Torlon® AI-30 LM

polyamide-imide

Torlon® AI-30 LM is a wet polymer granule developed for the performance coatings industry. This polyamide-imide precursor consists of roughly 35% polymer solids, 63% water and 2% NMP. The high acid number of the polymer backbone allows the formulation of aqueous solutions with the addition of an appropriate complexing amine. Aqueous-based solutions made with Torlon® AI-30 LM have inherently low VOCs, which helps end users meet stringent environmental regulations.

Coatings based on the Torlon® AI-30 LM polymer yield durable, abrasion-resistant, thermally-stable films. The cured resin has superior resistance to organic solvents and a wide array of other commercial and industrial chemicals. Outstanding tribological characteristics are afforded both by the resin as well as its unparalleled intra-coat adhesion to fluoropolymers.

Aqueous-based AI-30 LM polymer coatings offer a sustainable solution for electrical/electronic, high temperature decorative and corrosion preventative applications. In addition, magnet wire insulation and protective coatings for printed circuit boards may be converted from solvent-borne (NMP) polyamide-imide solutions. Industrial applications include primers and decorative topcoats for cookware, appliances and housewares. Aqueous AI-30 LM polymer solutions may be easily combined with aqueous fluoropolymer dispersions to produce sustainable, high-performance, low-friction, corrosion-resistant coatings that provide protection to industrial and automotive parts.

General		
Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Features	• Abrasion Resistant • Chemical Resistant • Flame Retardant	• Good Adhesion • High Heat Resistance • Water Soluble
Uses	• Binder	• Coating Applications
RoHS Compliance	• Contact Manufacturer	
Appearance	• Yellow	
Forms	• Powder	
Processing Method	• Coating	• Solution Processing

Physical	Typical Value	Unit
Acid Number	125.00	mg KOH/g
Molecular Weight		
Mn	3500	g/mol
Mw	11000	g/mol
Solids Content	35	%

Additional Information

Solution Processing

Waterborne polyamide-imide solutions may be formulated using Torlon® AI-30 LM and an appropriate complexing amine. Please contact your Solvay representative for further details. Waterborne PAI solutions are patent protected (US 6,479,581).

Application

There are numerous methods by which waterborne Torlon® AI-30 LM resin-based coatings can be effectively applied. Depending on the aesthetic and performance characteristics required, uniform coatings can be applied by spray, roll, spin or curtain techniques. Usually, dry film thicknesses from 5-10 µm are readily achieved in a single coating pass, with multi-coat systems affording the opportunity for even further surface build. Regardless of the method employed, it is essential to assure appropriate preparation of the substrate prior to application of coating. Once complete, application equipment should be purged of the coating and cleaned with water.

Drying/Curing

Coatings based upon Torlon® AI-30 LM resin dry and initiate cure at temperatures as low as 150°C (300°F). However, optimal film properties result after heating for 5 to 20 minutes at 275°C (527°F), depending on the film thickness and the formulation. In the case of multi-coat systems, an intermediate temperature step at around 200°C (390°F) for 10 minutes may be advisable. For coating formulations employing low solids, a brief flash off period of about 3 to 10 minutes may be recommended prior to initiating cure.

Notes

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

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