

3M D32/4500 Glass Bubbles

Category : Ceramic , Glass

Material Notes:

3M™ Glass Bubbles are engineered hollow glass microspheres that are alternatives to conventional fillers and additives such as silicas, calcium carbonate, talc, clay, etc., for many demanding applications. These low-density particles are used in a wide range of industries to reduce part weight, lower costs and enhance product properties. The spherical shape of 3M glass bubbles offers a number of important benefits, including: higher filler loading, lower viscosity/improved flow, and reduced shrinkage and warpage. It also helps the 3M glass bubbles blend readily into compounds, and makes them adaptable to a variety of production processes, including spraying, casting and molding. In addition, they offer greater survivability under demanding processing conditions, such as injection molding, and also produce stable voids, which results in low thermal conductivity and a low dielectric constant. The chemically stable soda-lime-borosilicate glass composition of 3M glass bubbles provides excellent water resistance, to create more stable emulsions. They are also non-combustible and non-porous, so they do not absorb resin. And, their low alkalinity gives 3M glass bubbles compatibility with most resins, stable viscosity and long shelf life. Information provided by 3M

Order this product through the following link:

http://www.lookpolymers.com/polymer_3M-D324500-Glass-Bubbles.php

Physical Properties	Metric	English	Comments
Density	0.300 - 0.340 g/cc	0.0108 - 0.0123 lb/in ³	True, 3M QCM 14.24.6
	0.320 g/cc	0.0116 lb/in ³	Typical, 3M QCM 14.24.6
Volatiles	0.50 %	0.50 %	
Particle Size	20 µm	20 µm	10th%
	40 µm	40 µm	50th%
	65 µm	65 µm	90th%
	80 µm	80 µm	95th%
pH	9.1 - 9.9	9.1 - 9.9	

Mechanical Properties	Metric	English	Comments
Compressive Strength	31.0 MPa	4500 psi	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	0.0600 - 0.160 W/m-K	0.416 - 1.11 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	600 °C	1110 °F	

Electrical Properties	Metric	English	Comments
Dielectric Constant	1.3 - 1.5	1.3 - 1.5	
	@Frequency 1.00e+8 Hz	@Frequency 1.00e+8 Hz	

Descriptive Properties	Value	Comments
Alkalinity	<0.3 milliequivalents/gram	
Appearance	White	unaided eye
Chemical Resistance	soda-lime-borosilicate glass	
Oil Absorption	31-36g oil/100 cc	ASTM D1483

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