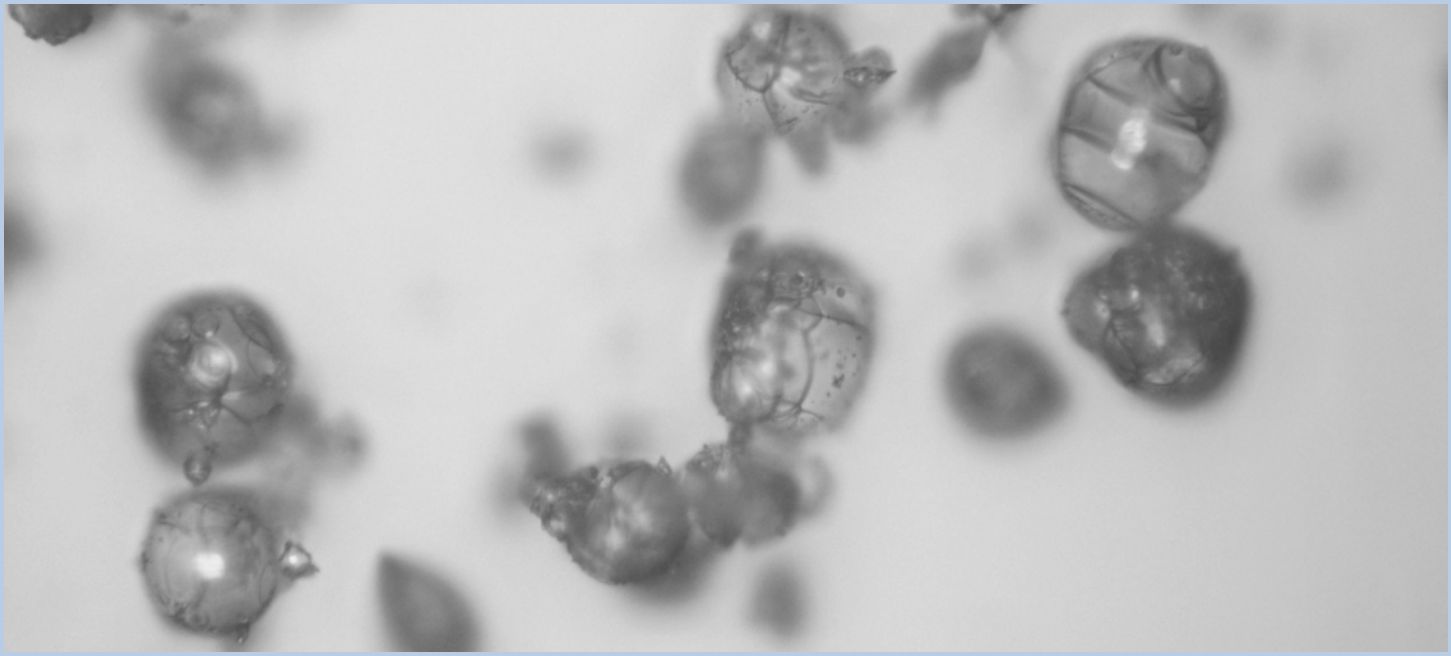
SIL-CELL® Cellular Microsphere Filler



Description

Sil-Cell® is an **ultra light**, naturally occuring, Aluminum Silicate, microcellular filler that is inert, inorganic, non-toxic and PH neutral.

Sil-Cell® particles are formed by creating a structure of multicellular spherical bubbles.

Sil-Cell® performs as an excellant fuctional filler due to its inert properties, low density and structure. The multicellular structure provides greater tensil strength versus other types of microfillers.

Sil-Cell® can be treated with unique proprietary surface coatings to modify the particle's surface. In both organic and inorganic composites, these coupling agents improve adhesion.

Sil-Cell® due to it's low effective specific gravity (E.S.G.) is an excellent density reducing agent for composites. **Sil-Cell®**s E.S.G. ranges from 0.17 to 0.336 gm/cc compared to Calcium Carbonate type fillers that range from 2.5 to 2.8 gm/cc.

Typical Applications

Sil-Cell® has been found to be cost effective in the manufature of Joint Compounds, Adhesives, Autobody Putty, Cultured Marble, Wall Patching Compounds, Stucco, Ready Mix Gypsum Plasters, Resins, Plastics and a variety of other composites.

Standard Chemical Analysis			
Silicon	Dioxide	SiO2	73%
Aluminum	Oxide	Al 2O3	17%
Potassium	Oxide	K2O	5%
Sodium	Oxide	Na20	3%
Calcium	Oxide	CaO	1%
Trace Elements			1%
		Total	100%

Physical Properties	
Hydroscopic Moisture	0%
Surface PH	7.0
Color	White
Fusion Point (Fahrenheit)	2300
Fusion Point (Celsius)	1260

Typical Specifications Grade:	Sil-32	Sil-42	Sil-35	Sil-43	Sil-50
Effective Partical Density-ESG (lb/cuft)	10.5	13.5	15.0	16.0	21.0
Effective Particle Density-Range (lb/cuft)	10.0 - 11.5	12.3 - 14.4	14.2 - 15.6	15.2 - 17.3	19.3 - 21.5
Dry Bulk Density (lb/Cuft)	7.0	8.5	9.0	10.5	13.0
Dry Bulk Density Range (lb/Cuft)	6.5 - 7.5	8.0 - 9.0	8.5 - 9.5	10.0 - 11.0	12.5 - 13.5
Effective Particle Density-ESG (g/cm3)	0.170	0.216	0.240	0.255	0.336
Effective Particle Density-Range (g/cm3)	0.160 - 0.184	0.197 - 0.231	0.228 - 0.250	0.244 - 0.277	0.310 - 0.345
Dry Bulk Density (g/cm3)	0.112	0.136	0.144	0.168	0.208
Dry Bulk Density Range (g/cm3)	0.104 - 0.120	0.128 - 14.4	0.136 - 0.152	0.160 - 0.176	0.200 - 0.216
Average Partical Size (Microns)	75	45	40	37	32
Particle Size Range (Microns)	1 - 300	1 - 220	1 - 150	1 - 150	1 - 110
Termal Conductivity	0.36	0.40	0.41	0.43	0.45

Representative Particle Distribution			Percent Retained by Weight (U.S. Sieve)				
			Sil-32	Sil-42	Sil-35	Sil-43	Sil-50
+50	Mesh	+300 µm	1%	0%	0%	0%	0%
-50 +100	Mesh	-300 +150 µm	8%	1%	Trace	Trace	Trace
-100 +200	Mesh	-150 +75 µm	26%	16%	12%	11%	4%
-200 +325	Mesh	-75 +45 µm	22%	26%	24%	21%	13%
-325 +450	Mesh	-45 +32 µm	12%	12%	18%	19%	10%
-450 +635	Mesh	-32 +20 µm	6%	18%	13%	15%	23%
-635	Mesh	-20 µm	25%	27%	33%	34%	50%
		Total	100.0%	100.0%	100.0%	100.0%	100.0%

Proprietary Surface Treatments are available to improve performance

Type	Ordering Code(s)	Molecular Structure	Hydrophobic	Oleophobic
Uncoated	BC		No	No
Silane	23	Monomer	Yes	Yes
Silicone	34 (18)	Polymer	Yes	Yes

23 Coating

Is an organometallic silane type reactive monomer
Creates a monolayer film on the surface of the particle
Demonstrates moderate hydrophobic and oleophobic properties
Significantly reduces the surface viscosity of perlite
Improves the Rheological properties of composites
Demonstrates moderate resistance in temperature and pressure

34 (18) coating

Is an organometallic silicone type reactive polymer
Creates a multiple layer formation on the surface of the particle
Demonstrates significant hydrophobic and oleophobic properties
Moderately reduces the surface viscosity of perlite
Improves the Rheological properties of composites
Demonstrates significant resistance in temperature and pressure

For more information or to arrange for samples, please call 708-354-3350 or email: ***info@silbrico.com***

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