SurABond®

ADHESIVE

SK 310

Excellent for the bonding of microelectronic components, especially those working on higher temperatures and climatic strain

Product Information

Adhesive **SurABond® SK 310**

*The **SurABond® SK 310** 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 310** adhesive and prevent eventual mistakes, which can lead to quality insufficiencies or adverse effects.

SurABond® SK 310 is a heat-curing one-component epoxy-based adhesive suitable for bondings and immobilization of microelectronic components, which work especially at high operating temperatures and high climate strain.

SurABond® SK 310 is a thixotropic adhesion and can be applied dosing cartridges or screen printing at room temperature.

Distinguished properties:

- **high heat deflection temperature** ✓
- **flexibilized** ✓
- **hydrophobized** ✓
- **heat resistant up to 250 °C** ✓
- **short-term thermal load up to 300 °C** ✓

SurA Chemicals GmbH
Am Poesener Weg 2
D 07751 Bucha b. Jena - Germany

Phone:+ 49-36 41-35 29 0
Fax:+ 49-36 41-35 29 29
e-mail:info@surachemicals.de
www.surachemicals.de

2. Performance Tests

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

The adhesion of **SurABond® SK 310** 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 4 hours boil-test.

The results (Figure 1) show a very high tensile shear strength of 44 N/mm² for stainless steel. The strain test (4 hours in boiling water) revealed a minor influence of the adhesion of SurABond® SK 310 and the tensile shear strength decrease slightly by max. 30%.

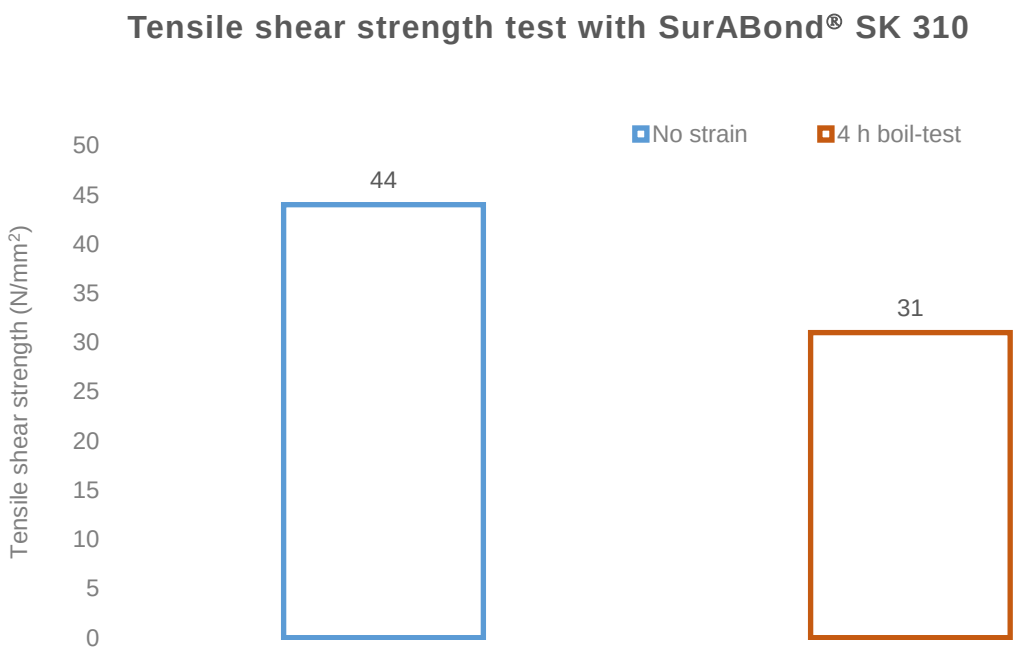

Figure 1: Tensile shear strength test using the SurABond® SK 310 adhesive on stainless steel (adhesive surface 20 mm²).

SurA Chemicals GmbH
Am Poesener Weg 2
D 07751 Bucha b. Jena - Germany

Phone:+ 49-36 41-35 29 0
Fax:+ 49-36 41-35 29 29
e-mail:info@surachemicals.de
www.surachemicals.de

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 or other cleaners established for electronic or optical components for the surface cleaning.

4. Processing

SurABond® SK 310 is immediately usable and can be applied by proper dosing devices or advantageously by screen printing.

5. Curing Conditions

SurABond® SK 310 has to be cured at 200 °C for 60 minutes.

6. Delivery Form

SurABond® SK 310 is available in bottles or cartridges, starting from 25 g. The adhesive can be also provided in a black color as well as in different viscosities.

7. Additional Information

The adhesion of SurABond® SK 310 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.

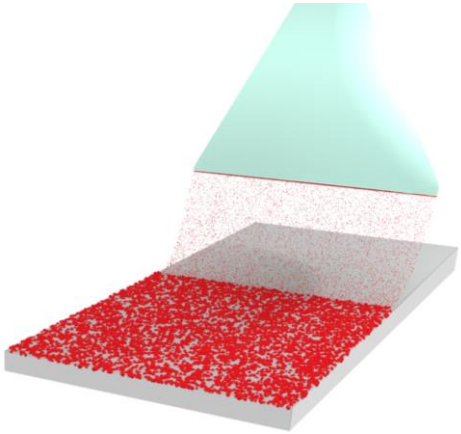

Figure 2: Schematic representation of the SurASil® process.

SurA Chemicals GmbH
Am Poesener Weg 2
D 07751 Bucha b. Jena - Germany

Phone:+ 49-36 41-35 29 0
Fax:+ 49-36 41-35 29 29
e-mail:info@surachemicals.de
www.surachemicals.de

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.

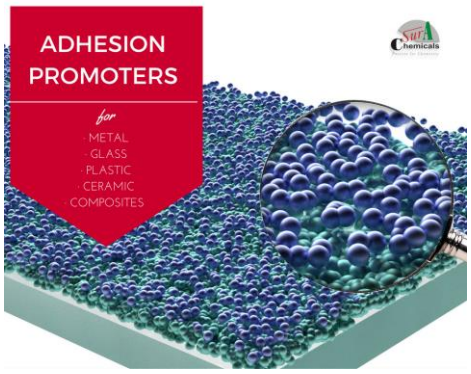

Figure 3: Schematic representation of an adhesion promoter coating.

8. Storage

The SurABond® SK 310 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	White, opaque
Density DIN EN 542	1.56 g/cm^3
Pot life	Not applicable
Curing time	60 min / 200 °C
Operation temperature	-40 to 250 °C
Water absorption	0.2%
Chemical resistance	Excellent to water and water vapor, chemicals and organic solvents

SurA Chemicals GmbH
Am Poesener Weg 2
D 07751 Bucha b. Jena - Germany

Phone:+ 49-36 41-35 29 0
Fax:+ 49-36 41-35 29 29
e-mail:info@surachemicals.de
www.surachemicals.de

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.

SurA Chemicals GmbH
Am Poesener Weg 2
D 07751 Bucha b. Jena - Germany

Phone:+ 49-36 41-35 29 0
Fax:+ 49-36 41-35 29 29
e-mail:info@surachemicals.de
www.surachemicals.de