Information on the Various Types of Spray Polyurethane Foam Products			
SPF Types	**Two-component High-Pressure**  Open-Cell (low density, half lb.) Closed-Cell (medium density, 2 lb.) Closed-Cell (high density, 3 lb.)	**Two-component Low-Pressure** 	**One Component Foam (OCF)** 
Uses	• Larger insulation applications; • Air sealant in hybrid insulation installation with fiberglass or other insulation material • Roofing applications (Closed-Cell, high density, 3 lb.)	• Air sealant; • Adhesive; • Smaller insulation applications; • Weatherization activities	Sealant for filling cracks, holes, gaps, and crevices: • Around windows and doors; • For sealing up small gaps (0.5" - 3") in a building to create an energy efficient building envelope *This product is inappropriate for "creative" uses such as science or art projects and should not be used around children.*
Applicator	Professional Installer	• Professional Installer; • Weatherization worker; • Available for do-it-yourself applicators, but the same precautions should be taken as with professional-use. DIY applicators are often unaware of inhalation and dermal hazards and may not have adequate knowledge, training and experience to wear adequate personal protective equipment.	• Professional Installer; • Weatherization worker; • Available for do-it-yourself applicators but note that the same precautions should be taken as with professional-use
Container Size	55 gallon drum containers	Typically three to five gallons per container from the system house, but can be purchased in larger containers over the internet or in some retail markets	Available in retail and hardware stores nationwide in a variety of sizes ranging from 12 oz. to 24 oz. cans

Engineering Controls	Ventilation and containment practices should be considered to control chemical exposures. Work in "permit-required" confined spaces as defined by OSHA, which may include work in attics and crawl spaces, requires entry procedures, including an entry permit, and training for the workers. OSHA requires a hierarchy of controls, under which employers must first implement engineering controls where feasible. Consult the safety data sheet for additional guidance on the use of Personal Protective Equipment (PPE) and Respiratory Protection when the use of engineering controls are not feasible or adequate to control exposures. See below for personal protection recommendations for each type of SPF product.		
Personal Protective Equipment	• Supplied Air Respirator; Loose fitting respirators are available and do not require fit testing. Respirators with a tight face seal require a fit test. For more information, see OSHA's Respiratory Protection Standard (29 CFR 1910.134). • Eye protection • Chemical resistant clothing; • Chemical resistant (e.g., nitrile) gloves so that no skin is exposed Receive medical surveillance to ensure applicator is healthy enough to wear respirator. Ensure all equipment is intact upon use and ensure proper equipment maintenance. Vacate all unprotected workers and building occupants.	• Air Purifying Respirator; Replace cartridges on appropriate change-out schedule. Respirators with a tight face seal require a fit test. For more information, see OSHA's Respiratory Protection Standard (29 CFR 1910.134). • Eye protection • Chemical resistant clothing; • Chemical resistant (e.g., nitrile) gloves so that no skin is exposed Receive medical surveillance to ensure applicator is healthy enough to wear respirator. Ensure all equipment is intact upon use and ensure proper equipment maintenance. Vacate all unprotected workers and building occupants. Read more information about personal protection when using two-component low pressure kits. Exit	• Eye protection • Chemical resistant clothing; • Chemical resistant (e.g., nitrile) gloves so that no skin is exposed Avoid breathing vapors and provide adequate ventilation. Consult safety data sheets for additional respiratory guidance when needed. Ensure all equipment is intact upon use and ensure proper equipment maintenance. Vacate all unprotected workers and building occupants.
Chemical Composition	SPF products contain approximately 50 percent Side A and 50 percent Side B. This chemical reaction generates heat. Side A contains very reactive chemicals known as isocyanates. Side B contains a polyol, which reacts with isocyanates to make polyurethane, and a mixture of other chemicals, including catalysts (which help the reaction to occur), flame retardants, blowing agents and surfactants.		
Variations in Chemical Composition	Open-Cell Blowing Agents: Carbon Dioxide or Water	Closed-Cell Blowing Agents: HFC-245fa	
Application Process	Sides A and B are pumped through heated hoses from supply tanks into a nozzle where the two components react and are spray applied at elevated temperatures (>150°F) and pressure (1200	Sides A and B combined at application site and sprayed on as a stream or bead. After the foam is applied, has expanded, and has cured, it may then be trimmed or cut, if needed.	OCF components are pre-reacted and undergo further reaction with ambient moisture at the time of application (moisture cured). Applied as stream or bead. May be trimmed or sanded.

	psi). "Open" cell foam expands more vigorously than "closed" cell foam and should be applied in layers. See photographs below illustrating expansion differences between open-cell and closed-cell SPF. Foam can expand up to 120 times its original volume. After the foam is applied, has expanded, and has cured, it may be trimmed or cut, as needed; this might especially be true for the use of "open" cell foam that may expand beyond the wall.		
Chemical Exposure Potential	May be exposed to chemicals: • During application • After application • During heat-generating processes such as drilling, welding, or sanding • During fires Through: • Aerosols • Vapors • Dust that may contain unreacted chemicals		
Hazards	• Asthma • Sensitization • Lung damage • Other respiratory and breathing problems • Skin and eye irritation		
Re-Entry	Some manufacturers recommend 24 hours after application for worker re-entry without the use of PPE and for re-occupancy by residents and other building occupants, but the recommended time may vary. Contact your manufacturer or supplier for specific guidance.	Some manufacturers recommend 24 hours after application for worker re-entry without the use of PPE and for re-occupancy by residents and other building occupants, but the recommended time may vary. Contact your manufacturer or supplier for specific guidance.	Some manufacturers estimate that it can take 8 to 24 hours for one component foam to cure, but curing rates can vary.