FUSED SILICA
POLYMERIC FILLERS

INTRODUCTION

Christy Minerals offers high purity ceramic powders used as resin fillers. Christy Minerals fused silica products are available in both standard and custom particle sizes and distributions. In addition, we can provide traceability data throughout our process, from the arrival of the high purity sand at our facility to each bag of finished fused silica in your inventory.
Christy Minerals fused silica is available in 55 lbs. (25 kg) paper bags or 2,200 lbs. (1,000 kg) tote sacks.

FEATURES AND BENEFITS

- Exceptionally low coefficient of thermal expansion
- High temperature resistance
- High hardness (5.5-6.5 Moh's scale)
- High chemical purity
- Extensive optical transmission from UV to IR
- Excellent electrical insulation properties
- Low density
- Low thermal conductivity

FUSED SILICA AS A POLYMERIC FILLER

We supply high purity fused silica flour blends for a variety of filler applications. Our revolutionary furnace design and process helps prevent the fused silica product from becoming contaminated with non-silica and crystalline-silica phase materials. This results in an amorphous silica finished product that is 99.6% chemical purity.
While this revolutionary process dramatically improved purity, it also increased productivity over conventional furnaces. Christy Minerals Fused Silica Flours and Grains are optimized for consistency from batch to batch. These products also provide excellent heat and dimensional stability, as well as a low surface area versus other silica flour products. Christy Minerals Fused Silicas have a low density and an extremely low coefficient of thermal expansion. They offer excellent resistance to heat and have excellent electrical resistivity and dielectric properties.

PRODUCT STORAGE AND SAFETY

Storage: Store in a dry location and protect from the elements. Store away from oxidizing agents. See the product Safety Data Sheet (SDS) for additional information.
Safety: See product SDS for additional information.

Particle Size Distribution
(% Retained)

US Mesh	Microns	20	40	550F
100	150	-	<0.10	<0.25
140	106	<0.05	<0.50	<0.60
200	75	<1.00	<10.00	<0.50
325	45	<3.00	15-30	<1.10

Typical Physical Properties
(Not for specification purposes)

Property	20	40	550F
Coulter d50 (µm)	9-16	19-27	3-6
Magnetics (ppm)	<20		<50
Electrical Conductivity	<5 µmhos		
App. Specific Gravity	2.18 – 2.20 g/cc		
LTE Coefficient (20-700 °C)	0.5 – 0.6 x 10^{-6}/°C		

Typical Chemical Analysis
(Not for specification purposes)

Property	20	40	550F
SiO_2	>99.6%		
Al_2O_3	<3000 ppm		
Fe_2O_3	<350 ppm		
TiO_2	<400 ppm		
K_2O	<250 ppm		
CaO	<100 ppm		
MgO	<100 ppm		
Na_2O	<100 ppm		
LOI @ 1000°C	<0.5%		

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