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AMBERCOMPOSITES

ELASTOSIL® M 4470

RTV-2 Silicone Rubber / Mold Making

Characteristics

Pourable, condensation-curing, two-component silicone rubber that vulcanizes at room temperature.

Special characteristics

- Good flow and self-deaeration
- High Shore A hardness (approx. 60)
- Very good heat resistance
- High thermal conductivity
- Outstanding resistance to common casting resins

Application

ELASTOSIL® M 4470 is particularly suitable for molding applications in which high elongation and tear strength can be sacrificed in favor of excellent deformation resistance and thermal stability, e.g., for making molds of models with no or only minor undercuts if good heat dissipation and high rigidity are required.

Typical applications are molds with

- High rigidity for foaming resins (for foaming polyurethanes, it is advisable to use a barrier coat!)
- High swelling resistance to components of casting resins, such as styrene in the case of polyesters
- High thermal stability and heat dissipation for casting low-melting metal alloys

Product data (uncured)

Property	Test method	Unit	Value
Color			Reddish brown
Density at 23 °C		[g/cm ³]	1.45
Viscosity at 23 °C, after stirring	ISO 3219	[mPa s]	15,000

Product data (catalyzed with 3 wt % Catalyst T 37)

Property	Test method	Unit	Value
Viscosity at 23 °C	ISO 3219	[mPa s]	10,000

Product data (cured)

Property	Test method	Unit	Value
Density at 23 °C in water	ISO 2781	[g/cm ³]	1.44
Hardness Shore A	ISO 868		60
Tensile strength	ISO 37	[N/mm ²]	4.5
Elongation at break	ISO 37	[%]	120
Tear strength	ASTM D 624 B	[N/mm]	> 4
Linear shrinkage		[%]	0.8

With 3 wt % Catalyst T 37, after 4 days at 23 °C / 50 % rel. humidity.

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

Processing

ELASTOSIL® M 4470 is cured by adding Catalyst T 37 for long pot lives and curing times, or Catalyst T 40 for short pot lives and curing times.

Catalyst	Pot life, approx. [min]	Curing time (tack-free), approx. [h]
3 % T 37	90	20-24
2 % T 40	40	3-4

The pot life is the period of time at 23 °C / 50 % rel. humidity during which the catalyzed mix to attain a viscosity of 60,000 mPa s and still be just pourable.

Thin-walled molds are best suited for casting low-melting metal alloys (melting point: 300 °C max.) and should be placed on a sheet of aluminum or other material with high thermal conductivity. Before the casting process, the old should be post-cured for a few hours at about 150 °C. In order to improve wetting by the molten metal, a thin layer of extremely fine silicon carbide, graphite powder or acetylene black should be applied to the mold surface. The first castings have normally to be discarded since the rubber still emits gases, giving the surface of the casting a pockmarked appearance.

Comprehensive instructions are given in our leaflet "WACKER RTV-2 Silicone Rubber - Processing."

Detailed information on other mold-making compounds in the ELASTOSIL® M range is contained in our brochure "ELASTOSIL® M. Mold-Making Compounds For Maximum Precision".

Storage

ELASTOSIL® M 4470 should be stored between 5 °C and 30 °C in the tightly closed original container. The 'Best use before end' date of each batch appears on the product label.

Catalysts T 37 and T 40 should be stored in the sealed original bottles between 5 °C and 25 °C.

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 information

Being a condensation-curing silicone rubber, ELASTOSIL® M 4470 contains only constituents that over many years have proved to be neither toxic nor aggressive. Special handling precautions are therefore not required, i.e., only the general industrial hygiene regulations apply.

Catalysts T 37 and T 40 contain a tetraorganotin compound, are flammable (flash points 53 °C and 34 °C respectively) and may cause irritation in contact with the eyes and skin. Adequate protective measures are required.

Detailed safety information is contained in each Material Safety Data Sheet, which can be obtained from our sales offices.

Additional information

Please visit our website www.wacker.com

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The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001 and DIN EN ISO 14001

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