

NCFI HIGH DENSITY MOLDING SYSTEM 22-027

DESCRIPTION:

NCFI 22-027 is a two-component, water blown, all PMDI-based, nominal 9.3 pcf density, pour-in-place urethane foam system. NCFI 22-027 has low component viscosities making the system suitable for either mechanical mix machines, high pressure (over 600 psi) impingement mix machines or hand mixing. This product is ideally suited to mold parts such as decorative furniture pieces, mirror and picture frames, as well as decorative and architectural millwork pieces. Products made from this system would have target overall densities of 15 - 20 pcf. The system is provided in multiple speeds to accommodate a variety of pour times and processing needs.

DISTINGUISHING CHARACTERISTICS:

- Excellent Flow and Wet Out
- Good Flexibility at Demold
- Excellent Flexural Strength
- Good Dimensional Stability
- Rapid Demold Times

TYPICAL RESIN PROPERTIES:

	<u>22-027 R</u>	<u>22-027 A</u>
Viscosity @ 72°F	1700 cps	200 cps
Lbs./Gallon	9.0 lbs.	10.2 lbs.
Appearance	transparent, amber liquid	transparent, brown liquid
Shelf Life	6 months	6 months

MIX RATIO:

	<u>22-027 R</u>	<u>22-027 A</u>
By Weight	100 parts	100 parts
By Volume	113 parts	100 parts

TYPICAL REACTION PROPERTIES:

Hand Mix 200 grams @ 72°F, 1500 rpms

	<u>FAST</u>	<u>REGULAR</u>	<u>SLOW</u>
Mix Time	20 sec	35 seconds	60 seconds
Cream Time	50 sec	65 seconds	105 seconds
Gel Time	105 sec	165 seconds	350 seconds
Tack Free Time	135 sec	225 seconds	510 seconds
Rise Time	150 sec	255 seconds	550 seconds
Density (FRC)	9.3 pcf	9.3 pcf	9.3 pcf

TYPICAL PHYSICAL PROPERTIES:

Overall Molded Density	20 pcf
Compressive Strength	600 psi
Tensile Strength	500 psi
Flexural Strength	750 psi
Closed Cell Content	>94%
Water Absorption, ASTM D2842	≤0.04 lbs/sq ft
Resistance to Solvents	Excellent
Resistance to Mold and Mildew	Excellent
Maximum Service Temperature	200°F

*The above values are average values obtained from laboratory experiments and should serve only as guide line

NCFI 22-027 APPLICATION INFORMATION

EQUIPMENT AND COMPONENT RATIOS:

NCFI 22-027 should be mixed by pour machines designed to mix urethane chemicals. It is recommended that this system be processed with either HPIM machines or low pressure equipment with mechanical mix heads, both with the capability of controlling component temperatures to 60°F - 80°F. NCFI 22-027 **R** is connected to the **resin/polyol** pumps with NCFI 22-027 **A** being connected to the **isocyanate** pumps.

MOLDING RECOMMENDATION:

To obtain optimum yield, consistent part quality and quick demold times, the mold temperature must be 80°F or higher. Recommended temperature is 100°F. Heating molds with radiant or convection heat sources should be accomplished without producing 'hot spots'. Molds may be constructed of fiberglass, aluminum, epoxy or other thermal conductive material. Mold surfaces must be coated with a suitable release agent and dried before molding. Follow the recommendations of the mold release supplier. The mold design should offer adequate clamping pressure and allow trapped air to escape through vent holes in the top or the parting lines of the mold.

STORAGE AND USE OF CHEMICALS:

Keep temperature of chemicals at 70°F for several days before use. Cold chemicals can cause poor mixing, pump cavitation or other process problems due to higher viscosity at lower temperatures. Storage temperature should not exceed 100°F. Prolonged exposure to temperatures below 60°F can cause the 'A' component to freeze. Do not store in direct sunlight. Keep drums tightly closed when not in use and under nitrogen pressure of 2 - 3 psi after they have been opened.

SAFE HANDLING OF LIQUID COMPONENTS:

Use caution in removing bungs from the container. Loosen the small bung first and let any built up gas escape before completely removing. Avoid prolonged breathing of vapors. In case of chemical contact with eyes, flush with water for at least 15 minutes and get medical attention. For further information refer to "MDI-Based Polyurethane Foam Systems: Guidelines for Safe Handling and Disposal" publication AX-119 published by the Center For The Polyurethanes Industry 1300 Wilson Blvd, Suite 800, Arlington, VA 22209.

Caution:

Polyurethane products manufactured or produced from this liquid system may present a serious fire hazard if improperly used or allowed to remain exposed or unprotected. The character and magnitude of any such hazard will depend on a broad range of factors which are controlled and influenced by the manufacturing and production process, by the mode of application or installation and by the function and usage of the particular product. ***Any flammability rating contained in this literature is not intended to reflect hazards presented by this or any other material under actual fire conditions. These ratings are used solely to measure and describe the product's response to heat and flame under controlled laboratory conditions.*** Each person, firm or corporation engaged in the manufacture, production, application, installation or use of any polyurethane product should carefully determine whether there is a potential fire hazard associated with such product in a specific usage, and utilize all appropriate precautionary and safety measures

The information on our data sheets is to assist customers in determining whether our products are suitable for their applications. The customers must satisfy themselves as to the suitability for specific cases. NCFI Polyurethanes warrants only that the material shall meet its specifications; this warranty is in lieu of all other written or unwritten, expressed or implied warranties and NCFI Polyurethanes expressly disclaims any warranty of merchantability, fitness for a particular purpose, or freedom from patent infringement. Accordingly, buyer assumes all risks whatsoever as to the use of the material. Buyer's exclusive remedy as to any breach of warranty, negligence or other claim shall be limited to the purchase price of the material. Failure to adhere strictly to any recommended procedures shall relieve NCFI Polyurethanes of all liability with respect to the material or the use thereof.