

TECHNICAL BULLETIN

POROUS MEDIA – Plates, Tubes, Spheres and Discs



Permeability

Porous media are classified on the basis of the rate of gas flow under a given set of conditions. This property of porous media is known as permeability. A standard test for permeability has been defined as: the amount of air at 70°F (21 °C), and 25 percent relative humidity, which will pass through an area of one square foot (0.09 m²) of plate, one inch (25,4 mm) thick, in one minute under an equivalent pressure at 2" of water (500 Pa). Permeability tests also provide a means of measuring the uniformity of porous media within a group and to provide a basis or quality control.

(Refer to "Mixture Characteristics")

Precision Porosity, Pore Size and Uniformity

Porous is defined as the percentage of the volume of pores to the bulk volume of the piece. All Alundum® porous media have 35 to 40 percent porosity. The pore size and related number of pores are varied to produce the required permeability to suit the application. The uniform distribution of pores, which is essential to the uniform passage of liquids and gases, is achieved through our controlled structure. This allows us to meet your rigid specification requirements.

High Strength

Porous Media from Saint-Gobain have very high strength and can operate under high pressures. Plates, tubes, and discs are resistant to breakage, chipping and sufficient to withstand loads many times greater than those usually encountered in most commercial and laboratory processes. Porous spheres are manufactured to meet ASTM D892-89.

Chemical Stability and Heat Resistance

Saint-Gobain's porous media are not affected by corrosive conditions found in most laboratory and commercial processes. A solubility test using both acidic and alkaline solutions resulted in little or no deterioration of product performance. Saint-Gobain plates, tubes, and discs are generally able to withstand temperatures up to 1,830°F (1,000°C) with no effect on the physical structure of the ceramic piece. This is due to the ceramic bond formed when the product is fired.

1 New Bond Street • PO Box 15136 • Worcester, MA 01615-0136 • (508) 795-5577 • FAX: (508) 795-5011 • ISO9001:2000 Certified

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Porous Media from Saint-Gobain are composed of fused alumina grains held together by a porcelain bond.

Typical Chemical Analysis

Constituent	Amount Percent
Al₂O₃	82.0
SiO₂	13.0
TiO₂	2.5
Fe₂O₃	1.0
CaO	0.8
MgO	0.5
Ma₂O	0.2
MnO	Trace



Porous Sphere

Mixture Characteristics

Saint-Gobain Mixture Number	Permeability* Range		Approx. Average Pore Size (Microns)	Approx. Particle Retention (Microns)
	Low	High		
P2320	0	0	17	7
P2240	1	1	25	10
P2180	1	1	42	18
P2150	1	2	51	21
P2120	2	3	68	28
P2100	3	4	86	36
P290	4	5	106	44
P280	6	7	121	50
P270	9	11	148	62
P260	15	18	179	75
P336	29	36	256	107
P236	36	44	303	126

Engineering Support

Saint-Gobain's application engineers can help you select the proper size, shape and permeability of porous media that will help to improve the efficiency of your operation.

www.refractories.saint-gobain.com

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