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Thermally Conductive Adhesive WLK

Epoxy based 2 component adhesive.

The main characteristics are its good heat conductivity, high dielectric strength, and an expansion coefficient suited to copper and aluminium. The thermally conductive adhesive binds porous and non-porous surfaces such as metal, glass, ceramic and almost all plastics.

Technical data :

Expansion coefficient	$8{,}5 \times 10^{-6}$/°C
Volume resistivity	10^{16} Ohm/cm
Dielectric strength	400 V/10^{-3} inch
Water absorption (in 7 days)	< 0,1 %
Spec. Gravity Resin	2,3 g/cm3
Spec. Gravity Hardener	1,003
Spec. Gravity Compound cured	2,1
Hardness	75 SHORE D at 25 °C
Viscosity Resin	0,9 Mio …. 1,3 Mio cps
Viscosity Hardener	1 …. 3 cps
Viscosity Compound	250.000 …. 300.000 cps (25°C)
Thermal conductivity	0,836 W/m K
Temperature range	-56 °C ... +150 °C

Below mentioned data are characteristical data for fully cured epoxy

Bond Shear strength (1 inch overlapping)	
at ca. 25 °C	2900 psi
at ca. 51 °C	2200 psi
at ca. 93 °C	1400 psi
After 30 days stored under water	unchanged
Bending strength	15000 psi
Expansion coefficient	15×10^{-6} per °F

Application :

Mixing ratio of resin to hardener of **10:1 by weight**.
Stir both components thoroughly for approx. **5 min**.
The surfaces to be bound are have to be free from oxides, dust and grease.
To remove surface contaminations as dust, grease, oil, etc., solvents (Aceton, thinners, Tri etc.) should be used. Do not use “denaturated alcohol” or glass-cleaners.
Roughened surfaces increase the binding strength.
Apply glue onto both sides of parts you want to adhere, thereafter join both the parts
The processing time is approx. 45 minutes (potlife).
Note: Be sure to read and follow the manufacturers´ precautions and directions when using solvent, primers and other chemicals.

Curing time :

at	190°C	approx.	20 minutes
at	100°C	approx.	30 minutes
at	40°C	approx.	6 hours
at	20°C	approx.	24 hours

Long term stability if handled, processed and cured properly in accordance with the specifications: min 20 years

Storage and shelf life :

Storage in closed containers between +4°C and +51°C.
The influence of frost is to be avoided.
The shelf life for unopened glass containers is min. 2 year,
for unopened plastic containers is min.1 year

The thermal resistance of the adhesive film can be calculated by using the following formula:

R_W : Thermal resistance in °C/W
p : specific R_W= 120°C.cm/W
t : film thickness in cm
A : surface area of film in cm^2

$$R_W = p \times t / A$$

All statements, technical information and recommendations herein has been thoroughly prepared and checked, but the accuracy or completeness thereof is not guaranteed. User is responsible for determining whether this product is fit for a particular purpose and suitable for users´ method of application. Please remember that many factors can effect the use and performance of this product in a particular application.
We reserve the right to correct any errors and faults, especially to technical modification as a result of constant product development and improvement.

