

E-SPHERES

E-SPHERES: the functional filler

Imagine, a mineral additive that can improve your product...

If you're in the manufacturing business you're always looking for ways to improve your product. Whether you make sealants, coatings, putties, refractory products, composites or cementitious products, your formulation could benefit from

E-SPHERES®.

E-SPHERES can reduce your product's weight, improve its performance and lower its cost.

What are E-SPHERES®?

E-SPHERES are white microscopic hollow ceramic spheres that are ideal for a wide range of uses. Looking just like a white powder to the naked eye.

E-SPHERES are used in a variety of manufacturing applications because of their unique properties

E-SPHERES: unique benefits

What makes E-SPHERES® so special?

E-SPHERES represent a new standard in microsphere quality and performance

Extreme heat resistance

With a melting point between 1600 and 1800 Degrees Celsius, **E-SPHERES** can withstand temperatures far higher than any other comparable microsphere. This extreme temperature resilience is achieved through unique refractory properties.

High compressive strength

E-SPHERES have unusually high compressive strength and can handle pressures of up to 10,000 psi with breakage up to a third less than comparable microspheres. This phenomenal strength extends their versatility by providing increased breakage resistance during mixing, processing and application.

Pure, clean, white

E-SPHERES' white color consistency always gives you the results you expect, as well as delivering lower tint costs.

In addition to these unique features, **E-SPHERES** provide all the benefits you would expect from a microsphere

E-SPHERES: applications

How can I use E-SPHERES®?

E-SPHERES can improve the properties and performance of many formulated products.

Products	Key Benefits	Typical Applications
Paints, Coatings and Plasters	colour, reduces cost, reduces	high-build, thermal insulation,

	weight, improves rheology, reduces sag/shrinkage, improves thermal insulation and impact resistance, chemically inert and non-absorbent	chemical and slip-resistant coatings, roof coatings, plasters/renders, auto under-body and sound dampening
Refractory/Foundry	high melting point(1600 DegC+), high compressive strength, non-flammable, thermal insulation	insulating bricks lightweight castables foundry products
Composites/FRP	lower weight, increases stiffness, greater thermal insulation, improves impact resistance, saves raw material costs, chemically inert and non-absorbent	casting, spray-up, hand lay-up, cold/hot press moulding, resin transfer moulding, syntactic foam
Cementitious Products	reduces weight, slump/shrinkage control, increases thermal insulation, improves flow and pumpability	mortars, glass reinforced cement, hydraulic concrete, lightweight panels and mouldings, polymer concrete
Caulks, sealants, putties and adhesives	reduces weight, shrinkage and cracking, improves flow and workability, colour, cost reduction, better nail/screw grip	crack/joint filling, tile adhesives, automotive/marine bodyfillers

A world of possibilities

It's easy to see that **E-SPHERES®** are an incredibly versatile additive. What makes them unique is that **E-SPHERES** also add value to your product. **E-SPHERES** give you a competitive advantage.

Ask us about the many other applications where **E-SPHERES®** bring you benefits.

E-SPHERES: products

Product Grades Available

E-SPHERES® SL Series	Nominal Particle Size Range In Microns	Approximate Particle Mean in Microns	Comments On Grade
E-SPHERES SLG	20 - 300	130	General Multipurpose
E-SPHERES SL500	250 - 500	300	Coarsest
E-SPHERES SL350	250 - 350	270	Coarse
E-SPHERES SL300	150 - 300	150	Mid Range Coarse
E-SPHERES SL180	20 - 180	115	Mid Range Fine
E-SPHERES SL150	20 - 150	100	General Purpose Fine
E-SPHERES SL125	12 - 125	80	Very Fine
E-SPHERES SL75	12 - 75	45	Finest Specialist

Technical Specifications

Technical Details	Physical Properties
Form	Free flowing white powder
Particle Size	12 - 500 microns
Colour	White
Relative density	0.6 - 0.8g/cc
Bulk density	0.4g/cc
Shell thickness	approx. 10% of diameter
pH of water dispersion	6 - 8
Melting point	1600 - 1800 Deg. C
Compressive strength	6,500 psi (45 MPa)
Hardness	6 Moh's scale
Refractive index	1.53
Thermal conductivity	0.1 W / m / Deg.C
Oil absorption	7g/100g
Chemical Properties	Typical (By Weight):
Silica SiO ₂	55 - 60%
Alumina Al ₂ O ₃	36 - 40%
Iron Oxide Fe ₂ O ₃	0.4 - 0.5%
Titanium Dioxide TiO ₂	1.4 - 1.6%

Health and Safety Information

E-SPHERES® SL series is an inert material similar to talc, etc. The material may be prone to dusting in use. Grinding, milling or otherwise generating dust may create a respiratory hazard. In high dust areas the use of goggles and a NIOSH approved dust respirator is recommended. A Material Safety Data Sheet (MSDS) will be supplied on request