

# TECHNICAL DATASHEET

U1780 A +B

Fev. 2022

## ELECTRICAL POLYURETHANE RESIN

### PRODUCT DESCRIPTION

Casting resin for mechanical and numerous electrical applications especially for low or medium voltage.

Example: potting, transformers, capacitors and components.

### FEATURES

- Two-component liquid polyurethane resin
- Casting use
- Rigid
- High thermal resistance
- High glass temperature
- Halogen free

### APPLICATION

Before use of isocyanate U1780 B, check carefully the absence of crystallisation or dimerization on each package:

- Solid particle presence
- Cloudy liquid

In case of crystallization or dimerization, the product must be placed in an oven at 60°C until complete decrystallization (16 hours maximum). Rehomogenize and return to room temperature.

After shaking the product into the package, if the product is not clear, **DO NOT USE THE PRODUCT.**

Setting may be observed on the polyol. In that case, it is necessary to mix the POLYOL part until both colour and aspect become homogeneous. This is not harmful for the product quality.

Both parts (POLYOL and ISOCYANATE) have to mixed at a temperature higher than 18°C according to the mix ratio indicated on the technical datasheet. Before casting check that parts or moulds are free of any trace of moisture.

Normal health and safety precautions should be observed when handling these products:

- Ensure good ventilation.
- Wear gloves, safety glasses and waterproof clothes

For further information, please consult the product safety data sheet.

<b>CURING CONDITION</b>		
	<b>U1780 A</b>	<b>U1780 B</b>
	<i>POLYOL</i>	<i>ISOCYANATE</i>
Mix ration by weight	100	40
Mix ratio by volume (25°C)	100	52
Gel time at 25°C (min) [on 110g, Gel Timer TECAM]	30	
Curing time at 25°C (hours) [200g]	12-24	
Final hardness at 25°C (days) [200g]	7	

## **PROPERTIES**

<b>PHYSICAL PROPERTIES</b>				
		<b>U1780 A</b>	<b>U1780 B</b>	<b>MIXED</b>
		POLYOL	ISOCYANATE	
Aspect		Liquid	Liquid	Liquid
Colour		Black	Dark amber	Black
Viscosity at 25°C (mPa.s)	<u>Brookfield</u> LVT	6000	200	1900
Specific gravity at 25 °C	ISO 1675 : 1975	1.57	1.22	cured: 1.53

<b>MECHANICAL PROPERTIES AT 23°C <sup>(1)</sup></b>			
Hardness	ISO 868 : 2003	Shore D1 / D15	88 / 87
Tensile strenght	ISO 527 : 1993	MPa	57
Elongation at break	ISO 527 : 1993	%	3
Flexural modulus	ISO 178 : 2010	MPa	4400
Impact strength	ISO 179/1eU : 1994	kJ/m <sup>2</sup>	11
<b>THERMAL AND SPECIFIC PROPERTIES <sup>(1)</sup></b>			
Working temperature	-	°C	- 40 / + 150
Thermal conductivity	ISO 2582 : 1978	W/m.K	0,42
Glass transition temperature (Tg)	ISO 11359 : 1999	°C	90
Coefficient of thermal expansion (CTE) [-25°C à + 80°C]	ISO 11359 : 1999	10 <sup>-6</sup> K <sup>-1</sup>	50
Coefficient of thermal expansion (CTE) [+95°C à + 130°C]	ISO 11359 : 1999	10 <sup>-6</sup> K <sup>-1</sup>	140
Water absorption (23°C – 24	ISO 62 : 1999	%	0.18
Directive 2011/65/EU (ROHS) <sup>(2)</sup>	-	-	Conform
<b>DIELECTRIC AND INSULATING PROPERTIES <sup>(1)</sup></b>			
Dielectric constant ε (100 Hz)	CEI 60250 : 1969	-	4.1
Dielectric strenght (50 Hz – 1	CEI 60243-1 E2 : 1998	kV/mm	25
Dissipation factor tan δ (100 Hz)	CEI6 60250 : 1969	-	5.10 <sup>-3</sup>
Volume resistivity (1000 V)	CEI 60093 E2 : 1980	Ω.cm	10 <sup>16</sup>

<sup>(1)</sup> Average values obtained on standardized specimens / Hardening 16 hours at 80°C and 24 hours at 23°C

## **PACKAGING**

Kit (A+B) of 7kg  
Part A (polyol) 5kg + Part B (isocyanate) 2kg

## **REFERENCES**

U1780 K07K

## **STORAGE CONDITION and SHELF LIFE:**

Shelf life is 12 months in a dry place and in their original unopened containers at a temperature **between 15 and 25°C**.

Storage at a temperature below 5°C promotes crystallization and dimerization of ISOCYANATE U1780 B.

Any open must be tightly closed under dry inert gas (dry air, nitrogen, etc...).

*All information is given in good faith but without warranty. Properties are given as a guide only and should not be taken as a specification. ABchimie cannot be held responsible for the performance of its products within any application determined by the customer, who must satisfy themselves as to the suitability of the product.*

*Toutes ces informations sont données en toute bonne foi mais sans garantie. Chaque application étant différente, il est vivement conseillé d'effectuer des tests préalables. Les spécifications concernant les propriétés sont données à titre indicatif et non comme étant spécifiques.*