H series Technical Data Sheet (TDS)

1. Composition of H series

Expandable Polystyrene (EPS) is suspension polymerized from styrene monomer, further more dip ıed with blowing agent, molecular formula: (C8H8) n,

Content of Polystyrene:	(CAS NO 9003-53-6)	93 - 96%
Content of Pentane:	(CAS NO 109-66-0)	4 - 7%

2. Characteristics of H series

H series is a high foam, high strength, and rapid foamed EPS. H series can have multiple expansions with ultra low density. One time expansion can easily achieve light density and economic consumption for block. Multiple-passed expansion (3-5 times) with ultra light block and light cushioning applications. It does not contain prohibited substances and also meets standards of EU REACH and ROHS.

Specification and Application:

Properties	**Unit**	**H- MS**	**H- SA**	**H- SB**	**H- S**
Average Granule	**mm**	1.2 - 1.8	0.9 - 1.4	0.7 - 1.1	0.5 - 0.9
Pentane Content	**%**	≧ 5.5	≧ 4.0	≧ 5.5	≧ 5.5
Moisture Content	**%**	≦ 1.0	≦ 1.8	≦ 1.0	≦ 1.0
Residual Monomer	**%**	≦ 1.0	≦ 0.2	≦ 1.0	≦ 1.0
Sieve Analysis Efficiency	**%**	≧ 90	≧ 90	≧ 90	≧ 90
General Expandability	-	75 - 85	65 - 75	55 - 65	40 - 55

3. Pre-expansion Condition (EXAMPLES)

***The density available depends on the type and equipment of pre expansion.**

Items	**Unit**	**H- MS**	**H-SA**	**H- SB**	**H- S**
Given Density/Expansion Rate	g/L	13.0	13.0	13.0	15.0
Steam Pressure	bar	0.25~0.40	0.25~0.40	0.10~0.30	0.10~0.25
Heating Time	sec	35~70	35~70	35~70	50~120
Aging Time	hr	12~48	12~48	12~48	12~48

Aging Time: (Aging time will be different due to different density, different temperature, and different humidity.) If the aging time is too long, it is hard to get good confusion during molding and when pentane content is less than 4%. If aging time is too short, it will result a longer cooling time, bad for the improvement of production efficiency. Thus, aging time shall be adjusted according to the expansion density required and aging temperature.

4. Molding Property (different machines can vary processing operation)

following is the molding processing conditions for reference

Grade	Unit	H- MS	H- SA	H- SB	H- S
Molding Density	g/L	8.0	8.0	13.0	18.0
Final Product	-	Block			
Measurement	m/m	6065*1205*655			
Major Steam Pressure	bar	5~8	5~8	5~8	5~8
Steam pressure used after decompression	bar	1.5~2.5	1.5~2.5	1.5~2.5	1.0~2.0
Crossing heating pressure 1/time	front/back	0.35~0.5/9~15S	0.35~0.5/9~15S	0.3~0.5/9~15S	0.35~0.5/9~15S
Crossing heating pressure 2/time	four side	0.45~0.70/2~5S	0.45~0.70/2~5S	0.4~0.60/2~5S	0.45~0.70/2~5S
Foam Pressure	bar	0.65~0.75	0.65~0.75	0.65~0.75	0.65~0.75
Vacuum Cooling	sec	40~80	40~80	60~150	80~200
Cycle Time	sec	180~250	180~250	200~300	250~350
Block Machine Brand & Type	-	DKB - 419VS			

5. Physical Properties

(after test)

Property	Test Method	Unit	H-MS	H-SA	H-SB	H-S
Apparent Density	GB/T6343-2009	Kg/M³	8~15	8~15	10~20	13~25
Compression strength (deformation 10%)	GB/T8813-2008	KPa	70~100	70~100	70~150	80~200
Bending strength	GB/T8812-2007	KPa	70~120	70~120	70~180	80~300
Tensile strength	GB/T9641-88	KPa	70~120	70~120	70~180	80~300
Thermal deformation		℃	85~100			
Coefficient of thermal expansion		℃	(5~7)*10			
Dimensional stability (70±2℃, 48hr)	GB/T8811-2008	%	≦0.38	≦0.38	≦0.38	≦0.38
Thermal conductivity coefficient (≦) (20℃)	GB/T10294-2008	W/M.K	≦0.036	≦0.036	≦0.036	≦0.036
Water vapor permeability	QB/T2411-2008	ng/(Pa.m.s)	≦4.5	≦4.5	≦4.5	≦4.5
Water absorption (≦) 3 day	GB/T8810-2005	%	≦1.0	≦1.0	≦1.0	≦1.0
Water absorption (≦) 7 day	GB/T8810-2005	%	≦1.0	≦1.0	≦1.0	≦1.0
Water absorption (≦) 28 day	GB/T8810-2005	%	≦2.2	≦2.2	≦2.2	≦2.2

Above information is based on our current knowledge, for other issues which are not mentioned herein, welcome to discuss with us and improve.