

polyurethane elastomer

**ALFONSO<sup>®</sup> UC-389** is a polyurethane prepolymer based on TDI-PET system engineered for harsh conditions. It exhibits outstanding wear, tear and extrusion resistance. Its mild requirement for curing environment and insensitivity to moisture grants UC-389 good operability. Widely applied in the manufacture of high end rollers, hydraulic seals and applications of intense abrasion.

### ALFONSO<sup>®</sup>UC-389 Prepolymer Characteristics

Property	Unit	Value
NCO	%	5.60±0.1
Viscosity at 70 °C	Mpa.s	1050±50
Viscosity at 30 °C	Mpa.s	7500±50
Specific Gravity at 25 °C	cm <sup>3</sup>	1.21
Operating Temperature	°C	85±5
Pot Life	min	3-4
Demould at	min/°C	30/110
Post Cure	Hour/°C	16/110

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### Curative Info

Type	Mixing Temperature	Mixing Ratio A:B
MBCA	120°C	100: 16
Ethacure 300	40°C	100: 12.8

### ALFONSO<sup>®</sup> UC-389 Physical Properties

Property	Unit	Value	Standard
Durometer Hardness	Shore A	95±2	DIN 53505
100% Modulus	N/mm <sup>2</sup>	9.5	DIN 53504
300% Modulus	N/mm <sup>2</sup>	18.5	DIN 53504
Elongation at Break	%	650	DIN 53504
Tensile Strength	N/mm <sup>2</sup>	50	DIN 53504
70°C/24h,20% Compression Set	%	35	DIN 53517
Tear Strength	N/mm <sup>2</sup>	135	DIN 53515
Rebound Resilience	%	24	DIN 53512
Abrasion	mm <sup>3</sup>	30	DIN 53516
Cured Density	g/cm <sup>3</sup>	1.28	DIN 53479

\*Values shown above are acquired from samples prepared only for testing purposes.

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**Notice**

**Storage & Handling**

ALFONSO<sup>®</sup> UC-389 prepolymer should be stored in cool, well ventilated and rainproof environments.

High storage temperature may reduce its shelf life.

When exposed to the air, certain reactions may occur and this can be harmful to the prepolymer. If a barrel is not consumed up at a time, the barrel with remained prepolymers should be sealed with care and it's recommended to fill the barrel with dry nitrogen for protection.

The prepolymer will increase in viscosity and eventually solidify at low temperature, and need heating to be poured out from the barrel. It is not recommended to heat the barrel with electric heating bars or electric hot plates because these equipment may cause uneven heating on some spots thus lead to material decomposition in these spots. Recommended temperature for melting UC-389 is 85°C.

The prepolymer will only be ready for curing when it's completely melted and heated to reaction temperature, because solid phase of the prepolymer can cause undermixing with curatives and results in flaws in the finished products.

**Health Hazard**

ALFONSO<sup>®</sup> UC-389 contains a small amount of free toluene diisocyanate (TDI) which is a known hazardous substance and may cause severe irritation to the eyes, skin and mucous membranes.

Operate only with proper ventilation to avoid inhalation of vapor. Avoid contact with eyes, skin and clothing and wash thoroughly after handling. For further information, please refer to the Material Safety

Data Sheet (MSDS).

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