TECHNICAL DATASHEET

U1456 Feb. 2023

ELECTRICAL POLYURETHANE RESIN

Clear dielectric casting resin for electronic components protection

PROPERTIES:

- Two-component liquid polyurethane resin
- Translucent
- Soft
- Good UV resistance

PHYSICAL PROPERTIES				
Composition		**U1456 A**	**U1456 B**	**MIXED**
		POLYOL	**ISOCYANATE**	
Mix ration by weight Mix ratio by volume (25°C)		100 100	100 89	
Aspect		Liquid	Liquid	Liquid
Colour		Translucent	Clear	Translucent
Viscosity at 25°C (mPa.s)	ISO 255 : 2018	70	2 200	300
Specific gravity at 25°C	ISO 1675 : 1975 ISO 2781 : 1996	1.01 -	1.13 -	- 1,10(cured)
Gel time at 25°C (min) [200g]	Gel Timer TECAM	-	-	10

MECHANICAL PROPERTIES AT 23°C (1)			
Hardness	ISO 868 : 2003	Shore A	72
Tensile strenght	ISO 37 : 2011	MPa	2,1
Elongation at break	ISO 37 : 2011	%	70

(1) *Average values obtained on standardized specimens / Hardening 16 hours at 80°C and 24hours t 23°C.*

THERMAL AND SPECIFIC PROPERTIES (1)			
Working temperature	-	°C	- 40 / + 80
Thermal conductivity	EN 993-15	W/m.K	0,2
Glass transition temperature (Tg)	ISO 11359 : 1999	°C	0
Coefficient of thermal expansion (CTE) [-40°C to -20°C] [+20°C to +120°C]	ISO 11359 : 1999	10^{-6} K^{-1}	 80 240
Water absorption (23°C – 24 heures)	ISO 62 : 1999	%	1.7
Directive 2011/65/EU (ROHS) (2)	-	-	Conform

(1) *Average values obtained on standardized specimens / Hardening 16 hours at 80°C.*

(2) European directive on the restriction of the use of certain hazardous substances electrical and electronic equipment.

DIELECTRIC AND INSULATING PROPERTIES (1)			
Dielectric constant ε (100 Hz)	CEI 60250 : 1969	-	11,6
Dielectric strenght (50 Hz – 1 mm)	CEI 60243-1 E2 : 1998	kV/mm	-
Dissipation factor tan δ (100 Hz)	CEI6 60250 : 1969	-	0.16
Volume resistivity (1000 V)	CEI 60093 E2 : 1980	Ω.cm	3.6 10^{12}

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

PROCESSING

- Before use of isocyanate U1456B, 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.
- Both parts should be mixed at 25 °C minimum
- Heat both part at minimum 25 °C in case of storage at lower temperature.
- Mix both part during 2 minutes with a metallic spatula
- Degas the mixing 2 minutes under vacuum (minimum 5 mbar)
- Cast in a mold without any trace of humidity (dry at minimum 6 H at 50 °C)
- Maximal casting thickness for optimal transparency: 10 mm
- For the first use, make an evaluation test on one specimen
- During the polymerization, temperature must be between 20 and 30 °C with relative humidity below 60 % at 20 °C and 40 % at 30 °C
- In case of using a dispensing machine, contact our technical service.

HANDLING PRECAUTIONS :

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.

PACKAGING

Kit bi composant A+B (5+5 Kg) U1456 K10K

STORAGE CONDITION and SHELF LIFE:

Storage at a temperature below 5°C promotes crystallization and dimerization of ISOCYANATE U1456 B.
Shelf life is 6 months in a dry place and in their original unopened containers at a temperature between 15 and 25°C.
Any open must be tightly closed under dry inert gas (dry air, nitrogen, etc…).

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