


LOW PRESSURE POLYURETHANE FOAM INFORMATION

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| Description | Low density, open-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 LD 0.5 B-side. Application rate of ½ inch to 6 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 | 0.5 lbs/ft ³ (8 kg/m ³) |
| K-factor | ASTM C518 | |
| Aged 90 days 140°F (60°C) | | 0.256 BTU·inch/ft ² ·h·°F at 1 inch |
| Aged 90 days 140°F (60°C) | | 0.268 BTU·inch/ft ² ·h·°F at 4 inches |
| R-Value | ASTM C518 | |
| Aged 90 days 140°F (60°C) | | 3.9/in at 1 inch thickness 3.7/in at 4 inch thickness |
| Air Barrier Properties | ASTM E283 | 0.02 cfm/ft ² |
| Tested at 3.5 inch thickness @1.57 psf (75Pa) | | |
| Dimensional Stability | ASTM D2126 | |
| 158°F (70°C)/ 97% RH/168 hrs | | <-2.0% |
| Open-Cell Content | ASTM D6226 | >90% |
| Fungi Resistance | ASTM C1338 | No Growth |
| Tensile Strength | ASTM D1623 | 5.9 lbf/in ² (40.7 kPa) |
| Perm Rating- Method A | | |
| 3.5" Thick (2.54 cm) | ASTM E96 | 16.9 (calculated) perms Class III Vapor Retarder |
| Water Absorption | ASTM D2842 | >40% |
| Fire Rating- Tested at 4" Thickness | ASTM E84 | Flame Spread Index <25 Smoke Developed <450 |
| Resin- Specific Gravity 70°F | ASTM D 1638 | 1.135 |

APPROVALS/STANDARDS/CLASSIFICATIONS

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|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CCRR- 1124 | Conforms to the requirements of AC 377. Low Density Foam |
| NFPA 286 | Thickness is not limited when installed behind a code-prescribed thermal barrier Approved for certain attic and crawl space applications with and without prescriptive ignition barriers. |

TEMPERATURE GUIDELINES

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|------------------------------------------|------------------------------------------------------------------------------------|
| 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 | 120°F (49°C) |
| Initial Drum Temperature | 75-85F (24-29C) |
| Surface Temperature (Substrate) | 50-100°F (10-38°C); Lower temperatures require cold weather application techniques |
| Cured Foam | 180°F (82°C) |

YIELD¹ (0.5 Density)

| | Board Feet |
|------------------------------------------------------------------------------------|-------------------|
| Includes A-side P60009A & B-side P60012B Drums System Item # P60012 | 17,000-21,000 |

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 LD 0.5 B-side Foam Processing |
|-----------------------------------------------------------------------|
| Equipment: Nitrosys Plus |
| Chemical Temperature Set-Point 120°F (49°C) |
| Hose Temperature Set-Point 120°F (49°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 LD 0.5 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 HVLP A-side, HandiFoam HVLP LD 0.5 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.