

## 59832 Glass Beads, very fine

Composition:	Inorganic soda lime glass (Type A)
Appearance:	White powder
Physical form:	Spherical, non porous
CAS No.:	65997-17-3
EINECS No.:	266-046-0

### Chemical Composition

SiO <sub>2</sub>	70 – 75 %
Na <sub>2</sub> O	12 – 15 %
K <sub>2</sub> O	0 – 1.5 %
CaO	7 – 12 %
MgO	0 – 5 %
Al <sub>2</sub> O <sub>3</sub>	0.1 – 2.5 %
Fe <sub>2</sub> O <sub>3</sub>	0 – 0.5 %

### Size Gradation

Sieve Size µm	% passing	Test Method
100	100	CILAS Laser Particle Analyser ISO 13320-1, FRAUENHOFER Correlation
63	95 – 100	The analysis is done by laser scattering. We cannot guarantee that traces of coarse particle are not there.
45	85 – 100	
Mean Value	12 to 26	
Specific Surface Area	cm <sup>2</sup> /g	4000 to 8000      Calculated

### Physical Properties

		Test Method
Refractive index	1.51	ISO 489 / ASTM D542
Specific gravity	2.5 g/cm <sup>3</sup>	ISO 787/10
Bulk density	1.51 – 1.52 g/cm <sup>3</sup>	ISO 787/11 ASTM D3101-78

#### Chemical Properties

		Test Method
Oil absorption	18 g / 100 g	ISO 787/5 ASTM D1483
pH (25°C)	11 – 12	ISO 787-9
Chemical resistance in H <sub>2</sub> O, 4h (90°C)	0.05 % Na <sub>2</sub> O extract	ISO 787-3
% weight loss, 1h H <sub>2</sub> O boiling	11.1	ISO 787-4
Hydrolytic class	3	DIN ISO 719

#### Electrical Properties

Dielectric Constant (1 MHz, 20°C)	6.9
Volume Resistivity (25°C)	6.5 x 10 <sup>-12</sup> ohm·cm
Resistivity	10 <sup>5</sup> ohm·m

#### Thermal Properties

Softening point	730°C
Annealing point	548°C
Coefficient of expansion	90 x 10 <sup>-7</sup>
Specific heat	750 J/kg·K (0 to 300°C)
Thermal conductivity	0.84 W/M·K
Thermal diffusivity (20°C)	5 x 10 <sup>7</sup> m <sup>2</sup> /sec

#### Mechanical Properties

Young Modulus	68.9 GPa
Rigidity Modulus	29.6 GPa
Poisson's Ratio	0.21
Crush Resistance	>30,000 psi (207 MPa)
Knoop Hardness	515 kg/mm <sup>2</sup>
Rockwell Hardness	47 RC
Mohs Hardness	6 – 6.5

#### Safety Information:

Glass microspheres are moderately alkaline, and prolonged exposure may irritate the respiratory tract. In dusty environment, the use of a NIOSH-approved mask or respirator is recommended.

#### Storage:

Store microspheres containers in dry conditions.

Partially used containers should be tightly closed, not left open to the atmosphere for extended periods.

The products are hygroscopic and will tend to agglomerate upon prolonged exposure to moisture and humidity.