SurABond®

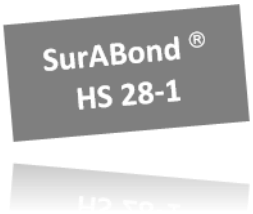
ADHESIVE

HS 28-1

Excellent for corrosive materials and electronic components

Product Information

Adhesive **SurABond® HS 28-1**



The SurABond® HS 28-1 *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® HS 28-1** adhesive and prevent eventual mistakes, which can lead to quality insufficiencies or adverse effects.

The properties of the SurABond® HS 28-1 adhesive corresponds to the properties of the predecessor adhesive SurABond® HS 28. The substitution of the hardening agent from a toxic to a non-toxic compound leads to a safer application.

SurABond® HS 28-1 is a heat-curing, pourable two-component structural adhesive based on epoxy resins with very low water absorption, suitable at low temperatures.

The SurABond® HS 28-1 adhesive is inorganically filled as well as additionally flexibilized and hydrophobized. SurABond® HS 28-1 is suitable for climate- and moisture-stable, especially low-temperature-stable bondings as well as for pouring on electronic components. Based on its hydrophobic properties, the adhesive is well-suited for adhesion or pouring on corrodible materials, *e.g.*, neodymium-iron-boron magnets or YBCO high-temperature superconductors.

Distinguished properties:

- **Stable at low temperatures** ✓
- **Flexible at low temperatures** ✓
- **Moisture stable** ✓
- **Autoclavable** ✓

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2. Performance Tests

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

The adhesion of SurABond® HS 28-1 was tested by the determination of the tensile shear strength based on DIN 53283 standard. The jointing materials used were sandblasted stainless steel and aluminum 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 a temperature treatment between -196 °C and +40 °C for 20 cycles.

The results (Figure 1) show a very high tensile shear strength of 50 N/mm² and 43 N/mm² for stainless steel and aluminum, respectively. The strain test (20 cycles, -196 to +40 °C) revealed a minor influence of the adhesion of SurABond® HS 28 on both materials and the tensile shear strengths decrease slightly by max. 7%.

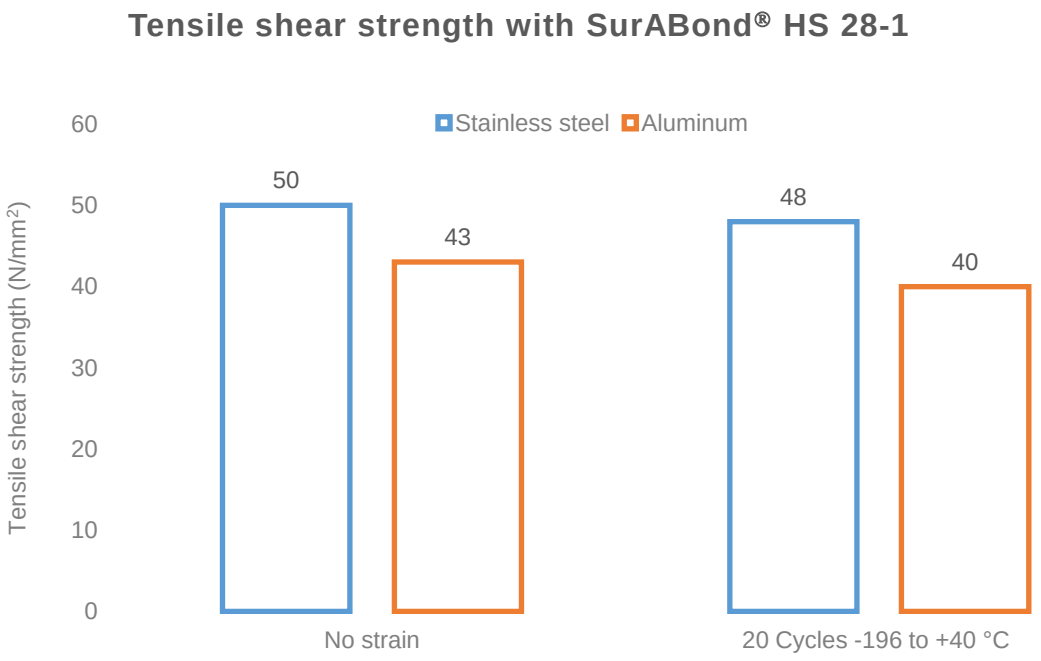

Figure 1: Tensile shear strength test using the SurABond® HS 28 adhesive on stainless steel and aluminum (adhesive surface 20 mm²).

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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 isopropanol, alcohol, acetone or ethyl acetate for the surface cleaning.

4. Processing

SurABond® HS 28-1 is usable at room temperature for about 30 minutes after thorough mixing its two components. The two components have to be well stirred in the ratio of 1:0.115. The following mixture is recommended as minimum amount:

10.00 g resin, 1.15 g hardening agent

SurABond® HS 28-1 can be applied by brushing as well as by appropriate dispensing machines or screen printing.

5. Curing Conditions

SurABond® HS 28-1 has to be cured at 80 °C for 2 hours.

6. Additional Information

The adhesion of SurABond® HS 28-1 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.

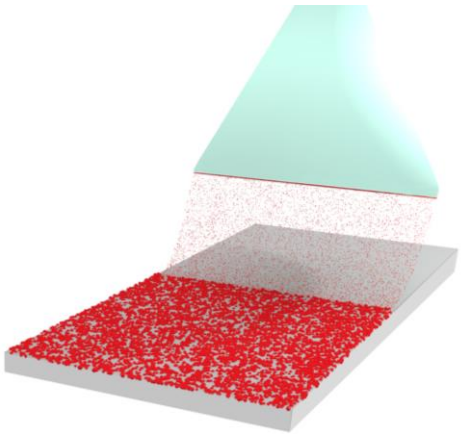

Figure 2: *Schematic representation of the SurASil® process*

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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.

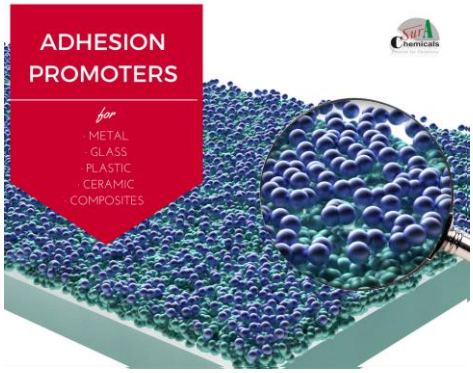

Figure 3: *Schematic representation of an adhesion promoter coating*

7. Delivery Form

SurABond® HS 28-1 is available in dispensing cartridges or in bottles, starting from 25 g. The adhesive can be also provided in a black color as well as in different viscosities.

8. Storage

The SurABond® HS 28-1 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	White
Density DIN EN 542	1.18 g/cm^3
Water absorption DIN 53495	0.1%
Chemical resistance	Excellent to water and water vapor, chemicals and organic solvents

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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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