

TECHNICAL DATASHEET

7490

(Resin 7438 + Hardener 7489)

Description

7490 is a black, toughened, pasty epoxy resin adhesive for application with composite or metal parts. Due to its long open time especially for larger applications. The product provides excellent strength build up after a long pot life, very good heat resistance as well as remarkable mechanical properties over a broad temperature range. 7490 is characterised by easy processing, despite high paste stability.

Advantages

- High toughness
- Excellent adhesion to composite materials and metals
- Very good temperature resistance up to 180 °C
- High strength at elevated temperatures
- Long processing time
- Very good stability, flow resistant
- Solvent-free, good chemical resistance
- Minimum gap 75 µm (Spacer)

Physical properties (liquid product)

Chemical base	Epoxy resin adhesive	
Curing System	2-component-system	
Mixing ratio (volume)	2 : 1 (resin : hardener)	
Mixing ratio (weight)	2.19 : 1 (resin : hardener)	
Shelf life	24 months at 2 – 30 °C	
Colour	Resin	7438
	Hardener	7489
	Mixture	Black
Viscosity	Mixture	Pasty, thixotropic
Density (following DIN EN ISO 2811-1)	Resin	7438
	Hardener	7489
	Mixture	~ 1.17 g/cm ³
		~ 1.07 g/cm ³
Minimum gap / Spacer		~ 1.13 g/cm ³
		75 µm

Curing properties

Pot life at 23 °C

~ 2 hours

Fixture time at 23 °C (DIN EN 1465; >1 N/mm²)

~ 8.5 hours

Functional time at 23 °C (DIN EN 1465; >10 N/mm²)

~ 15 hours

Final strength at 23 °C

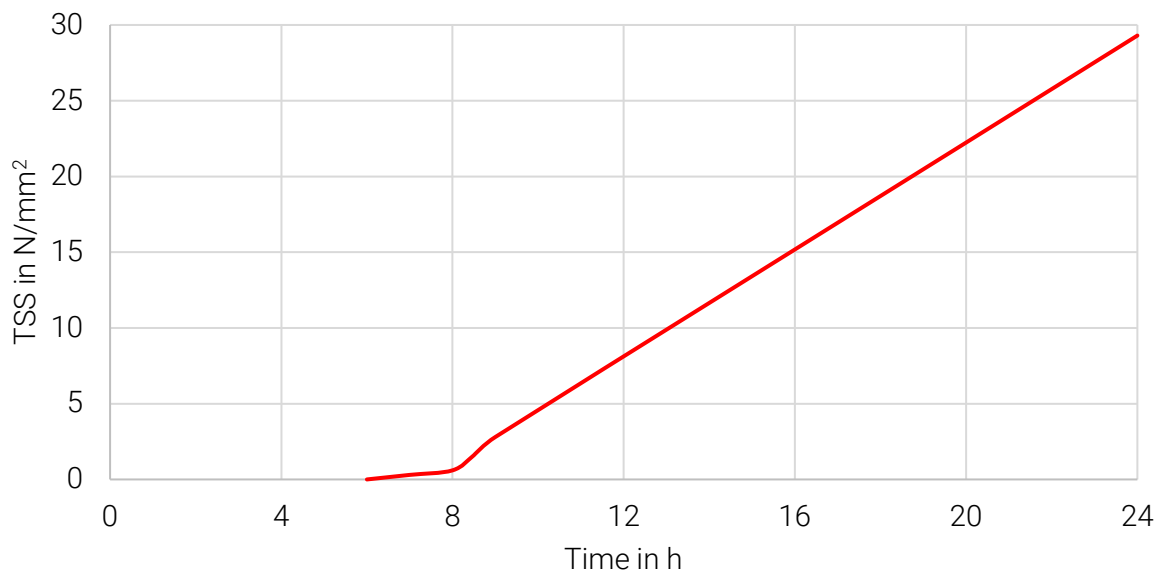
~ 5 days

Volume shrinkage (DIN EN ISO 3521)

~ 3.9 %

Strength build-up

Test temperature 23 °C; material: steel corundum blasted; method: tensile shear strength acc. to DIN EN 1465



Physical properties (cured product)

Thermal range

-40 °C up to +180 °C

Density measured cured
(following DIN EN ISO 2811-1)

~ 1.17 g/cm³

Shore-D-hardness (DIN EN ISO 868)

~ 75

Glass transition point (T_g)

~ 87 °C

Curing: 16 hours at 40 °C, post-hardened at 120 °C

E-modulus (bending; DIN EN ISO 178/A/2)

~ 1930 N/mm²

Curing: 16 hours at 40 °C, post-hardened at 120 °C

Tensile strength (ISO 527-2/1A/2)

~ 45 N/mm²

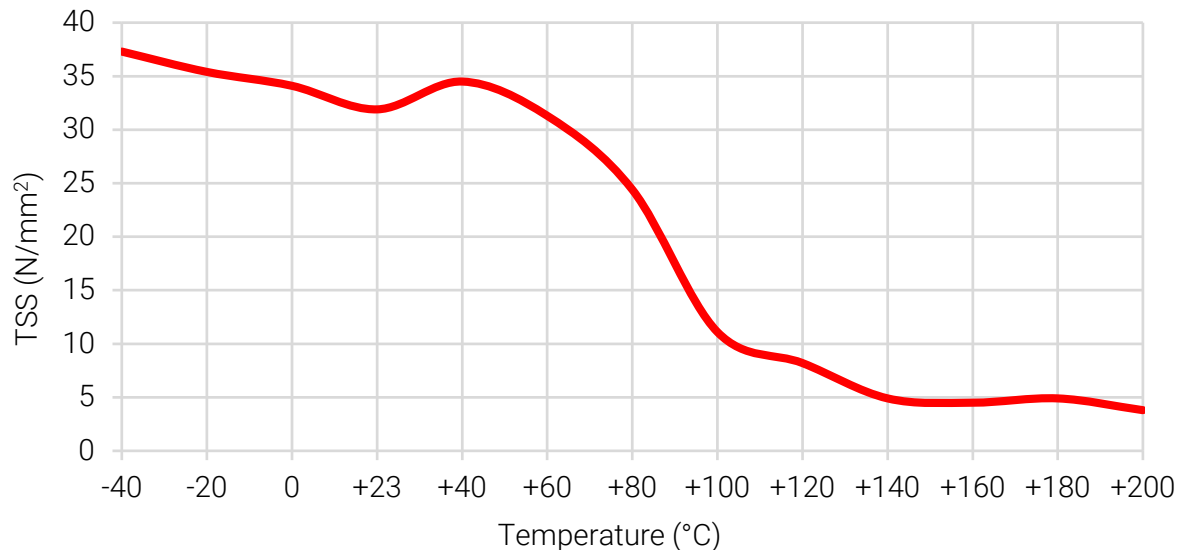
Curing: 16 hours at 40 °C, post-hardened at 120 °C

Elongation at break (ISO 527-2/1A/2)

~ 14 %

Curing: 16 hours at 40 °C, post-hardened at 120 °C

Tensile shear strength vs. temperature



Tensile shear strength acc. to DIN EN 1465

Curing: 16 hours at 40 °C, 24 hours at 23 °C, test temperature 23 °C,

Surface preparation: metals and composites corundum blasted and cleaned, plastics only cleaned

Steel	~ 34 N/mm ²
Stainless Steel	~ 30 N/mm ²
Aluminium	~ 27 N/mm ²
Brass	~ 27 N/mm ²
Copper	~ 22 N/mm ²
GRP, epoxy	~ 30 N/mm ² (broken fibres)
CFRP	~ 36 N/mm ² (broken fibres)
ABS	~ 4 N/mm ² (material failure)
PC	~ 4 N/mm ² (material failure)
PVC	~ 3 N/mm ² (material failure)

Precautions

For your own safety, please refer to the information of the concerned MSDS and for the correct handling the "user instructions".

The information in this data sheet is based on the results of our research and experience. However, the suggestions herein concerning the use, application, and processing of the products (collectively, „the methods“) **are non-binding recommendations only**. It is the user's sole responsibility to determine the suitability and safety of these methods, based on the user's particular purpose in using the products. Before relying on the reliability and safety of any parts that are bonded using the products, it is extremely important that the user test the reliability and safety of the parts that are bonded. Failure to do so could result in serious personal injury. Because of the use of the products are within the purchaser's sole control, Kisling Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose, arising from the sale or use of the products described herein. Kisling Corporation specifically disclaims any liability for consequential, incidental, or other damages of any kind, including lost profits. Kisling Corporation's liability for damages shall not exceed the purchase price of the products used.

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