

NEUKASIL RTV 20

Silicone Rubber
addition-crosslinking

altropol

Main features

- very good flowability
- high resistance to initial tearing and tear propagation
- higher Shore A hardness
- variable pot life

Applications

- mould making
- suitable for polyester, epoxies, wax
- casting of electrical component parts
- production of parts
- prototypes
- compliant with FDA 21 CFR 117.2600 and BfR-Recommendation XV „Silicones“

Properties in the non-crosslinked state (approx. values)

		NEUKASIL RTV 20	NEUKASIL Crosslinker A 1	NEUKASIL Crosslinker A 2	NEUKASIL Crosslinker A 26
Colour		white	colourless/blue	colourless/blue	colourless/blue
Mixing ratio	p.b.w.	100	10	10	10
Density (20 °C)	g/cm ³	1.2	1.0	1.0	1.0
Viscosity	mPa·s	100,000	5,500	400	500

Properties of the mixture (approx. values)

Mixed viscosity	mPa·s		95,000	80,000	80,000
Pot life (RT, 1000 g)	minutes		90	90	120
Curing time (RT)*	hours		24	24	24
Hardness (RT)	Shore A	DIN 53505	55	55	55
Service temperature under air admission, briefly	max °C		240	240	240

Mechanical values of the cured product (approx. values)

Tensile strength	N/mm ²	DIN 53504	6.0	6	6
Elongation at tear	%	DIN 53504	250	300	300
Resistance to tear propagation	N/mm	ASTM D 624 B	8	8	8
Linear dimensional change	%		0.1	0.1	0.1
Resistivity	Ω cm	DIN 53482	10 ¹⁵	10 ¹⁵	10 ¹⁵
Dielectric strength	KV/mm	DIN 53481	22	22	22
Dielectric constant	ε r	DIN 53483	3.0	3.0	3.0
Dissipation factor	tan δ 60 Hz	DIN 53483	0.008	0.008	0.008

*The vulcanization is temperature-dependent and is accelerated considerably by heat supply. RT = room temperature

Important information: The platinum catalyst is in NEUKASIL RTV 20.

How to process the material

See that as little air as possible gets into the compound while stirring. To obtain a bubble-free vulcanized material, we recommend evacuating the crosslinker-containing formulation before continuing the processing. When the vacuum is created, the mixture may increase in volume by 3 - 4 times of its volume under formation of bubbles. This process is finished when the bubbles have collapsed and the formulation has reobtained its original volume. Carefully pour the prepared material over the object to be cast. Take care that no air bubbles are generated on the surfaces of the master pattern. To prevent such a bubble formation, begin at the deepest point and continue the rising casting in a long stream.

Whenever working with addition-crosslinking silicone rubbers, take care that the receptacles used are clean and dry. Furthermore, the surface of the object to be cast should be dry and free from dirt.

Release agents

When NEUKASIL RTV 20 is used as mould making material (production of negatives), there is no release agent required for demoulding. Should there still arise any problems, we recommend our NEUKADUR Release Agent SE or NEUKADUR Release Spray P 6.

For release agents, please visit our homepage under <http://www.altropol.de/en/produkte/weitere-produkte/trennmittel>

For the production of multipart moulds and to avoid an adhesion of NEUKASIL RTV 20 to itself, use the same release agents. Treat the surface of the part already vulcanized with release agent, then cast the second part of the mould.

When processing polyester resins and other casting resins, it is recommended keeping the moulds after use in the air for some hours or heating them up to 50 - 100 °C for 1 to 3 hours. This measure allows the components of casting resin having got into the surface of the mould to escape again, and the stability of the mould and the number of casts are increased considerably. To prolong the life of a silicone mould we recommend treating the same from time to time with silicone spray or silicone oil.

Compatibility with other materials

NEUKASIL RTV 20 is well compatible with all common pattern materials such as wood, plaster, metals and plastic materials and provides perfect casts.

Certain substances inhibit or decelerate the vulcanization of NEUKASIL RTV 20 which can be noticed by tacky surfaces or surfaces containing bubbles. To these substances belong among other things condensation-crosslinking silicones, organic rubbers, plasticizers, amines, heavy-metal compounds and sulphurous substances. High air humidity and water may also lead to disturbances. Under unfavourable circumstances, it may happen that also surfaces having been in contact with the mentioned substances lead to vulcanization faults. The same applies to certain modelling materials. In case of doubt, we recommend carrying out pretrials on a small scale.

Vulcanization

By vulcanization or cross-linking one understands the transition from liquid, castable silicone rubber to the tack-free, elastomeric state. It begins after addition of the crosslinker, and there are no cleavage products whatsoever produced during this process. At 20 - 25 °C, the vulcanization is terminated to a large extent after 24 hours. The vulcanization speed is temperature-dependent and can be accelerated considerably by heat supply.

Consumer Goods

The Federal Institute for Risk Assessment in Berlin (BfR) treats in Recommendation XV "Silicones" dated 2014-10-01 silicone polymers (silicone oils, silicone resins, silicone elastomers).

The NEUKASIL RTV 20 addition system complies in its material composition with paragraph III of Recommendation XV „Silicones“ of the BfR.

NEUKASIL RTV is the designation for 2-component silicone rubber systems of the ALTROPOL KUNSTSTOFF GmbH vulcanizing at room temperature.

Form of delivery

NEUKASIL RTV 20	1 kg*	5 kg	10 kg	25 kg
NEUKASIL Crosslinker A 1	0.1 kg*	0.5 kg	1 kg	2.5 kg
NEUKASIL Crosslinker A 2	0.1 kg*	0.5 kg	1 kg	2.5 kg
NEUKASIL Crosslinker A 26	0.1 kg*	0.5 kg	1 kg	2.5 kg

*=minimum order quantity = 6 kits

Storage

We recommend keeping the material in tightly closed original receptacles at temperatures of 20 - 25 °C. When duly stored, the material can be used within the shelf life indicated on the labels (the first 2 digits of the batch number indicate the week, the 3rd digit indicates the year).

Measure of precaution

With the aid of the current safety data sheets, which contain physical, ecological, toxicological and other data relating to safety, the user can inform himself on the safe handling and storage of the products.

Our technical service - in words, in writing or by trials - is given according to the current state of our knowledge. It does however not relieve the customer/user from the duty to check by himself if the products supplied by us are suitable for the intended processes and purposes. Application, use and processing of the products take place beyond our control possibilities and lie therefore exclusively in the area of responsibility of the processor. Any existing property rights of third parties are to be considered. We guarantee the perfect quality of our products in accordance with our general terms and conditions of business. When handling our products you have to observe the legal rules and the rules for the industrial hygiene. As for the rest, we refer to the corresponding safety data sheets.

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