

PHYSICAL PROPERTIES OF starex EPS SF-200H

Properties	Unit	Value	Remarks
Bead Analysis			
Size	mm	0.96 - 1.36	JIS Z8801
PS	%	93 - 94	Polymer
Blowing Agent	%	6.0	Pentane
Additive	%	0.20	Coating Agent
R-TVM(Max.)	ppm	3,000	
Molecular Viscosity(×1,000)	-	200~220	Molecular Viscosity
Specific Gravity	-	1.03~1.05	
Pre-Expansion			
Expandability(Max.)	Times	80	Expansion for 5 min CHEIL METHOD
Blocking(Max.)	%	1.0	
Molding Property			
Moisture Cont.(Max.)	Wt.%	13	ASTM C-272
Compressive Strength(Min.)	kg/cm ²	0.50	JIS A9511 ASTM D-1621
Fusion(Min.)	%	70	CHEIL METHOD
Flammability			
UL 94 Classification	Certified	HF-1	6.0mm specimen

* The above data represents the general specifications of starex EPS for customer's reference.
Due to the peculiar properties of the product, the data might have minimum variations comparing with the products.

* Revision : Dec.. 01, 2006



DETROIT TESTING LABORATORY, INC.

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TEST REPORT

**Samsung Cheil Industries Inc.
332-2 Gocheon-Dong
Uiwang-Si Gyeonggi-do
Korea**

**DTL REPORT NO 9015250
REPORT DATE March 10, 2009
RECEIVE DATE March 2, 2009**

ATTN Hyun Ae Beak

SAMPLE DESCRIPTION

Samsung Cheil Industries, Inc. submitted two (2) sheets of Styrofoam Insulation identified as: Grade: EPS SF SERIES

WORK REQUESTED/TEST SPECIFICATIONS

Flammability per FMVSS 302-98

SAMPLE CONDITIONING

Prior to testing, the samples were conditioned at $23\pm 2^{\circ}\text{C}$ and $50\pm 5\%$ relative humidity, as applicable.

TEST RESULTS

FLAMMABILITY PER FMVSS 302-98

Results

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	0 / SE
2	0	0	0 / SE
3	0	0	0 / SE

SE = Self Extinguishing

Requirements Maximum Burn Rate of 102mm/min

Conclusion Specimens meet the stated requirements

TEST EQUIPMENT

Detroit Testing Laboratory, Inc.'s calibration system meets the requirements of ISO 17025:2005.

Sportline ;Stop Watch, ID 11987, calibrated to: 10/09

Omega; Chart Recorder (for flammability use), M/N CT485B-110V-G-AL, ID: 08672, calibrated to: 4/09

Sun Spot Products; Multi-Procedural Flammability Cabinet, ID: 08462, calibrated to: no cal required

SAMPLE DISPOSITION

Samples will be retained at Detroit Testing Laboratory, Inc. for 30 days and then disposed of, unless otherwise specified by client.

Reported By

DETROIT TESTING LABORATORY, INC.


David Smith, Department Manager
Materials Testing


Timothy R. Geiger, Group Manager
Materials Testing

DS/TRG/cmg



AUTHORIZATION TO MARK

This authorizes the application of the Certification Mark(s) shown below to the Product Covered described below herein when made in accordance with the authorized Listing Report, including Manufacturing/Machining Specifications, and under conditions set forth in the Certification Agreement and Listing Report, including Manufacturing/Machining Specifications. This authorization also applies to the Multiple Listee model(s) identified on the correlation page of the Listing Report.

Client Number: 28614 **Report Number:** 3080908, 3088424 and 3145805

Evaluation Center: Intertek (Coquitlam)

Applicant/Basic Listee: Cheil Industries, Inc.
332-2 Gochun-Dong, Uiwang-Si,
Gyeonggi-DO, 437-711
Korea

Ms. Hyun-ae Baek
82-31-596-3674
82-31-596-3456

Product Covered: Cheil Industries Inc. - Starex SF Grade H and Grade L
Polystyrene Beads

Testing Standards: CAN / ULC S701 (2005) ASTM C578 (2007) CAN / ULC
S102.2 (2007) ASTM E84 (2008)

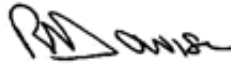
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Authorized By: _____

Bob Davison, Certification Manager, Toronto Center

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Listing Section(s): OTHER PRODUCTS

Description: Starex SF Grade H and L Polystyrene Beads are manufactured from petroleum based product, Styrene, and are used by independent manufacturers in manufacturing expanding polystyrene (EPS) insulation board.

RATINGS

The Starex SF Grade H and L polystyrene beads comply with Type 1 and 2 EPS in accordance with CAN/ULC S701-05 and Types I, II, VIII and IX EPS in accordance with ASTM C578-07.

The Flame Spread Index and Smoke Developed Index for each Type is given in Table 3 below.

Table 3 – Surface Burning Characteristics

TYPE	STANDARD	FLAME SPREAD	SMOKE DEVELOPED
I	ASTM E84	0	250
II	ASTM E84	0	250
II (high density)	ASTM E84	10	5
VIII	ASTM E84	0	250
IX	ASTM E84	25	400
1	CAN/ULC S102.2	225 (3") / 125 (6")	160 (3") / 250 (6")
2	CAN/ULC S102.2	240 (3") / 125 (6")	140 (3") / 250 (6")
2 (high density)	CAN/ULC S102.2	10	85
3	CAN/ULC S102.2	240 (3") / 95 (6")	140 (3") / 230 (6")
9	CAN/ULC S102.2	40	195

**Party(s) Authorized by
Manufacturer To Apply Mark:**

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**Party(s) Authorized by Other Parties To Apply
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None