



SurABond®

ADHESIVE

HH 059

Excellent for the climate-stable, moisture-stable and autoclavable adhesions of optical components made of glass and quartz, as also of these with metals and ceramics

Product Information

Adhesive **SurABond® HH 059**



The SurABond® HH 059 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® HH 059** adhesive and prevent eventual mistakes, which can lead to quality insufficiencies or adverse effects.

SurABond® HH 059 is a UV-curing one-component construction adhesive based on acrylate resins with very low water absorption suitable for glass, metals and ceramics.

SurABond® HH 059 is additionally flexibilized and hydrophobized.

SurABond® HH 059 adhesive is well-suited for climate- and moisture-stable, especially autoclavable bondings of optical components of glass and quartz between themselves as well as with metals and ceramics.

Distinguished properties:

- **climate-stable**
- **moisture-stable**
- **crystal clear**



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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® HH 059 was tested by the determination of the tensile shear strength based on DIN 53283 standard. The jointing materials used were glass/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 26 N/mm² for glass/stainless steel. The strain test (4 hours in boiling water) revealed a minor influence of the adhesion of SurABond® HH 059 and the tensile shear strength decrease slightly by max. 50%.

Tensile shear strength test with SurABond® HH 059

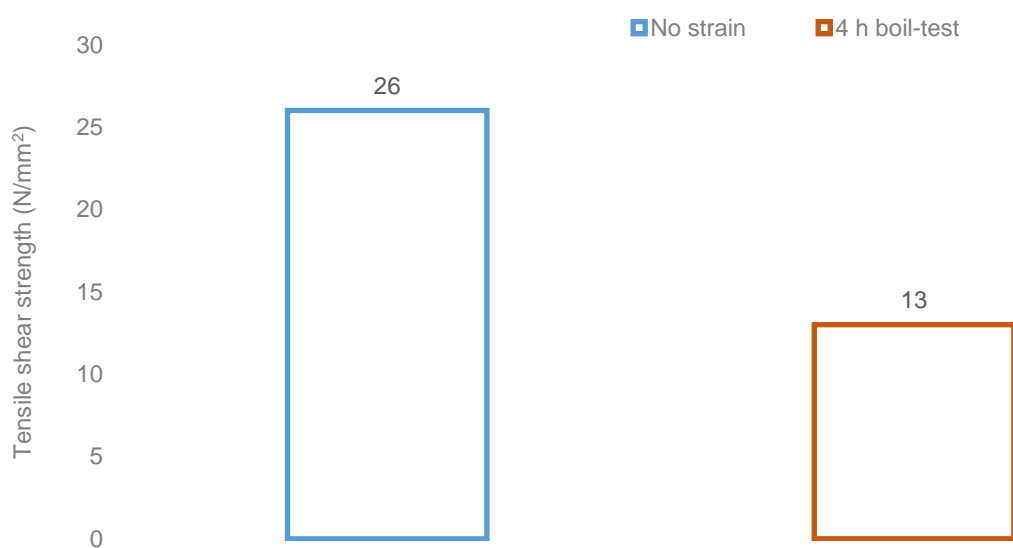


Figure 1: Tensile shear strength test using the SurABond® HH 059 adhesive on glass/stainless steel (adhesive surface 20 mm²).

Product Information

3. Surface Pretreatment

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

4. Processing

SurABond® HH 059 can be applied by manual or automatically dispenser machines as well as by other common techniques.

5. Curing Conditions

SurABond® HH 059 has to be cured by UV-irradiation for 10 to 50 seconds.

6. Additional Information

The adhesion of SurABond® HH 059 on the appropriate substrates can be significantly enhanced by the application of adhesion-promoting surface silication (**SurASil® process**) and the **SurAChem® GM 138** 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.

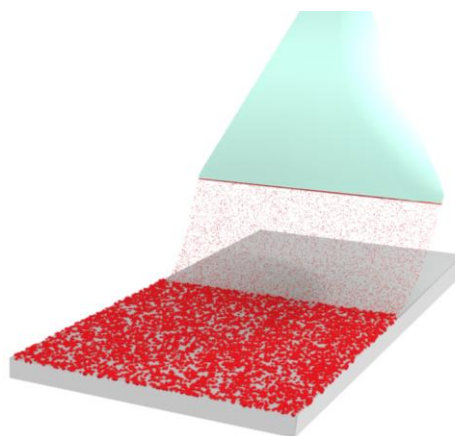


Figure 2: Schematic representation of the SurASil® process.

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.

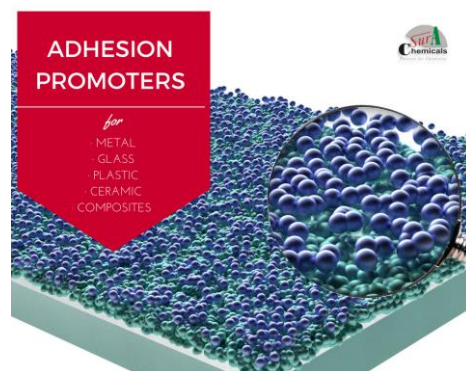


Figure 3: Schematic representation of an adhesion promoter coating.

7. Delivery Form

SurABond® HH 059 is available in bottles, starting from 25 g.

8. Storage

The SurABond® HH 059 adhesive is in unopened condition and at +5 °C stable for 12 months and at room temperature for 6 month 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	1.19 g/cm ³
Refractive index (cured)	1.46
Viscosity	50 mPas
Water absorption DIN 53495	0.2%
Max. continues operating temperature	150 °C
Short-time operation temperature	180 °C
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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