Technical datasheet

Novasil® AS 431

The 2-component conveyor belt coating silicone

AS 431

Characteristics

- RTV-2 silicone, addition curing
- Very quick curing at higher temperatures
- Free-flowing
- Very high mechanical strength
- Excellent abrasion and notch strength

Fields of application

- Coating of cloth and fabrics
- Coating of conveyor belts

Standards and tests

- The product was successfully tested according to the requirements of volatility and extraction test of Bundesamtes für Risikobewertung (BfR), chapter XV (silicones) and the US Food and Drug Administration (FDA), 21 CFR 177.2600.Mandatory precondition for an application according to these regulations is a suitable pretreatment of the vulcanizate in order to remove extractable and volatile residues.

Technical properties

Single components:
Novasil® AS 431(SiH crosslinker)

Comment	contains an SiH crosslinker
Colour	transparent
Viscosity (rheometer CP25, 0.5 1/s) [mPas]	~ 100000
Viscosity (rheometer CP25, 50 1/s) [mPas]	~ 48000
Density at + 23 °C [g/cm³]	~ 1,1
Shelf life at 23 °C/50 % RH [months]	6 [1] [2]

1) from production

2) The single components may thicken slightly on prolonged storage. This is due to a polymer/filler interaction which can be reversed at any time by shearing. Therefore, the viscosity will automatically decrease when the silicone is processed by conveying and mixing. Stirring the compound before use also helps to restore the original viscosity level. As a result, such RTV-2 silicone formulations can be processed in the normal way within the specified shelf life.

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SEALING & BONDING

Ottocure AS-CA 5050 (platinum catalyst)

Comment	contains a platinum catalyst
Colour	transparent
Viscosity (rheometer CP25, 0.5 1/s) [mPas]	~ 135000
Viscosity (rheometer CP25, 50 1/s) [mPas]	~ 78000
Density at + 23 °C [g/cm³]	~ 1,1
Shelf life at 23 °C/50 % RH [months]	6 [1] [2]

1) from production

2) The single components may thicken slightly on prolonged storage. This is due to a polymer/filler interaction which can be reversed at any time by shearing. Therefore, the viscosity will automatically decrease when the silicone is processed by conveying and mixing. Stirring the compound before use also helps to restore the original viscosity level. As a result, such RTV-2 silicone formulations can be processed in the normal way within the specified shelf life.

Mixed components
Novasil® AS 431 + Ottocure AS-CA 5050

Colour	transparent
Mixing ratio according to weight (Novasil® : Ottocure)	1 : 1
Mixing ratio according to volume (Novasil® : Ottocure)	1 : 1
Viscosity mixture (rheometer CP25, 0.5 1/s) [mPas]	~ 135000
Viscosity mixture (rheometer CP25, 50 1/s) [mPas]	~ 65000

Vulcanisate:

Tensile strength based on DIN 53504, S2, 200 mm/min [N/mm²]	~ 4,1 [1]
Tensile expansion based on DIN 53504, S2, 200 mm/min [%]	~ 260 [1]
Stress expansion modulus at 100 % based on DIN 53504, S2, 200 mm/min [N/mm²]	~ 1,4 [1]
Tear strength [N/mm]	~ 32 [1]

1) Measured after 24 h at 100 °C

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

Reactivity

Temperature [°C]	+ 23	+ 100	+ 150	+ 180
Processing time [hours] [1]	15	-	-	-
Pot life [hour]	~ 24	-	-	-
Pot life [minutes]	-	~ 8	~ 2	~ 2
Shore-A hardness after 10 minutes	0	0	~ 38	~ 45
Shore-A hardness after 20 minutes	0	~ 22	~ 43	~ 47
Shore-A-hardness after 30 minutes	0	~ 38	~ 44	~ 48

1) Time to double viscosity at shear rate = 0.5 1/s

* The values are subject to a natural fluctuation range of ± 10% due to the method used.

Pretreatment

The adherent surfaces have to be clean, free from fat, dry and sustainable.

Important information

Compatibility with other materials:
Prior to use, the user must ensure that materials that come into contact with the product are compatible with it and will not damage or change it (e.g. discolouration). This includes gaseous substances that can be released by materials in the immediate vicinity (e.g. sulphurous compounds, amines, etc.) For example, processing condensation-curing products in the direct vicinity may disrupt the product curing.
The platinum catalyst can be inhibited in the event of contact with organometallic compounds (especially organic tin compounds), as well as with amine, sulphur and phosphorous compounds. The user may need to contact the respective material manufacturer. It is recommended to check the compatibility in the application and in the planned production environment in advance.
Keep the product away from moisture.
Usual temperature range:
Addition curing silicones are typically usable over a temperature range of -45 to +200 °C for long periods of time. The interaction of factors such as the frequency of temperature changes, the heating rate, the air intake, etc. causes a complex time- and temperature-dependent thermal behaviour. Therefore, the behaviour at both the lower and upper end of the temperature spectrum should be tested close to the application in order to check the individual suitability in the application.
Batch binding:
Both components are delivered in coordination with each other. The listed technical details can only be guaranteed if the corresponding components are processed together. The batch numbers of each corresponding batch can be found on the container labels.
Mixing:
Even the smallest amounts of the catalyst can lead to curing in the crosslinker component. That is why work must be done with the utmost level of cleanliness to avoid a cross-contamination of the components. Tools for processing the catalyst (spatula, cup, etc.) must not come into contact with the crosslinker.
Curing of coating:
The curing times of addition curing silicones are very dependent on the temperature and the layer thickness. Increased temperatures lead to an exponential increase in the curing speed.

Application information

Due to the many possible influences during and after application, the customer always has to carry out trials first.
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.

Packaging

Packagings and colours 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

The above information and our technical application advice, whether verbal, in writing or by means of tests, are provided to the best of our knowledge, but are non-binding, including with regard to any third-party property rights. The information in this publication does not exempt the processor from carrying out their own tests on our products with regard to their suitability for the intended processes and purposes. The application, use and processing of our products and the products manufactured on the basis of our technical application advice are beyond our control and are therefore the sole responsibility of the processor. If the application for which our products are used is subject to an official authorisation requirement, the user is responsible for obtaining these authorisations. We reserve the right to adapt the product to technical progress and new developments. For the rest, we refer to our General Terms and Conditions, in particular with regard to any liability for defects. You can find our GTC at www.otto-chemie.de.