

Product: PTFE Fine Powder Resin PF-F46 is a polytetrafluoroethylene fine powder resin used primarily for paste extrusion.

Applications: It is typically used to make wire and cable insulation and small diameter, thin wall tubing.

Packing: It is packed in a sealed PVC bag, and loaded in water content proof paper barrel. The net weight is (20±0.1) kg per barrel.

TYPICAL PROPERTIES OF PTFE Fine Powder Resin PF-F46 (Data not for specification purposes)

Properties	Test Method	Unit	PF-F46
Appearance			White loose powder, no impurities
Tensile Strength, MPa ≥		MPa ≥	24.0
Elongation at Break, % ≥		% ≥	350
Moisture content, % ≤		% ≤	0.030
Bulk Density, g/L	ASTM D4895	g/L	475±100
Average Particle Size, μm	ASTM D4895	μm	400-575
Standard Relative Density			2.165-2.225
Melting Point, °C		°C	327±5
Thermal Instability Index, ≤		≤	50
Extrusion Pressure (RR 100:1) MPa	ASTM D4895	(RR 400:1) MPa	20.0 - 35.0
Extrusion Appearance			Continuous, straight, smooth ring

CERTIFICATION

- ROHS Certification
- REACH Certification
- SVHC Certification

PROCESS

PTFE Fine Powder Resin PF-F46 is extruded using a liquid processing aid such as naphtha. In the paste extrusion process, the powder is mixed with a lubricant aid and then compressed into a cylindrical preform slug under light pressure (1.5–2.0 MPa [220–290 psi]). The preform slug is placed in the cylinder of a paste extruder, where the composition is forced under high pressure through a finishing die to produce beading, tubing, or wire coatings. After extrusion, the product is a low-density, but coherent, fibrous structure. Teflon™ PTFE CFP 6000 X is usually processed further, with heat, into a solid resin product such as tubing. Heat is applied in two steps, which may be taken in-line with extrusion or separately. The lubricant must be removed first, usually by heating within the range of 100–300 °C (212– 572 °F). A sintering step follows to melt the resin above its melting point of approximately 342 °C (648 °F) and produce the void-free, solid PTFE resin.

STORAGE AND HANDLING

PTFE fine powder resins must be handled carefully to avoid shearing the powder prior to extrusion. Fibrillation by shearing is not reversible, and damaged particles can appear as defects in the finished product. As temperature is reduced below the transition point of 19 °C (66 °F), the powder becomes progressively less sensitive to mechanical damage or compaction in its containers.

The Fine powder compacted during shipping and storage be restored to its optimum condition by cooling it for one or two days below 19 °C (66 °F), followed by screening through a 2–4.76 mm opening sieve (4–10 mesh). Lumps that are retained on the sieve that can be broken up by shaking at temperatures below 19 °C (66 °F) may be used; however, harder lumps that cannot be broken up should be discarded.

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