

TECHNICAL DATASHEET

ergo.[®] 7440

(ergo.[®] 7438 resin + ergo.[®] 7439 hardener)

Description

ergo.[®] 7440 is a black, toughened, pasty epoxy resin for application with composite or metal parts. The resin 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.

ergo.[®] 7440 fulfills the requirements according to DIN EN 45545-2 chart 5, R1, R7 and R17 with HL1-3.

Advantages

- High toughness
- Excellent adhesion to composite materials and metals
- High strength at elevated temperatures
- High temperature resistance
- Solvent-free, good chemical resistance

Physical properties (liquid product)

Chemical base		epoxy resin
Curing System		2-component-system
Mixing ratio (v:v)		2 : 1 (<i>resin : hardener</i>)
Shelf life		24 month at 5 – 23 °C
Colour	Resin	white
	Hardener	black
	When cured	black
Density	Resin	~1.2 g/cm ³
(23 °C)	Hardener	~1.2 g/cm ³
	Mixture	~1.2 g/cm ³
Viscosity acc. to DIN EN 12092 measured at 23 °C		
	Resin	70'000 – 90'000 mPa·s
	Hardener	15'000 – 30'000 mPa·s
	Mixture	pasty, thixotropic

Curing properties

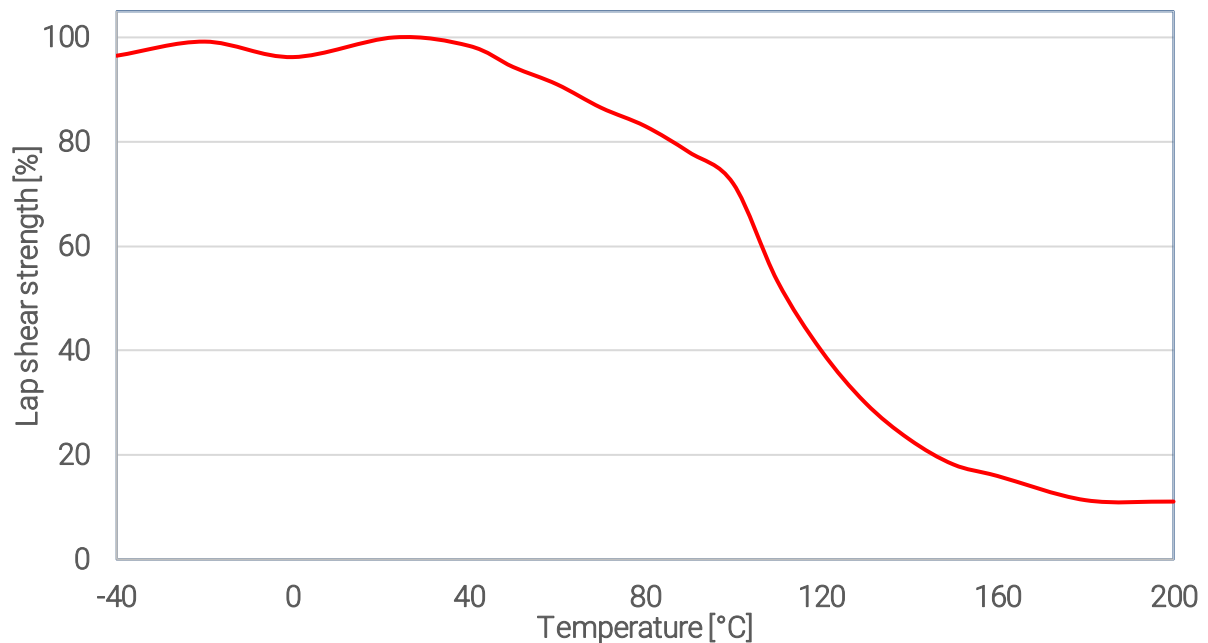
Pot life at 23 °C	40 – 60 minutes
Fixture time at 23 °C (>1 N/mm ²)	~ 3 hours
Functional time at 23 °C (>10 N/mm ²)	~ 4.5 hours
Final strength at 23°C	~ 2 – 3 days
Volume shrinkage	~ 3 %

Test method DIN EN 1465	At 23 °C	At 60 °C	At 80 °C
Fixture time (>1 N/mm ²)	~3 hours	~18 minutes	~10 minutes
Functional time (> 10 N/mm ²)	~4.5 hours	~23 minutes	~11 minutes

Physical properties (cured product)

Thermal range	-60 °C up to +180 °C
Glass transition point (T _g)	~ 106°C
Curing: 16 hours at 40 °C, post-hardened at 120 °C	
Thermal expansion coefficient	103 ppm/K
Volume resistivity	1.94•10 ¹⁵ Ω•cm

Tensile shear strength vs. temperature (steel to steel); 100% = Strength at 23 °C



Tensile strength (ISO 527-2/1A/2) After 7 days at 23 °C, test temperature 23 °C	~ 33 N/mm ²
Elongation at break (ISO 527-2/1A/2) After 7 days at 23 °C, test temperature 23 °C	~ 4.6 %
E-modulus (DIN EN ISO 178/A/2) After 7 days at 23 °C, test temperature 23 °C	~ 2100 MPa
Shore-D-hardness	~ 80
Tensile shear strength acc. to DIN EN 1465 Curing: 16 hours at 40 °C, 24 hours at 23 °C, test temperature 23 °C, metals corundum blasted	
Steel	~ 35 N/mm ²
Stainless Steel	~ 30 N/mm ²
Aluminium	~ 24 N/mm ²
Brass	~ 24 N/mm ²
Copper	~ 20 N/mm ²
GRP, epoxy	~ 12 N/mm ²
GRP, polyester	~ 9 N/mm ² (broken fibres)
Carbon Composite	~ 26 N/mm ² (broken fibres)
ABS	~ 2 N/mm ²
PC	~ 2 N/mm ²
PVC	~ 2 N/mm ²

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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