

TECHNICAL DATASHEET – provisional

7601 + 7922

(Resin + Hardener)

Description

7601 + 7922 is a flexible epoxy encapsulant. The product is characterised by a very low viscosity at processing temperature despite a thermal conductivity of 0.8 W/(m•K). The system is typically used in electronic applications, such as transformers, capacitors, relays, etc.

Passes the UL94 V-0 test for layer thicknesses ≥ 4 mm.

Advantages

- Thermal conductivity of approximately ~ 0.8 W/(m•K)
- Semi-flexible
- Long open time / pot life
- Low viscosity reduces air gaps / inclusions
- Solvent-free
- Low Tg of approx. 42 °C
- Cold curing possible

Physical properties (liquid product)

Chemical base	Epoxy resin		
Curing System	2-component-system		
Mixing ratio by weight	100 : 8.3 (resin : hardener)		
Mixing ratio by volume	100 : 14.2 (resin : hardener)		
Shelf life	12 month at 2 – 30 °C		
Colour	Resin	7601	Beige
	Hardener	7922	Transparent
	Mixture		Beige
Density	Resin	7601	~ 1.61 g/ml
	Hardener	7922	~ 0.94 g/ml
	Mixture		~ 1.55 g/ml
Viscosity at 25°C (DIN EN ISO 3219)	Resin	7601	1'000 – 1'500 mPa•s
	(Plate/Plate, 10 s ⁻¹)		
	Hardener	7922	50 – 60 mPa•s
	(Cone 75, 3000 s ⁻¹)		

Viscosity mixture	at 25 °C	~ 670 mPa•s
(DIN EN ISO 3219;	at 40 °C	~ 370 mPa•s
Plate/Plate, 10 s ⁻¹)	at 50 °C	~ 250 mPa•s
	at 60 °C	~ 140 mPa•s

Curing properties

Pot life (doubling of viscosity)

(DIN EN ISO 3219;	at 25 °C	~ 166 minutes
Plate/Plate, 10 s ⁻¹)	at 40 °C	~ 78 minutes
	at 50 °C	~ 43 minutes
	at 60 °C	~ 24 minutes

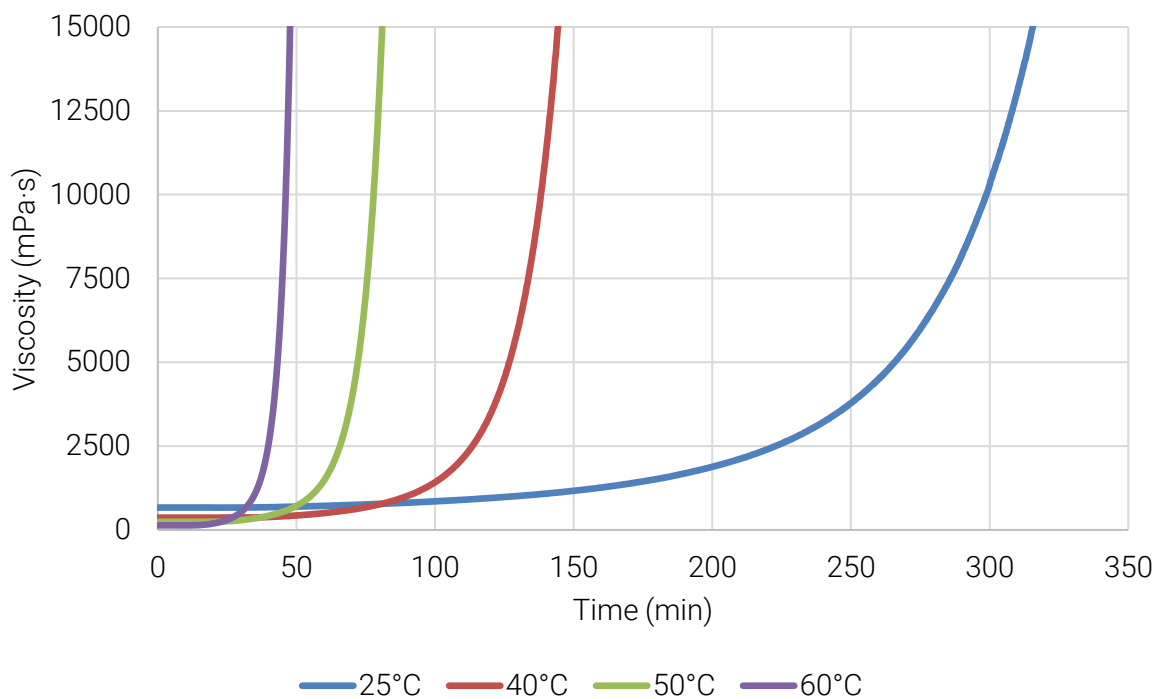
Pot life (time to reach viscosity of 15'000 mPa•s)

(DIN EN ISO 3219;	at 25 °C	~ 316 minutes
Plate/Plate, 10 s ⁻¹)	at 40 °C	~ 144 minutes
	at 50 °C	~ 81 minutes
	at 60 °C	~ 48 minutes

Gel time (30 gram) at 23 °C	~ 495 minutes
Gel time (30 gram) at 40 °C	~ 195 minutes

Volume shrinkage DIN EN ISO 2811-2	~ 3.6 %
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Viscosity during curing at different temperatures (DIN EN ISO 3219; Plate/Plate, 10 s⁻¹)



Physical properties (cured product)

Thermal range

-40 °C up to +130 °C

Density acc. to DIN EN ISO 2811-2:2011-06

~ 1.60 g/cm³

Glass transition point

~ 42 °C

(DIN 65467; DSC method; cured at 16h, 40°C + 24h, 120°C)

Curing cycle to achieve the following values (>95% max. Tg):

Curing for 48h at 23°C + post-curing for 3h at 120°C

Thermal conductivity (Transient hot-bridge method)

~ 0.8 W/(m•K)

Coefficient of expansion TMA

< Tg

~ 49 ppm/K

acc. ISO 11539-2:2014

> Tg

~ 113 ppm/K

Shore D hardness DIN EN ISO 868:2003-10

~ 65

Tensile strength DIN EN ISO 527-2

~ 9 N/mm²

Elongation at break DIN EN ISO 527-2

~ 21 %

E-Modulus (bending) DIN EN ISO 178

~ 430 N/mm²

Dielectric strength

~ 40 kV/mm

Dielectric constant (ε) at 50 Hz, 23 °C

~ 4.6

Dissipation factor (tan δ) at 50 Hz, 23 °C

~ 0.14

Comparative tracking index CTI

600

Material preparation

Due to a sedimentation tendency of the filled resin (component A), careful stirring or homogenisation of the material is always necessary before removing it from the original container. This step is especially important if only one part of the material is taken out of the container. To facilitate stirring and removal, it is recommended to heat the material in the original container to approx. 25°-45°C.

In the dosing system tank, the material should be stirred from time to time to avoid sedimentation and thus errors in the mixing ratio during dosing.

The hardener (component B) is unfilled and does not need to be stirred or homogenised before filling the tank.

Recommendation for processing parameters and curing cycle

Before dosing and mixing the two components, the resin (component A) should be degassed and homogenised in the tank at approx. 40°C and a vacuum of 1-5mbar. The hardener (component B) should be degassed and homogenised in the tank at 25°-30°C and also at a vacuum of 1-5mbar. The degassing process as well as the homogenisation can be improved considerably by using an agitator.

The following table represents a recommendation of the processing parameters in the process:

Process	Mixing temperature of the potting compound	Parts temperature	Curing cycle
Atmospheric or vacuum potting	25° – 60°C	25° – 60°C	5h at 40°C and 3h at 120°C

It is recommended to determine the degree of curing of the potting compound with relevant test methods (e.g. DSC measurement), as different curing cycles as well as the component volume can have an influence on the final properties.

Precautions

For your own safety, please refer to the information of the concerned MSDS.

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