Kisling

TECHNICAL DATASHEET

ergo.® 7440

(ergo.® 7438 (resin) and 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 pot life, good heat resistance up to 140 °C as well as good mechanical properties.

Advantages

- High toughness
- Excellent adhesion to composite materials and metals
- High strength at elevated temperatures
- Good chemical resistance
- High temperature resistance

Physical properties (liquid product)

Chemical base			epoxy resin
Curing System			2-K-System
Mixing ratio			2 : 1 (*resin : hardener*)
Shelf life			12 month at ~ 23 °C
Viscosity according to DIN 54453 (cone/plate-system; cone C-25; shear rate D=35 s^{-1}; 23 °C)	Resin	ergo.® 7438	70'000 – 90'000 mPa•s
	Hardener	ergo.® 7439	15'000 – 30'000 mPa•s
	Mixture		pasty, thixotropic
Color	Resin	ergo.® 7438	white
	Hardener	ergo.® 7439	black
	Mixture		black
Density 23 °C	Resin	ergo.® 7438	1.2 g/cm³
	Hardener	ergo.® 7439	1.2 g/cm³
	Mixture		1.2 g/cm³

Physical properties (cured product after 7 days/23 °C)

Glasstransitiontemperature (T_g)	~ 106 °C
Thermal range	-60 °C up to +180 °C
Modulus (DIN EN ISO 178) After 7 days at 23°C	2100 N/mm²
Tensile strength (ISO 527 1A) After 7 days at 23°C	33 N/mm²
Elongation at break (ISO 527 1A) After 7 days at 23°C	4.6 %
Pot life (20 g mixture @ 23 °C)	40 - 60 minutes
Fixture time (> 1 N/mm^2)	3 hours (23 °C)
Functional time (> 10 N/mm^2)	4.5 hours (23 °C)
Final strength	2 – 3 days (23 °C)

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

Aluminum	~ 24 N/mm²
Steel	~ 35 N/mm²
Stainless steel	~ 30 N/mm²
Brass	~ 24 N/mm²
Copper	~ 20 N/mm²
ABS	~ 2 N/mm²
PVC	~ 2 N/mm²
Polycarbonate	~ 2 N/mm²
GRP, polyester	~ 9 N/mm² (broken fibers)
GRP, epoxy	~ 12 N/mm²
Carbon Composite	~ 26 N/mm² (broken fibers)

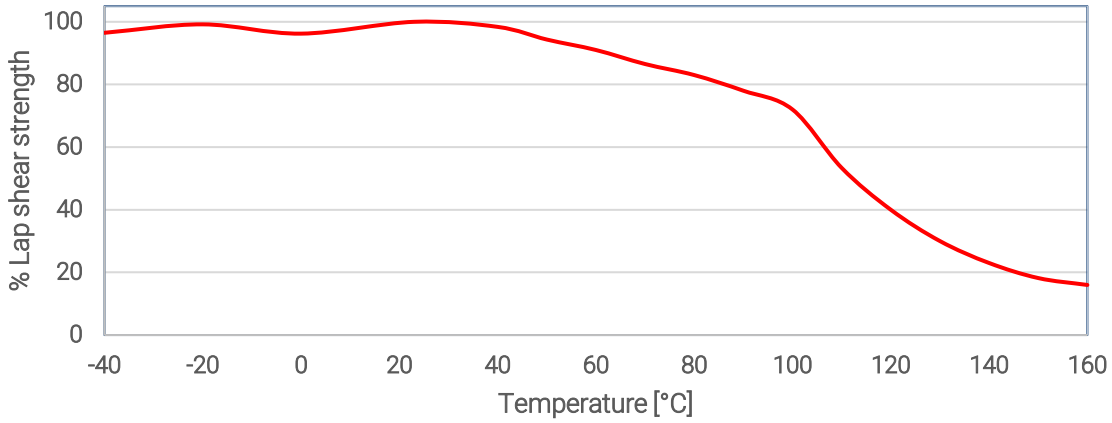

Fig. 1: Lap shear strength vs. temperature on steel-steel; 100% = strength at 23 °C.

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.

TIS_7440_e/OT/16.12.2019