

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: $(C_8H_8)_n$.

Content of Polystyrene: (CAS NO. 9003-53-6) 93.5-94.5%

Content of Pentane: (CAS NO. 109-66-0 和 CAS NO. 78-78-4) 4.0-6.5%

Section 2 Characteristics Of F&HF EPS

Gon EPS is available in white or translucent 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.

Grade F is EPS containing flame retardant with excellent flame retardant performance, low thermal conductivity, eco-friendly, high efficiency, no additives such as toluene, xylene, ethylbenzene, etc.,

flame retardant is methyl octabromoether, no prohibited substances (HBCD).

HF grade has more excellent flame retardant performance than F grade, belongs to high flame retardant grade EPS, high oxygen index, low thermal conductivity, does not add toluene, xylene, ethylbenzene and other additives, flame retardant is brominated SBS, in line with EU export standards, does not contain prohibited substances (HBCD).

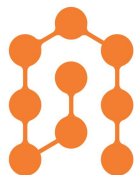
The foaming efficiency is high, the maximum foaming rate can reach 80 times, the particle size is uniform, the particles are full, the Aging time is short, and the binding is good.

Low volatile organic compounds (VOC), low content of harmful volatile gases, no irritating odor, and customized low-pentane products (pentane content less than 4%).

Processing performance: good preservation, good smoothness, good toughness, high strength. Suitable for all kinds of forming machinery manufacturing building materials, cold insulation materials, precision instruments, electrical packaging.

Section 3 Chemical Indicators And Specifications

Category	Index	Unit	301	302	303	401	501
F&HF	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



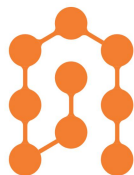
	Pentane	%	4.0-6.5	4.0-6.5	4.0-6.5	4.0-6.5	4.0-6.5
	Water Content	%	≤2.5	≤2.5	≤2.5	≤2.5	≤2.5
	Residual Monomer	%	≤0.08	≤0.08	≤0.08	≤0.08	≤0.08
	Foaming Ratio	-	45-75	40-70	35-65	30-60	15-30
	Foaming Weight	g/L	13-22	14-25	15-28	16-33	33-63

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
Temperature	℃	95-110	95-110	95-110	95-110	95-105
Heating Time	s	35-75	35-75	35-75	35-75	35-75
Maturation Time	h	4-12	4-12	4-12	4-12	8-24
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
Pressure	Mpa	0.05-0.06	0.05-0.06	0.05-0.06	0.05-0.06	0.05-0.06
Preheat	s	2-4	2-4	2-4	2-4	2-4
Heat 1	s	15-25	15-25	15-25	15-25	15-25
Pressure Holding Time 1	s	8-15	8-15	8-15	8-15	8-15
Heat 2	s	2-5	2-5	2-5	2-5	2-5
Pressure Holding Time 2	s	8-15	8-15	8-15	8-15	8-15
Cooling	s	200-350	200-350	200-350	200-350	200-350
The Brand Of The Device	DONGSHAN					

Note: The processing data needs to be changed for different 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
Oxygen Index	GB/T2406.2-2009	%	≥27	≥27	≥27	≥27	≥27
Thermal Conductivity	GB/T10294-2008	W/(m.K)	≤0.040	≤0.035	≤0.035	≤0.035	≤0.033

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.