

Spherical Filler

FEATURES & BENEFITS

MINISPHERES® are whole grain spherical fillers with excellent structural, chemical and dielectric properties. Their unique particle geometry offer manufacturers and installers superior flow and placement capabilities and produce improved compressive, abrasion and impact properties in a diverse range of applications.

The 4000 series is designed for improved dimensional rigidity without a corresponding loss in flexural strength or thermal diffusivity. The low surface area and uniform particle size distribution of MINISPHERES will add stability to polymer and cast composites, impart greater durability and corrosion resistance in high solids overlay systems. Chemical purity makes MINISPHERES an excellent non-conductive, inert filler in electrical and mechanical assemblies.

All MINISPHERES grades are processed with rigid adherence to Covia QIPSM quality assurance programs. The result is chemical purity and consistently uniform particle size distributions for predictable results and reliable service.

PARTICAL SIZE ANALYSIS

Typical Mean Values. These Do Not Represent a Specification.

	Mesh Size		MINISPHERES® Grades					
	ASTM	MICRONS	4900	4600	4400	4300	4200	4100
Typical mean % retained on individual sieves	10	2.00mm	-	-	-	-	-	-
	16	1.18mm	39.2	-	-	-	-	-
	18	1.00mm	27.7	-	-	-	-	-
	20	850	22.3	18.5	0.9	-	-	-
	30	600	9.2	14.3	20.8	-	-	-
	40	425	0.5	38.2	33.2	17.7	0.5	-
	50	300	0.2	27.3	26.0	43.2	11.3	1.1
	70	212	-	1.1	17.3	26.8	30.8	24.6
	100	150	-	0.4	1.6	8.5	35.0	42.2
	140	106	-	0.2	0.2	3.2	18.0	25.1
	200	75	-	0.1	0.0	0.6	4.1	6.4
	270	53	-	0.0	0.0	0.0	0.4	0.7
	<270	<53	0.9	0.0	0.0	0.0	0.0	0.0

PHYSICAL PROPERTIES

Typical Mean Values. These Do Not Represent a Specification.

MINISPHERES® Spherical Filler	4900	4600	4400	4300	4200	4100
Median Particle Size (µ)	992	669	433	314	200	176
Surface Area (cm2/g)	32	59	136	118	187	213
Roundness	0.9	0.9	0.9	0.9	0.9	0.8
Sphericity	0.9	0.9	0.9	0.8	0.8	0.8
Hardness (Mohs)	7.0	Moh's Scale				
Color	White	Visual				
Moisture Content (%)	<0.1	ASTM C-566				
Bulk Density (g/cm3)	2.65	ASTM C-29				
Oil Absorption (g/100g)	20.1	ASTM D-281				
Refractive Index	1.54-1.55	ASTM D-801				

CHEMICAL ANALYSIS

Typical Mean Values. These Do Not Represent A Specification.

Typical Mean Percent by Weight	
Silicon Dioxide (SiO ₂)	99.73
Aluminum Oxide (Al ₂ O ₃)	0.06
Iron Oxide (Fe ₂ O ₃)	0.04
Titanium Dioxide (TiO ₂)	<0.01
Calcium Oxide (CaO)	0.01
Magnesium Oxide (MgO)	0.01
Sodium Oxide (Na ₂ O)	<0.01
Potassium Oxide (K ₂ O)	0.01
Loss on Ignition (LOI)	0.12

SHIPPING/ORDERING INFORMATION

- Shipping Point: Ottawa, MN
- Originating Carrier: Union Pacific (UP)
- Availability: Bulk, 3000# IBC, 50 lb Poly Bag
Truck and Rail

CUSTOMER SERVICE

US & Canada: 1-800-243-9004
Fax: 1-800-243-9005
Worldwide: 1-203-442-2500
Fax: 1-203-972-1378

3 Summit Park Drive, Suite 700, Independence, OH 44131 | CoviaCorp.com

GRADE NUMBERS INDICATE RELATIVE VALUES OR RESULTS. THEY ARE NOT A SPECIFICATION OR WARRANTY OF PERFORMANCE.

Health Hazard Warnings: Prolonged inhalation of dust associated with the materials described in this data sheet can cause delayed lung injury including Silicosis, a progressive, disabling and sometimes fatal lung disease. IARC and NTP have determined that crystalline silica can cause lung cancer in humans. Risk of injury is dependent on the duration and level of exposure. Follow OSHA or other relevant safety and health standards for the form of crystalline silica called Quartz. Current safety data sheet, containing safety information, is available and should be consulted before usage.

Notice: While information contained herein is correct to the best of our knowledge, Covia hereby disclaims any warranties as to the accuracy of the same. Recommendations or suggestions are made without guarantee or representation as to result, since conditions of usage are beyond our control. All materials are sold subject to Covia's standard terms and conditions of sale and the condition that buyer shall make his own tests to determine the suitability of such product for buyer's purpose. No statement contained herein shall be construed as a license to operate under or as a recommendation to infringe any patent.

Silica/Silica Containing

COVIA and MINISPHERES® are trademarks of Covia Holdings Corporations and/or its subsidiaries. All rights reserved.

