

## Description:

TechnoPur® InsulPuf is a two component, 1:1 ratio, HCFC-blown & CFC free, polymeric M.D.I based system for producing rigid urethane foam which when processed through suitable spray machinery will produce a rigid foam with closed cells for thermal insulation of approximate density 45-50kg/m<sup>3</sup> with exceptionally good compressive strength and a very smooth surface. The system may be applied to substrates where the surface temperature is of the order of 25-30°C. Grades, adjusted in reactivity, are available for both cold and hot condition.

## Application Includes:

- Thermal insulation layer in building envelope; mainly on roofs, walls or cold stores where a seamless thermal insulation is required.
- Thermal insulation in industrial plants, storage tanks, containers, cargo ships, agricultural storage and all types of buildings.
- The system can be applied on substrate like metal, plywood and concrete.
- Suitability must be examined by the user prior to commercial use.

## Features:

TechnoPur® InsulPuf system is self-flashing and provides seamless protection by sealing cracks, crevices and holes while insulating decks from temperature extremes. TechnoPur® InsulPuf system offers:

- A high R-value and can reduce condensation when applied correctly
- Enhancing energy efficiency
- Lowering lifecycle costs by reducing the operating costs.
- Improves thermal comfort.
- Adheres well to concrete, masonry and variety of other substrate.
- Light Weight
- HFCs, HCFCs, VOCs free, so do not promote the greenhouse effect.
- TechnoPur® InsulPuf system is 100% recyclable by mechanical means friendly to the environment.

## Packaging

TechnoPur® InsulPuf Part A (Polyol) is packaged in 200 Kg drum and Part B (ISO) is packaged in 250 Kg drum.

## Method of Application

### Surface preparation

The surface of application must be thoroughly prepared by mechanical means, to remove all loose particles, laitance, etc. Oil and grease, if any, must be de-greased with suitable solvents.

Any surface undulations, cracks and crevices must be duly filled or repaired with cement sand mortar mixed with latex polymers such as TechnoCrete®URP and TechnoCem™ RM.

### Environmental Considerations and Substrate Temperature

Applicators must recognize and anticipate climatic conditions prior to application to ensure the highest quality foam and to maximize yield. Ambient air and substrate temperatures, moisture, and wind velocity are all critical determinants of foam quality and selection of the appropriate reactivity formulation.

Variations in ambient air and substrate temperature will influence the chemical reaction of the two components, directly affecting the expansion rate, amount of rise, yield, adhesion and the resultant physical properties of the foam insulation.

To obtain optimum results, the TechnoPur® InsulPuf system should only be spray-applied to substrates when ambient air and surface temperatures fall within the range of 10°C and 48°C.

All substrates to be sprayed must be dry at the time of application.

Moisture in the form of rain, fog, frost, dew, or high humidity (>85%R.H.), will react chemically with the mixed components, adversely affecting the polyurethane foam formation, dimensional stability and physical properties of the finished product.

Wind velocities in excess of 12 miles per hour may result in excessive loss of exotherm and interfere with the mixing efficiency, affecting foam surface, cure, and physical properties.

Generally primer is not required for well-prepared dry sound substrate surface, however for highly porous surfaces TechnoSeal® PrimePlus is recommended to improve the adherence of TechnoPur® InsulPuf spray foam.

### Application Equipment

2:1 transfer pumps are recommended for material transfer from container to the proportioner. The plural component proportioner must be capable of supplying each component within ± 2% of the desired 1:1 mixing ratio by volume. Hose heaters should be set to deliver 50°C to 55°C materials to the spray gun. These settings will ensure thorough mixing in the spray gun mix chamber in typical applications.

Optimum hose pressure and temperature will vary with equipment type and condition, ambient and substrate conditions, and the specific application. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that relates to the acceptable combinations of gun chamber size, proportioner output, and material pressures.

The relationship between proper chamber size and the capacity of the proportioner's pre-heater is critical.

Mechanical purge spray guns (specifically direct impingement or DI type) are recommended for highest foam quality.

## Shelf Life & Storage

Shelf life is 6 months for Part A and 9 months for Part B when stored clear off the ground in unopened original packing, in a room well protected from moisture and humidity. Keep TechnoPur® InsulPuf cool in hot weather and warm in cold weather.

## Health and Safety instructions

Some people are sensitive to resins so gloves and a barrier cream should be used when handling TechnoPur® InsulPuf. If contact with the resin occurs, it must be removed, before it hardens, with a resin removing cream. Follow by washing with soap and water. Do not use solvent. The use of goggles is recommended but should accidental eye contamination occur, wash thoroughly with plenty of water and seek medical treatment immediately.

Ensure adequate ventilation in volume and pattern in working area and do not smoke during use. Consider property in proximity of the application area to prevent loss or damage. Protect your jobsite from unauthorized persons. Store all materials and equipment safely and out of reach of children and animals. Observe container labels, SDS, applicable laws and regulations and all instructions before using the product and equipment.

Product only for professional use.

**Additional Information:** Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

\*Separate datasheet are available on these products.

**DISCLAIMER:** The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

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Please note that this datasheet supersedes all previous versions.

## Typical Properties at 25°C

Properties	Values	Test Method
Core density(kg/m <sup>3</sup> )	45-50	ASTM D-1622
Thermal conductivity@25°C,W/M K	0.023	ASTM C-518/91
Closed cell content, apparent vol,%	96-98	ASTM D-2856
Mix ratio (A:B by volume)	1:1	1:1
Compressive strength (kg/cm <sup>2</sup> ) With rise	4.2	ASTM D-1621/94
Tensile strength, Kg/cm <sup>2</sup> with rise	5.1	ASTM-D 1623/78
Water Absorption	0.02kg/m <sup>2</sup>	ASTM D2126
Supply form	Thick liquid	
Mixing ratio (part A: part B)	100:109 (by weight) & 100:100 (by volume)	
Specific Gravity (part A: part B)	1.15±0.05 & 1.23±0.05	
Water Vapour Transmission, perm-inch	2	ASTM C-518/91
All cut surfaces With skin retained	1	
Dimensional Stability (linear change)	-0.1% vol 7 days @ - 15°C	ASTM D212

\* Note: Adhesion should not be tested within one hour of application

## Application

TechnoPur® InsulPuf has extremely short reaction times and can be processed only using special PUR Spray equipment. The high reactivity of the system allows a processing on vertical and ceilings without problems.

In-situ foaming is carried out by means of mobile two component high-pressure machines equipped with a constantly operating pre-heating and with heated hoses. The heating have to be designed such that permanent temperatures of 35°C to 50° C can be obtained. In order to obtain good mixture, mixing pressure of 80-100 bars is necessary.

TechnoPur® InsulPuf can be applied in layers, each of 10 to 50mm thickness. Larger form thicknesses are achieved by applying InsulPuf in several layers. Higher densities are obtained by lower temperatures and/or thinner foam layers.

Lower densities are obtained by higher substrate temperatures and thicker layer application. Avoid application when inclement weather is present or imminent.

TechnoPur® InsulPuf is not stable in exposed UV – rays, therefore the foam shall be protected by UV resistant coating or any other standard protective layer.

## Protection

If the area insulated with TechnoPur® InsulPuf is exposed to atmospheric conditions it is necessary to provide them with UV Protective coatings as supplied and recommended by STIPL. If the application area is subjected to traffic provide protection with screed, tiles or soil (garden).

## Cleaning

The pump and line of Components must be thoroughly cleaned with TechnoPur® Eco Cleaner and preserved with Flushing oil through pumping it through the pump. Curing process might take place with residual product left in the pump and injection line with the air humidity.

## Coverage

To achieve average 50mm thickness on 1 m<sup>2</sup> area, 3 Kg of mixed TechnoPur® InsulPuf for - approximate density 40-45kg/m<sup>3</sup> OR 4 Kg of mixed TechnoPur® InsulPuf for - approximate density 50-55kg/m<sup>3</sup> would be required.

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