SurABond®

ADHESIVE

SK 250 S

Excellent for thermo- / mechanically stable as well as climate-, moisture- and chemical-resistant bonding of ceramic components with each other as well as with metals and glass

Product Information

Adhesive **SurABond® SK 250 S**

*The **SurABond® SK 250 S** 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 250 S** adhesive and prevent eventual mistakes, which can lead to quality insufficiencies or adverse effects.

SurABond® SK 250 S is a heat-curing filled one-component structural adhesive based on epoxy resins with low heat deflection and high water- and chemical-resistance suitable for metals, glass and ceramics.

SurABond® SK 250 S is additionally hydrophobized.

SurABond® SK 250 S is well-suited for mechanically and thermomechanical stable as well as climate-, moisture and chemical-stable bondings of ceramic components between themselves as well as with metals and glass.

Distinguished properties:

- **tough**
- **heat deflection temperature of over 250 °C**
- **short-term thermal load up to 300 °C**
- **moisture stable**
- **resistant against organic solvents**
- **resistant against 20% mineral acids (HF, HCl, H_2SO_4)**
- **resistant against 20% bases (NaOH, KOH)**

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2. Performance Tests

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

The adhesion of SurABond® SK 250 S 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 30 N/mm² for stainless steel. The strain test (4 hours in boiling water) revealed a minor influence of the adhesion of SurABond® SK 250 S and the tensile shear strength decrease slightly by max. 35%.

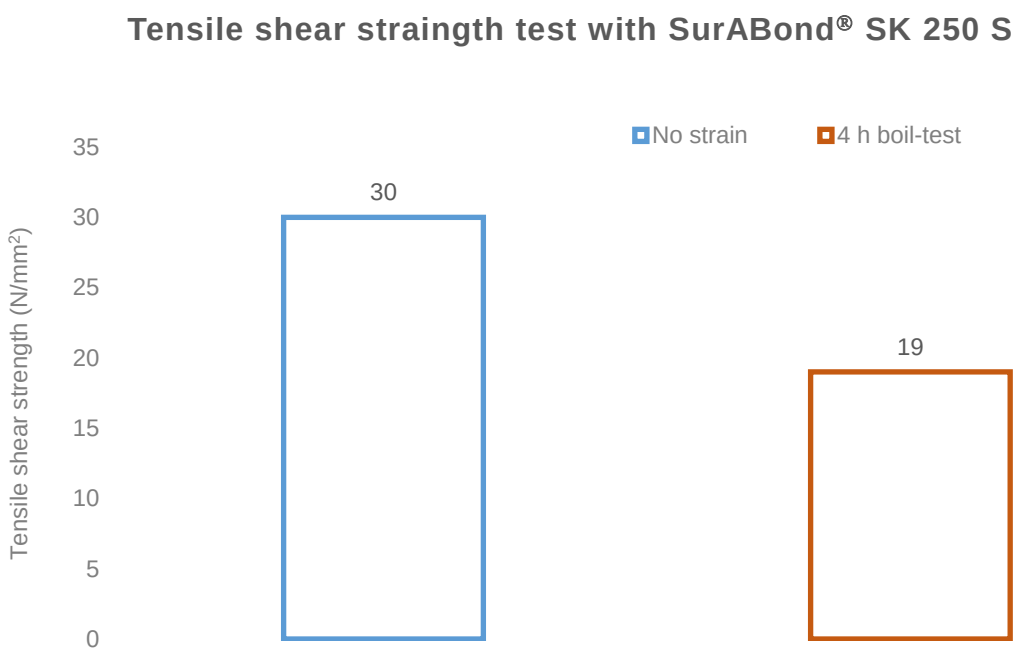

Figure 1: Tensile shear strength test using the SurABond® SK 250 S adhesive on stainless steel (adhesive surface 20 mm²).

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3. Surface Pretreatment

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

4. Processing

SurABond® S 250 S is a one-component adhesive and consequently immediately usable as is.

SurABond® S 250 S can be applied by common application and dispensing techniques.

5. Curing Conditions

SurABond® SK 250 S has to be cured at 180 °C for 1 hour or at 200 °C for 30 minutes.

6. Additional Information

The adhesion of SurABond® SK 250 S 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.

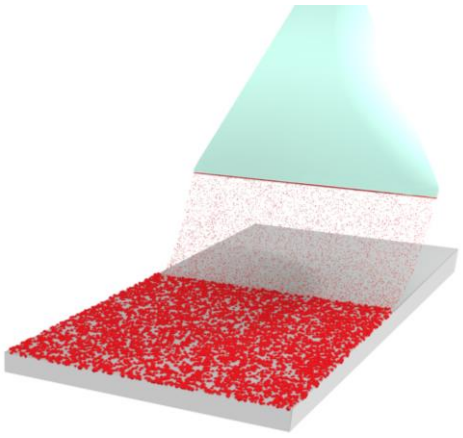

Figure 2: Schematic representation of the SurASil® process.

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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.

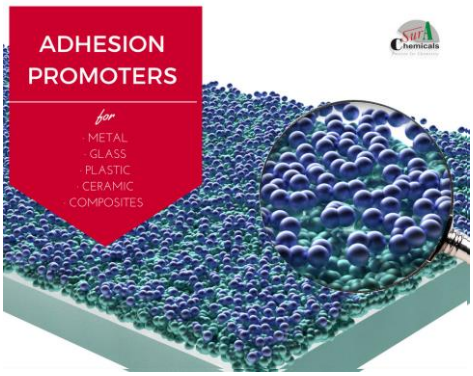

Figure 3: Schematic representation of an adhesion promoter coating.

7. Delivery Form

SurABond® SK 250 S, as one-component system, is available in bottles, starting from 25 g or in dispenser cartridges. The adhesive can be also provided in a black color as well as in different viscosities.

8. Storage

The storage conditions are currently tested. The SurABond® SK 250 S adhesive is in unopened condition and at +5 °C stable for 3 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 grey
Density DIN EN 542	1.25 g/cm^3
Water absorption DIN 53495	0.2%
Chemical resistance	Excellent to water and water vapor, chemicals and organic solvents, 20% mineral acids and 20% bases

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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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