

Product Data

Powders for Coatings and Adhesives

Molded and machined components made from TORLON polyamide imide (PAI) are recognized in a number of industries for their unstoppable performance under extreme conditions. This remarkable polymer combines exceptional strength at high temperatures – up to 260°C (500°F) – with excellent resistance to creep, wear, and chemicals including organic solvents. Powdered forms of TORLON PAI can bring these same benefits to high-performance coatings and adhesives.

TORLON AI-10

TORLON AI-10 powder has an impressive record of proven performance in high-temperature coatings and adhesives. These include electrical and wire coatings, corrosion resistant coatings, ablative coatings, non-stick cookware, and a variety of industrial coatings.

TORLON AI-10 is soluble in dipolar aprotic solvents such as NMP, DMAC, DMF and DMSO* to at least 35% solids. Mixtures of these solvents with other non-solvents are possible. Cast solutions are thermally cured up to 250-300°C (482-572°F) to achieve maximum performance properties. For more information, please see our Application Bulletin entitled, “TORLON AI-10 Polymer.”

TORLON AI-30

TORLON AI-30 is the water-soluble analog of TORLON AI-10 and consists of 35% solids, 63% water and 2% NMP. It is made water soluble by forming an ammonium salt with the amic acid groups on the polymer backbone. Aqueous-based solutions made with TORLON AI-30

have inherently low VOCs, which helps end users meet stringent environmental regulations. Cast solutions are thermally cured up to 250-300°C (482-572°F) for maximum performance properties.

TORLON 4000T

TORLON 4000T has a different polymer backbone and a greater degree of imidization than AI-10. Similar to TORLON AI-10, this material is soluble in dipolar aprotic solvents such as NMP, DMAC, DMF and DMSO* to at least 35% solids. Cast solutions are thermally cured up to 250-300°C (482-572°F) to achieve maximum performance properties.

It is available in four powder grades, 4000T-LV, 4000T-MV, 4000T-HV, and a finer particle size version, 4000TF. TORLON 4000TF has a particle size range of 0 to 150 microns, and 95% of the particles are less than 75 microns. 4000TF should be used when a defined particle size is important, such as in powder coatings and dispersions.

TORLON AI-50

TORLON AI-50 is the water soluble analog of 4000TF. It is similar to TORLON AI-30 in solids composition, yet offers a lower viscosity and the associated processing advantages. Cast solutions are thermally cured up to 250-300°C (482-572°F) for maximum performance properties.

* NMP = N-methyl pyrrolidone; DMAC = dimethyl acetamide; DMF = dimethyl formamide; DMSO = dimethyl sulfoxide

Typical⁽¹⁾ Properties of TORLON PAI Powders

	AI-10	AI-30	4000T-LV	4000T-MV	4000T-HV	4000TF	AI-50
Appearance	yellow powder	wet yellow powder	yellow powder	yellow powder	yellow powder	fine yellow powder	wet yellow powder
Solids content, %	90	35	99	99	99	99	35
Solution viscosity, 25% in NMP, cP	800 ⁽²⁾		7,000 ⁽³⁾	42,000 ⁽³⁾	85,000 ⁽³⁾	7,000 ⁽³⁾	
Solution viscosity, 7% in water, cP		650 ⁽²⁾					20 ⁽²⁾
Acid number, mg KOH/g of polymer	80	125	20	15	10	20	125

⁽¹⁾ Actual properties of individual batches will vary within specification limits.

⁽²⁾ Measured at 25°C

⁽³⁾ Measured at 40°C (104°F)

TORLON Powders

Standard Packaging and Labeling

TORLON powdered resins are packaged in lined cardboard boxes or fiber drums containing 150 lbs (68 kg), or 50 lbs (22.7 kg) of material depending on grade. Special packaging can be supplied upon request. Individual packages will be plainly marked with the product number, the lot number, and the net weight.

Precautionary Labeling

On the basis of the toxicological, physical, and chemical properties of TORLON powdered resins, labeling used on containers is as follows:

Caution! Handling and/or processing this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose, and throat.

TORLON AI-10 and AI-30 resins also include this additional warning:

*Danger
Contains MDA
Contains materials which may cause cancer
Liver toxin*

Product Safety and Emergency Service

For product safety information or a Material Safety Data Sheet on a product of Solvay Advanced Polymers

1 (800) 621-4557

1 (770) 772-8880 outside of U.S.

For information or help in an emergency such as a spill, leak, fire or explosion, call day or night:

Emergency Health Information

1 (800) 621-4590

1 (770) 772-5177 outside of U.S.

Emergency Spill Information

CHEMTREC 1 (800) 424-9300

1 (703) 527-3887 outside of U.S.

collect calls accepted

For Additional Information

Technical Service

1 (800) 621-4557

Customer Service

1 (800) 848-9744

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