

Polyethylene Fine Powder

FLO-THENE UF[®]



SUMITOMO SEIKA



Polyethylene Fine Powder

For Higher Quality, Finely Pulverized Polyethylene With Stable Particle Size!

Since its establishment in 1944 as one of the affiliated companies of Sumitomo Chemical Co., Ltd. Sumitomo Seika Co., Ltd. has continued to meet the changing needs of the times supplying excellent products to customers. In order to satisfy customers' needs, increasingly diversified and sophisticated, Sumitomo Seika Co., Ltd. will continue to develop its technologies and products as a combined system.

In the field of powdered plastics, we have the pulverizing and processing techniques of the world's top standard, with which we keep expanding our business into a still wider field. Especially, our finely powdered polyethylene (FLO-THENE UF) is finding expanding uses as a property modifier of plastics, organic and inorganic materials for its outstanding performance.



FLO-THENE

Characteristics

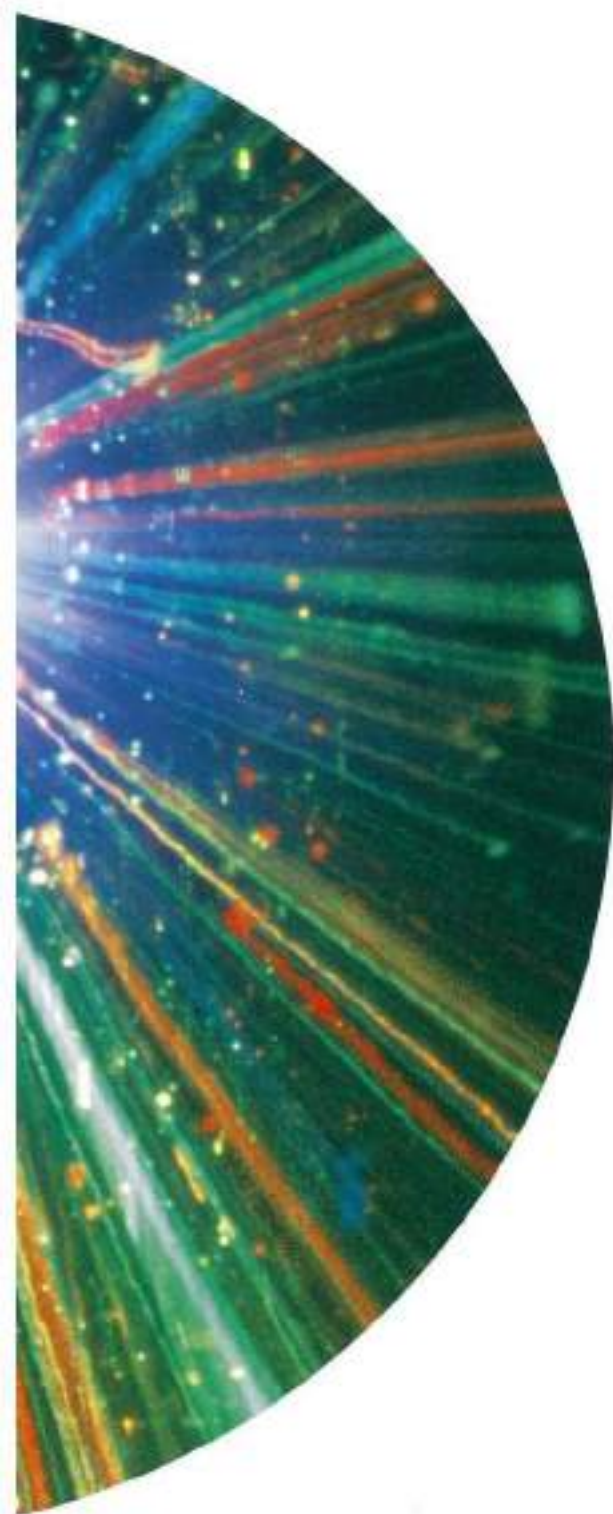
1. FLO-THENE UF is a fine polyethylene powder. The typical particle size is 25 μ , and there is almost no variation of particle size distribution between production lots.
2. FLO-THENE UF has a high purity and retains the excellent properties of raw polyethylene.
3. FLO-THENE UF easily disperses to form water and solvent type dispersants.
4. FLO-THENE UF has good adhesive properties especially suitable for the heat sealing of papers and fibers.

Grades and Properties

Property	Test Method	Unit	UF-15	UF-30	UF-80
Melt flow rate Index	JIS K6760-1981	g/10min	15	20	75
Density	JIS K6760-1981	g/cm ³	0.922	0.918	0.918
Tensile Strength at Break	JIS K6760-1981	kg/cm ²	170	130	90
Elongation	JIS K6760-1981	%	600	550	150
Hardness	ASTM D2240-68	Shore-D	47	44	43
Torsional Rigidity	ASTM D147-70	kg/cm ²	2,200	1,600	1,500
Melting Point	DSC Method	°C	107	105	106
Vicat Softening Point	ASTM D1525-70	°C	96	83	78

Chemical Properties

FLO-THENE UF exhibits outstanding resistance against acids, alkalis, inorganic salts, and their solutions. It also exhibits low water absorption rate (below 0.01% at 25°C for 24 hours) and will not dissolve in solvents below 60°C. Slight whitening and loss of clarity are observed after dipping in turbin oils and gasoline for about 30 days.



UF[®]

Electrical Properties

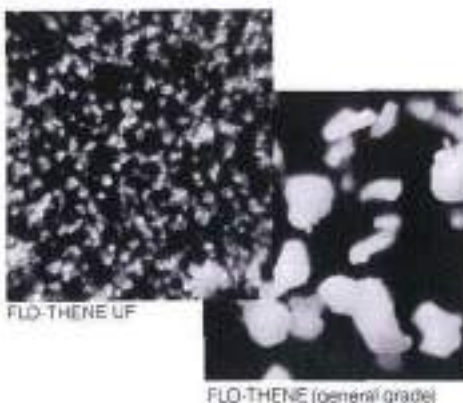
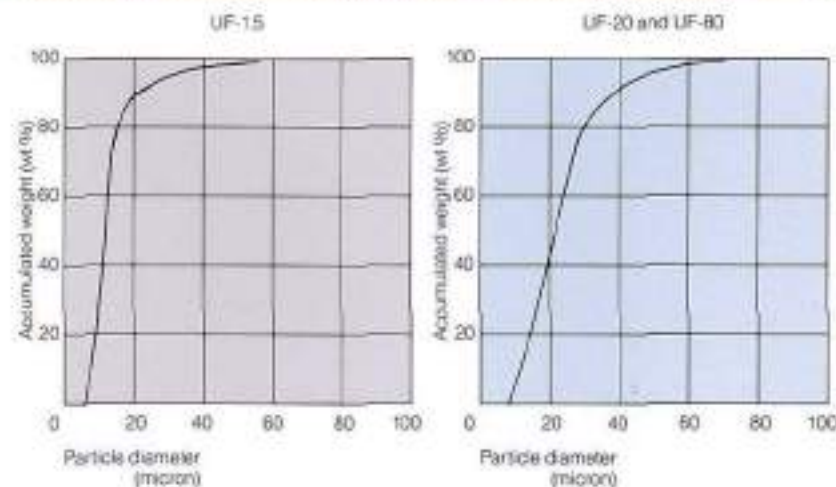
FLO-THENE UF has such outstanding electrical properties as low dielectric loss, electric conduction rate, dielectric constant and high dielectric strength, etc.

Surface Resistivity	Ω-cm	>10 ¹⁴
Dielectric Strength	kV/mm (phenolic method)	40

Thermal Properties

Heat Conductivity 20°C	0.29 Kcal/m ² ·hr ² ·°C
Specific Heat (solid) 20°C	0.55 cal/g ² ·°C
Specific Heat (liquid) 120-140°C	0.70 cal/g ² ·°C
Coefficiency of Linear Thermal Expansion 20°C	2.2 × 10 ⁻⁴ 1/cm ² ·°C
Decomposition Point (by DSC in vacuum)	280-300°C

Distribution of Typical Particle Size



Applications

Modification of Resins FLO-THENE UF added to resins can modify their properties.

Polyester Resins

Adding a very small quantity of FLO-THENE UF to unsaturated polyester molding materials will modify its physical properties.

FLO-THENE UF is an especially effective additive for SMC (Sheet Molding Compound) and BMC (Bulk Molding Compound), improving their shrinkage, mold releasing, crack resistance, moisture proof, and filler dispersion properties.

Other Plastic Materials

FLO-THENE UF is used for casting grade epoxy resins, polystyrene, ABS, phenolic and PVC resins for property improvement. When used for casting grade epoxy resins, flexibility is improved. Added in polystyrene it improves flowability and in ABS resins it improves processability. Likewise, rigid PVC has flowability and impact resistance improved. It can also be used as a miscible agent for composite plastics materials.

Coating and Adhesive

Processing of Papers and Textile Fibers

A coating of a FLO-THENE dispersant to papers or fibers provides a fine, thin film without pinholes. Coating craft paper, wood-free paper and glassine paper will provide excellent water proofing and chemical resistance and also heat-sealing ability. By applying FLO-THENE powder to fibers and felts, they can be glued and processed with no deterioration in quality.

Metal Coating

FLO-THENE UF, in either form of powder or dispersant, can coat metal surfaces through electro-static coating, spray coating and other methods.

Additive to Paints,

Pigments and Inks

FLO-THENE UF will modify the physical properties of paints, pigments and inks. If a small amount of FLO-THENE is added to a paint, it will diminish slipperiness and luster. Addition to ink will improve abrasion resistance. It is also used as pigment dispersion agent.

Other Applications

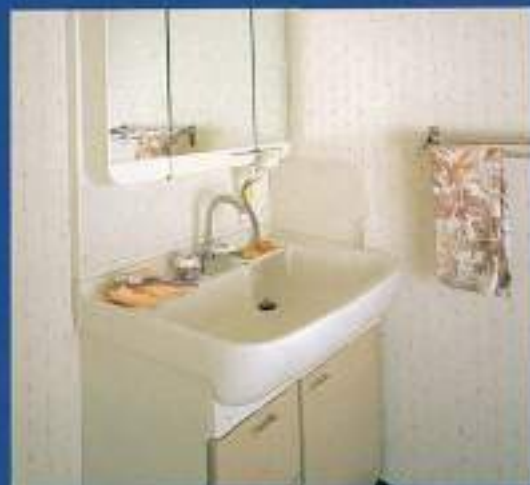
In addition to those applications introduced here, FLO-THENE UF also finds an extensive range of applications including cosmetics (scrubbing agent), rubbers (anti-blocking agent, processing aid) and lubricating oil (sliding property improvement) and many others.



Water Tank



Bathtub



Washstand



Purificatory Tank



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