

GF Reinforced PBT Flame Retardant ER-M1443

ER-M1443 is a novel halogen-free flame retardant developed for glass fiber reinforced PBT, which can achieve UL 94-V0 level of 0.8-1.6mm. The usage of this FR required to obtain V0@1.6mm is lower, compared with traditional flame retardants. Additionally, it affords a good processing flowability.

1. Materials

PBT: Changchun PBT 1100

Flame retardant: Inovia ER-M1443

Glassfiber: Chongqing International Composite Materials 303-3-E

2. Processing

Drying conditions: 110~120 °C, 4 h.

Extrusion temperature: 230~250 °C

Injection temperature: 240~250 °C; mold temperature: 60-80 °C

3. Application data

Table 1. Flame Retarding Properties

	Method	Thickness	16% Conventional FR	15% ER-M1443	16% ER-M1443
UL rating	UL94	0.8mm	V1	V1	V0
UL rating	UL94	1.6mm	V0	V0	V0

Table 2. Mechanical and thermal properties

	Method	Unit	16%Conventional FR	15%ER-M1443	16%ER-M1443
Tensile strength	ISO 527	MPa	132	128	130
Elongation at break	ISO 527	%	1.1	1.2	1.1
Flexural strength	ISO 178	MPa	185	184	183
Flexural modulus	ISO 178	MPa	10000	9600	9800
Charpy notched impact strength	ISO 179	kJ/m ²	6.8	6.8	6.6
HDT (1.8MPa)	ISO 75	°C	200	200	200

Table 3. Other properties

	Method	Unit	16%Conventional FR	15%ER-M144 3	16%ER-M144 3
MI (250°C / 2.16kg)	ISO 1133	g/10min	5	9.3	10
Density	ISO 1183-1	g/cm ³	1.56	1.54	1.55