

E-SPHERES®

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

1.1 Product Identifier

Product name	E-SPHERES®
Synonyms	Cenospheres, hollow ceramic microspheres E-SPHERES SL series E-SPHERES ES series
EU REACH Registration Number	01-2119563688-21-0002

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Identified use	Light weight inert filler for industrial applications only
Use advised against	None

1.3 Details of the Supplier

Company	Envirospheres Pty Ltd PO Box 497 Lindfield NSW 2070 Australia
ABN	93 077 898 849
Telephone	+61 2 9416 5644
E-mail	info@envirospheres.com.au
Website	http://www.envirospheres.com

1.4 Emergency Telephone Number

Telephone	+61 2 9416 5644 9am to 5pm Australian Eastern Time
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2 HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification according to GHS	Not classified as hazardous.
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2.2 Label Elements

Pictogram	Not required
Single word	No single word
Hazard statement	None
Precautionary statement(s)	Handle with care to avoid dust generation.



2.3 Other Hazards

PBT and vPvB	Substance does not meet the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) substances.
Endocrine disruptors	Not applicable.
Other	Exposure may aggravate pre-existing respiratory conditions.

3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Characterisation	Amorphous alumino silicate (or aluminosilicate) in the form of hollow ceramic microspheres approximately 40-500 micron in diameter, containing the following inseparable phases:
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Chemical Name	CAS Number	Weight % content
Amorphous alumino silicate	1327-36-2	65-85
Mullite	1302-93-8	20-30
Calcite	1317-65-3	0-5
Quartz	14808-60-7	0-1

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 not biologically available.

The spheres are inert and do not leach detectable levels of heavy metals.

4 FIRST AID MEASURES

4.1 Description of First Aid Measures

Inhalation	Move person to fresh air. If symptoms persist, seek medical advice.
Skin contact	Remove contaminated clothing and wash with plenty of water. Seek medical advice if irritation develops or persists.
Eye contact	Immediately rinse eyes with water. Remove contact lenses if present and easy to remove and continue to rinse. Seek medical advice if symptoms persist.
Ingestion	Rinse mouth thoroughly and seek medical advice as required.

4.2 Most Important Symptoms and Effects, both Acute and Delayed

Inhalation	Prolonged exposure may cause irritation.
Skin contact	Prolonged exposure may cause skin irritation.
Eye contact	May cause eye irritation.
Ingestion	Symptomatic treatment and seek medical advice in case of prolonged discomfort.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Immediate medical attention Treat symptomatically.

5 FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media This product is not combustible. Choose extinguishing media suitable for surrounding fire.

5.2 Special Hazards Arising from the Substance or Mixture

Fire hazards Product is not flammable.

5.3 Advice for Fire Fighters

Protective equipment Self-contained respirator / breathing apparatus.

Additional information on firefighting No special measures required. Use PPE and extinguishing measures that are appropriate to the surrounding environment. Do not allow run off into drains and water ways.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Non-emergency personnel Evacuate from area.

Emergency personal Ensure adequate ventilation and avoid generation and breathing of dust. Wear protective clothing as per section 8.1. Respiratory protection, gloves and safety glasses must be used in high dust conditions.

Emergency procedures *Minor spills:* Clean up the area immediately using dry clean up procedures and avoid generation of dust.

Major spills: Avoid generation of dust. Contain any spills with bunding and covering of drains to prevent migration and entry into sewers or streams. See section 6.3 for clean-up procedures.

6.2 Environmental Precautions

Environmental precautions E-spheres are inert and are not expected to present a hazard to the environment. Prevent product from entering drains and waterways. If contamination of waterways occurs, contact the Environmental Protection Authority (EPA) in your state or territory.

6.3 Methods and Materials for Containment and Cleaning Up

Methods for cleaning up Avoid dust formation and dispersal of dust, if appropriate wet down using a gentle water spray to help minimise dust formation.

Dust must be exhausted directly at the point of origin. Use approved industrial vacuum cleaner for removal.

Wash spill site if necessary and retain all contaminated water. Dispose of in accordance with federal, state, or local regulations.

6.4 Reference to Other Sections

Refer to section 8 for personal protection and section 13 for waste disposal.

7 HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Safe handling

Minimise dust generation and accumulation. Wear personal protective equipment and avoid breathing dust and prolonged contact with product. Wear approved and suitable dust mask in high dust areas.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Storage specifications

Store in original bags or tightly closed containers in a dry and well-ventilated area. Do not store near food or drinking water.

7.3 Specific End Use(s)

Refer to section 1.2.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

Particulates (insoluble or poorly soluble) not otherwise specified, PNOS

Safe Work Australia WES (8hr TWA) 10mg/m³ Inhalable/inspirable dust.

Safe Work Australia WES (8hr TWA) 5mg/m³ Respirable dust.

8.2 Exposure Controls

Appropriate engineering controls

Provide adequate ventilation and minimise dust inhalation. Local exhaust ventilation is recommended to keep dust levels below exposure limits.



Personal protective equipment

Safety glasses, gloves, protective clothing, and dust mask.

Respiratory equipment

Approved and suitable respiratory protection must be used in high dust environments. Respiratory protection should comply with Australian standard AS/NZS 1716.

Hand protection

Protective gloves resistant to chemicals must be worn.

Eye Protection

Wear dust resistant safety goggles with side protection complying to AS/NZS 1336.

Skin protection

Wear suitable protective clothing, gloves and eye/face protection.

General hygiene measures:

Do not eat, drink, or smoke when handling. Wash hands before breaks and after work

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Physical state	Free flowing powder.
Form	Hollow microspheres.
Colour	White or Grey
Odour	No perceptible odour
pH	6 – 8 (in aqueous solution)
Melting point	1500° C - 1800 °C
Boiling point / °C	Not applicable
Flash point / °C	Not combustible
Flammability	Non-flammable
Risk of explosion	Not explosive
Vapour pressure	Not applicable
Relative Density	0.6 - 0.9 g/cm ³
Bulk Density	0.3 - 0.4 g/cm ³
Solubility	Insoluble in water
Partition coefficient (n-octanol/water)	Not applicable
Decomposition temperature	No data available
Viscosity, dynamic	Not applicable
Oxidation	Not oxidising
Particle characteristics using laser light scattering method (volume based)	Typical particle size distribution 20-500 microns

10 STABILITY AND REACTIVITY

10.1 Reactivity:	No specific reactivity hazard associated with this product.
10.2 Chemical Stability:	Product is chemically stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	None known.
10.4 Conditions to Avoid:	No special requirements
10.5 Incompatible Materials :	None known
10.6 Hazardous Decomposition Materials:	None known

11 TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute toxicological effects

No LD 50 and LC 50 data is available for this product.

Skin irritation or exacerbation of pre-existing skin conditions may result from prolonged physical contact. May cause eye irritation if exposed to large amounts of dust. Inhalation of high levels of airborne dust may cause irritation of the respiratory system.

Chronic toxicological effects.

No data available but if dust exposures are kept below the exposure standard, no long-term health, or toxic effects such as pneumoconiosis or lung cancer are expected.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

No specific adverse effects are known.

12.2 Persistence and Degradability

Biodegradability

Product is inorganic. The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative Potential

No information available.

12.4 Mobility in Soil

No data available

12.5 Results of PBT and vPvB Assessment

Product does not contain any (very) Persistent, (very) Bioaccumulative and/or Toxic substances.

12.6 Endocrine disruptor

Not Identified as a substance with endocrine disrupting properties.

12.7 Other Adverse Effects

Product does not meet the classification criteria for ecotoxicological endpoints in accordance Globally Harmonised System of Classification and Labelling of Chemicals (GHS Rev., 7).

13 DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Disposal considerations

Product should be recovered for recycling if possible. Product should be disposed of in accordance with the local and national regulations.

14 TRANSPORT INFORMATION

- 14.1 UN Number** Not allocated
- 14.2 Proper Shipping Name** Not allocated
- 14.3 Transport Hazard Class and Subsidiary Risk**
- | | |
|------------------------------|---|
| Land Transport (ADR/RID/DOT) | Not classified as hazardous for transport |
| Sea Transport IMDG | Not classified as hazardous for transport |
| Air Transport ICAO/IATA | Not classified as hazardous for transport |
- 14.4 Packing Group** Not allocated
- 14.5 Environmental Hazards** Not regulated as dangerous goods

15 REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations / Legislations Specific for the Substance or Mixture

Classified as non-dangerous goods. Safe Work Australia criteria is based on the Globally Harmonized System (GHS) of classification and labelling of chemicals.

SUSDP Poisons Schedule Number: None allocated.

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

The product is an article as defined by TSCA, EINECS, CDSL, MITI, KECI, AICS, PICCS and CICS regulations and is exempt from chemical inventory listing requirements.

The chemical components of the product are listed under the following chemical inventory as per table below.

Country/Region	Inventory	Aluminium silicate	Mullite	Calcite	Quartz
CAS Number		1327-36-2	1302-93-8	1317-65-3	14808-60-7
Australia	Australian Inventory of Chemical Substances (AICS)	Listed	Listed	Listed	Listed
Canada	Domestic Substances List (DSL)	Listed	Listed	Not Listed	Listed
Canada	Non-Domestic Substances List (NDSL)	Not Listed	Not Listed	Listed	Not Listed
China	Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)	Listed	Listed	Listed	Listed
Europe	European Inventory of Existing Commercial chemical Substances (EINECS)	Listed	Listed	Listed	Listed

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Japan	Japan Inventory of Existing and New Chemical Substances (ENCS)	Not Listed	Listed	Not Listed	Listed
New Zealand	New Zealand Inventory (NZIoC)	Listed	Listed	Listed	Listed
Philippine	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Listed	Not Listed	Not Listed	Listed
South Korea	Korean Existing Chemicals List (KECI)	Listed	Listed	Listed	Listed
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Listed	Listed	Listed	Listed
USA	Toxic Substances Control Act Inventory (TSCA)	Listed	Listed	Listed	Listed

15.2 Chemical Safety Assessment

Safety assessment

No information available

16 OTHER INFORMATION

16.1 General Information

E-SPHERES consist of amorphous and poorly crystalline alumino silicates. XRD analysis of crystalline silica (quartz) determines that the quartz content is below the detection limit of analysis (in bulk materials).

Any quartz that is potentially present is fused into the microspheres' ceramic/glass matrix and it is not biologically available. E-SPHERES show no evidence of liberated (free) crystalline silica (quartz).

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 may 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.

E-SPHERES are inert and do not leach detectable levels of heavy metals.

16.2 Revision

Revision date: August 2024 - Reviewed and replaces safety data sheet issued on February 2023.

Issue date: 29 August 2024

Disclaimer

The information given in this SDS is to the best of Envirospheres' knowledge and believed accurate and reliable as of the data indicated. However, no warranty or guarantee is made to its accuracy, reliability, or completeness. The information provided is based on proper handling and anticipated uses and is not valid for the material used in combination with other materials or in any process. Each user must, prior to usage, review this SDS to determine the suitability of the information for their particular use.