Step-by-step product selection guide

Silicone moldmaking materials | Europe and Asia Edition

If you're looking for an easy-to-use moldmaking material that will deliver consistently superior results, look no further. With silicone moldmaking materials from SILASTIC™, you can create tough-but-flexible molds to reproduce intricate details and deliver high-quality replicas, again and again.

Our products can be used with masters made of stone, glass, wood, metal, wax, ceramic, plaster and clay. And they're compatible with a wide range of casting materials.

Each SILASTIC™ moldmaking product consists of two components: a liquid silicone rubber base and a catalyst or curing agent. There are two basic cure types — condensation cure and addition cure. Within each cure type, we offer several products in a range of viscosities with variable cure times. To identify the product(s) best suited to your application, start by using the product selection tree and typical moldmaking variables chart in step 1 on the next page.

SILASTIC™ makes a variety of products to meet a variety of needs:

Reproduction
- Figurines
- Jewelry
- Artifacts
- Collectibles
- Candles

Creating
- Silicone rubber pads for transfer printing
- Robotic skins for animated creatures

Molding
- Prototypes
- Furniture
- Industrial tooling

Architectural fabrication
- Concrete casting
- Reconstituted stone
- Crown molding, finials, brackets and more

Step 1

Narrow the field to match your needs

SILASTIC™ silicone moldmaking materials

- Are easy to use
- Reproduce intricate details
- Hold severe undercuts
- Feature excellent release characteristics
- Provide good resistance to most chemicals
- Offer tailorable working times and cure rates
- Resist tearing with repeated use
- Are flexible to reduce demolding and stress problems
- Work in a wide range of service temperatures

Condensation cure mold making silicone rubbers
SILASTIC™ silicone rubbers

- For molding figurines, decorative reproduction and making transfer pads
- Provide outstanding resistance to inhibition
- Use tin catalyst
- Offer variable cure times at room temperature

Addition cure mold making silicone rubbers
SILASTIC™ silicone rubbers

- For engineering design, prototyping, architectural fabrication, and making transfer pads
- Use platinum catalyst
- Cure can be heat accelerated
- Exhibit virtually no shrinkage when cured at room temperature
- Offer better chemical resistance

SILASTIC™ RTV-3110 Mold-Making Base General purpose, low tear strength, medium durometer, low mixed viscosity, easy to work with, fills tiny crevices, vacuum de-airing isn't always required, white.	**SILASTIC™ RTV-3481 Mold-Making Base** High tear strength, low durometer. Well-suited for one-part molds.	**SILASTIC™ RTV-3496 Mold-Making Base** High tear strength, low durometer, very good resistance to polyester resin, suited for reproduction of figurines.	**SILASTIC™ RTV-4131-P1 Base and Curing Agent** High tear strength, suited for production of print pads, can be colored.	**SILASTIC™ RTV-4234-T4 Base and Curing Agent** High tear strength, high durometer, translucent, suited for prototype design.	**SILASTIC™ RTV-T5 Base and Curing Agent** High tear strength, high durometer, highly translucent, medium viscosity, suited for prototype design.
SILASTIC™ RTV-3112 Mold-Making Base General purpose, low tear strength, high durometer, white.	**SILASTIC™ RTV-3483 Mold-Making Base** High tear strength, low durometer. Well-suited for one-part molds.		**SILASTIC™ RTV-4250-S Base and Curing Agent** High tear resistance, low durometer, low viscosity, high inhibition resistance, high elongation.		**SILASTIC™ RTV-4136-M Base and Curing Agent** Medium tear resistance, high durometer, high inhibition resistance, demoldable in 16 hours, regal blue.
SILASTIC™ RTV-3120 Mold-Making Base Low tear strength, high durometer, excellent heat stability, red.	**SILASTIC™ RTV-3487 Mold-Making Base** Medium tear strength, very low durometer, low mixed viscosity. Well-suited for one-part molds.	**SILASTIC™ RTV-3498 Mold-Making Base** High tear strength, low durometer, very good resistance to polyester resin, suited for reproduction of figurines.	**SILASTIC™ RTV-4251-S2 Base and Curing Agent** High tear resistance, medium durometer and low viscosity, suited for reproduction of reconstituted stone.		
SILASTIC™ RTV-3133 Base General purpose, low tear strength, low durometer, white.					

SILASTIC™
silicone elastomers by DOW

Typical moldmaking variables

	Condensation cure products									Addition cure products					
	SILASTIC™ RTV Silicone Rubber*														
	3110	3112	3120	3133	3481	3483	3487	3496	3498	4131-P1	4250-S	4251-S2	4234-T4	RTV-T5	4136-M
Pattern characteristics															
Simple, no undercuts	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Complex, some undercuts					●	●	●	●	●	●	●	●	●	●	●
Complex, deep undercuts					●	●		●	●	●	●	●	●	●	○
Vertical surfaces, large or immovable objects					●	●	●		●	●	●	●	●	●	
Compatibility with casting materials															
Polyesters	○	○	○	○	●	●	●	●	●	●	●	●	○	○	○
Polyurethane, rigid	○	○	○	○	●	●	○	○	●	●	●	●	●	●	●
Polyurethane, foam	○	○	○	○	○	○			○	○	○	○	●	●	●
Epoxies	○	○	○	○						○	○	○	○	○	○
Low-melt metals	○	○	●	○						○	○	○	○	○	○

● Recommended ○ Can be used

* Refer to page 2 for full product names and descriptions.

Step 2

Take a closer look at your cure options

Once you've narrowed the field to a few materials, it's time to look at your cure options. SILASTIC™ RTV high strength moldmaking silicone rubbers are available with a variety of curing agents to modify working and demold times. For unique conditions we offer:

- SILASTIC™ RTV-3081-F Mold-Making Curing Agent for curing against sulfur-containing clays

Each SILASTIC™ RTV addition cure silicone rubber base has its own special curing agent. For best results, these products should be used at the specified mix ratios. The chart at left can help you determine the mix ratios, working times and cure times most compatible with your equipment capabilities and application requirements.

Working and cure times at room temperature (23°C, 73°F) catalyst or curing agent	Base/ catalyst mixing ratio, by weight	Approximate working time[1]	Approximate demold time[2]
SILASTIC™ RTV-3110 Mold-Making Base			
SILASTIC™ RTV-3000-F Catalyst	20:1	40 min	80 min
SILASTIC™ RTV-3010-S Catalyst	10:1	2 hrs	7 hrs
SILASTIC™ RTV-3112 Mold-Making Base			
SILASTIC™ RTV-3000-F Catalyst	20:1	28 min	100 min
SILASTIC™ RTV-3010-S Catalyst	10:1	1 hr	8 hrs
SILASTIC™ RTV-3120 Mold-Making Base			
SILASTIC™ RTV-3000-F Catalyst	20:1	25 min	1½ hrs
SILASTIC™ RTV-3010-S Catalyst	10:1	1 hr	8 hrs
SILASTIC™ RTV-3133 Base			
SILASTIC™ RTV-3081-F Mold-Making Curing Agent	100:5	30 – 45 min	6 hrs
SILASTIC™ RTV-3481 Mold-Making Base			
SILASTIC™ RTV-3081 Mold-Making Curing Agent	100:5	1.5 – 2 hrs	24 hrs
SILASTIC™ RTV-3081-F Mold-Making Curing Agent	100:5	30 – 45 min	6 hrs
SILASTIC™ RTV-3081-R Mold-Making Curing Agent	100:5	1.5 – 2 hrs	24 hrs
SILASTIC™ RTV-3081-VF Mold-Making Curing Agent	100:5	8 – 10 min	2 hrs
SILASTIC™ RTV-3483 Kit			
SILASTIC™ RTV-3083 Mold-Making Curing Agent	100:5	1.5 – 2 hrs	24 hrs
SILASTIC™ RTV-3487 Mold-Making Base			
XIAMETER™ RTV-3087-S Mold-Making Curing Agent	100:5	1.5 – 2 hrs	24 hrs
SILASTIC™ RTV-3496 Mold-Making Base			
SILASTIC™ RTV-3081 Mold-Making Curing Agent	100:5	2 – 3 hrs	24 hrs
SILASTIC™ RTV-3081-F Mold-Making Curing Agent	100:5	1 – 1.5 hrs	8 hrs
SILASTIC™ RTV-3081-R Mold-Making Curing Agent	100:5	2 – 3 hrs	24 hrs
SILASTIC™ RTV-3498 Mold-Making Base/SILASTIC™ RTV-3081 Mold-Making Curing Agent			
SILASTIC™ RTV-3081 Mold-Making Curing Agent	100:5	2 – 3 hrs	24 hrs
SILASTIC™ RTV-3081-F Mold-Making Curing Agent	100:5	1 – 1.5 hrs	8 hrs
SILASTIC™ RTV-3081-R Mold-Making Curing Agent	100:5	2 – 3 hrs	24 hrs
Addition cure SILASTIC™ mold making silicone rubber			
SILASTIC™ RTV-4234-T4 Base and Curing Agents	10:1	1.5 hrs	12 hrs
SILASTIC™ RTV-T5 Base and Curing Agent	10:1	1.5 hrs	12 hrs
SILASTIC™ RTV-4131-P1 Base and Curing Agent	10:1	45 min	8 hrs
SILASTIC™ RTV-4136-M Base and Curing Agent	10:1	1 hr	16 hrs
SILASTIC™ RTV-4250-S Base and Curing Agent	10:1	45 min	7 hrs
SILASTIC™ RTV-4251-S2 Base and Curing Agent	10:1	1 hr	6 – 8 hrs

1 The time it takes for the catalyzed mixture to become nonflowable.
2 The point at which the rubber can be demolded.

These technical characteristics are typical properties. These values are not intended for use in preparing specifications.

Visit **www.silastic.com** to order these products or to learn more.

Step 3

Focus on your specific performance objectives

When you've determined which products have the general performance and cure capabilities you need, review the following typical properties charts to see how these products match up with the specific properties you require.

Typical properties† condensation cure materials

	SILASTIC™ mold making silicone rubber*								
	RTV-3110[2]	RTV-3112[2]	RTV-3120[2]	RTV-3133[2]	RTV-3481[2]	RTV-3483[2]	RTV-3487[2]	RTV-3496[2]	RTV-3498[2]
As supplied									
Specific gravity	1.14	1.30	1.45	1.15	1.21	1.16	1.15	1.16	1.23
Curing agent used*	RTV-3010-S	RTV-3010-S	RTV-3010-S	RTV-3081-F	RTV-3081, RTV-3081-F, RTV-3081-R, RTV-3081-VF	RTV-3083	RTV-3087-S	RTV-3081, RTV-3081-F, RTV-3081-R	RTV-3081, RTV-3081-F, RTV-3081-R
As catalyzed									
Appearance	White	White	Red	Beige	All white	White	White	Off white	Light beige
Viscosity, mPa.s	16,000	27,000	30,500	20,000	20,000-36,400	16,000	15,000	11,400-14,600	14,700-17,100
As-cured physical properties[1]									
Durometer hardness, shore A, points	45	58	56	16	24, 23, 19, 25	13	8	13, 15, 12	28, 27, 23
Tensile strength, MPa	2.7	4.4	4.0	3.2	4.7, 4.6, 4.6, 4.1	3.9	2.6	3.6, 3.7, 4.0	4.9, 4.7, 4.9
Elongation, percent	170	127	128	534	544, 543, 622, 438	680	650	689, 585, 765	537, 483, 568
Tear strength die B, N/mm	<5	<7	7	<5	26, 24, 26, 25	25	13	28, 28, 27	30, 23, 27
Linear shrink, percent	0.2-0.4	0.4-0.6	–	0.2-0.4	0.2-0.4 (all)	0.2-0.4	0.2-0.4	0.2-0.4 (all)	0.2-0.4 (all)

† These values are not intended for use in preparing specifications.
* Refer to page 2 for full product names and descriptions.
[1] Based on sample thickness of 125 mils, cured 24 hours at room temperature.
[2] Cured for 7 days @ 23°C (73°F).

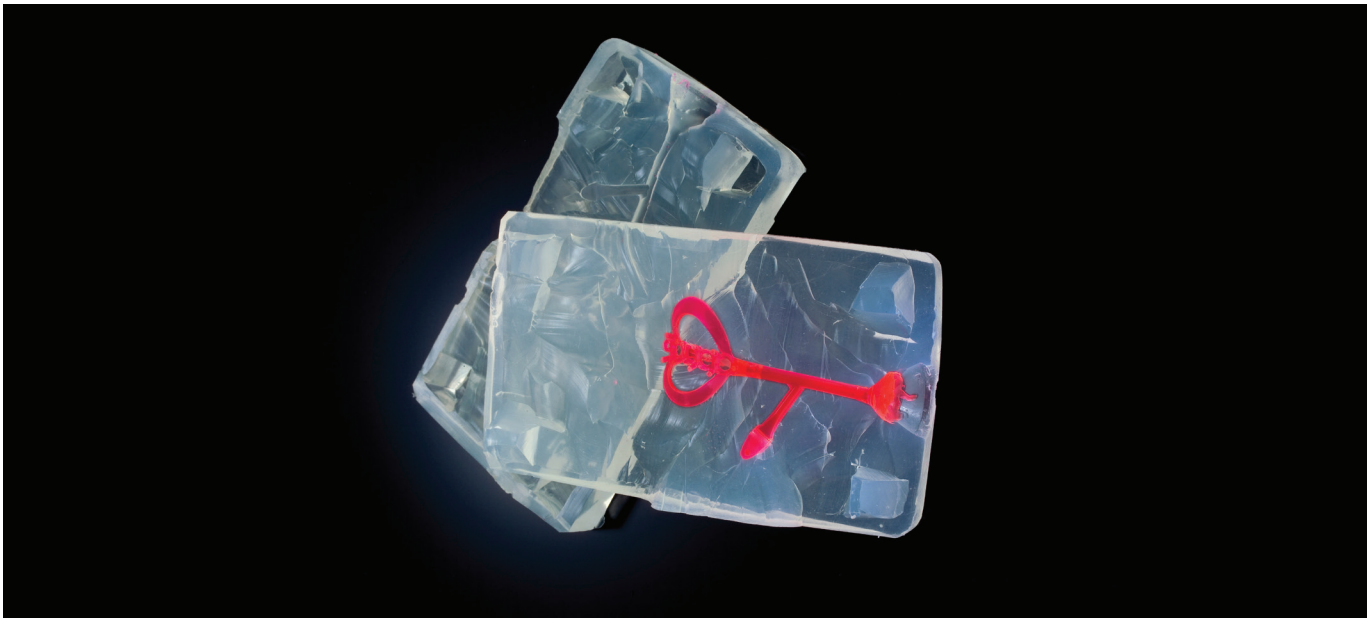
Step 3

Focus on your specific performance objectives

Typical properties† addition cure materials

	SILASTIC™ mold making silicone rubber*					
	RTV-4131-P1	RTV-4250-S	RTV-4251-S2	RTV-4234-T4[3]	RTV-T5	RTV-4136-M
As supplied						
Specific gravity	1.12	1.12	1.13	1.1	1.1	1.29
As catalyzed						
Appearance	Off white	Green	Off white	Translucent	Translucent	Regal blue
Viscosity, mPa.s	13,500	12,800	12,000	35,000	28,000	90,000
As-cured physical properties[1]						
Durometer hardness, shore A, points	25	26	20	40	35	59
Tensile strength, MPa	7.5	6.9	6.3	6.7	5.5	4.5
Elongation, percent	850	900	600	400	380	250
Tear strength die B, N/mm	23	25	23	27	24	16
Linear shrink, percent						
After 24 hrs @ 25°C (77°F)	Nil[2]	Nil[2]	Nil[2]	Nil[2]	Nil[2]	Nil[2]
After 7 days @ 25°C (77°F)	0.1	0.1	0.1	0.1	0.1	0.1

† These values are not intended for use in preparing specifications.
* Refer to page 2 for full product names and descriptions.
[1] Based on sample thickness of 125 mils, cured 24 hours at room temperature.
[2] Shrinkage not measurable after curing 24 hours at room temperature.
[3] T4 O — SILASTIC™ RTV-4234-T4 Base/SILASTIC™ RTV-4234-T4 O Curing Agent.



Other DOWSIL™ and XIAMETER™ products for the moldmaking industry

DOWSIL™ 732 Multi-Purpose Sealant, clear:

This one-part adhesive cures at room temperature and can be used to repair torn molds.

DOWSIL™ 734 Flowable Sealant:

This one-part room-temperature coating can be used for painting silicone robotic skins. It can be easily pigmented and diluted with solvents.

SYL-OFF™ 4000 Catalyst:

This cure accelerator can be used to speed room-temperature cure of all addition cure (platinum cure) moldmaking silicone rubbers. It can also be used as a surface treatment to prevent inhibition.

XIAMETER™ PMX-200 Silicone Fluid 50 cSt:

This product can be used as a thinner to lower mixed viscosity and also to adjust the hardness of the cured silicone. It can also be used as a release agent. Users must conduct their own trials to establish the optimum silicone oil viscosity and amount to meet their specific need.

XIAMETER™ RTV-3011 Thixo Additive:

XIAMETER™ RTV-3011 Thixo Additive can be used with SILASTIC™ RTV-3481, RTV-3483, RTV-3487, RTV-3498, RTV-4131-P1, RTV- 4250-S, RTV-4251-S2and RTV-4234-T4 products.* Adding 1%-3% of this additive will give them a paste-like consistency. After applying and curing a thin layer of moldmaking material base without the additive, a thicker layer can be applied with a spatula, e.g., on vertical surfaces, to obtain the final mold. When stored below 20ºC (68°F), XIAMETER™ RTV-3011 Thixo Additive may solidify; apply heat to re-liquefy by placing the closed container into hot water.

* Refer to page 2 for full product names and descriptions.

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