

# HOLLOW GLASS MICROSPHERES

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## TECHNICAL DATA SHEET

### 1.Product Description and Application

High-performance hollow glass microsphere is a kind of ultra-lightweight inorganic non-metallic material with hollow structure, and it is a versatile and high-performance new lightweight material developed in recent years. It will be the new composite materials at twenty-first century. Its true density is 0.15-0.60g/cm<sup>3</sup> with 2-120 $\mu$ m in diameter. It owns features with light weight, large bulky, low thermal conductivity, high compressive strength, smoothly mobility etc.It can be used in paint and coatings, rubber, plastics, FRP, artificial stone, putty and other products as filler and weight-reducing agent.Because of its high compressive properties, it can be used to produce high-strength ,low-density cement slurry and low-density drilling fluid in oil and gas extraction industry.

**Applications:**Its applications are in the fields of thermal insulation coating, putty, plastic casting polyester, FRP, SMC(BMC), radome, synthetic foam, adhesives, printed circuit board substrate, RTM, bowling, fan blades, & caulking materials, emulsion explosives, golf, sealant, pipeline insulation materials, artificial marble, PVC, low density oil drilling, light cement, and other deep-sea buoy etc.

### 2.True Density

Product	Requirement (g/cm <sup>3</sup> )	True Density (g/cm <sup>3</sup> )	
		Minimum	Maximum
OLH-A	0.20	0.18	0.22
OLH-D	0.25	0.23	0.27
OLH-E	0.32	0.30	0.34
OLH-F	0.40	0.38	0.42
OLH-G	0.46	0.44	0.48
OLH-H	0.60	0.58	0.63

### 3.Nitrogen Isostatic Crush Strength

Product	Test Pressure (MPa/Psi)	Target Fractional Survival	Minimum Fractional Survival
OLH-A	4/550	90%	80%
OLH-D	5/750	90%	80%
OLH-E	14/2000	90%	80%
OLH-F	28/4000	90%	80%
OLH-G	41/6000	90%	80%
OLH-H	69/10000	90%	80%

## 4. Thermal Stability

Appreciable changes in glass microspheres properties may occur above 625°C depending on temperature and duration of exposure.

## 5. Chemical Resistance

In general, the chemical properties of hollow glass microspheres resemble those of a soda-lime borosilicate glass.

## 6. Thermal Conductivity

Product	Thermal Conductivity (W·m <sup>-1</sup> ·K <sup>-1</sup> ) at 20°C
OLH-A	0.0503
OLH-D	0.0512
OLH-E	0.0535
OLH-F	0.0654
OLH-G	0.0777
OLH-H	0.0934

## 7. Flotation

Product	Floaters (% by bulk volume)	
	Typical	Minimum
OLH-A	96%	90%
OLH-D	95%	90%
OLH-E	95%	90%
OLH-F	95%	90%
OLH-G	95%	90%
OLH-H	94%	90%

## 8. Oil Absorption

0.2-0.65g oil/cm<sup>3</sup> of Scotchlite hollow glass microspheres.

## 9. Particle Size

Product	Particle Size(μm, by volume )				
	10%	50%	90%	d <sub>50</sub>	Size
OLH-A	32	68	106	70	2-120
OLH-D	30	65	100	66	2-110
OLH-E	30	56	74	47	2-92
OLH-F	20	45	70	38	2-75
OLH-G	22	45	65	36	2-70
OLH-H	18	40	60	30	2-65

## 10.pH

8-9.5

## 11.Appearance

White.

## 12.Flow

Hollow glass microspheres remain free flowing for at least half a year from the date of shipment if stored properly.

## 13.Labeling

### Each container will be labeled with:

Type of hollow glass microspheres. Name of manufacturer. Lot number and quantity in kilograms.

## 14.Storage and Handling

### Storage:

Store in dry, well ventilated and out of direct sunlight place. Have Waterproof Functions. Keep away from fire and heat. Stored apart with acids and not allowed mixed storage. With the suitable material for leakage in storage area.

### Handling:

Airtight operation and local exhaust. The operator should be treated professionally and observe instructions seriously. The operator is suggested to wear self-inhalation filter type dust mask, protective chemical safety glasses, and protective gloves. Avoid producing dust and get in touch with acids. Should be light when load and unload to avoid breakage of packages. Equipped with emergency treatment equipment to avoid leakage.

## 15.Health and Safety Information

For product Health and Safety Information, refer to product label and Material Safety Data Sheet (MSDS) before using product.

## 16.Packing Information

**A Box(0.09m<sup>3</sup>):**Each box inside diameter is 41.5cm\*41.5cm\*52cm.

**B Box(0.125m<sup>3</sup>):**Each box inside diameter is 50cm\*50cm\*50cm.

Product	A Box (kg)	B Box (kg)
OLH-A	10	15
OLH-D	12.5	18
OLH-E	15	20
OLH-F	18	26
OLH-G	22	32
OLH-H	28	40