

ELASTOSIL[®] E50 N TRANSPARENT



Moisture Curing Silicone Rubber (RTV-1)

ELASTOSIL[®] E50 N TRANSPARENT is a flowable one-part silicone rubber for potting, coating or sealing applications. When exposed to air moisture it cures at room temperature to yield a permanently flexible silicone rubber with very good mechanical properties.

Fully vulcanized ELASTOSIL[®] E50 N TRANSPARENT 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
- Suitable for applications with food contact

Please note: fully cured ELASTOSIL[®] E50 N TRANSPARENT 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
- General purpose
- Low viscosity
- MIL-A 46106 grade
- One-component
- Primerless adhesion to most substrates
- Ready to use
- Resistant to moisture
- UV & weathering-resistant

Technical data

Properties Uncured

Property	Condition	Value	Method
Colour	-	colourless	-
Curing speed	23 °C 50 % r.h	1.7 mm/d	-
Density	25 °C 1013 hPa	1.09 g/cm ³	DIN 53217
Skin formation time	23 °C 50 % r.h	8 - 12 min	-
Viscosity, dynamic	25 °C Brookfield, spindle 5 / 2,5 rpm	approx. 45000 mPa·s	DIN EN ISO 2555

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	-	transparent	-
Density (in water)	23 °C	1.10 g/cm ³	DIN EN ISO 1183-1 A
Hardness Shore A	-	35	DIN ISO 48-4
Tensile strength	-	3.2 N/mm ²	ISO 37 type 1
Elongation at break	-	220 %	ISO 37 type 1
Tear strength	-	5.0 N/mm	ASTM D 624 B

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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

- Multipurpose potting and coating grade
- Surface adhesive
- Typical fields of application: household appliances, mechanical engineering

Processing

ELASTOSIL® E50 N TRANSPARENT 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® E50 N TRANSPARENT 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® E50 N TRANSPARENT 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.

After completion of the vulcanization the silicone elastomer may continuously be exposed to constantly changing climatic conditions, UV radiation and high temperature without damage. Cured ELASTOSIL® E50 N TRANSPARENT usually shows good primerless adhesion to many substrates, e.g. glass, ceramics, metals, plastics and powder coatings.

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.

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® E50 N TRANSPARENT releases a total of approx. 3.5 % 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® E50 N TRANSPARENT



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

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