

LOXEAL EB4451 A+B

Description

Loxéal EB4451 is a thermally conductive two-components adhesive based on epoxy resin. Specifically designed to bond metal substrates when an excellent resistance to high temperature is required. The full cure is achieved in 7 days at room temperature, but it can be obtained in 24 hours at room temperature followed by 30 minutes at +80°C.

Loxéal EB4451 provides an excellent resistance to hot and cold water, motor oil, water and glycol.

Typical physical properties

Part	A	B
Composition:	epoxy resin	amine
Colour:	white	dark grey
Viscosity rheometer plate-plate (+25°C - mPa s):		
Shear rate 0.3 s ⁻¹	188.000	103.000
Shear rate 40 s ⁻¹	25.000	20.000
Specific weight @25°g/cm ³ :	2,1	2,1
Mixing ratio (weight and volume):	2:1	
Shelf life:	12 months @+5°C≤T≤+25°C in original unopened packaging.	

Typical curing properties at +25°C

Pot life:	150 minutes**
Fixture time:	8 hours
Full cure time:	7 days

**Time detected on a 60g total mass mixture A+B

Typical properties of cured product

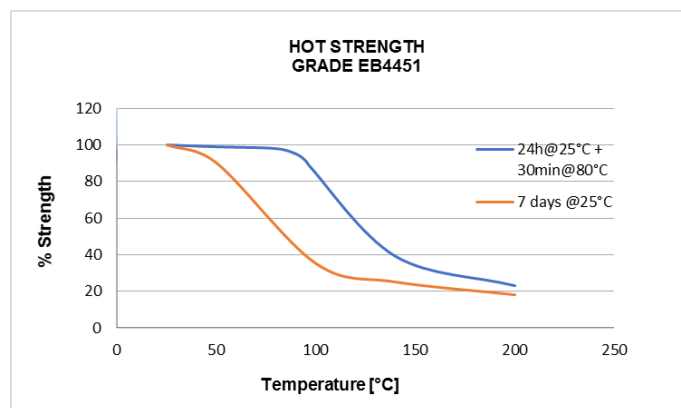
Tg (DSC):	65°C
Tg (DSC, cure in 24h@+25°C followed by 30min@+80°C):	113°C
Temperature resistance:	-40°C/+200°C - peaks up to +250°C

Thermal conductivity (ISO 8302):	1.0 - 1.4 W/m K
Thermal expansion coefficient under Tg (ISO 11359-2):	5x10 ⁻⁵ K ⁻¹
Linear shrinkage (ISO 1675):	0,7%
Tensile strength at break (DIN 53504):	50 N/mm ²
Elongation at break (DIN 53504):	2,9%

Shear strength (ISO 4587):	
Steel	20 N/mm ²
Aluminum (scratched)	15 N/mm ²
ABS	6 N/mm ²
PC	4 N/mm ²
Glass fiber reinforced epoxy	10 N/mm ²
PBT GF50	5 N/mm ²

Mechanical resistance

The graph below shows the mechanical strength of the product (%) vs. temperature. Specimen steel - ISO 4587



Storage

Keep product in a cool and dry room at no more than +25°C. To avoid contaminations do not refill containers with used product. For further information on applications, storage and handling contact Loxéal Technical Service

Safety, handling and disposal

Consult Material Safety Data Sheet before use. This adhesive is not approved for usage neither with pure nor with gaseous oxygen.

Directions for use

- **Surface preparation**

For best results we recommend to scratch the surfaces with a tool and then to degrease and clean with Loxeal Cleaner 10 or Acetone and let dry for a few seconds.

- **Mixing**

The resin and the hardener need to be mechanically mixed before use in the ratio of weight and/or volume in compliance with technical specifications until a homogeneous colour is reached. Products are available in dual cartridges with static mixers (separately provided) allowing a direct and correct product application on the substrates to bond, completely discarding the first 3/5 cm of the extruded product. Avoid excess of product blend because heating produced by chemical reaction may cause risk and loss of product.

- **Pot life**

Pot life of the mixed product may vary from few minutes to some hours at room temperature according to the resin and the hardener used. Higher temperature and big quantities reduce the pot life. Apply product at temperature higher than +15°C.

- **Assembly**

Parts to be bonded shall be assembled immediately after product application and kept close until full polymerization without providing any mechanical stress.

- **Cleaning**

Excess of product can be removed with Acetone or any other solvent based cleaner compatible with the substrates to bond. Application tools and dosing systems shall be cleaned before the product is hardened.

Cured product can be removed only mechanically.

Note

The data contained herein, obtained in Loxeal laboratories, are given for information only; if specifics are required, please contact Loxeal Technical Department. Loxeal ensures abiding quality of supplied products according to its own specifics. Loxeal cannot assume responsibility for the results obtained by others which methods are not under Loxeal control. It is user's responsibility to determine suitability for user's purpose of any product mentioned herein. Loxeal disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Loxeal products. Loxeal specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.