

FLAME RETARDAND: FRX – A101

Description

FRX-A101 is a high-efficiency halogen-free flame retardant based on organic phosphorus. It delivers excellent flame retardancy and mechanical properties when used in flame-retardant modified composites such as PA (polyamide), high-temperature nylons, elastomers, and epoxy resins. Notable advantages include low required dosage, low density, and reduced smoke generation.



No plate-out under high temperature/humidity.



Better mechanical properties.



Stronger flame retardant efficiency, lower dosage levels.

Technical Data

Property	Unit	Typical Value
Bulk Density	gram/cm ³	0.4 – 0.8
Moisture	wt %	≤ 0.5
Phosphorus Content	wt %	≥ 20



Typical Applications: Short Glass Fiber reinforced PA66 and PA6

FRX-A101, when used at 10–12 phr to replace 25 wt% of short glass fiber in reinforced PA66 and PA6 composites, maintains excellent flame retardancy—achieving UL94 V-0 at both 0.8 mm and 1.6 mm, along with a GWIT of 775°C—while simultaneously enhancing mechanical strength and impact performance. This makes it a powerful alternative to low-migration ADP.

Components	Low Migration ADP Basis (wt %)	At an 18:10 ratio substitute by FRX-A101 (wt %)	At an 18:12 ratio substitute by FRX-A101 (wt %)
PA66	46	54	52
PA6	10	10	10
Short Glass Fiber	25	25	25
FRX-A101	-	10	12
Low Migration ADP (Aluminum Diethylphosphinate)	18	-	-
Lubricant/Antioxidant	1	1	1
Total	100	100	100

Property	Testing Protocol	Unit	Performance Results		
Tensile Strength	GB/T 1040-06	MPa	140	151	145
Deflection	GB/T 9341-08	mm	6.6	8.5	7.6
Notch Impact Strength	GB/T 1803-1-08	kJ/M ²	8.0	10.8	9.0
Flame Resistance	UL94	0.8 mm	V-0	-	V-0
		1.6 mm	V-0	V-0	V-0
GWIT		°C/2 mm	775	775	775

Disclaimer

The property values presented herein are typical values and are not to be interpreted as specification limits. The information in this document is believed to be accurate and reliable as of the date of publication; however, it is provided for general guidance only. This document is intended to support safe handling, use, processing, storage, transportation, and disposal of the product,

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