auto ignition temperature:	Not applicable.

10. STABILITY AND REACTIVITY

10.1 Chemical Stability: Stable.

10.2 Conditions to Avoid: None known.

10.3 Incompatible Materials: Can react with strong oxidisers.

10.4 Hazardous Decomposition Products: None known.

10.5 Hazardous Reactions: Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

11.1 Likely Route of Exposure: [X] Inhalation [X] Skin Contact [X] Ingestion

11.2 Health Effects From Likely Routes of Exposure:

Acute:

Ingestion:	If ingested in sufficient quantity may cause temporary gastric irritation.
Eye:	Physical irritation. Abrasive action may cause damage to outer surface of the eye.
Skin:	May cause irritation and inflammation due to defatting or mechanical action.
Inhalation:	Irritation to nose, throat and upper respiratory tract.

Chronic: None expected from low concentration of quartz, refer Other Information.

The above listed potential effects of overexposure are based on actual data, the results of studies performed upon similar compositions, component data, and/or expert review of the products.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity: No adverse effects on aquatic organisms are predicted.
Bioaccumulation: No bioaccumulation potential.

12.2 Environmental Fate and Distribution: Not soluble in water. It will adhere to soil or sediments.

12.3 Fate and Effects in Waste Water Treatment Plants: No adverse effects on bacteria are predicted.

13. DISPOSAL CONSIDERATIONS

13.1 Disposal Method: Waste should be placed in containers, plastic bags or other methods which prevent dust emission, and disposed of in accordance with the local waste disposal authority requirements.

13.2 Special Precautions for Landfill or Incineration: None known.

14. TRANSPORT INFORMATION

14.1 UN Number: None allocated.

14.2 UN Proper Shipping Number: None allocated.

14.3 Dangerous Goods (Class and Subs Risk): None allocated.

14.4 Special Precautions for User: Not applicable.

14.5 Hazchem Code: Not applicable.

15. REGULATORY INFORMATION

15.1 SUSDP Poisons Schedule Number: None allocated.

15.2 Prohibition/Licensing Requirements: There are no applicable prohibition or notification/licensing requirements, including for carcinogens under Commonwealth, State or Territory legislation.

15.3 Industrial Chemicals (Notification and Assessment) Act 1989: All ingredients are listed on or exempt from the *Australian Inventory of Chemical Substances* (AICS).

16. OTHER INFORMATION

Date of Last Revision: April 2004

Contact Points Technical Manager **(+61 2) 9416 5644**

E-SPHERES consist of amorphous and poorly crystalline alumino silicates with a very low crystalline silica (quartz) content. The quartz is fused into the ceramic matrix and hence it is not biologically available. The spheres are inert and do not leach detectable levels of heavy metals. Particle size analysis indicates that 99% of the particles are greater than 20 micron with less than 0.5% being in the respirable size range. On the basis of findings of increased lung cancer risk in silicotics in some industries (but not in others) IARC has classified quartz as carcinogenic. However, in line with evidence from other naturally occurring non-fibrous alumino silicates that also contain low levels of quartz, if dust exposures are kept below the exposure standard, no long term health or toxic effects such as pneumoconiosis or lung cancer are expected.

Disclaimer: This information is based on our current knowledge and is intended to describe the product for the purpose of health, safety and environmental requirements only. Since Envirospheres Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product.