

polyurethane elastomer

**ALFONSO® UC-383N** is a polyurethane prepolymer based on TDI-PET system engineered for harsh conditions. It exhibits outstanding wear and oil resistance. Its mild requirement for curing environment and insensitivity to moisture grants UC-383N good operability. Widely applied in the manufacture of ceramic tile press punches, high end sleeve plates and other applications of intense abrasion.

**ALFONSO®UC-383N Prepolymer Characteristics**

| Property                  | Unit            | Value    |
|---------------------------|-----------------|----------|
| NCO                       | %               | 3.85±0.1 |
| Viscosity at 70 °C        | Mpa.s           | 1200±50  |
| Viscosity at 30 °C        | Mpa.s           | 7000±50  |
| Specific Gravity at 25 °C | cm <sup>3</sup> | 1.2      |
| Operating Temperature     | °C              | 85±5     |
| Pot Life                  | min             | 7-8      |
| 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: 11          |
| Ethacure 300 | 40°C               | 100: 8.8         |

### ALFONSO<sup>®</sup> UC-383N Physical Properties

| Property                     | Unit              | Value | Standard  |
|------------------------------|-------------------|-------|-----------|
| Durometer Hardness           | Shore A           | 88±2  | DIN 53505 |
| 100% Modulus                 | N/mm <sup>2</sup> | 5     | DIN 53504 |
| 300% Modulus                 | N/mm <sup>2</sup> | 11.5  | DIN 53504 |
| Elongation at Break          | %                 | 450   | DIN 53504 |
| Tensile Strength             | N/mm <sup>2</sup> | 46.5  | DIN 53504 |
| 70°C/24h,20% Compression Set | %                 | 32    | DIN 53517 |
| Tear Strength                | N/mm <sup>2</sup> | 100   | DIN 53515 |
| Rebound Resilience           | %                 | 26    | DIN 53512 |
| Abrasion                     | mm <sup>3</sup>   | 30    | DIN 53516 |
| Cured Density                | g/cm <sup>3</sup> | 1.26  | 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-383N 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-383N is 80°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-383N 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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