


LOW PRESSURE POLYURETHANE FOAM INFORMATION

Description	Medium density, closed-cell, two-component spray polyurethane foam
SPF	Spray Polyurethane Foam
Applications	Designed to be used in residential construction and common commercial insulation applications
Preparation for use	Substrate must be clean, dry, firm, free of loose particles, and free of dust, grease and mold release agents. Protect surfaces not to be foamed. For additional information go to www.icpadhesives.com
Use	Condition chemical to 75-85°F (24-29°C). Follow instructions for set-up found in the operating instructions. Must be processed with HandiFoam HVLP A-side and HandiFoam HVLP MD 2.0 B-side. Application rate of 1/2 inch to 2 inches maximum per pass. Once installed and material has cooled it is possible to add additional applications in order to increase the overall installed thickness of SPF.
PPE	 <p>Recommend using in a well-ventilated area with certified respiratory protection or a powered air purifying respirator (PAPR). Wear protective glasses with side shields or goggles, nitrile gloves, and clothing that protects against dermal exposure. Read all instructions and SDS (Section 8) prior to use of any product.</p>
Note	FOR PROFESSIONAL USE ONLY. Always check the local building code before use. Cured polyurethane foam is non-toxic and inert.
Temperature Guidelines	Please see chart located on page 2
Shelf-life	6 months (When stored unopen at 50-80F)
Compatibility	Cured low pressure polyurethane foam is chemically inert and non-reactive in approved applications, and will not harm electrical wire insulations, extruded polystyrene foams, Romex®, rubber, PVC, polyethylene (i.e. PEX) or other plastics. The product is not resistant to UV rays; if left exposed the product should be coated or painted.

TECHNICAL DATA	STANDARD	RESULTS
Density	ASTM D1622	2.0-2.3 lbs/ft ³ (32-36.8 kg/m ³)
K-factor	ASTM C518	
Aged 90 days 140°F (60°C)		0.149 BTU·inch/ft ² ·h·°F at 1 inch
Aged 90 days 140°F (60°C)		0.145 BTU·inch/ft ² ·h·°F at 4 inches
R-Value	ASTM C518	
Aged 90 days 140°F (60°C)		6.7/in at <4 inch thickness 6.9/in at >4 inch thickness
Air Barrier Properties	ASTM E283	0.005 cfm/ft ² (0.015 L/s/m ²)
Tested at 1 inch thickness @1.57 psf (75Pa)		
Compressive Strength	ASTM D1621	26 lbf/in ² (179 kPa) Parallel
Dimensional Stability	ASTM D2126	
158°F (70°C)/ 97% RH/168 hrs		4.9%
Closed-Cell Content	ASTM D6226	98%
Fungi Resistance	ASTM C1338	No Growth
Tensile Strength	ASTM D1623	62.4 lbf/in ² (430 kPa) Type C
Perm Rating- Method A		
1" Thick (2.54 cm)	ASTM E96	1.39 perms Class III Vapor Retarder
2" Thick (5.08 cm)		.70 perms Class II Vapor Retarder
3" Thick (7.62 cm)		.46 perms Class II Vapor Retarder
4" Thick (10.16 cm)		.35 perms Class II Vapor Retarder
Water Absorption	ASTM D2842	0.6%

Fire Rating- Tested at 4" Thickness	ASTM E84	Flame Spread Index <25 Smoke Developed <450
Resin- Specific Gravity 70°F	ASTM D 1638	1.175
Resin- Viscosity @ 70°F		500 cps

APPROVALS/STANDARDS/CLASSIFICATIONS

ESR- 4287	Conforms to the requirements of AC 377. Medium Density Foam
NFPA 286	Tested with various Intumescent Coatings; see ICC ESR-4287 for more information.

TEMPERATURE GUIDELINES

Chemical Storage Temperature	Optimum 50-80°F (10-27°C); Storage outside of these ranges can shorten shelflife
Outside Application Temperature	60-120°F (16-49°C)
Process Core Chemical Temperature	115°F (46°C)
Initial Drum Temperature	75-85F (24-29C)
Surface Temperature (Substrate)	30-100°F (1-38°C); Lower temperatures require cold weather application techniques
Cured Foam	-200°F to +240°F (-129°C to +116°C)

YIELD¹ (2.0 Density)

	Board Feet
Includes A-side P60009A & B-side P60010B Drums	4200-4800
System Item # P60010	

¹ Yield is based on free-rise density. We state our core density/free-rise density when describing the foam. Applying foam into a cavity may result in higher in-place densities due to packing effects. These higher densities may result in lower yields.

EQUIPMENT SETTING GUIDELINES

HandiFoam HVLP A-side & HVLP MD 2.0 B-side Foam Processing
Equipment: Nitrosys Plus
Chemical Temperature Set-Point 115°F (46°C)
Hose Temperature Set-Point 115°F (46°C)
T1 or Equivalent Transfer pump Inlet Pressure Setting 120 psi (49°C)
T2 or Equivalent Transfer pump Inlet Pressure Setting 105 psi (40°C)
T3 or Equivalent Transfer pump Inlet Pressure Setting 80 psi (27°C)

Performance and actual physical properties will vary with differences in application/process equipment. The above information is based on using HandiFoam HVLP A-side, HandiFoam HVLP MD 2.0 B-side and Nitrosys Plus at the recommended process temperatures and settings.

Always read all operating, application and safety instructions before using any products. Use in conformance with all local, state and federal regulations and safety requirements. Failure to strictly adhere to any recommended procedures and reasonable safety precautions shall release ICP Building Solutions Group of all liability with respect to the materials or the use thereof. For additional information and location of your nearest distributor, call ICP Building Solutions Group 1 330.753.4585 or 1 800.321.5585.

NOTE: Physical properties shown are typical and are to serve only as a guide for engineering design. Results are obtained from specimens under ideal laboratory conditions and may vary upon use, temperature and ambient conditions. Right to change physical properties as a result of technical progress is reserved. This information supersedes all previously published data. The Customer is responsible for deciding whether products and associated TDS information are appropriate for customer's use.

Performance and actual physical properties will vary with differences in application/process equipment. The above information is based on using HandiFoam HVLV A-side, HandiFoam HVLV MD 2.0 B-side and Nitrosys Plus at the recommended process temperatures and settings. Odor level of Spray Polyurethane foam is dependent on proper application using the recommended processing parameters and proper ventilation. Large masses of SPF should be removed to an outside safe area, cut into smaller pieces, allowed to cool before being placed into a disposal container.

ICP low pressure one-component polyurethane foam sealants and adhesives (OCF), low pressure spray polyurethane foams (SPF), and low pressure pour-in-place polyurethane foams (PIP) are composed of a diisocyanate, hydrofluorocarbon or hydrocarbon blowing agent, and polyol. For polyurethane foam sealants/adhesives: wear protective glasses with side shields or goggles, nitrile gloves, and clothing that protects against dermal exposure. Recommend using in a well-ventilated area. Avoid breathing vapors. Read the SDS and instructions carefully before use (www.icpadhesives.com). For spray polyurethane foams and pour-in-place polyurethane foams: wear protective glasses with side shields or goggles, nitrile gloves, and clothing that protects against dermal exposure. Use only in a well-ventilated area and with certified respiratory protection or a powered air purifying respirator (PAPR). Additional information on ventilation can be found in the Product Stewardship Guide (www.icpadhesives.com). Read the SDS (www.icpadhesives.com) and instructions carefully before use. The urethane foam produced from these ingredients will support combustion and may present a fire hazard if exposed to a fire or excessive heat about 240°F (116°C). Refer to each product's TDS for specifications, testing results, and other attributes. The customer is ultimately responsible for deciding whether products and associated TDS information are appropriate for customer's use. Refer to the products' SDS, ICP Building Solutions Group's Product Stewardship Guidelines, and operating instructions for guidance on the safe and proper application of the product (www.icpadhesives.com). For professional use only. Building practices unrelated to materials can lead to potential mold issues. Material suppliers cannot provide assurance that mold will not develop in any specific system.

WARNINGS: Follow safety precautions and wear protective equipment as recommended. Prolonged inhalation exposure may cause respiratory irritation/sensitization and/or reduce pulmonary function in susceptible individuals. Onset may be delayed. Pre-existing respiratory conditions may be aggravated. We recommend that the product is used in a well-ventilated area and with certified respiratory protection. NIOSH approved positive pressure supplied air respirator is recommended if exposure guidelines may be exceeded. Contents may be very sticky and irritating to skin and eyes, therefore wear safety glasses with side shields or goggles, nitrile gloves, and clothing that protects against dermal exposure when operating. If liquid chemical comes in contact with skin, first wipe thoroughly with dry cloth, then rinse affected area with water. Wash with soap and water afterwards, and apply hand lotion if desired. If liquid comes in contact with eyes, immediately flush with large volume of clean water for at least 15 minutes and get medical help at once. If liquid is swallowed, get immediate medical attention. Do not induce vomiting. If breathing is difficult, give oxygen. If breathing has stopped give artificial respiration. Products manufactured or produced from these chemicals are organic and, therefore, combustible. Each user of any product should carefully determine whether there is a potential fire hazard associated with such product in a specific usage. **KEEP OUT OF REACH OF CHILDREN.**

LIMITED WARRANTY and LIMITATION OF DAMAGES: ICP Building Solutions Group warrants only that the product shall meet ICP Building Solutions Group specifications for the product when shipped by ICP Building Solutions Group. NO OTHER EXPRESSED OR IMPLIED WARRANTIES APPLY AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT OUTSIDE THE U.S. AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. Buyer and users assume all risks of use, handling and storage of the product. Failure to strictly adhere to any recommended procedures shall release ICP Building Solutions Group from all liability. The user of the product is responsible to determine suitability of the product for the particular use. The exclusive remedy as to any breach of warranty, negligence or other claim is limited to the replacement of the product. Liability for any indirect, incidental or consequential damage or loss is specifically excluded.