

Technical Data Sheet

Version: 2.1

1 Introduction of HGM Product and Application

Hollow Glass Microsphere (HGM) is a kind of hollow spherical powder which is inorganic and non-metallic. It is a new kind of lightweight material with wide applications and excellent properties. Its true density is 0.10-0.60 g/cm³ and particle size is between 2-130 μm. Due to its advantages of light weight, large volume, low thermal conductivity, high compressive strength, good fluidity and stable chemical properties, Hollow Glass Microsphere is widely used in coatings, rubber, plastics, glass steel, artificial stone, atomic ash, emulsified explosives and oil and gas field mining industry products.

Advantages of high-performance Hollow Glass Microsphere: high filling rate, reduced viscosity, good fluidity to reduce shrinkage and warping of products. Therefore, in the process of composite production, Hollow Glass Microsphere can be well fused with resin.

Main component	Proportion (%)
SiO ₂	68~75%
Na ₂ O	5~15%
CaO	8~15%
B ₂ O ₃	15~20%
Al ₂ O ₃	2~3%

2 Performance parameters

2.1 True density

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Model number	(g/cm3) Standard value	True density (g/cm3)	
		MIN	MAX
NP10	0.10	0.11	0.13
NP15	0.15	0.14	0.17
NP20	0.20	0.18	0.22
NP25	0.25	0.23	0.27
NP32	0.32	0.30	0.34
NP38	0.38	0.36	0.40
NP40	0.40	0.40	0.44
NP46	0.46	0.44	0.48
NP60	0.60	0.58	0.62

2.2 Compressive strength

Model number	(Mpa/Psi) Compressive strength	% Aver. Survivors Rate	% Mini. Survivors Rate
NP10	1.72/250	90%	80%
NP15	2.06/300	90%	80%
NP20	3.44/500	90%	80%
NP25	5.17/750	90%	80%

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NP32	13.79/2000	90%	80%
NP38	42/6000	90%	80%
NP40	28/4000	90%	80%
NP46	41/6000	90%	80%
NP60	83/12000	90%	80%

2.3 Particle size distribution

Model number	Particle size range (um)		
	D10	D50	D90
NP10	30	65	115
NP15	30	60	105
NP20	30	60	90
NP25	25	55	90
NP32	25	55	80
NP38	20	45	75
NP40	10	35	75
NP46	10	35	75
NP60	10	30	70

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2.4 Floating rate

Model number	(g/cm ³) True density	% Volumetric floatability
NP10	0.10	99%
NP15	0.15	98%
NP20	0.20	98%
NP25	0.25	98%
NP32	0.32	98%
NP38	0.38	98%
NP40	0.40	98%
NP46	0.46	98%
NP60	0.60	98%

2.5 Thermal stability

The morphology of Hollow Glass Microsphere remains stable under the temperature of 620°C.

2.6 Chemical Stability

The properties of Hollow Glass Microsphere are basically the same as borosilicate glass. Chemical stability is good, does not react with other substances except for hydrofluoric acid.

2.7 Thermal conductivity

Model number	(W/(m·K)) Thermal conductivity at 20°C
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NP10	0.02-0.06
NP15	0.02-0.06
NP20	0.02-0.06
NP25	0.02-0.06
NP32	0.02-0.06
NP38	0.02-0.06
NP40	0.02-0.06
NP46	0.02-0.06
NP60	0.02-0.06

2.8 Oil absorption value

The oil absorption value of alkali lime borosilicate Hollow Glass Microsphere is 0.20-0.65 oil/g。

2.9 pH Value

PH value is between 8.0 ~ 9.5.

3 Appearance

White fluidized powder.

4 Safety information

For more information on product health and safety, please refer to the information and Material Safety Data Sheet before use.

5 Packaging information

5.1 Weight standards and packing for different models

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Model number	Dimensions of package (cm x cm x cm)	Type of package	Net weight	Gross weight
NP15	41.5x41.5x52	carton	9KG	10.4KG
	50x50x50	carton	11.5KG	13.3KG
NP20	41.5x41.5x52	carton	10KG	11.4KG
	50x50x50	carton	13KG	14.8KG
	90x90x220	Ton bag	180KG	185.2KG
	62x110	Paper bags	10KG	10.3KG
NP25	41.5x41.5x52	carton	12.5KG	13.9KG
	50 x50x50	carton	15KG	16.8KG
	90x90x220	Ton bag	280KG	285.2KG
	62x110	Paper bags	12.5KG	12.8KG
NP32	41.5x41.5x52	carton	15KG	16.4KG
	50x50x50	carton	22KG	23.8KG
	90x90x220	Ton bag	350KG	355.2KG
	62x110	Paper bags	15KG	15.3KG
NP40	41.5x41.5x52	carton	20KG	21.4KG
	50x50x50	carton	28KG	29.8KG
	90x90x220	Ton bag	500KG	505.2KG

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	62x110	Paper bags	20KG	20.3KG
NP46	41.5x41.5x52	carton	22KG	23.4KG
	50x50x50	carton	32KG	33.8KG
	90x90x220	Ton bag	550KG	555.2KG
	62x110	Paper bags	20KG	20.3KG
NP60	41.5x41.5x52	carton	30KG	31.4KG
	50x50x50	carton	40KG	41.8KG
	90x90x220	Ton bag	750KG	755.2KG
	90x90x115	Ton bag	400KG	404.15KG
	62x110	Paper bags	25KG	25.3KG

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