Expandable Polystyrene

EPS Technical Data Sheet (TDS)

Section 1 EPS Composition

Expandable polystyrene (EPS) is made by suspension polymerization of styrene monomer and then further impregnated with foaming agent, molecular formula: (C8H8)n.

Content of Polystyrene: (CAS NO.9003-53-6) 93-94.5%%

Content of Pentane:(CAS NO.109-66-0 和 CAS NO.78-78-4) 5.5-7.0%

Section 2 Characteristics Of P-Grade EPS

Gon EPS is white or transparent beads, and foamed products are white. When EPS particles foam through a heat source (above 90℃), the EPS particles soften. When EPS particles pass through a heat source (more than 110℃), they become a melt with adhesiveness, and the heating time and temperature of the product molding affect their bonding.

P-grade EPS is a light-grade material with high foaming rate, and the product has low monomer residue, in line with EU standards, and FDA and SGS food contact materials are qualified.

The foaming rate is high, the highest foaming rate can reach 80-100 times, the particle size is uniform, the particles are full, and the

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bonding is good.

Low volatile organic compounds (VOC), low content of harmful volatile gases, no pungent odor.

Processing performance: good smoothness, high strength, with the ability to pre-launch multiple times. Processing performance: good smoothness, high strength, with multiple pre-release ability. Suitable for all kinds of molding machinery to make electrical appliances, ceramics, food and other packaging materials.

Section 3 Chemical Indicators And Specifications

Category	Index	Unit	301	302	303	401	501
P	Particle Size Range	mm	1.40-1.80	1.15-1.40	0.80-1.15	0.55-0.80	0.35-0.55
	Sieving Efficiency	%	≥95	≥95	≥95	≥98	≥98
	Pentane	%	5.5-7.0	5.5-7.0	5.5-7.0	5.5-7.0	5.5-7.0
	Water Content	%	≤1	≤1	≤1	≤1	≤1
	Residual Monomer	%	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3
	Foaming Ratio	-	80-100	70-90	60-80	50-70	15-30
	Foaming Weight	g/L	10-15	11-17	12-20	14-25	30-60

Section 4 Foaming Condition

Index	Unit	301	302	303	401	501
Density	g/L	13	14	16	19	34
Rate Of Addition	Kg/hr	350-650	450-750	650-850	750-950	300-600
Pressure	Mpa	0.03-0.04	0.03-0.04	0.03-0.04	0.03-0.04	0.03-0.04

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Temperature	℃	95-110	95-110	95-110	95-110	95-105
Heating Time	s	30-70	30-70	30-70	30-70	30-70
Maturation Time	h	4-12	4-12	4-12	4-12	4-12
The Brand Of The Device	FANGYUAN SPD150					

Note: The processing data needs to be changed for different processing conditions such as equipment and supporting facilities.

Maturation Time: Due to the difference in density, temperature, and humidity, the Maturation Time will also vary. If the Maturation Time is too long, the pentane content is too low during the molding process, which will lead to poor binding. If the Maturation Time is too short, it will lead to a long molding Cooling time and reduce production efficiency.

Section 5 Molding Property

Index	Unit	301	302	303	401	501
Fixed Die Pressure	Mpa	0.05-0.06	0.05-0.06	0.05-0.06	0.05-0.06	0.05-0.06
Fixed Die Heating	s	2-3.5	2-3.5	2-3.5	2-3.5	2-3.5
Moving Die Pressure	Mpa	0.05-0.06	0.05-0.06	0.05-0.06	0.05-0.06	0.05-0.06
Moving Die Heating	s	2-3.5	2-3.5	2-3.5	2-3.5	2-3.5
Double-sided Heating	s	15-30	15-30	15-30	15-30	15-30
Water Cooling	s	2-4	2-4	2-4	2-4	2-4
Vacuum Cooling	s	25-40	25-40	25-40	25-40	25-40
The Brand Of The Device	FANGYUAN Forming Machinery					

Note: The processing data needs to be changed for different

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processing conditions such as equipment and supporting facilities.

Section 6 Physical Properties

Index	Test Method	Unit	301	302	303	401	501
Apparent Density	GB/T6343-2009	Kg/m^3	12-20	13-22	15-24	16-27	33-60
Compressive Stress At 10% Relative Deformation	GB/T8813-2020	kpa	55-150	65-170	110-300	150-350	120-320
Rupturing Load	GB/T8812.1-2007	N	11-35	13-40	15-40	15-40	15-40
Bending Test	GB/T8812.2-2007	mm	≥8	≥8	≥8	≥8	≥8
Water Absorption Rate	GB/T8810-2005	%	≤4	≤4	≤4	≤4	≤4
Thermal Conductivity	GB/T10294-2008	W/(m.K)	≤0.040	≤0.040	≤0.035	≤0.035	≤0.035

Note: The results of each index are affected by the density of the plate, and the index value changes with the density of the plate.

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