

Torlon® 4000TF

polyamide-imide

Torlon 4000TF is a neat resin polyamide-imide (PAI) fine powder designed for compounding with other polymers and specialty additives. It is the base resin utilized in all Torlon injection molded compounds. Its powder form enables designers to enhance custom compounds and specialty applications with the well-known properties of Torlon polyamide-imide, from its unstoppable performance under extreme conditions to excellent resistance against wear, creep and chemicals.

Torlon® 4000TF is a fine-particle powder suitable for compression molded parts. It has a maximum particle size of 150 µm with 95% less than 75 µm. The majority of material is the range of 30-40 µm. The IV for this grade is greater than 0.50, the typical range is 0.50-0.65. A coarse-particle powder version, Torlon® 4000T, is also available. A water soluble analog of Torlon® 4000T is available as Torlon AI-50.

The strength and wear properties of compression molded compounds can be uniquely improved through addition of Torlon® 4000TF powder. Polytetrafluoroethylene (PTFE) and related fluoropolymer compounds show higher strength,

greatly reduced creep behavior and better performance in wear-resistant applications, when Torlon® 4000TF is added. Torlon® 4000TF serves as a high temperature, high performance matrix binder for other diverse compression molded parts such as clutches, brake pads and their components, fused metal powders and thermoplastic magnets. The fine powder also may be used in thermal spray processes such as flame spray and high-velocity oxyfuel (HVOF) spray techniques.

In addition to molded components, Torlon® PAI powders are suitable for use in other high performance forms. For example, these powders are soluble in dipolar aprotic solvents such as N-methyl pyrrolidone (NMP), dimethylacetamide (DMAC), dimethylsulfoxide (DMSO) and dimethylformamide (DMF). Solutions of these systems can be sprayed into coatings, cast into films, spun into fibers and cast or spun into specialty membranes. High strength, high temperature capable adhesives can be also formulated from Torlon® PAI powders. Torlon® PAI powders may be incorporated into epoxy and other thermoset systems to provide additional strength, ductility and heat resistance.

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Features	• Chemical Resistant • Flame Retardant	• High Heat Resistance
Uses	• Blending • Cast Film	• Coating Applications
RoHS Compliance	• Contact Manufacturer	
Forms	• Powder	
Processing Method	• Coating	• Compression Molding

Physical

	Typical Value	Unit
Intrinsic Viscosity - 0.5% in NMP (25°C)	> 0.50	



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Injection

Typical Value Unit

Drying Temperature

177 °C

Drying Time

3.0 hr

Injection Notes

Drying Time/Temp: 4 hrs @ 300°F

Drying Time/Temp: 16 hrs @ 250°F

Notes

Typical properties: these are not to be construed as specifications.

