

PC Flame Retardant DR-M858

DR-M858 is a flame retardant developed for polycarbonate(PC), mainly for the preparation of PC translucent thin-walled products, including films, sheets, thin plates, and injection parts. DR-M858 itself does not contain halogen and does not need to add fluorine-containing PTFE. It complies with the latest regulations of the EU's PFAS free.

1. Materials

PC raw material: Covestro 2805

Flame retardant: Inovia DR-M858

2. Processing

2.1 Drying: 120°C, 4 hours.

2.2 Extrusion: 240 - 260°C.

2.3 Filming casting: temperature is 240 - 270°C

Note: The flame retardant DR-M858 can effectively reduce the melt viscosity and processing temperature of PC. A processing temperature of 240 - 270°C is optional.

3. Application Example Datas

Table 1. Flame retardant performance

	DR-M858	UL 94 rating
PC	0	0.25 ~1.6mm V2
FR PC	1.5%	0.25 ~1.6mm V0

Table 2. Mechanical Properties

	Test direction	Thickness	Unit	PC	PC+1.5%DR-M858
Tensile Strength	MD	0.45mm	MPa	63	62
	TD			59	61
Elongation at break	MD	0.45mm	%	161	105
	TD			83	47
180°Bending resistance	MD	0.45mm	times	9	6
	TD			9	6

Note: The film casting machine we used, is a small experimental type without vacuum pump, which leading to a number of crystal point bubbles present in the film. And that maybe effect the properties. The data above is only for reference.

Table 3. Thermal Performance

	Method	Unit	PC	PC+1.5%DR-M858
VST (10N)	ISO 306	°C	144	144
HDT (1.8MPa)	ISO 75	°C	119	117
Tg (10°C/min)	/	°C	145	142

Table 4. Processing Flowability

	Method	Unit	PC	PC+1.5%DR-M858
MI (300°C, 1.2kg)	ISO 1133	cm ³ /10min	12	/
MI (270°C, 1.2kg)	ISO 1133	cm ³ /10min	4	15

Summary:

Adding 1.5% DR-M858 in total weight, PC product (0.25-1.6mm) can reach UL94-V0, while maintaining good mechanical and thermal properties. It can also decrease the melt viscosity and processing temperature of PC, and improve its processing fluidity.