

# TECHNICAL DATA SHEET

# PURIOS 500

## Open-Cell Spray Polyurethane Foam Insulation System

### GENERAL INFORMATION

Purios 500 is a two component, **0.5lb open cell**, spray applied polyurethane foam. Purios 500 provides **high-performance thermal insulation, air barrier, and acoustic control**. This product is a fully water blown foam system, which contains **ZERO Ozone Depleting blowing agents**. Long lasting durability ensures **good energy efficiency for years**. Recommended Product Applications: ceilings, walls, attics.

**Component A** (Purios A) polymeric diphenylmethane 4, 4' diisocyanate.

**Component B** (Purios 500) mixture of polyols with additives.

### ADVANTAGES

Very good adhesion to the surface - it does not require additional adhesives and connectors

Acoustic and thermal insulation in a single application process obtained by the open-cell foam structure

Speed applications not requiring the storage of dealing with large storage space, as in the case of mineral wool or polystyrene (EPS, XPS)

### FOAM PROPERTIES

<u>Physical Properties</u>	<u>Test Method</u>	<u>Value</u>
Core Density (pcf)	ASTM D1622	0.5 – 0.6
Tensile Strength (psi)	ASTM D1623	5.7
Dimensional Stability (%)	ASTM D2126	- 2.7
Water Vapor Permeability (Perms)	ASTM E96	24.0
Open Cell Content (%)	ASTM D6226	98.02
Aged Thermal resistance (Fht <sup>2</sup> /Btu)	ASTM C 518	3.85 @ 1”
Fungi Resistance	ASTM C1338	No fungi growth

### Fire Properties

<u>Test Method</u>	<u>Value</u>
ASTM E 84	Class A
Surface Burning Characteristics	5
Flame Spread	450
Smoke Developed	Pass (DC315 manufactured by IFT at 4 Mill Wet)
Ignition Barrier	COMPLIES with the requirements for such assemblies as prescribed in the following regulatory codes: NFPA 101, Life Safety Code, 2015 Edition, Section 10.2.3.7.2; 2009 IBC Section 803.1.2; and 2009 IRC 316.6 (DC315 by IFT at 18 Mill Wet)
Thermal Barrier	

Evaluation Report	ICC - ES	ESR - 4165
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### LIQUID COMPONENT PROPERTIES

Property	Purios A – component A pMDI	Purios 500 – component B Resin
Viscosity 77°F (cps)	150 – 250	200 – 450
Specific Gravity 77 °F	1.22 – 1.24	1.05 – 1.15
Mixing Ratio (By Volume)	100	100
Shelf life	12 months	6 months
Storage temperature	50°F – 86°F	59°F – 77°F

### REACTIVITY PROFILE

Cream time (s)	2 – 4
Gel time (s)	5 – 8

### APPLICATION

Components **Purios 500** are applied by spraying using a dedicated spray equipment in relation metering 1: 1 by volume. The main purpose of the system is thermal and acoustic insulation inside the building.

#### Mixing ratio

**Note: Mix polyol (Component B) before use!**

Preserve the stability of the mixing ratio during operation is very important for the quality and stability of the resulting foam.

Note: Before start working, it is recommended to check the correct operation of the machine by performing the spray test while observing the correct operation of the machine. A large pressure differential component (over 10% between the components) during spraying may indicate problems with the machine spray - is required the intervention of service - in this case, it is prohibited to continue the work until the removal of the cause.

**Note:** Due to the possibility of delamination of component B in a barrel, to achieve optimum parameters of foam are necessary to the thorough mixing just before the start of spraying. The polyol should be stirred in the container provided, mechanical stirring until a homogeneous throughout the volume of liquid in the barrel. Heating the raw materials in the barrel greatly improves the quality of mixing of the ingredients.

#### Surface preparation and application system

The surface which will be applied polyurethane Purios 500 System must be clean, dry, stable surface free of dust, oil in order to ensure adequate adhesion to the substrate. In the case of metal surfaces, they should be free from metal oxides and rust. Purios 500 System can be applied to any type of substrate, except for substrates with a thermoplastic material, galvanized sheet (unprepared), glass and painted surfaces before they are matt by chemical or mechanical. In the case of internal systems, secure windows and movable and immovable property which may become dirty during application.

#### The thickness of the spray

The recommended thickness of the spray layer is controlled by choosing a suitable nozzle and the speed of the application and **should be in the range between 2,4 – 4,0 in.** Keep in mind that the quality of the insulation is better if the layers are applied comparable thickness. **One layer should not exceed the upper range of thickness** due to problems of heat release during the foaming reaction. Too thick a layer may cause problems with heat generation during the foaming reaction, while too thin a layer may result in a higher density foam.

#### RECOMMENDED PROCESSING PARAMETERS

TEMPERATURE HEATING BLOCKS	104 °F – 131 °F
TEMPERATURE HOSE	104 °F – 131 °F
PRESSURE	1200 – 1600 psi

Please note that foam quality depends on the outside conditions. During the execution of the application should be corrected according to the changing external conditions.

#### SAFETY RULES

Purios 500 Systems for correct use does not pose a threat to human life and health.

Before working with the Purios 500 System refer to the content and adhere to the recommendations contained in Material Safety Data Sheet and Technical Information. Avoid contact of components with skin and eyes. During the application used clothing and gloves, use face protection and breathing apparatus.

**In case of doubt, or when disturbing adverse events during application, discontinue use and contact the manufacturer of the system.**



**Note:** The above values are average values obtained from laboratory experiments and should serve only as guidelines. During the work in other possible conditions, it's possible to obtain differing results from given. Overall densities consider the thickness of application, environmental conditions, etc.

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Version: 6.2  
Date of issue: Jun 04,2021