WACKER® T-SERIES CATALYSTS

for ELASTOSIL® RTV-2 Silicone Rubber

Flexible molds and printing pads can be produced with condensation-curing ELASTOSIL® M products. The best choice of catalyst for the product is indicated on the respective ELASTOSIL® M Technical Data Sheet (TDS).

The following guidelines on WACKER T-Series catalysts show the full choice of catalysts available and support you in choosing the right catalyst or catalyst mixture for your specific use case:

- Achieve high number of copies for polyurethane and polyester resin castings with our specialized catalysts
- Achieve the required pot life and curing time by varying dosage rate or by blending with a fast catalyst
- For a better mixing control the transparent WACKER® T-Series catalysts can be colored by adding a small amount of WACKER® Color Solution Red.

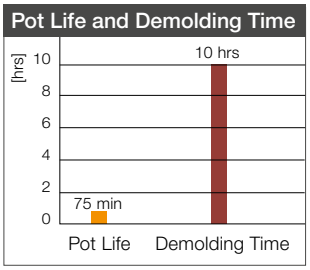
Catalysts with Special Performance

- Standard catalysts: T 21 and T 51
- Catalyst T 21 or T 37 for high numbers of copies for polyurethane casting resins
- Catalyst T 51 for high numbers of copies for polyester casting resins
- Catalyst T 47 for fast and very fast curing rates

Pot Life and Curing Time

The pot life and curing rate of ELASTOSIL® M products can be adjusted within a wide range, either by varying the amount of T-Series catalyst (no more than 2–3% on top of the recommended dosage; may increase linear shrinkage), or by blending with Catalyst T 47.
Pot life can be adjusted from a few minutes up to 120 minutes in this way, with curing rates from 1 to 24 hours at room temperature.

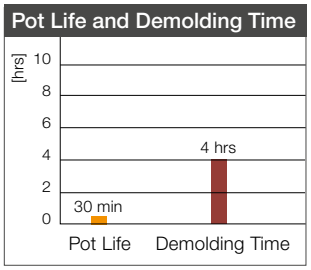
Example: Achieve Faster Curing Rates by Combining Catalysts



1 kg ELASTOSIL® M 4514
50 g (5%) Catalyst T 51

Pot Life = 75 min
Demolding Time = 10 hrs

Example 1:
Add 5% Catalyst T 51 (by weight) to ELASTOSIL® M 4514 (50 g T 51 for 1 kg of M 4514) to achieve a pot life at 23 °C and 50% RH of about 75 minutes. Demolding is possible after 10 hours' curing time.



1 kg ELASTOSIL® M 4514
50 g Catalyst T 51 + T 47
(Ratio 9.5 : 0.5)

Pot Life = 30 min
Demolding Time = 4 hrs

Example 2:
Faster curing rates can be easily achieved by blending Catalyst T 51 with Catalyst T 47 in the ratio of 9.5 : 0.5 (T 51 : T 47 / 47.5 g : 2.5 g).

The pot life will decrease to around 30 minutes and the mold needs only about 4 hours before being demolded. By increasing the proportion of T 47, you can achieve even faster curing rates, but your processing window gets shorter. Find the right balance: Fast curing, but sufficient pot life for processing.

Adjust Pot Life and Demolding Time to Your Needs

ELASTOSIL® M 4511 – M 4512 – M 4514 – M 4541

Catalyst	Property	Blended with Catalyst T 47 (T 21 : T 47)	Amount	Pot Life [min]	Demolding Time [h]
T 21	Standard cat./ excellent polyurethane resin resistance	-	5%	60 - 90	8 - 12
		95 : 5	5%	20 - 40	4 - 6
		90 : 10	5%	20 - 20	2 - 4
		(T 51 : T 47)			
T 51	Standard cat./ excellent polyester resin resistance	-	5%	60 - 90	8 - 12
		95 : 5	5%	20 - 40	4 - 6
		90 : 10	5%	10 - 20	2 - 4
T 47	Fast cure	-	1.50%	3 - 10	1 - 2

ELASTOSIL® M 4503

Catalyst	Property		Amount	Pot Life [min]	Demolding Time [h]
T 40	Standard cat.	-	2%	60 - 90	15 - 20
		-	3%	30 - 50	8 - 12
T 47	Fast cure	-	2%	3 - 10	1 - 2

ELASTOSIL® M 4400 / M 4440 / M 4470

Catalyst	Property	Amount	Pot Life [min]	Demolding Time [h]
T 37	Excellent polyurethane resin resistance	3%	80 - 100	10 - 12
		4%	50 - 70	8 - 10
T 40	Medium fast	2%	30 - 50	6 - 7
		3%	30	2
T 47	Fast cure	2%	3 - 10	1 - 2

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

Casting Resin Stability, Pot Life and Demolding Time: in Line with Your Needs

The pot-life and demolding-time figures contained in the table are a guide to reactive rubbers that cure rapidly, but still have enough processing window. Blending ratios in the table are based on parts by weight.

The individual catalyst blends have a long shelf life and can be stably stored in larger quantities. The catalyst blends do not affect the outstanding performance of the silicone molds if Catalyst T 51 is used for polyester casting resins and T 21 for polyurethane casting resins.

The pot life listed indicates how long it takes at 23 °C/50% RH for the catalyzed mix to reach a viscosity of 100,000 mPa s and still just be pourable. The demolding time listed indicates how long it takes at 23°C/50% RH until the rubber can be demolded tack-free.

ELASTOSIL®

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