Technical datasheet

Novasil® AS 830

The premium RTV-2 silicone gel for potting sensitive electronic components

AS 830

Characteristics

- Gel for electronic applications
- RTV-2 silicone, addition curing
- Extremely low viscosity for flowing around the finest components
- Excellent self-adhesion
- Self-degassing
- Quick gelatinisation at a moderate temperature
- Crystal clear
- Protects sensitive components from thermo-mechanically-induced stresses
- Particularly low volatile content ("low volatiles")

Fields of application

- Potting of components in sensor technology and electrical engineering

Standards and tests

- According to the requirements of UL 94 HB

Technical properties

Single components:
Novasil® AS 830 (SiH crosslinker)

Comment	contains an SiH crosslinker
Colour	crystal clear
Density at + 23 °C [g/cm³]	0,98
Viscosity (rheometer CP25, 0.5 1/s) [mPas]	250
Viscosity mixture (rheometer CP25, 50 1/s) [mPas]	250
Shelf life at 23 °C/50 % RH [months]	24 [1]

1) from production

Ottocure AS-CA 5180 (platinum catalyst)

Comment	contains a platinum catalyst
Colour	crystal clear
Density at + 23 °C [g/cm³]	0,98
Viscosity (rheometer CP25, 0.5 1/s) [mPas]	450
Viscosity (rheometer CP25, 50 1/s) [mPas]	450
Shelf life at 23 °C/50 % RH [months]	24 [1]

1) from production

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SEALING & BONDING

Mixed components
Novasil® AS 830 + Ottocure AS-CA 5180

Colour	crystal clear
Density at + 23 °C [g/cm³]	0,98
Viscosity mixture (rheometer CP25, 0.5 1/s) [mPas]	350
Viscosity mixture (rheometer CP25, 50 1/s) [mPas]	350
Mixing ratio according to volume (Novasil® : Ottocure)	1 : 1
Mixing ratio according to weight (Novasil® : Ottocure)	1 : 1

Vulcanisate:

Relative temperature index RTI [°C]	+150
Maximum service temperature [°C]	+165 [1]
Minimum service temperature [°C]	-45
Glass transition range Tg (TMA measurement) [°C]	~ -40 to -50
Thermal conductivity [W/mK]	~ 0,2
Coefficient of linear thermal expansion - CTE (TMA measurement at +25°C) [ppm/K]	462
Penetration (after 7 d at 23 °C, quarter cone, 16.1 g) [1/10 mm]	73
Transmission (layer thickness 1 mm) 400-700 nm [%]	> 95
Refractive index [nD25] at +25°C	~ 1,41
Dielectric strength according to IEC 60243-1:2013; 23 °C [kV/mm]	~ 21
Volume resistance ρ according to IEC 62631-3-1:2016 [Ω*cm]	3,5 *10^14

1) tested after 2000 h

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

Reactivity

Temperature [°C]	+ 23	+ 60	+ 100
Processing time [minutes] [1]	22	-	-
Pot life [hour]	1,5	-	-
Pot life [minutes]	-	6	2
Ready for use [h]	4	-	-
Ready for use [min]	-	15	5

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.
To avoid the inclusion of air or bubbles, it is recommended to evacuate the materials prior to working with them or to apply the materials with a vacuum.
Curing:
The curing times of addition curing silicones are very dependent on the temperature and the design of the component to be potted. 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 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.