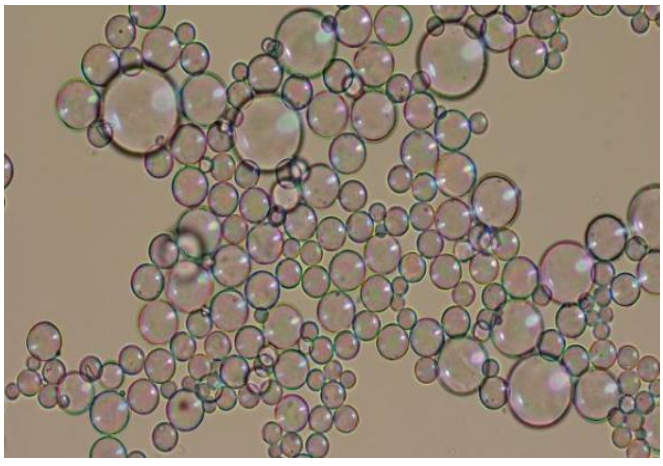
HGM15-TDS

Certification & Compliance Standards

Quality Management System: ISO 9001
Certified Compliance Standards: Compliant with RoHS & REACH Regulations
Available Documents: Material Safety Data Sheet (MSDS), Certificate of Analysis (COA), Technical Data Sheet (TDS), Compliance Statement

Product Introduction

Hollow glass microspheres are a new type of inorganic non-metallic hollow spherical powder material, close to the ideal powder. They are mainly composed of alkali/alkali-earth borosilicate glass (including SiO_2, Na_2O, B_2O_3, CaO, etc.). Rich silanol groups on the surface facilitate functional modification.The product features true density ranging from 0.1 to 0.7 g/cm³, compressive strength from 5500 psi to 18000 psi, particle size between 1 μm and 200 μm, and wall thickness of 0.5 μm to 1.5 μm. It possesses outstanding properties including low density, high compressive strength, low thermal conductivity, good dispersibility, low dielectric constant, high filling capacity, self-lubricity, sound and heat insulation, and excellent chemical stability. As a key functional filler for advanced composite materials, it is widely applied in aerospace, deep-sea exploration, petroleum exploitation, hydrogen energy storage, high-frequency & high-speed electronic products, vehicle lightweighting and other fields.



Main Chemical Composition

Component Name	Content
High-alumina borosilicate glass	100%

Technical Parameters

Item	Specification	Test Standard
Appearance	White powder, no agglomeration, excellent fluidity	Powder fluidity test
Particle Morphology	Hollow glass microspheres	Microscopic observation
True Density (±0.02)	0.15 g/cm³	Quantachrome 5200e True Density Tester
Median Particle Size (D50)	57 μm	OMEC LS-POP (9) Laser Particle Size Analyzer
Compressive Strength	500 psi	MAXIMATOR Hollow Microsphere Pressure Resistance Test System
pH Value	7～9	Precision pH test paper
Floating Rate	＞99%	National Standard JC/T2284-2014
Dielectric Constant	1.2～2	Vector Network Analyzer
Thermal Conductivity	0.04～0.1 W/(m·k)	Steady-state thermal conductivity meter & transient heat flow method tester

Note: The above typical parameters are for reference only and shall not be regarded as product acceptance criteria.

Application Recommendations

Coatings

Recommended Dosage: 5–20 wt%

Application Advantages: It greatly reduces the consumption of other raw materials, endows coatings with superior thermal insulation, fluidity and levelling performance. It also improves chemical corrosion resistance, thermal shrinkage resistance and elasticity of the coating layer.

Adhesives

Recommended Dosage: 3–10 wt%

Application Advantages: It lowers the density of adhesives and increases filling capacity to optimize overall cost. It stabilizes glue layer thickness, prevents glue overflow, and improves glue flow and workability. Meanwhile, it provides thermal insulation, sound insulation and electrical insulation for glue layers, reduces resin consumption and lowers VOC emission.

Building Materials

Application Advantages: It reduces the weight and anti-cracking performance of artificial marble. It lightens various furniture made of synthetic wood and improves structural performance. It also enhances the thermal and sound insulation effect of paints and coatings.

Supplementary Note: In addition to the above fields, this product is also widely applicable to various other industries and composite material systems. Custom formulas and solutions are available according to actual working conditions.

Packaging Specifications

Item	Details
Packaging Type	cardboard box: 22 lb / 10 kg Bulk Bag: 176 lb / 80 kg
Pallet Packaging	Available
Container Loading	Customizable on request
Shelf Life	24 months

Storage & Handling Guidelines

- Store in a cool, dry and well-ventilated warehouse.
- Avoid severe mechanical impact during transportation and handling.
- Keep packages sealed before use to prevent moisture and contamination.
- Avoid excessive shear force during mixing and compounding processes.

Available Compliance Documents

Our company can provide the following documents upon customer request:

- Certificate of Analysis (COA)
- Material Safety Data Sheet (MSDS)
- RoHS Compliance Statement
- REACH Compliance Statement
- Technical Data Sheet (TDS)

Other supporting compliance documents can be provided for specific application scenarios.

Frequently Asked Questions

1. Will hollow glass microspheres be damaged during processing?

The integrity rate of microspheres depends on product compressive strength, processing equipment and shear conditions. High-strength grades are recommended for harsh working environments.

2. What is the recommended dosage?

The conventional dosage ranges from 5% to 20% based on application scenarios and target performance requirements.

3. Do hollow glass microspheres have thermal insulation performance?

Yes. The hollow internal structure effectively reduces thermal conductivity and improves the overall thermal insulation capacity of materials.

4. Can this product be used in deep-sea applications?

High-strength grades are widely used in deep-sea composite foam buoyancy systems and various deep-sea floating equipment.

Quality Statement

All data stated in this document is based on laboratory tests and long-term production experience, which is true and reliable. However, users shall independently evaluate and verify the product adaptability according to their own processing conditions and application scenarios.

No express or implied performance warranty is made by this document for any single application scenario.

Please feel free to contact our technical team for technical support, product application development, sample application and business consultation.

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