

Technical Data Sheet

SIPOLYNATE™ R100FRE-3D

Description

SIPOLYNATE™ R100FRE-3D is a pre-blended rigid polyurethane polyol for 3-component insulation of discontinuous roof and wall panels, vessels, and tanks. The foam has a good surface finish with excellent cell structure and good inter-laminar adhesion. The system uses cyclopentane as the blowing agent, which needs to be mixed proportionately at 16.6% with the polyol component. It is ideally processed through high-pressure impingement mixing. The foam exhibits high flame retardancy.

Typical Component Properties

Serial No.	Characteristics	Unit	Specifications
1.	Physical State	None	Liquid
2.	Colour	None	Clear Yellow
3.	Specific Gravity	None	1.15-1.2 (25°C)
4.	Viscosity	cps	450-750 (25°C)

Typical Reaction Characteristics

Serial No.	Characteristics	Unit	Specifications
1.	Ideal Operated Temperature	Celsius	21°C
2.	Mixing Ratio (Polyol:CP:MDI*)	PBW	100:16.6:152
3.	Mixing Ratio (Polyol+CP:MDI*)	PBW	100:130
4.	Cream Time	seconds	18-25
5.	Gel Time	seconds	80-90
6.	End of Rise Time	seconds	105-120

* Huntsman Suprasec 5005 or Bayer Desmodour 44v22L or Equivalent MDI (Isocyanate)

The above reaction characteristics are achieved in the laboratory tests at 21°C via hand mixing with a mechanical stirrer at 3000 rpm. Using a high-pressure dispensing machine with primary and secondary heating line would speed up the system. The overall applied density may also vary depending upon processing conditions, including ambient and substrate temperatures, mixing speed and time, etc.

Typical Foam Properties

Serial No.	Characteristics	Unit	Specifications
1.	Free Rise Density	kg/m ³	25 ± 1
2.	Moulded Density	kg/m ³	40 ± 2
3.	Closed Cell Content	%	>90
4.	Thermal Conductivity	mW/mk	22-24
5.	Dimensional Stability	%	1 max
6.	Fire Retardancy (PIR)	None	Yes

*The above free rise density and moulded density can be altered according to the user's expectations.

Handling and Storage

The product must be stored out of direct sunlight, weather, and direct external fire sources. The containers must always be kept sealed against moisture. Ideal storage temperature is approximately 20°C or less. Under these conditions, the product will remain stable for 6 months.

Safety Precautions

SIPOLYNATE™ is a blend of polyether polyols and other components, which include a small percentage of tertiary aliphatic amines.

- Because of its alkaline character, SIPOLYNATE™ may cause slight to moderate irritation when it is exposed to the skin, the eyes, and the mucous membranes.
- Safety goggles and impermeable protective gloves should always be worn if there is a risk of direct exposure when handling SIPOLYNATE™.
- Splashes that are exposed to skin must be wiped off immediately and the contaminated areas must be thoroughly washed with soap and water.
- Affected areas should be treated with a good barrier cream.
- To prevent further contact with the skin, contaminated clothing should be changed immediately and thoroughly cleaned before reuse.
- The product must be kept away from food items.
- Anyone involved in the application of the system must familiarize themselves with the safety precautions required of rigid polyurethane foam.

Disclaimer

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