



# Step-by-step product selection guide

## Silicone moldmaking materials | Americas 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 products SILASTIC™ silicone rubbers			Addition cure products SILASTIC™ silicone rubbers		
<ul style="list-style-type: none"> <li>• For molding figurines, decorative reproduction and making transfer pads</li> <li>• Provide outstanding resistance to inhibition</li> <li>• Use tin catalyst</li> <li>• Offer variable cure times at room temperature</li> </ul>			<ul style="list-style-type: none"> <li>• For engineering design, prototyping, architectural fabrication, and making transfer pads</li> <li>• Use platinum catalyst</li> <li>• Cure can be heat accelerated</li> <li>• Exhibit virtually no shrinkage when cured at room temperature</li> <li>• Offer better chemical resistance</li> </ul>		
<b>SILASTIC™ RTV-3481 Mold-Making Base</b>  High tear strength, medium durometer. Well-suited for one-part molds.	<b>SILASTIC™ RTV-3110 Mold-Making Base</b>  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.	<b>SILASTIC™ RTV-3496 Mold-Making Base</b>  High tear strength, low durometer, very good resistance to polyester resin, suited for reproduction of figurines.	<b>SILASTIC™ RTV-4230-E Base and Curing Agent</b>  Good tear resistance, high durometer (hardness), long working time, high elongation, white.	<b>SILASTIC™ RTV-4133-M2 Base and Curing Agent</b>  High durometer, high inhibition resistance, regal blue.	<b>SILASTIC™ RTV-4234-T4 Base and Curing Agent</b>  High tear strength, high durometer, translucent, suited for prototype design.
<b>SILASTIC™ RTV-3483 Mold-Making Base</b>  High tear strength, low durometer. Well-suited for one-part molds.	<b>SILASTIC™ RTV-3112 Mold-Making Base</b>  General purpose, low tear strength, high durometer, white.	<b>SILASTIC™ RTV-3497 Mold-Making Base</b>  High tear strength, low durometer, very good resistance to polyester resin, suited for reproduction of figurines.	<b>SILASTIC™ RTV-4130-J Base</b>  Good tear resistance, high durometer, green.	<b>SILASTIC™ RTV-4131-P1 Base and Curing Agent</b>  Rubber. High tear strength, suited for production of print pads, can be colored.	
	<b>SILASTIC™ RTV-3120 Mold-Making Base</b>  Low tear strength, high durometer, excellent heat stability, red.	<b>SILASTIC™ RTV-3498 Mold-Making Base</b>  High tear strength, low durometer, very good resistance to polyester resin, suited for reproduction of figurines.	<b>SILASTIC™ RTV-4136-M Base</b>  Medium tear resistance, high durometer, high inhibition resistance, demoldable in 16 hours, regal blue.	<b>SILASTIC™ RTV-4250-S Base</b>  Rubber. High tear resistance, very low durometer, low viscosity, high inhibition resistance, high elongation.	
				<b>SILASTIC™ RTV-4251-S2 Base and Curing Agent</b>  High tear resistance, low durometer and low viscosity, suited for reproduction of reconstituted stone.	





## Typical moldmaking variables

	Condensation cure products								Addition cure products							
SILASTIC™ Silicone Rubber*																
	RTV-3481	RTV-3483	RTV-3110	RTV-3112	RTV-3120	RTV-3496	RTV-3497	RTV-3498	RTV-4230-E	RTV-4130-J	RTV-4136-M	RTV-4133-M2	RTV-4131-P1	RTV-4250-S	RTV-4251-S2	RTV-4234 T4
<b>Pattern characteristics</b>																
Simple, no undercuts	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Complex, some undercuts	●	●				●	●	●	●	●	●	●	●	●	●	●
Complex, deep undercuts	●	●				●	●	●	●	○	○	○	●	●	●	●
Vertical surfaces, large or immovable objects	●	●						●	●				●	●	●	●
<b>Compatibility with casting materials</b>																
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.

<sup>1</sup>The time it takes for the catalyzed mixture to become nonflowable.

<sup>2</sup>The point at which the rubber can be demolded.

<sup>3</sup>Refer to data sheet for off-ratio mixing that can result in adjusted working times.

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

Visit [www.dow.com](http://www.dow.com) to order these products or to learn more.

	Working and cure times at room temperature (73°F, 23°C) catalyst or curing agent	Base/catalyst mixing ratio, by weight	Approximate working time <sup>1</sup>	Approximate demold time <sup>2</sup>
<b>Condensation cure</b>	<b>SILASTIC™ RTV-3481</b>			
	SILASTIC™ RTV-3081 Mold-Making Curing Agent	20:1	1.5 – 2 hrs	24 hrs
	SILASTIC™ RTV-3081-F Mold-Making Curing Agent	20:1	30 – 45 min	6 hrs
	SILASTIC™ RTV-3081-R Mold-Making Curing Agent	20:1	1.5 – 2 hrs	24 hrs
	SILASTIC™ RTV-3081-VF Mold-Making Curing Agent	20:1	8 – 10 min	7 hrs
	<b>SILASTIC™ RTV-3483</b>			
	SILASTIC™ RTV-3083 Mold-Making Curing Agent	20:1	1.5 – 2 hrs	24 hrs
	<b>SILASTIC™ RTV-3110 Mold-Making Base</b>			
	SILASTIC™ RTV-3010-S Catalyst	10:1 <sup>3</sup>	2 hrs	7 hrs
	DOWSIL™ 4 Catalyst	100:1 <sup>3</sup>	3 min	10 min
	<b>SILASTIC™ RTV-3112 Mold-Making Base</b>			
	SILASTIC™ RTV-3010-S Catalyst	10:1 <sup>3</sup>	1 hr	8 hrs
	DOWSIL™ 4 Catalyst	100:1 <sup>3</sup>	2 min	10 min
	<b>SILASTIC™ RTV-3120 Mold-Making Base</b>			
	SILASTIC™ RTV-3010-S Catalyst	10:1 <sup>3</sup>	1 hr	8 hrs
	DOWSIL™ 4 Catalyst	100:1 <sup>3</sup>	2 min	10 min
	<b>SILASTIC™ RTV-3496 Mold-Making Base</b>			
	SILASTIC™ RTV-3081 Mold-Making Curing Agent	20:1	2 – 3 hrs	24 hrs
	SILASTIC™ RTV-3081-F Mold-Making Curing Agent	20:1	1 – 1.5 hrs	8 hrs
	SILASTIC™ RTV-3081-R Mold-Making Curing Agent	20:1	2 – 3 hrs	24 hrs
<b>SILASTIC™ RTV-3497 Mold-Making Base</b>				
SILASTIC™ RTV-3081 Mold-Making Curing Agent	20:1	2 – 3 hrs	24 hrs	
SILASTIC™ RTV-3081-F Mold-Making Curing Agent	20:1	1 – 1.5 hrs	8 hrs	
SILASTIC™ RTV-3081-R Mold-Making Curing Agent	20:1	2 – 3 hrs	24 hrs	
<b>SILASTIC™ RTV-3498 Mold-Making Base</b>				
SILASTIC™ RTV-3081 Mold-Making Curing Agent	20:1	2 – 3 hrs	24 hrs	
SILASTIC™ RTV-3081-F Mold-Making Curing Agent	20:1	1 – 1.5 hrs	8 hrs	
SILASTIC™ RTV-3081-R Mold-Making Curing Agent	20:1	2 – 3 hrs	24 hrs	
<b>Addition cure</b>	<b>SILASTIC™ silicone rubbers</b>			
	SILASTIC™ RTV-4230-E Base and Curing Agent	10:1	2 hrs	24 hrs
	SILASTIC™ RTV-4130-J Base and Curing Agent	10:1	2 hrs	24 hrs
	SILASTIC™ RTV-4136-M Base and Curing Agent	10:1	1.5 hrs	16 hrs
	SILASTIC™ RTV-4133-M2 Base and Curing Agent	10:1	1.5 hrs	4 – 5 hrs
	SILASTIC™ RTV-4131-P1 Base and Curing Agent	10:1	45 min	8 hrs
	SILASTIC™ RTV-4250-S Base and Green Curing Agent	10:1	45 min	7 hrs
	SILASTIC™ RTV-4251-S2 Base and Curing Agent	10:1	1 hr	6 – 8 hrs
	SILASTIC™ RTV-4234-T4 Base and Curing Agent	10:1	1.5 hrs	12 hrs
	SILASTIC™ RTV-4234-T4 Base and O Curing Agent	10:1	1.5 hrs	12 hrs

# 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<sup>†</sup> condensation cure materials

SILASTIC™ silicone rubber*											
	RTV-3481				RTV-3483	RTV-3110	RTV-3112	RTV-3120	RTV-3496 <sup>2</sup>	RTV-3497 <sup>2</sup>	RTV-3498 <sup>2</sup>
<b>As supplied</b>											
Specific gravity	1.21				1.16	1.14	1.30	1.45	1.16	1.21	1.23
Curing agent used*	RTV-3081	RTV-3081-F	RTV-3081-R	RTV-3081-VF	RTV-3083	RTV-3010-S <sup>3</sup>	RTV-3010-S <sup>3</sup>	RTV-3010-S <sup>3</sup>	RTV-3081-R <sup>3</sup>	RTV-3081-R <sup>3</sup>	RTV-3081 <sup>3</sup>
<b>As catalyzed</b>											
Appearance	Off White	Off White	Off White	Off White	White	White	White	Red	Off White	Off White	Light Beige
Viscosity, poise	200	221	200	364	160	130	280	280	146	162	147
<b>As-cured physical properties<sup>1</sup></b>											
Durometer hardness, Shore A, points	24	23	19	25	13	45	58	56	12	18	28
Shore 00, points	-	-	-	-	-	-	-	-	-	-	-
Tensile strength, psi	682	667	667	595	566	395	640	582	580	609	711
Elongation, percent	544	543	622	438	680	170	127	128	765	582	537
Tear strength die B, ppl	148	137	148	143	143	24	35	40	154	154	171
Linear shrink, percent after 7 days @ 77°F (25°C)	0.2-0.4	0.2-0.4	0.2-0.4	0.2-0.4	0.2-0.4	0.83	0.87	0.91	0.2-0.4	0.2-0.4	0.2-0.4

<sup>†</sup> These values are not intended for use in preparing specifications.

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

<sup>1</sup> Based on sample thickness of 125 mils, cured 24 hours at room temperature.

<sup>2</sup> Cured for 7 days @ 73°F (23°C).

<sup>3</sup> See data sheet for additional catalyst options.

# Step 3

## Focus on your specific performance objectives

### Typical properties† addition cure materials

SILASTIC™ silicone rubber*									
	RTV-4230-E	RTV-4130-J	RTV-4136-M	RTV-4133-M2	RTV-4131-P1	RTV-4250-S	RTV-4251-S2	RTV-4234 T4	RTV-4234 T4 O <sup>3</sup>
<b>As supplied</b>									
Specific gravity	1.12	1.28	1.29	1.29	1.12	1.12	1.13	1.1	1.1
<b>As catalyzed</b>									
Appearance	White	Green	Regal Blue	Regal Blue	Off White	Green	Off White	Translucent	Translucent
Viscosity, poise	550	900	900	660	135	128	90	350	350
<b>As-cured physical properties<sup>1</sup></b>									
Durometer hardness, Shore A, points	35	56	59	59	25	26	20	40	40
Tensile strength, psi	800	900	650	700	1087	1000	913	971	942
Elongation, percent	350	250	250	200	850	900	600	400	375
Tear strength die B, psi	110	90	90	85	131	140	131	150	180
<b>Linear shrink, percent</b>									
After 24 hrs @ 25°C (77°F)	Nil <sup>2</sup>	Nil <sup>2</sup>	Nil <sup>2</sup>	Nil <sup>2</sup>	Nil <sup>2</sup>	Nil <sup>2</sup>	Nil <sup>2</sup>	Nil <sup>2</sup>	Nil <sup>2</sup>
After 7 days @ 25°C (77°F)	0.1	0.1	0.1	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.

<sup>1</sup> Based on sample thickness of 125 mils, cured 24 hours at room temperature.

<sup>2</sup> Shrinkage not measurable after curing 24 hours at room temperature.

<sup>3</sup> SILASTIC™ RTV-4234-T4 O – SILASTIC™ RTV-4234-T4 Base/SILASTIC™ RTV-4234-T4 O Curing Agent.

# Other DOWSIL™ and XIAMETER™ products for the moldmaking industry

## **DOWSIL™ 236 Dispersion:**

White, one-part room-temperature cure coating. Used to prevent casting resins from sticking to wooden molding boxes/frames.

## **DOWSIL™ 3-6559 Cure Accelerator:**

Can be used to speed up room-temperature cure of all addition cure (platinum cure) moldmaking silicone rubbers and as a surface treatment to prevent inhibition. Contains a silicone polymer and platinum catalyst.

## **DOWSIL™ 732 Multi-Purpose Sealant:**

A one-part room-temperature cure adhesive used to repair torn molds.

## **DOWSIL™ 734 Flowable Sealant:**

A one-part room-temperature cure coating used for painting silicone robotic skins; easily pigmented and diluted with solvents.

## **DOWSIL™ 92-009 Dispersion Coating:**

A one-part, room-temperature cure coating used for painting silicone robotic skins; easily pigmented.

## **DOWSIL™ HS Extender:**

Additive to extend the working time of condensation cure (tin cure) moldmaking rubbers in conditions of high temperature and humidity.

## **DOWSIL™ OS-2 Silicone Cleaner and Solvent:**

Non-ozone depleting, VOC exempt silicone cleaner to clean plastics and metals; excellent for removing oils and uncured silicones.

## **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:**

Clear liquid. Can be used with SILASTIC™ RTV-3481, RTV-3483, RTV-3498, RTV-4230-E, RTV-4131-P1, RTV- 4250-S, RTV-4251-S2, RTV-4234-T4 silicone rubbers to produce skin molds on vertical surfaces or from immovable objects.\*

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

## Contact us

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