



SurABond[®]

ADHESIVE

SK 231-1

Excellent for the climate- and moisture-stable as well as autoclavable bonding of optical fibers, optical components, sensors and microelectronic circuits

Product Information

Adhesive SurABond® SK 231-1



The SurABond® SK 231-1 adhesive is RoHS-compliant in accordance to the European directive 2011/65/EC. All ingredients are pre-registered according to REACH Regulation (EC) No. 1907/2006.

1. Introduction

This product information seeks to ensure the proper use of the **SurABond® SK 231-1** adhesive and prevent eventual mistakes, which can lead to quality insufficiencies or adverse effects.

The properties of the SurABond® SK 231-1 adhesive corresponds to the properties of the predecessor adhesive SurABond® SK 231. The substitution of the hardening agent from a toxic to a non-toxic compound leads to a safer application.

SurABond® SK 231-1 is a heat-curing, very low-viscous two-component construction adhesive based on epoxy resins with very low water absorption suitable for metals, glass, plastics and ceramics.

SurABond® SK 231-1 is additionally hydrophobized.

SurABond® SK 231-1 adhesive is well-suited for climate- and moisture-stable, especially autoclavable bondings on optical fibers, optical components, sensors as well as microelectronic circuits.

Distinguished properties

- **climate-stable** ✓
- **moisture-stable** ✓
- **tough** ✓



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Product Information

2. Performance Tests

Tensile shear strength test based on DIN 53283 standard – adhesive surface 20 mm²

The adhesion of SurABond® SK 231-1 was tested by the determination of the tensile shear strength based on DIN 53283 standard. The jointing materials used were sandblasted stainless steel with a surface of 20 mm². The surface was pretreated with the SurASil® process and an appropriate adhesion promoter. The tensile shear strength of the bonded materials was measured without strain as well as after 2 hours boil-test.

The results (Figure 1) show a very high tensile shear strength of 55 N/mm² for stainless steel. The strain test (2 hours in boiling water) revealed a minor influence of the adhesion of SurABond® SK 231-1 and the tensile shear strength decrease slightly by max. 35%.

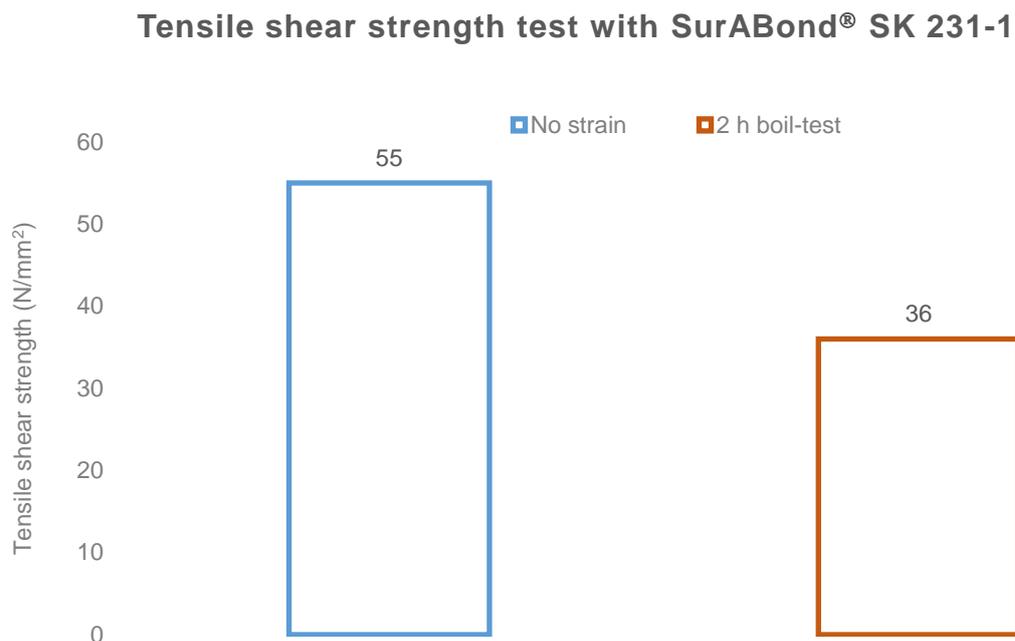


Figure 1: Tensile shear strength test using the SurABond® SK 231-1 adhesive on glass/stainless steel (adhesive surface 20 mm²).

Product Information

3. Surface Pretreatment

The surface to be adhering should be dry as well as free of dust and other impurities. We recommend acetone, ethyl acetate, chlorinated hydrocarbons or other cleaners established for optical components for the surface cleaning.

4. Processing

SurABond® SK 231-1 is usable at room temperature after mixing its two components and a pre-reaction time of about 1 to 2 hours (under occasional stirring). The two components have to be well stirred in the ratio of 1:0.3. The following mixture is recommended as minimum amount:

1.000 g resin
0.300 g hardening agent

SurABond® SK 231-1 can be applied by brushing as well as with the help of the capillary effect, e.g., in the case of bondings of glass fibers or lenses.

5. Curing Conditions

SurABond® SK 231-1 has to be cured at room temperature for 8 hours and a subsequent curing at 50 °C for 8 hours or, alternatively, 4 hours at 80 °C with a subsequent curing at 90 °C for 2 hours.

6. Additional Information

The adhesion of SurABond® SK 231-1 on the appropriate substrates can be significantly enhanced by the application of adhesion-promoting surface silication (**SurASil® process**) and the **SurAChem® GE 141** adhesion promoter.

1. Surface silication: The activation of the surface is very advantageous to influence the adhesion of glues, coatings and printing media. The SurASil® process (Figure 2) offers a significant enhancement of the adhesion by the deposition of a reactive silicate layer. The very thin silicate layer arises by the combustion of a silane additive in a combustion-gas atmosphere. The SurASil® process is suitable for metals, glass, ceramics, plastics or composites.

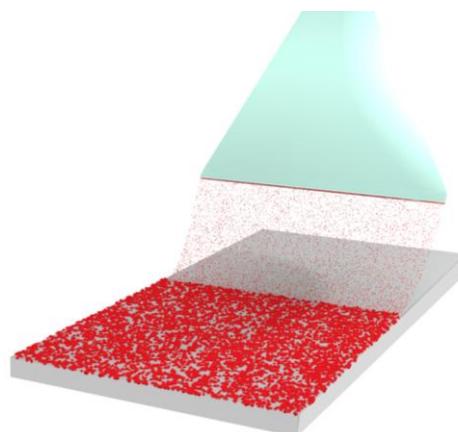


Figure 2: Schematic representation of the SurASil® process.

Product Information

2. Adhesion promoters: The SurAChem[®] adhesion promoters (Figure 3) are liquid silane-based adhesion enhancing systems, developed especially to apply with the SurABond[®] adhesives and SurACer[®] coatings but also with other utilizing products. The SurAChem[®] adhesion promoters are appropriate for metals, glass, ceramics and, after appropriate activation, for plastic surfaces.

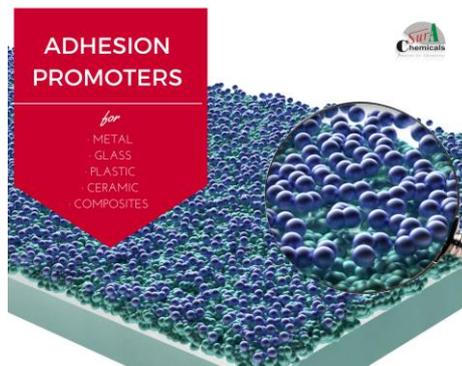


Figure 3: Schematic representation of an adhesion promoter coating.

7. Delivery Form

SurABond[®] SK 231-1 is available in bottles, starting from 25 g.

8. Storage

SurABond[®] SK 231-1 adhesive is in unopened condition and at +5 °C stable for 6 months after delivery.

9. Instructions to Occupational and Health Safety

Irritating to eyes and skin. May cause sensitization by skin contact. If on skin, wash immediately with plenty of water and mild soap.

The conversion of all reactive groups is complete after correct curing of the adhesive. Any type of contact is not harmful in that state.

10. Technical Data

Color	Colorless, transparent
Density DIN EN 542	1.15 g/cm ³
Water absorption DIN 53495	0.1%
Chemical resistance	Excellent to water and water vapor, chemicals and organic solvents

Product Information

For eventual questions or doubts concerning your product, we encourage you to get in touch with SurA Chemicals GmbH.

The information and technical consultation given by SurA Chemicals GmbH, verbally or written, is based on the company's best knowledge and shall only be considered as non-binding advice, also in respect of the protected rights of third parties. The company's technical consultation does not release the customer from own examination concerning the suitability and usability of the company's product. The manufacturer's liability extends solely to the value of the products supplied by SurA Chemicals GmbH and applied by the customer.

SurA Chemicals GmbH guarantees its products to be of perfect quality as stated in its general terms and conditions of sale and delivery.



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