



Epoxy.com Product #71

Cab-o-Sil Thickening Agent for Resins

Cabosil is a synthetic, amorphous, untreated fumed silicon dioxide. Because of its inert nature, it has been used in food such as ketchup as well as in shampoo and some cosmetics. When mixed into liquid resin, Cabosil functions as a resin thickener (flow control agent) and sometimes as an anti-settling, anti-caking agent. Its applications are many, including thickening, epoxy, polyester, and urethane. It is a versatile thickening agent that has even been used to "thicken" fresh water and sea water.

Cabosil is an extremely fine particle size silica (silicon-dioxide / SiO_2). It is pure white and free-flowing. Each volume contains about 94% dead air space, with a density of only 2.3 lb/cu ft. On the other hand, water (density 62.4 lb / cu ft) weighs about 27 times more.

During the cure cycle, polyesters and epoxies being liquids tend to run off of vertical surfaces and accumulate on horizontal surfaces. The vertical surfaces become resin starved, whereas valleys become resin rich. The resin starved areas fail to achieve expected strength, and the resin rich areas suffer excessive shrinkage and warpage. Both of these undesirable conditions can be eliminated with the addition of the proper amount of cabosil. This thixotropic agent holds the liquid resin in place until the curing agent takes over and hardens it.

Normally, Cabosil is added at a 1% to 7% proportion based on the weight of the liquid (resin, hardener, thinner) involved. Because resin and Cabosil have such different densities, weight proportions are awkward. For example, one gallon of polyester weighs 9 pounds; 7% of 9 lbs is 10 ounces, which for Cabosil is about 1.25 gallons by volume. For many situations, volumetric proportions are more convenient. A gallon of resin and a gallon of Cabosil is a 50/50 ratio by volume, but only 5% by weight. Incidentally, this 50/50 volume ratio results in a resin consistency about like vaseline. Lesser amounts yield a more liquid consistency, whereas greater amounts yield thicker pastes. The exact amount used is determined by the application. The addition of Cabosil has no effect on such properties as pot life, cure time, etc., and only affects strength to the degree that entrapped air reduced cross-sectional area.

For preciseness, a distinction has to be made between thickness and thixotropic. These terms are not the same. Thixotropic fluids are not always thick. They are only thick when they are left undisturbed. When they are being mixed or brushed, they appear to be fluid, but when left undisturbed for 20 to 30 seconds, they become thicker and stop flowing. This is how it is possible to have a liquid that is easy to brush, but will not run.

In order to get the maximum effect with the least amount of Cabosil, the microscopic particles must be homogeneously dispersed throughout the resin. For best results, use a high shear mixing blade running at maximum speed. If a mixing stick must be used, expect to consume more of the agent. Whenever thixotrophy is needed, no finer, more effective product exists than Epoxy.com Product #71 Cabosil.

PROPERTIES:

Weight per Gallon: Approximately 8 oz.
pH (4% aqueous slurry): 3.7 - 4.3
B.E.T. Surface Area: 200 m² / g
325 mesh (44 microns) residue: 0.02% max
Bulk Density: 3.0 lb / cu ft (max)
Pour Density: 50 g/l Tap Density
Loss on Heating: <1.5% max
Loss on Ignition (@1000C): <2 wt%
Refractive Index: 1.46
X-ray form: Amorphous
Assay (Percent Silicon Dioxide): >99.8%
Oil Adsorption: 350 g / 100 g oil
Average Particle (Aggregate) Size: 0.2-0.3 microns

**FOR INDUSTRIAL USE ONLY
KEEP AWAY FROM CHILDREN**

For more information please contact:

Epoxy.com.

352-489-1666 (Phone)

352-465-3497 (Fax)

info@epoxy.com

www.epoxy.com

Epoxy.com a division of Epoxy Systems, Inc. warrants its products (when properly stored) for the period of time as follows: Epoxies, Product #315, Product #315BC, and Product #316 one (1) year; Polyesters, Methyl Methacrylates (normal) two (2) months and Polyurethanes Four (4) months; Power Tools and Equipment 90 days; Vinyl Esters, High Molecular Weight Methacrylates (HMMA) and all other resins (not specifically mentioned above) 30 days; hand tools (non-power tools) 30 days. Epoxy.com warrants that its products will be free of manufacturing defects and will be in conformity with published specifications when handled, stored, mixed and applied in accordance with recommendations of Epoxy.com. If any product fails to meet this warranty, the liability of Epoxy.com will be limited to replacement of any non-conforming material if notice of such non-conformity is given to Epoxy.com within the warranty period for the material (as indicated above), or within 1 year of the delivery of materials (whichever is sooner). Epoxy.com may in its discretion refund the price received by Epoxy.com in lieu of replacing the material. No customer, distributor, or representative of Epoxy.com is authorized to change or modify the published specifications of this warranty in any way. No one is authorized to make oral warranties on behalf of Epoxy.com. In order to obtain replacement or refund the customer must provide written notice containing full details of the non-conformity. Epoxy.com reserves the right to inspect the non-conforming material prior to replacement. EXCEPT FOR THE EXPRESSED WARRANTY STATED ABOVE, THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE. Epoxy.com'S OBLIGATION SHALL NOT EXTEND BEYOND THE OBLIGATIONS EXPRESSLY UNDERTAKEN ABOVE AND Epoxy.com SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO THE PURCHASER OR ANY THIRD PARTY FOR ANY LOSS, COST, EXPENSE, DAMAGE OR LIABILITY, WHETHER DIRECT OR INDIRECT, OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. All quotes and sales subject to availability.

Many of our products are made on an individual order basis. Unless authorized in writing by Epoxy.com a division of Epoxy Systems, Inc. in writing before the material is made, there are no returns on items purchased from us, once the order has been processed, and the material made. In the event of authorized returns a restocking charge will be charged in the amount of 30% of the value of the material returned or \$150 whichever is greater. No returns on non-list priced items. All Returns are for merchandise (store) credit only, no cash or credit card credits. In the event of a return, buyer is responsible for the cost of shipping and handling in both directions.