The 2-component silicone adhesive for industrial purposes

Novasil®
S 49

Technical Datasheet

Characteristics:

- Neutral, condensation-curing 2-component silicone adhesive and sealant based on alkoxy
- Excellent weathering, ageing and UV-resistance
- Excellent primerless adhesion on numerous substrates - even when exposed to water
- Reduced cycle times - due to the fast curing bonded parts can be further processed extremely soon
- Very good temperature resistance
- High adhesion strength
- Non-corrosive
- Low odour

Fields of application:

Renewable energies:

- Glass frame bonding of hot water collectors
- Elastic bonding of frames to PV-modules
- Adhesion and sealing of junction boxes

Domestic appliances industry :

- Bonding of door pillars, brackets and mouldings

Lighting and electronics industry:

- Elastic bonding and sealing of lamp casings
- Elastic bonding and sealing of electrical and electronic components

General Industry:

- Elastic bonding and sealing for industrial purposes with a permanent temperature of up to + 180 °C

Standards and tests:

- UL 94 Flame Classification HB, RTI 105 °C, File No. E 176319

Important information:

Before applying this product the user has to ensure that the materials in the area of contact (solid, liquid and gaseous) are compatible with it and also amongst each other and do not damage or alter (e. g. discolour) each other. As for the materials that will be used at a later stage in the surrounding area of the product the user has to clarify beforehand that the substances of content or evaporations do not lead to an impairment or alteration (e. g. discolouration) of the product. In case of doubt the user should consult the respective manufacturer of the material.
Paints, lacquers, plastics and any other coatings must be compatible to the adhesive/sealant.
Constructional details of the adhesion must be agreed upon by our technical department.
During curing small amounts of alcohol are released.

Technical properties:

Single components:
Component A

Colour	white
Viscosity at 23 °C	pasty
Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,30 - 1,35
Shelf life at 23 °C/50 % RH [months]	8

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OTTOCURE S-CA 2030

Colour	black
Viscosity at 23 °C	pasty
Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,20 - 1,25
Mixing ratio according to weight (base A : curing agent B)	10,6 : 1
Mixing ratio according to volume (base A : curing agent B)	10 : 1
Shelf life at 23 °C/50 % RH [months]	9

OTTOCURE S-CA 2010

Colour	RAL 7035 / RAL 7046
Viscosity at 23 °C	pasty
Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,20 - 1,25
Mixing ratio according to weight (base A : curing agent B)	10,6 : 1
Mixing ratio according to volume (base A : curing agent B)	10 : 1
Shelf life at 23 °C/50 % RH [months]	8

OTTOCURE S-CA 2160

Colour	black
Viscosity at 23 °C	pasty
Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,24
Mixing ratio according to weight (base A : curing agent B)	10,6 : 1
Mixing ratio according to volume (base A : curing agent B)	10 : 1
Shelf life at 23 °C/50 % RH [months]	6

OTTOCURE S-CA 2105

Colour	black
Viscosity at 23 °C	pasty, stable
Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,15 - 1,19
Mixing ratio according to weight (base A : curing agent B)	11,0 : 1
Mixing ratio according to volume (base A : curing agent B)	10 : 1
Shelf life at 23 °C/50 % RH [months]	6

Colour	RAL 7035
Viscosity at 23 °C	pasty, stable
Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,21 - 1,25
Mixing ratio according to weight (base A : curing agent B)	10,6 : 1
Mixing ratio according to volume (base A : curing agent B)	10 : 1
Shelf life at 23 °C/50 % RH [months]	6

OTTOCURE S-CA 2340

Colour	black
Viscosity at 23 °C	pasty
Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,20 - 1,25
Mixing ratio according to weight (base A : curing agent B)	10,6 : 1
Mixing ratio according to volume (base A : curing agent B)	10 : 1
Shelf life at 23 °C/50 % RH [months]	9

Unvulcanised compound:
with OTTOCURE S-CA 2030

Colour	black
Viscosity at 23 °C	pasty, stable
Processing temperature from/to [°C]	+ 5 / + 40
Shore-A-hardness after 4 hours	~ 23 - 33
Shore-A-hardness after 24 hours	~ 35 - 44
Pot life at 23 °C/50 % RH [minutes]	~ 10 - 30

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Shrinkage of volume according to ISO 10563 [%]	~ 4

with OTTOCURE S-CA 2010

Colour	depending on colour of component B
Viscosity at 23 °C	pasty, stable
Processing temperature from/to [°C]	+ 5 / + 40
Shore-A-hardness after 4 hours	~ 19 - 34
Shore-A-hardness after 24 hours	~ 35 - 42
Pot life at 23 °C/50 % RH [minutes]	~ 17 - 34
Shrinkage of volume according to ISO 10563 [%]	~ 4

with OTTOCURE S-CA 2160

Colour	black
Viscosity at 23 °C	pasty, stable
Processing temperature from/to [°C]	+ 10 / + 25 (1)
Shore-A-hardness after 45 minutes	~ 18 - 42
Shore-A-hardness after 24 hours	~ 40 - 50
Shore-A-hardness after 3 days	~ 45 - 50
Pot life at 23 °C/50 % RH [minutes]	~ 3 - 7
Adhesion strength/handling [minutes]	~ 15 - 30 (2)
Shrinkage of volume according to ISO 10563 [%]	~ 4

1) temporarily up to + 30 °C
2) The build-up of the adhesion and the realisation of sufficient strength for the further handling of the bonded components depend on the material, the adhesion geometry and the surface to be bonded. Generally speaking sufficient strength for the further handling of the bonded components is reached after the advised curing time at room temperature. Full load-bearing capacity of the adhesion is only reached after 24 hours of curing. A shorter curing time can be achieved by raising the temperature to +60 °C.

with OTTOCURE S-CA 2105

Colour	depending on colour of component B
Viscosity at 23 °C	pasty, stable
Processing temperature from/to [°C]	+ 10 / + 25 (1)
Shore-A-hardness after 2 hours	~ 17 - 28
Shore-A-hardness after 4 hours	~ 25 - 35
Shore-A-hardness after 24 hours	~ 35 - 42
Shore-A-hardness after 3 days	~ 43 - 47
Pot life at 23 °C/50 % RH [minutes]	~ 10 - 20
Shrinkage of volume according to ISO 10563 [%]	~ 4

1) temporarily up to + 30 °C

with OTTOCURE S-CA 2340

Colour	black
Viscosity at 23 °C	pasty, stable
Processing temperature from/to [°C]	+ 5 / + 40
Shore-A-hardness after 2 hours	~ 15 - 25
Shore-A-hardness after 24 hours	~ 38 - 45
Pot life at 23 °C/50 % RH [minutes]	~ 7 - 15
Shrinkage of volume according to ISO 10563 [%]	~ 4

Vulcanisate:

Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,30
Shore-A-hardness according to ISO 868	~ 42 - 47
Temperature resistance from/to [°C]	- 40 / + 180
Tensile strength according to ISO 8339 [N/mm²]	~ 0,5 - 1,5
Tensile strength according to ISO 37, S3A [N/mm²]	~ 2 - 3
Tensile expansion according to ISO 8339 [%]	~ 50 - 100

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Tensile expansion according to ISO 37, S3A [%]	~ 200 - 500
Stress expansion modulus at 100 % according to ISO 37, S3A [N/mm²]	~ 1,0
Dielectric strength ED according to DIN EN 60243 [kV/mm]	≥ 15
Volume resistance p according to DIN IEC 93 [Ω*cm]	10 ^ 14

These data are not suitable for the issue of specifications. Please contact OTTO-CHEMIE before issuing specifications.

Pretreatment:

All adherent surfaces must be clean and any contaminant such as release agents, preserving agents, grease, oil, dust, water, old adhesives or sealants and other substances which could affect adhesion, should be removed.
The adherent surfaces have to be clean, free from fat, dry and sustainable.
The demands on elastic sealings and bondings depend on the respective exterior influences. Extreme fluctuations in temperature, tensile or shear forces, repeated contact with water etc. demand high requirements of a bonding. In such cases it is advisable to apply primer in order to achieve a resilient bonding. Please consult our technical department.

Application information:

Processing of 2-component adhesives and sealants out of side-by-side cartridges:
First of all remove the lids of both component's chambers. Place cartridge into the pistol. Squeeze out material, until material comes out of both chambers. Wipe off material and attach the static mixing nozzle with help of the union nut. Check homogenity of the mixture.
Maximum tolerance of mixing ratio: The mixing ratios may vary by a maximum of +/- 10 % in order to have an impact on the curing time.
Avoid entrapment of air during mixing. Therefore we recommend to use a mixing equipment.
To guarantee a constant supply of material of the feeding pumps of mixing - and dosing installations and to prevent material being pressed alongside the packaging of the following plate which leads to soiling the following plate, the pressure for this plate has to be set to:
Component A: 2-3 bar
Component B: < 1,5 bar
If the sealings of the mixing and dosing equipment are in direct contact with the sealant/adhesive we recommend to use EPDM-sealings (free from plasticizers). If it is the intention to use another sealing material please contact our technical department.
Component A does not react with air humidity and is stable under normal conditions (23 °C, 50 % RH).
Component B is sensitive to moisture and therefore must be protected from moisture.
The maximum ambient temperature of 60 °C must not be exceeded while curing.
In order to achieve optimal adhesion and good mechanical characteristics, the entrapment of air in the joint must be avoided.
Processing/smoothing: The adhesive/sealant has to be smoothened within pot life in order to ensure close contact with joint edges/substrates. OTTO Smoothing Agent shall not be used.
Due to the many possible influences during and after application, the customer always has to carry out trials first.
Please observe the recommended shelf life which is printed on the packaging.
We recommend to store our products in unopened original packagings dry (< 60 % RH) at temperatures of +15 °C up to +25 °C. If the products are stored and / or transported at higher temperatures / air humidity for longer periods (some weeks), a diminuition of durability or a change of material characteristics may arise.
To make sure the mixing is correct the user has to carry out accompanying quality checks during application. The according necessary tests have to be gathered from the document “Accompanying Quality Checks for the processing of 2-component Silicones”, which is available from our technical department.

Packaging:

	490 ml side-by-side plastic cartridge
with OTTOCURE S-CA 2010	on request
with OTTOCURE S-CA 2030	S49-43-2030-C04
with OTTOCURE S-CA 2105	on request
with OTTOCURE S-CA 2160	on request
with OTTOCURE S-CA 2340	on request
Packaging unit	**9/Box incl. 9 static mixing nozzles**
Pieces per pallet	**540**

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*OTTO Static mixing nozzle MFQX 10-24T
Further delivery forms available on request

Safety precautions: Please observe the material safety data sheet.

Disposal: Information about disposal: Please refer to the material safety data sheet.

Warranty information: All information in this publication is based on our current technical knowledge and experience. However, since conditions and methods of use and application of our products are beyond our control, we suggest that you test the product before final use. Information given in this technical data sheet and explanations of OTTO-CHEMIE in connection with this technical data sheet (e.g. service description, reference to DIN regulations etc.) is not to be seen as a warranty. Warranties require a separate written declaration of OTTO-CHEMIE to prove their validity. The characteristics stated in this data sheet define the characteristics of the article broadly and concludingly. Suggestions of use are not to be taken as confirmation of the appropriateness for the recommended intended use. We reserve the right to alter the product, adjusting it according to technical progress and new developments. We are at your disposal both for inquiries as well as specific application problems. If a governmental approval or clearance is necessary for the application of our products, the user is responsible for the obtainment of such. Our recommendations do not excuse the user from the obligation to take into consideration the possibility of infringement of third parties' rights and - if necessary - resolving it. For the rest our general terms and conditions apply, in particular regarding a possible liability for defects. You can find our general terms and conditions on our homepage: http://www.otto-chemie.de/en/terms-and-conditions

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