

ELASTOSIL[®] E6 N CSC



Moisture Curing Silicone Rubber (RTV-1)

ELASTOSIL[®] E6 N CSC is a flowable one-part silicone rubber for potting or coating applications, and it is in particular suitable for surface impregnation of porous natural materials. When exposed to air moisture the product cures at room temperature to yield a permanently flexible silicone rubber with good mechanical and release properties.

Fully vulcanized ELASTOSIL[®] E6 N CSC shows long-term stability against weathering, moisture and UV radiation. The silicone elastomer may continuously be exposed to constantly changing climatic conditions, UV radiation and temperature as high as 180 °C (356 °F) without damage.

Properties

Uncured:

- Flowable
- Fast skin formation at room temperature
- By-product of curing: acetic acid

Cured:

- Medium hardness
- Recommended service temperature range: -50 °C to +180 °C
- No inhibition of Pt curing silicones
- Good resistance to liquid media, in particular to water or water-based compositions comprising alcohols and/or carboxylic acids
- Suitable for applications with food contact.

Please note:

fully cured ELASTOSIL[®] E6 N CSC is suitable for uses under the Recommendation "XV. Silicones" of the BfR and 21 CFR § 175.300 "Resinous and polymeric coatings" and FDA 21 CFR §177.2600 "Rubber articles intended for repeated use", provided that any given limitations on extractable and volatile substances are observed. Residual solvents have to be completely removed from the food contact article

Specific features

- Condensation-curing
- Electrically insulating
- Food grade
- Low viscosity
- One-component
- Primerless adhesion to most substrates
- Provides excellent water repellency
- Ready to use
- Resistant to moisture
- Solvent-free
- UV & weathering-resistant

Technical data

Properties Uncured

Property	Condition	Value	Method
Skin formation time	23 °C 50 % r.h	8 - 12 min	-
Colour	-	colourless dark	-
Curing speed	23 °C 50 % r.h	2.0 mm/d	-
Density	23 °C	1.07 g/cm ³	DIN 53217
Solid content / Active ingredients content	-	100 %	-
Viscosity, dynamic	25 °C 0.5 1/S	approx. 7000 mPa·s	DIN EN ISO 3219
Viscosity, dynamic	25 °C 25 1/S	approx. 4500 mPa·s	DIN EN ISO 3219

These figures are only intended as a guide and should not be used in preparing specifications.

Properties Cured

Curing Conditions: 14 days at 23 °C and 50 % rel. humidity, 2 mm sheet, no post-curing.

Property	Condition	Value	Method
Color	-	translucent	-
Density (in water)	23 °C	1.08 g/cm ³	DIN EN ISO 1183-1 A
Hardness Shore A	-	32	DIN ISO 48-4
Tensile strength	-	2 N/mm ²	ISO 37 type 1
Elongation at break	-	150 %	ISO 37 type 1

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All the information provided is in accordance with the present state of our knowledge. Nonetheless, we disclaim any warranty or liability whatsoever and reserve the right, at any time, to effect technical alterations. The information provided, as well as the product's fitness for an intended application, should be checked by the buyer in preliminary trials. Contractual terms and conditions always take precedence. This disclaimer of warranty and liability also applies particularly in foreign countries with respect to third parties' rights.

Application details

ELASTOSIL® E6 N CSC is primarily designed for the coating and the surface impregnation of natural materials, such as cork, colmated or agglomerated cork, wood, wooden materials, paper and paperboard. Treatment with ELASTOSIL® E6 N CSC creates a smooth and soft-touch surface finish.

Processing

Handling and Curing

ELASTOSIL® E6 N CSC is a ready-to-use, one-part silicone rubber which starts curing when exposed to air moisture. Typical curing characteristics are given in the table "Properties Uncured".

As RTV-1 silicones require humidity for curing, free access of air moisture to the silicone rubber is essential. Additionally, the vulcanization time of ELASTOSIL® E6 N CSC can be greatly reduced by increasing the level of air's relative humidity. Please note that, unlike the initial skin formation, the total curing rate of RTV-1 silicones is limited by moisture's diffusion speed in silicone rubber.

As increasing the curing temperature has just a minor effect both on the skin forming time and the curing speed, ELASTOSIL® E6 N CSC typically is vulcanized at room temperature. Heat curing is recommended only for applications where the silicone rubber is applied as a thin film (thickness less than 0.5 mm), because otherwise blistering is likely to occur due to the quick release of acetic acid.

Due to its excellent flowability ELASTOSIL® E6 N CSC can be processed by any conventional coating method, e.g. by dipping, spraying, jetting, knife coating or dispensing.

After completion of the vulcanization the silicone elastomer remains permanently flexible over a wide temperature range. Cured ELASTOSIL® E6 N CSC can continuously be exposed to constantly changing climatic conditions, UV radiation, and aqueous media without damage. Besides, ELASTOSIL® E6 N CSC usually shows good primerless adhesion to many substrates, e.g. glass, ceramics, metals, plastics, powder coatings and materials based on paper, wood or cork.

Detailed information about the processing of RTV-1 silicones is given in our brochure "ROOM TEMPERATURE VULCANIZING (RTV) SILICONES - MATERIAL AND PROCESSING GUIDELINES". We recommend running preliminary tests to optimize conditions for the particular application.

Removal:

If removal of the silicone from machines or dispensing equipment is necessary, white spirit or similar nonpolar solvents are recommended. However, cleaning ideally should take place before the silicone rubber is fully vulcanized. Cured silicone needs to be rubbed off or removed mechanically, if necessary in combination with a swelling agent (solvent) or a chemical silicone remover.

Example of Use

Coating and Impregnation of Cork Stoppers

For coating cork stoppers ELASTOSIL® E6 N CSC is processed preferably in a tumbling barrel. The uncured rubber is applied either by spraying or pouring it directly onto the cork stoppers while the tumbling barrel is rotating.

A quantity of 10 - 15 g of ELASTOSIL® E6 N CSC per 1.000 stoppers (44 mm x 24 mm, natural cork) proved useful to provide a uniform smooth coating. Cork stoppers having a larger or smaller surface area may require a higher or lower quantity, respectively.

Once the entire quantity of ELASTOSIL® E6 N CSC has been added, the tumbling barrel is kept rotating for at least 20 minutes. The surface treated cork stoppers are then collected in cages, buckets or perforated bags and conditioned for not less than 24 hours at room temperature. For an optimum result, all process steps should be performed at a temperature of 20 - 30 °C and a relative humidity of 40 - 60 %.

Packaging and storage

Storage

Store in a dry and cool place.

The 'Best use before end' date of each batch is shown on the product label.

Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Safety notes

While curing ELASTOSIL® E6 N CSC releases some 5 - 6 % by weight of acetic acid. These vapours should not be inhaled for long periods or in high concentration. Work areas should therefore be well ventilated.

Contact of the uncured silicone rubber with eyes and mucous membranes must be avoided as this can cause irritation. If, despite all protective measures, uncured silicone rubber comes into contact with the skin or eyes, irrigate the affected area immediately with copious amounts of water for several minutes. If the irritation continues, immediately seek medical advice.

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site <http://www.wacker.com>.

QR Code ELASTOSIL® E6 N CSC



For technical, quality or product safety questions, please contact:

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