

# ALIPHATIC POLYUREA

## Product Description:

Aliphatic Polyurea is a 100% solid, fast curing, 2 components, UV resistive, aliphatic pure polyurea system. Its formulation is designed for maintaining high color stability and preventing discoloration where surfaces are exposed to sun light continuously. While it can be directly used on most surfaces, it also can be used as a top layer on epoxy, polyurethane and polyurea. After fully cured, it forms a coating material with high tensile strength and abrasion resistance. For protection and coating purposes, it can be applied on concrete, metal, wood, ceramic and PU foam. It can form strong films in wide variety of thicknesses. The material must be applied utilizing high pressure, heated plural component spray proportioning equipment.

## Features:

- Excellent resistance to UV light
- 100% color stability
- Fast reactivity and fast return to service time
- 100% solid, VOC free, no odor
- Very good tensile and structural strength
- Anticorrosive
- High Hydrolysis resistance
- Excellent temperature stability
- Seamless and joint-less coating with high water resistance
- Excellent adhesion on concrete, steel, aluminum, plastics, wood, etc.
- No sensitivity to temperature and humidity
- Variable application thickness is possible
- Broad color spectrum

## Application Areas:

- At exterior coatings where color stability is required
- Swimming pools and water parks
- Roofs, garages and parking lots
- Airports, shipyards and marina
- Wind energy plants
- Amusement parks and playgrounds
- Decorative designs
- Furniture industry

## Surface Preparation and Application:

- Surface preparation strongly affect coating performance. Concrete substrates must be prepared mechanically using abrasive blast cleaning to remove cement laitance and achieve an open textured surface. Weak concrete must be removed and surface defects such as voids must be fully exposed. Repairs to the substrate, filling of blowholes/voids and surface levelling must be carried out using appropriate products. The application surface has to be primed in order to achieve an even surface and good adhesion.
- All dust, loose and friable material must be completely removed from all surfaces before

application of the product, preferably by brush and/or vacuum. For application pull off strength of the surface should be min. 1.5 N/mm<sup>2</sup> and concrete residual moisture should be max. 6 %.

- Isocyanate prepolymer and amine resin must be applied using a 2-component high pressure and heat spray machine. The machine should be able to spray the components in 1:1 volume ratio. In order to achieve good performance, the temperature and pressure should stay same during the application.
- Before application, amine component must be stirred using a barrel mixer.

#### Storage and Shelf Life:

Polyurea components are sensitive to moisture. Keep polyurea components in tightly closed containers. Mix amine resin before application. Store polyurea components between 20 -30 °C.

9 months of storage time, If stored according to stated conditions.

#### Technical Features:

##### COMPONENT PROPERTIES

	Unit	Method	MDI Prepolymer (A)	Amine Resin (B)
<b>Density (25°C)</b>	g/cm <sup>3</sup>	ASTM D 1217	1.11±0.03	1.02±0.02
<b>Viscosity (25°C)</b>	mPa.s	ASTM D 4878	800-1000	600-1000
<b>Shelf life</b>	-----	-----	9 months	9 months

**PHYSICAL PROPERTIES**

	Method	Datas
<b>Chemical structure</b>		A: MDI Prepolymer
		B: Amine Resin
<b>VOC content (%)</b>	ASTM D1259	0
<b>Solid content (%)</b>	ASTM D2697	100
<b>Gel time (sec)</b>	--	25-30
<b>Tack free time (sec)</b>	--	45-60
<b>Recoat time(hr)</b>		0-12
<b>Density (g/cm<sup>3</sup>)</b>	ASTM D792	1.05-1.08
<b>Tensile strength (MPa)</b>	ASTM D638	>18
<b>Elongation at break (%)</b>	ASTM D638	≥150
<b>Hardness (Shore D)</b>	ASTM D2240	40-45
<b>Abrasion resistance (mg)</b>	EN ISO 5470-1	<33 (H22, 1000 cycle)
<b>Pull off strength (N/mm<sup>2</sup>)</b>	ASTM D4541	Concrete: ≥2.5 Steel: ≥6

**PROCESS PROPERTIES**

	Unit	Data
<b>Mix Ratio</b>	By volume	A=100 B=100
	By weight	A= 112 B= 100
<b>Process temperature(°C)</b>	°C	A: 70-80 B: 70-80
<b>Process pressure (bar)</b>	Bar	A: 150-200 B: 150-200

**Safety and Disposal:**

Contains isocyanate MDI. Avoid breathing vapors. Avoid contact with skin and eyes. Take precautions during application. Wear suitable protective clothing, gloves and eye/ face protection. Adequate ventilation of the working area is recommended. Refer to SDS sheet prior to use.

Limited Warranty

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