WACKER® T-Series Catalysts

RTV-2 Silicone Rubber / Mold Making and Pad Printing

Characteristics

Crosslinker systems for room-temperature condensation-curing two-part silicone rubber grades

Special Features

- Low viscosity
- Curing rates can be adjusted within a wide range
- Specific systems (Catalysts T 21 and T 51) guarantee large numbers of polyester and polyurethane resin castings
- Only Catalyst T is suitable for BfR-compliant applications.

Use and Processing

Production of flexible molds and printing pads with condensation-curing ELASTOSIL® M silicone rubber grades.

Pot Lives and Curing Times
The curing rates and pot lives of ELASTOSIL® M products can be adjusted within a wide range, either by varying the amount of T-series catalyst used or by blending it with Catalyst T 47.

Pot lives can be adjusted to between five and 120 minutes in this way, with curing times ranging from one to 24 hours.

Example:
100 g of Catalyst T 51 are needed for a mold made from 2 kg ELASTOSIL® M 4514. The pot life is about 75 minutes, and the product can be demolded after 10 h.

For faster curing, mix the required amount of catalyst in a ratio of, for example, 9.5 : 0.5 (T51 : T47), i.e. 95 g T 51 + 5 g T 47. The pot life decreases to 30 minutes, and the mold needs only about 4 h to cure.

The figures contained in the tables overleaf are a guide to reactive rubber blends that cure rapidly but still have an adequately long processing window.

It is possible to increase the proportion of T 47, but pot lives become extremely short. The rubber blend may flow less easily as a result, reducing the fidelity of reproduction.

The blending ratios given in the tables for individual catalysts and Catalyst T 47 are based on parts by weight.

Blends of the individual catalysts with Catalyst T 47 have a long shelf life, making it possible to prepare larger quantities that can be used over a lengthy period.

Molds for Use with Casting Resins
To manufacture molds intended for use with epoxy and polyurethane resins, condensation-curing ELASTOSIL® M silicone rubber grades are processed with 5 wt. % Catalyst T 21.

Molds intended for use with polyester resins, by contrast, are made using 5 wt. % Catalyst T 51.

The reactivity of these catalysts, too, can be varied by blending them with Catalyst T 47. The resistance of the silicone molds to the respective casting resins is not affected.

General Information
Please follow the general information provided in our leaflet "Wacker RTV-2 Silicone Rubber – Processing"

You will find detailed information on our ELASTOSIL® M product range in our brochure "ELASTOSIL® M Mold-Making Compounds for Maximum Precision."

Pot Lives and Curing Times

ELASTOSIL® M 3502 / M 4511 / M 4512 / M 4514 / M 4541

CATALYST	BLENDED WITH CATALYST T 47 (T 21 or T 51 : T 47)	AMOUNT	POT LIFE [min]	CURING TIME [h]
T 21	-	5 %	60 – 90	8 – 12
	95 : 5	5 %	20 – 40	4 – 6
	90 : 10	5 %	10 – 20	2 – 4
T 51	-	5 %	40 – 80	6 – 10
	95 : 5	5 %	15 – 30	2 – 5
	90 : 10	5 %	5 – 15	1 – 2
T 47	-	1.5 %	3 – 10	1 – 2

ELASTOSIL® M 4503

CATALYST	BLENDED WITH CATALYST T 47 (T 35 : T 47)	AMOUNT	POT LIFE [min]	CURING TIME [h]
T 35	-	5 %	90 – 120	15 – 20
	90 : 10	5 %	20 – 40	6 – 8
	40 : 10	5 %	10 – 20	2 – 4
T 47	-	2 %	3 – 10	1 – 2

ELASTOSIL® M 4400 / M 4440 / M 4470

CATALYST	AMOUNT	POT LIFE [min]	CURING TIME [h]
T 37	3 %	80 – 100	10 – 12
T 37	4 %	50 – 70	8 – 10
T 40	2 %	30 – 50	6 – 7
T 47	2 %	3 – 8	0.5 – 1

ELASTOSIL® M – BfR-compliant food applications; rubber-grade recommendation on request

CATALYST	AMOUNT	POT LIFE [min]	CURING TIME [h]
T	1 – 3 %	20 – 60 min	4 – 12 h

The pot lives listed indicate how long it takes at 23 °C/50 % relative humidity for the catalyzed mix to reach a viscosity of 100,000 mPa s and still just be pourable.

The curing times listed indicate how long it takes at 23 °C/50 % relative humidity until the rubber can be demolded tack-free.

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

Storage

T-series catalysts should be stored between 5 °C und 25 °C in the tightly closed original container.

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. However, the properties required for the intended use should be checked in this case for quality assurance reasons.

Safety Information

Our T-series catalysts contain tetraorganotin compounds, some of which are flammable (flashpoint < 61 °C), and may cause irritation in contact with eyes and skin. Adequate protective measures are required.

Comprehensive instructions are given in the appropriate material safety data sheets. These are available on request from WACKER sales offices.

Additional information

Please visit our website www.wacker.com

Management system certified to ISO 9001 and ISO 14001

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

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