

Product Data Sheet

Cenospheres - Industrial Grade

Description

Description	Cenospheres are lightweight, hollow, inert spherical particles composed primarily of alumino-silicate, occurring as a naturally-formed by-product fraction of fly ash from coal-fired thermal power plants. Their hollow structure gives them exceptionally low density combined with high strength, making them a valued lightweight filler across construction, oil & gas, and composite materials.
Applications	Lightweight fillers in cement, concrete and construction products Syntactic foams for subsea buoyancy modules and marine/oil & gas applications Oil well cementing – lightweight additive to reduce cement slurry density Lightweight refractory castables, paints, coatings, plastics and composites
Grade	Standard Industrial Grade
CAS No.	Mixture – primarily alumino-silicate (SiO ₂ /Al ₂ O ₃); no single CAS applies

Key Benefits

1. Exceptionally low density (hollow structure) reduces overall product weight
2. High compressive strength relative to density – withstands significant pressure without collapsing
3. Chemically inert and thermally stable, suited to demanding construction and oilfield environments
4. Consistent particle size distribution supporting predictable formulation performance
5. Cost-effective, recycled by-product material with a favourable sustainability profile

Chemical Analysis & Physical Data

Typical Specification

Parameter	Test Method	Unit	Specification
SiO ₂	XRF Method	wt%	55 – 65
Al ₂ O ₃	XRF Method	wt%	25 – 35
Fe ₂ O ₃ (max)	XRF Method	wt%	5.0
True Particle Density	Pycnometer Method	g/cm ³	0.4 – 0.8
Bulk Density	Standard Bulk Density Method	g/cm ³	0.35 – 0.45
Particle Size	Sieve / Laser Diffraction Method	microns	50 – 300
Loss on Ignition (max)	Gravimetric Method	wt%	2.0
Appearance	Visual	–	Grey to light grey free-flowing powder

Packaging

Packaging 25 kg Kraft Paper Bags (PE-lined)
500 kg / 1,000 kg Jumbo Bags (FIBC)
Bulk (bulker truck) available on request for large orders
Custom packaging available on request.

Storage & Handling

1. Store in a dry, covered warehouse away from moisture
2. Keep bags sealed until point of use to prevent moisture ingress and contamination
3. Handle gently – excessive mechanical stress can fracture the hollow spheres
4. Stack on pallets, away from direct ground contact
5. Use appropriate PPE (dust mask, goggles) when handling – avoid dust generation

Quality Assurance

1. Every batch is tested against the specification above before dispatch
2. A batch-specific Certificate of Analysis (COA) accompanies each shipment, reporting true density, particle size and SiO₂/Al₂O₃ content against this TDS
3. COA available on request prior to shipment for buyer pre-approval
4. Third-party inspection (SGS/Intertek) can be arranged on request for regulated-market shipments

Disclaimer: The information provided in this document is based on our current knowledge and is intended as a general guide. Ochnology Solution Pvt. Ltd. reserves the right to modify specifications without prior notice. Buyers are advised to conduct their own testing for specific applications. A batch-specific Certificate of Analysis (COA) is available on request for each shipment.