

I. GENERAL DESCRIPTION

Epsilyte Grade 54 expandable polystyrene is a modified grade resin used for block and shape molding operations, designed for use in a wide range of engineered building applications. It is available in a variety of bead sizes and blowing agent (VOC) content. This product contains a (non HBCD) flame retardant, and the molded expanded polystyrene has been tested to ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation and ASTM D-6817 Standard Specification for Rigid Cellular Polystyrene Geof foam.

Epsilyte grade 54 has been classified by Underwriters Laboratories, Inc. for ASTM E-84, and UL-94 properties and by Underwriters Laboratories of Canada for CAN/ULC - S102.2-M88 properties. Expanded polystyrene manufactured from Epsilyte Modified Grade 54 expandable polystyrene complies with the building codes of the United States and Canada, as well as many industrial, military, and federal specifications.

Evaluation of compliance of materials molded from Epsilyte grade 54 resins to the building codes are covered in **UL evaluation report UL ER7503-01** and **ICC-ES report ESR-1634**.

II. PROPERTIES OF GRADE 54 EXPANDED POLYSTYRENE

3% Blowing Agent						
Type	Bead Size	Typical* Unexpanded Particle Size, (mm)	Blowing Agent (%)	Recommended Density Range** (lb/ft ³)	Recommended ASTM C-578	Method of Processing and Benefits
I3354	A	1.100 - 1.700	3.50 ± 0.30	1.30 - 3.00	I, VIII, II, XIV, XV	Block Grade, Fast Cycles, Short Pre-Puff Age, Smooth Wire Cut Surface
S5354	B	0.700 - 1.400	3.50 ± 0.30	1.00 - 2.00	I, VIII, II, IX	Shape/Block Grade, Fast Mold Cycles at High Densities, Smooth Wire Cut Surface
I5354	B	0.700 - 1.400	3.50 ± 0.30	1.50 - 3.00	I, VIII, II, IX, XIV, XV	Shape/Block Grade, Very Fast Cycling, Smooth Wire Cut Surface
S7354	C	0.400 - 0.800	3.50 ± 0.30	1.25 - 2.00	VIII, II, IX	Shape Grade, Very Fast Cycles, Excellent Part Appearance

*Typical indicates at least 92% of the product falls within the given particle size range

** Low density on low pentane products attainable with batch or double pass pre-expansion

4% Blowing Agent						
Type	Bead Size	Typical* Unexpanded Particle Size, (mm)	Blowing Agent (%)	Recommended Density Range** (lb/ft ³)	Recommended ASTM C-578	Method of Processing and Benefits
3454	A	1.100 - 1.700	4.70 ± 0.40	0.90 - 1.25	I, VIII	Block Grade, Low Density
S3454	A	1.100 - 1.700	4.70 ± 0.40	0.90 - 1.25	I, VIII	Block Grade, Fast Cycling, Short Pre-Puff Age
S5454	B	0.700 - 1.400	4.80 ± 0.30	0.90 - 2.00	VIII, II, IX	Block Grade, Fast Cycling, Short Pre-Puff Age, Low- Medium Density
S7454	C	0.400 - 0.800	4.80 ± 0.30	1.15 - 2.50	II, IX, XIV	Block/Shape Grade, Medium - High Density, Smooth Wire Cut Surface, Fast Block Cycles
I7454	C	0.400 - 0.800	4.80 ± 0.30	1.15 - 2.50	VIII, II, IX, XIV	Shape Grade, Medium - High Density, Fast Cycles

6% Blowing Agent						
Type	Bead Size	Typical* Unexpanded Particle Size, (mm)	Blowing Agent (%)	Recommended Density Range** (lb/ft ³)	Recommended ASTM C-578	Method of Processing and Benefits
3654	A	1.100 - 1.700	6.50 ± 0.40	0.90 - 1.25	I, VIII	Block Grade Low Density
5654	B	0.700 - 1.400	6.60 ± 0.40	0.90 - 1.25	I, VIII	Block Grade, Low Densities, Good Wire Cut Surface
S5654	B	0.700 - 1.400	6.60 ± 0.40	0.90 - 1.25	I, VIII	Block Fast Cycling, Short Pre-Puff Age Time
7654	C	0.400 - 0.800	6.40 ± 0.40	0.90 - 1.50	I, VIII, II	Block Grade, Smooth Wire Cut Surface Fabrication
S7654	C	0.400 - 0.800	6.40 ± 0.40	0.90 - 1.50	I, VIII, II	Shape Molding, Fast Cycling in The Mold

*Typical indicates at least 92% of the product falls within the given particle size range

** Low density on low pentane products attainable with batch or double pass pre-expansion

III. APPLICATIONS

Grade 54 modified expandable polystyrene resins have gained broad acceptance in the production of consistent, high quality molded products, requiring assembly fire ratings or code approvals. Compliance of materials molded from Epsilyte grade 54 resins to the building codes is covered in UL evaluation report UL ER7503-01 and ICC-ES report ESR-1634.

Grade 54 resins have been used in a wide range of engineered building applications including but not limited to Geofoam, Insulated Concrete Forms, Structural Insulated Panels, Roofing, Exterior Insulated Finishing Systems, Slope Stabilization, Highway Embankments and Shallow Foundation Frost protection.

To help assure that Epsilyte products are not misapplied or used in any manner which they may not have been intended or tested, we suggest a review of proposed applications with Epsilyte personnel to assist in dealing with safety considerations. Your Epsilyte Sales Representative can arrange for the proper contact with our Technical Staff for such review.

IV. SHIPPING AND HANDLING PRECAUTIONS

Expandable polystyrene contains a flammable blowing agent and is consequently regulated by the United States Department of Transportation as a CLASS 9-MISCELLANEOUS MATERIAL. These products are shipped in regulation UN 2211, 2204 - pound flexible bulk packages. Each container is lined with a hydrocarbon barrier liner to decrease the emissions of volatiles. For further information, please refer to Technical Bulletin, "Recommended Safety, Health, and Environmental Guidelines" and to the "Epsilyte Hills Resources Safety Data Sheet" for product code "Grade 54" name "Expandable Polystyrene (EPS)," a copy of which is provided with the first shipment or upon request. Printed, Fax or Electronic File copies of individual MSDS may be requested by contacting your Epsilyte Customer Service representative, Mon – Fri 8:00 AM to 5:00 PM CST, at 1-815-224-1525.

V. MANUFACTURING LOCATIONS

Peru, Illinois

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