

The Characteristic and applications of Taitacell EPS resin

TAITACELL EPS RESIN-can be classified by its bead size into ML、MM、T、S、S_s and F.

GRADES	CHARACTERISTICS	APPLICATIONS
EPS-301 General Purpose Grades	Can be processed over a wide range of molding conditions. Good strength. Short cycle time. Low steam consumption. Suitable for block case molding.	Protecting articles from breakage, e.g. Packing for electronic appliances, chinaware and glassware etc. Thermal Insulations, e.g. Packing for frozen foods, insulation tubes and plates etc. Construction materials. Arts and crafts materials, e.g. decoration of exhibition. Others, e.g. fish-box, helmet inner mat etc.
EPS-391 Fast-Molding Grades	Shortening the cycle time. Condition time is short. Other physical properties similar to EPS-301.	Protecting articles from breakage, e.g. Packing for electronic/electrical appliances, chinaware and glassware etc. Thermal.
EPS-321 Flame Retardant Grades	Pass 94HF-1 test, self-extinguishing. Other physical properties similar to EPS-301.	Thermal insulation, e.g. packing for insulation tubes and plates etc.
EPS-351 Anti-Static Grades	Good anti-static effect for products Other physical properties similar to EPS-301.	Protecting articles from breakage insulation air pollution, e.g. packaging for precision electronic appliance, etc.
EPS-361 Food Grades	Low residual styrene monomer content, corresponding with national food standard. Other Physical properties similar to EPS-301	Package for foods, e.g. cake box, fish box, ice-cream box, etc Packing for dinner set.

The Physical Properties of Taitacell EPS resin-- Property of beads

Grades	Properties	Unit	ML	MM	T	S	S _s	F
	Bead Size Range 95% min.	mm	1.4-1.8	1.2-1.6	1.0-1.4	0.7-1.1	0.7-0.9	0.5-0.8
EPS-301 EPS-391 EPS-321 EPS-351 EPS-361	Expandability (time)	EPS-301	80-95	80-95	70-85	65-80	65-80	55-70
		EPS-391	70-85	70-85	65-80	60-75	60-75	50-65
		EPS-321	70-85	70-85	65-80	60-75	60-75	50-65
		EPS-351	80-95	80-95	70-85	65-80	65-80	55-70
		EPS-361	80-95	80-95	70-85	65-80	65-80	55-70
	Water content max.	%	0.5	0.5	0.5	0.5	0.5	0.5

Property of Molded Foams

Properties	Test Method	Unit	ML	MM	T	S	Ss	F
Density	JIS K-7222	g/l	12-25	12-25	15-30	15-30	15-30	17-35
Compressive Strength (10% deformation)	JIS K-7220	kg/cm ²	0.7	0.7	0.8	0.8	0.8	0.9
Flexural Strength	JIK A-9551	kg/cm ²	2.0	2.0	2.5	2.5	2.5	3.0
Thermal Conductivity	JIK A-9551	Kcal/mh c	0.028	0.028	0.027	0.027	0.027	0.027
Chemical Resistance	Acid		Good	Good	Good	Good	Good	Good
	Alkali		Good	Good	Good	Good	Good	Good
	Org. Solvent		Poor	Poor	Poor	Poor	Poor	Poor

The data listed represent average values and are believed to be reliable. They are given for information: no guarantee of their accuracy is made, however, and the product is sold without warranty. Express or implied, and upon condition that purchasers shall make their own tests to determine and suitability of the product for their particular purposes.

Processing Procedure

The standard procedure of processing TAITACELL EPS RESINB beads into expanded blocks or molded articles includes three stages: Prefoaming, Conditioning and Molding.

1. Prefoaming:

The beads are heated by hot water, hot air, steam or infrared heating in a batch or continuous operation. The beads are, thus, expanded to about 50-90 times their original volume and the density is reduced to as little as 15Kg/m³. Bulk density of prefoamed beads.

2. Conditioning:

The prefoamed beads are conditioned at room temperature in a ventilated area, thus, allowed drying and aerate. The conditioning generally requires 24 hours and is very essential for the molding of quality products. In the case of fast molding type, however, conditioning time shall not exceed 16 hours.

3. Molding:

A perforated mold is filled with conditioned prefoamed beads and low pressure steam is admitted through the small holes of the mold. This steam sweeps away the air in the interstices between beads. After a short time the steam pressure is increased to about 0.5~1/0kg/cm² causing the prefoamed beads to fuse in the mold. The mold is then water or air cooled to allow the removal of the molded articles.