PLAINTIFF'S EXHIBIT

UC-2990

ASBESTOS

PRODUCT INFORMATION

UNION CARBIDE CORPORATION • MINING AND METALS DIVISION • 270 PARK AVENUE, NEW YORK, N.Y. 10017

RESIN-GRADE ASBESTOS 144

Union Carbide's Resin-Grade Asbestos is an effective, low cost thickening agent and thixotrope for vinyl plastisols and gels, polyesters, epoxy cements, mastics and sealants.

Resin-Grade is a highly purified, white chrysotile asbestos. Fibers are of essentially uniform diameter - averaging 250 angstroms or .025 microns. Lengths vary from a few microns to tens of microns.

By means of a special refining technique, Resin-Grade Asbestos is made completely grit free and non-abrasive. This latter characteristic makes it especially valuable in spray application. Moisture content is controlled at a low level for maximum reproducibility.

TYPICAL CHARACTERISTICS

Specific Gravity		2.45 g/cc
Moisture Content		2.0% max.
Surface Area		60 M^2/gm approx.
Reflectance (G.E. Brightness)		72-76
Nature of Surface Charge		Electropositive(cationic)
pH in Water		9.5
Bulking Value		4.8 gals./100 lbs.
Oil Absorption (DOP)		120 lb./100 lbs.
Refractive Index		1.54 - 1.56
Wet Bulk Density (in water):		
as received, 20 g/liter	(3 hrs. settling)	700 ml.
after dispersion, 2 g/liter	(1 hr. settling)	900-1,000 ml.
Dry Bulk Density		4 lbs./cu. ft.
Shipping Density		12-14 lbs./cu. ft.
Standard Package Wt.		35 lbs.

RESIN-GRADE ASBESTOS IS NON-ABRASIVE

	Relative Abrasiveness
Resin-Grade Asbestos	1.0
Bentonite	39
Diatomite	25

The attached graphs present typical data on the use of Resin-Grade Asbestos as a thixotrope in "Flexol" Plasticizer EPO; the performance may be enhanced, if desired, by the addition of small percentages (0.1%) of ethylene glycol or other polyols.

High shear mixers are recommended for optimum efficiency and dispersion stability. A mixing procedure for Cowles dissolvers is attached. Sonic dispersers, homogenizers and similar equipment are also satisfactory.

SALES OFFICES:

270 Park Avenue, New York, N. Y.	212-551-4420
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22 Battery Street, San Francisco, Calif.	415-982-1360

UCC 025647

Dispersing of Union Carbide's Resin-Grade Asbestos in Di-Octyl Phthalate using the Cowles Dissolver

The subject matter serves as a means of introducing Resin-Grade Asbestos with vinyls in plastisol compositions.

The following composition was dispersed using a 1-VG Cowles Dissolver with a B-1503 (3") impeller in a 4-1/8" diameter vessel.

80% Di-Octyl Phthalate (DOP)
20% Resin-Grade Asbestos
100

Log of operation:

Start with all the DOP and at 1800 RPM charge in one-half the Resin-Grade Asbestos into the vortex of the mixture. Raise the RPM to 5000 and run for 2 minutes. Temperature reached 120°F. Lower speed to 1800 RPM. Charge in 1/2 of remaining asbestos and raise RPM to 3000 and run for 2 minutes. Lower speed again to 1800 RPM and add balance of asbestos. Then operate equipment as follows:

Min.	Temp.	RPM	Observation
0	130°F.	3000	Maintain lower speed to prevent surge.
5	150°F.	4000	Rolling flow without showing a vortex.
10	175°F.	5000	RPM raised to maximum permitted by condition of mix. Rolling flow without a vortex. Slight occasional surge only, diminishing as temperature increases.
15	210°F.	5000	
20	235°F.	5000	Batch secured.

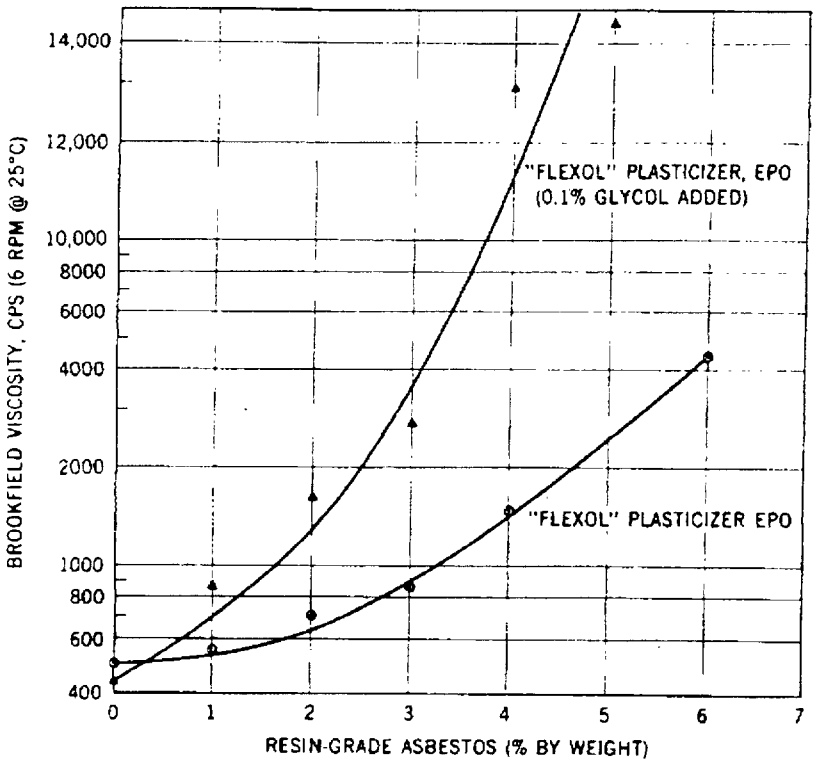
Concentrations greater than 20% asbestos do not seem practical because of the surging nature of the flow pattern due to viscosity increase. With DOP as the vehicle, there seems to be no channeling (cutting a hole) about the impeller. Examination under the microscope for uniform break-up of the clusters of asbestos seems to be the best method for evaluating the dispersion method. The agglomerates of asbestos seem to be uniformly attrited to the ultimate fiber lengths within 10 minutes.

It takes about a minimum of 20 minutes for complete dispersion because of the inability to reach maximum speed sooner than 10 minutes. Concentrations of 10-12% can be dispersed in 10 minutes at 5000 RPM.

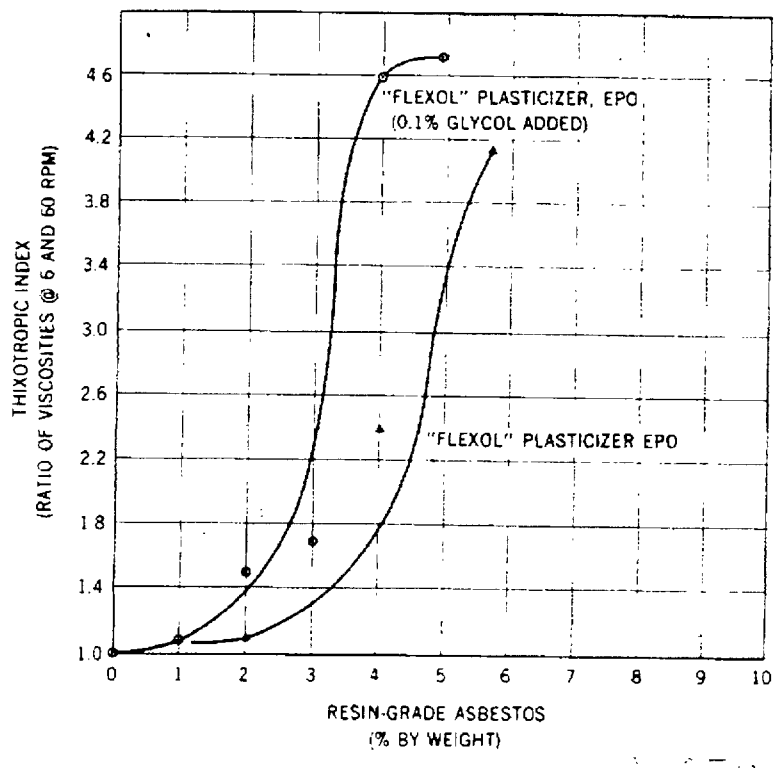
Suggested use in: Coatings, Plastisols, Mastics, Polyesters.

UCC 025648

THICKENING EFFECT OF RESIN-GRADE ASBESTOS IN "FLEXOL" PLASTICIZER, EPO



THIXOTROPIC INDICES OF RESIN-GRADE ASBESTOS IN "FLEXOL" PLASTICIZER, EPO



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