DELO

Technical Information

DELO-KATIOBOND® 4670

UV-curing encapsulant for Smart-Card technology, fill for Dam&Fill

Base

- modified epoxy resin
- one-part, solvent-free, UV-curing

Curing

- curing with UVA-light in a recommended wavelength range of 320 - 400 nm
- high initial strength after exposure to light, thus complete protective function
- further curing until final strength 24 h at room temperature

Curing parameters

- depend on coating thickness of the potting compound, type of lamp and intensity of illumination

Use

- as fill for potting chip modules with the dam & fill process. We recommend DELO-KATIOBOND 4696 as dam, it form a chemical homogeneous unit with DELO-KATIOBOND 4670
- especially suitable for smart card technology, e. g. phone or health insurance cards
- the dam & fill system DELO-KATIOBOND 4670 / 4696 is a standard system world-wide for UV-curing embedding compounds at smart card modules
- the system realizes shortest cycle times, combined with increasing productivity and decreasing production costs
- the adjustment of tension has favorable effects on bending stress
- since many years it has prove to be a high reliable system
- due to the high ionic purity it shows least corrosion properties
- positive tested according to UL 94 HB

Application

- supplied ready-to-use
- setting of the fillers possible
- product should be stored at approx. +5 °C and homogenized by tumble before use
- an integrated stirring element can be employed when used from pressure tanks
- note our further informations at the brochure "adhesives for smart card applications"

Technical data

colour cured in approx. 0.1 mm thickness of layer	transparent
colour cured in approx. 0.5 mm thickness of layer	light grey translucent
colour cured in approx. 2 mm thickness of layer	light grey translucent
filler content [weight %]	43

DELO Industrial Adhesives
Ohmstrasse 3 · D-86899 Landsberg
Phone +49 8191 3204-0
Fax +49 8191 3204-144
E-Mail info@DELO.de · www.DELO.de

filler particle size [µm]	≤ 32
density [g/cm³] standard DELO 13 at room temperature (approx. 23 °C)	1.4
viscosity [mPas] at 23 °C, brookfield sp/rpm 4/5	4800
curing time until initial strength [s] UVA-intensity: 55 - 60 mW/cm², DELOLUXcontrol	60
curing time until final strength [h] at room temperature (approx. 23 °C) after illumination	24
compression/shear strength glass/glass [MPa] standard DELO 5 UVA-intensity: 55 - 60 mW/cm², DELOLUXcontrol, illumination time: 60 s curing time: 24 h at room temperature (approx. 23 °C)	35
compression/shear strength glass/Al [MPa] standard DELO 5 UVA-intensity: 55 - 60 mW/cm², DELOLUXcontrol, illumination time: 60 s curing time: 24 h at room temperature (approx. 23 °C)	10
compression/shear strength glass/FR4 [MPa] standard DELO 5 UVA-intensity: 55 - 60 mW/cm², DELOLUXcontrol, illumination time: 60 s curing time: 24 h at room temperature (approx. 23 °C)	35
tensile strength [MPa] DIN EN ISO 527	30
elongation at tear [%] DIN EN ISO 527	6
Young modulus [MPa] DIN EN ISO 527	1700
shore hardness D DIN EN ISO 868	79
glass transition temperature [°C] rheometer	62
coefficient of elongation [ppm/K] TMA, in a temperature range of +30 to +150 °C	150
water absorption [weight %] DIN EN ISO 62, 24 h at room temperature (approx. 23 °C)	0.19
shrinkage [vol. %] standard DELO 13	3
chemical stability	good
recommended long-time temperature range of use [°C]	-40 to +150
short-time temperature of use [°C]	+250
ion content Na+ [ppm] extraction	< 10
ion content K+ [ppm] extraction	< 10
ion content Cl- [ppm] extraction	< 10

ion content F- [ppm] extraction	< 100
specific volume resistance [Ωcm] VDE 0303, part 3	> 1xE13
surface resistance [Ω] VDE 0303, part 3	> 1xE13
dielectric constant RF-IV method, 1 MHz, at 25 °C +/- 3 °C	3.3
dielectric constant RF-IV method, 10 MHz, at 25 °C +/- 3 °C	3.3
dielectric constant RF-IV method, 100 MHz, at 25 °C +/- 3 °C	3.2
dielectric constant RF-IV method, 1 GHz, at 25 °C +/- 3 °C	3
creep resistance CTI VDE 0303, part 1, IEC 112	> 600 M
storage life at approx. +5 °C in unopened original container	6 months

Recommendations

General

The data and information provided are based on tests performed under laboratory conditions. Reliable information about the behaviour of the product under practical conditions and its suitability for a specific purpose cannot be concluded from this.
It is the user's responsibility to test the suitability of the product for the intended purpose by considering all specific requirements. Type and physical and chemical properties of the materials to be processed with the product, as well as all actual influences occurring during transport, storage, processing and use, may cause deviations in the behaviour of the product compared to its behaviour under laboratory conditions. All data provided are typical average values or uniquely determined parameters measured under laboratory conditions.
The data and information provided are therefore no guarantee for specific product properties or the suitability of the product for a specific purpose.

Instruction for use

The instruction for use is available under following address: www.DELO.de. If requested we will also be pleased to send it to you.

Industrial health and safety standards

see material safety data sheet

Specification

see quality assurance certificate