



# SUNSPHERES™ 03.0

## DESCRIPTION

SUNSPHERES™ 03.0 are optically clear, solid fused amorphous silica microspheres specially engineered for optimum dispersion in paints, coatings, inks, adhesives, thermoplastics, and composites. These microspheres increase corrosion and impact resistance, reduce shrinkage, improve adhesion, and enhance surface qualities including mar and scratch resistance. SUNSPHERES™ 03.0 are ideally suited for specialty applications where mechanical and rheological properties are required.

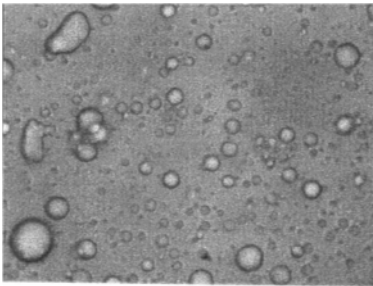
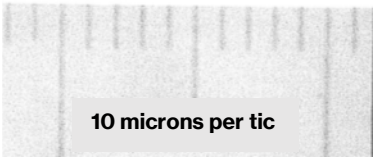
The dielectric properties and very high electrical receptivity of these materials over a wide range of temperatures, together with their low thermal conductivity, allow their use as an electrical and thermal insulating material in a range of environments. SUNSPHERES™ 03.0 are chemically stable in a vast range of resins and pH.

## LIGHT TRANSMISSION:

The SUNSPHERES™ 03.0 efficiently transmit ultraviolet and visible light from 200 nanometers through the visible and near IR spectrum. These microspheres space pigments and promote efficient, thorough curing by ultraviolet radiation.

## SIZING & USE:

SUNSPHERES™ 03.0 have a median particle size of 3 to 4 microns, with a particle size range of 0.5 microns to 92% passing 22 microns. Recommended dosages are 3 to 50% by weight of total weight of formulation. Due to their low surface area, SUNSPHERES™ 03.0 are easily dispersed.

| Each Tic Mark is .01 mm or 10 Microns  | TYPICAL PARTICLE SIZE ANALYSIS*:    |                  | PHYSICAL & CHEMICAL PROPERTIES*:     |                            |
|--|-------------------------------------|------------------|--------------------------------------|----------------------------|
| <br><br>10 microns per tic | Median Diameter Approx. 3.0 Microns |                  |                                      |                            |
|  | <u>Microns</u>                      | <u>% Passing</u> | Specific Gravity                     | 2.2                        |
|  | 22                                  | 92.0             | Index of Refraction                  | 1.458(n <sub>D</sub> )     |
|  | 11                                  | 73.0             | Softening Temperature                | >1000°C                    |
|  | 5.5                                 | 50.0             | Strain Point                         | >600°C                     |
|  | 2.75                                | 20.0             | Coefficient of Thermal Expansion     | 0.48 x 10 <sup>-6</sup> /K |
|  | 1.375                               | 2.0              | DC Resistivity                       | 1 x 10 <sup>8</sup>        |
|  | 0.50                                | 0                | Hardness (Mohs) Scale                | 7.0                        |
| Shape: Solid, Spherical to Well Rounded Microspheres   |                                     |                  | BET Surface Area (sq.m/g)            | 1.3 – 2.2                  |
|  |                                     |                  | Oil Absorption                       | <10                        |
|  |                                     |                  | pH                                   | 5                          |
|  |                                     |                  | Structure/Amorphous SiO <sub>2</sub> | >99%                       |
|  |                                     |                  | Crushing Strength                    | >60,000 psi                |
| *Copies of actual COA's listing actual measured values of data shown above are available upon request.   |                                     |                  |                                      |                            |

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See reverse side for additional information



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