EVA

EVA for Foam Application

▶E153F, E180F, E220F

● Description

E153F, E180F, and E220F are EVA resins for crosslinked foam applications including mid-sole and in-sole of athletic shoes. These grades are designed to be processed in conventional kneading and rolling equipment for mixing and dispersing crosslinking agent and foaming agent.

● Characteristics

These grades offer good processability during compounding with various additives. Foamed products made of these grades provide excellent spilt tear resistance, superb tensile and elongation properties, and good compression set characteristics.

● Applications

▶ Athletic shoe mid-soles and in-soles, Sandals, Cushion padding

● Physical Properties

Properties	Test Method	Units	E220F	E180F	E153F
Melt Index (190℃/2.16 kg)	ASTM D 1238	g/10min	3.0	2.0	1.6
Density	STC Method	g/cm^3	0.944	0.940	0.938
VA Content	STC Method	%	22	18	15
Tensile Strength at Break	ASTM D 638	kg/cm^2	290	260	200
Elongation at Break	ASTM D 638	%	800	750	750
Flexural Stiffness	ASTM D 747	kg/cm^2	450	500	550
Shore Hardness	ASTM D 2240	A scale D scale	90 35	92 38	94 39
Vicat Softening Point	ASTM D 1525	℃	55.0	64.0	69.0
Melting Point	STC Method	℃	87.0	93.0	95.0
Brittleness Temp.	ASTM D 746	℃	<-70	<-70	<-70
E.S.C.R (at 50℃,10%, F_{10})	ASTM D1693	Hrs	>500	>500	>500

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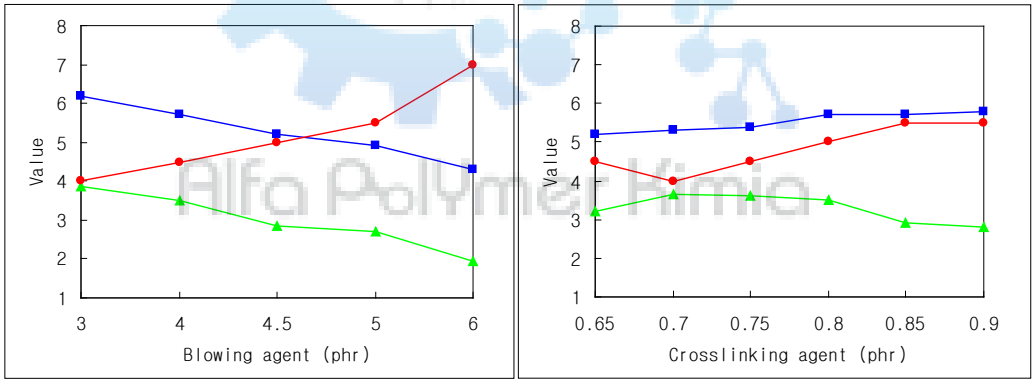
* Data shown above are representative values for reference purposes only, and not to be construed as specifications.

● General Processing Guide

The compression foaming process is generally composed of three distinct steps: kneading, addition of crosslinking and foaming agents by roll milling, and foaming by compression molding.

At the kneading step, the temperature should be maintained in the range 95 ~105 ℃ to provide good dispersion of additives and filler in the molten resin. The selection of a specific kneading temperature will depend on factors such as VA content in the resin, type and content of filler and other additives, and machine variables. The crosslinking and blowing agents are mixed with molten compounded resin in the roll milling process below 110℃ to avoid premature crosslinking and foaming. Often the roll milling process is repeated several times to get more uniform mixing of crosslinking and foaming agents. After the roll milling step, the compound sheet is compression molded to obtain a foamed sheet. Selection of curing temperature, pressure, and curing time depends on desired property of the final product as well as mold thickness.

▶ Effect of additive contents for E220F



* Foaming Conditions

- Mold Dimension 150 * 150 * 25mm
- Temperature 155℃
- Pressure 150kg/㎠
- Curing Time 40min

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Food Contact Application

- There may be some limitation to apply Samsung Total E153F, E180F, E220F to the food packaging
- Thus, the verification on the suitability is necessary. In case you might need additional information, please contact Samsung Total Customer Service Team.

Other Information

The information in this document can be used for reference only, not to be construed as specification. Customers are responsible for determine whether our product and information is suitable for their particular purpose and for the compliance with related law.
SAMSUNG TOTAL assumes no obligation or liability for the information in this document.

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