

PRODUCT INFORMATION Hollow Ceramic Microspheres Standard Grades

• Introduction

Fillite is a glass hard, inert, hollow silicate sphere. Fillite is primarily used to reduce the weight of plastics, rubbers, resins, cement, etc., but also imparts further benefits in many situations. Many of the advantages from the use of Fillite, including increased filler loading and improved rheology, are directly attributed to the spherical nature of the material.

• Characteristics

Lightweight Free-flowing Spherical Inert

• Typical Applications

Refractories, PVC flooring, oilwell cements, brake linings, Phenolics, Epoxies, Cast Polyesters, synthetic marbles, syntactic foams, BMC, SMC and FRP. Low density cements, shotcrete and gypsum board joint compounds. Automotive sound-damping sheets.

• Advantages

Reduced weight, increased filler loadings, better flow characteristics, less shrinkage and warping. Improved physical properties in mouldings, castings and laminates, reduced water absorption, improved flame retardance, improved chemical resistance.

• Chemical Properties

Shell Al ₂ O ₃	27% - 33%
SiO ₂	55% - 65%
Fe ₂ O ₃	6% maximum
Gas Carbon Dioxide	70%
Nitrogen	30%

• Physical Properties

Average Particle Density	0.65 – 0.85 g/cc (44 lbs/ft ³)
Average Bulk Density	0.35 – 0.45 g/cc (25 lbs/ft ³)
Packing Factor	60% - 65%
Hardness of Shell	Mohs Scale 5
Average Wall Thickness	5 – 10% Sphere Diameter
Melting Temperature	1200°-1350°C (2190°-2460°F)
Thermal Conductivity	0.11 Wm ⁻¹ K ⁻¹
Loss on Ignition	2 % maximum
Surface Moisture	0.3% maximum
Typical Crush Strength	105–210 kg/cm ² (1500 – 3000 psi)

• Grades – Typical Particle Size Analysis

	SG (500)	52/7S (355)	FG (300)	PG (355LF)	160	106
Particle Size Range (microns)	5-500	5-355	5-300	5-355	5-180	5-106
Particle Size Distribution						
% Passing 500 microns	99.5-100	99.5-100	99.5-100	99.5-100	100	100
% Passing 300 microns	85-100	95-100	99.5-100	97-100	100	100
% Passing 180 microns	--	--	--	--	99.5-100	--
% Passing 150 microns	30-80	30-80	40-80	30-60	--	100
% Passing 106 microns	25-55	25-55	25-55	15-30	40-80	99.7-100
% Passing 50 microns	2-10	5-10	5-10	2-10	10-20	15-30

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