

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 the XIAMETER[®] brand, 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 XIAMETER[®] 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.

XIAMETER brand 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

XIAMETER® 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			Addition Cure Products		
XIAMETER® Brand Silicone Rubbers			XIAMETER® Brand Silicone Rubbers		
<ul style="list-style-type: none"> • For molding figurines, decorative reproduction and making transfer pads • Provide outstanding resistance to inhibition • Use tin catalyst • Offer variable cure times at room temperature 			<ul style="list-style-type: none"> • 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 		
RTV-3133 Base. General purpose, low tear strength, low durometer, white.	RTV-3110 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.	RTV-3496 Base. High tear strength, low durometer, very good resistance to polyester resin, suited for reproduction of figurines.	RTV-4136-M Base. Medium tear resistance, high durometer, high inhibition resistance, demoldable in 16 hours, regal blue.	RTV-4131-P1 Kit. High tear strength, suited for production of print pads, can be colored.	RTV-4232-T2 Kit. Translucent/colorless, low viscosity, medium durometer, high inhibition resistance.
RTV-3481 Base. High tear strength, low durometer. Well-suited for one-part molds.	RTV-3112 Base. General purpose, low tear strength, high durometer, white.	RTV-3497 Base/RTV-3081 Curing Agent. High tear strength, low durometer, very good resistance to polyester resin, suited for reproduction of figurines.		RTV-4250-S Base. High tear resistance, low durometer, low viscosity, high inhibition resistance, high elongation.	RTV-4232-T2 Base/RTV-4232-T2 HD Curing Agent. Higher durometer version of XIAMETER® RTV-4232-T2.
RTV-3483 Kit. Medium tear strength, low durometer	RTV-3120 Base. Low tear strength, high durometer, excellent heat stability, red.	RTV-3498 Base/RTV-3081 Curing Agent . High tear strength, low durometer, very good resistance to polyester resin, suited for reproduction of figurines.		RTV-4251-S2 Kit. High tear resistance, medium durometer and low viscosity, suited for reproduction of reconstituted stone.	RTV-4234-T4 Kit. High tear strength, high durometer, translucent, suited for prototype design.
RTV-3487 Base. Medium tear strength, very low durometer, low mixed viscosity. Well-suited for one-part molds.					RTV-4260-V Kit. High tear strength, high durometer, suited for architectural and prototype design.

Typical Moldmaking Variables

	Condensation Cure Products										Addition Cure Products						
	XIAMETER® RTV Silicone Rubber																
	3481	3483	3487	3110	3112	3120	3133	3496	3497	3498	4136-M	4131-P1	4250-S	4251-S2	4232-T2	4234-T4	4260-V
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

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
Condensation Cure	XIAMETER® RTV-3481 Base			
	XIAMETER® RTV-3081 Curing Agent	100:5	1.5 – 2 hrs	24 hrs
	XIAMETER® RTV-3081-R Curing Agent	100:5	1.5 – 2 hrs	24 hrs
	XIAMETER® RTV-3081-F Curing Agent	100:5	30 – 45 min	6 hrs
	XIAMETER® RTV-3081-VF Curing Agent	100:5	8 – 10 min	2 hrs
	XIAMETER® RTV-3483 Kit			
	XIAMETER® RTV-3083 Curing Agent	100:5	1.5 – 2 hrs	24 hrs
	XIAMETER® RTV-3487 Base			
	XIAMETER® RTV-3087-S Curing Agent	100:5	1.5 – 2 hrs	24 hrs
	XIAMETER® RTV- 3110 Base			
	XIAMETER® RTV-4250-S	10:1	2 hrs	7 hrs
		20:1	3 hrs	12 hrs
	XIAMETER® RTV-3112 Base			
	XIAMETER® RTV-4250-S	10:1	1 hr	8 hrs
		20:1	2 hrs	12 hrs
	XIAMETER® RTV-3120 Base			
	XIAMETER® RTV-4250-S	10:1	1 hr	8 hrs
		20:1	2 hrs	12 hrs
	XIAMETER® RTV-3133 Base			
	XIAMETER® RTV-3081-F Curing Agent	100:5	30 – 45 min	6 hrs
	XIAMETER® RTV-3496 Base			
	XIAMETER® RTV-3081 Curing Agent	100:5	2 – 3 hrs	24 hrs
	XIAMETER® RTV-3081-R Curing Agent	100:5	2 – 3 hrs	24 hrs
	XIAMETER® RTV-3081-F Curing Agent	100:5	1 – 1.5 hrs	8 hrs
XIAMETER® RTV-3497 Base/RTV-3081 Curing Agent				
XIAMETER® RTV-3081 Curing Agent	100:5	2 – 3 hrs	24 hrs	
XIAMETER® RTV-3081-R Curing Agent	100:5	2 – 3 hrs	24 hrs	
XIAMETER® RTV-3081-F Curing Agent	100:5	1 – 1.5 hrs	8 hrs	
XIAMETER® RTV-3498 Base/RTV-3081 Curing Agent				
XIAMETER® RTV-3081 Curing Agent	100:5	2 – 3 hrs	24 hrs	
XIAMETER® RTV-3081-R Curing Agent	100:5	2 – 3 hrs	24 hrs	
XIAMETER® RTV-3081-F Curing Agent	100:5	1 – 1.5 hrs	8 hrs	
Addition Cure	XIAMETER® Silicone Rubbers			
	XIAMETER® RTV-4136-M Base	10:1	1 hr	16 hrs
	XIAMETER® RTV-4131-P1 Kit	10:1	45 min	8 hrs
	XIAMETER® RTV-4250-S Base	10:1	45 min	7 hrs
	XIAMETER® RTV-4251-S2 Kit	10:1	1 hr	6 – 8 hrs
	XIAMETER® RTV-4232-T2 Kit	10:1	2.5 hrs	10 hrs
	XIAMETER® RTV-4232-T2 HD Curing Agent	10:1	1 hr	12 hrs
	XIAMETER® RTV-4234-T4 Kit	10:1	1.5 hrs	12 hrs
	XIAMETER® RTV-4234-T4 O Curing Agent	10:1	1.5 hrs	12 hrs
XIAMETER® RTV-4260-V Kit	10:1	1 – 1.5 hrs	6 – 8 hrs	

Once you've narrowed the field to a few materials, it's time to look at your cure options.

XIAMETER® silicone rubbers are available with a selection of curing agents, bringing options to adapt to your mold preparation or usage.

Each XIAMETER® RTV addition cure silicone rubber 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.

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

	XIAMETER [®] High Strength Moldmaking Silicone Rubber			XIAMETER [®] Silicone Rubber				XIAMETER [®] Bases ²		
	RTV-3481	RTV-3483	RTV-3487	RTV-3110	RTV-3112	RTV-3120	RTV-3133	RTV-3496	RTV-3497	RTV-3498
As Supplied										
Specific Gravity	1.21	1.16	1.15	1.14	1.30	1.45	1.15	1.16	1.21	1.23
Curing Agent Used	RTV-3081, RTV-3081-F, RTV-3081-R, RTV-3081-VF Curing Agent	RTV-3083 Curing Agent	RTV-3087-S Curing Agent	RTV-3010-S Catalyst	RTV-3010-S Catalyst	RTV-3010-S Catalyst	RTV-3081-F Curing Agent	RTV-3081, RTV-3081-F, RTV-3081-R Curing Agent	RTV-3081, RTV-3081-F, RTV-3081-R Curing Agent	RTV-3081, RTV-3081-F, RTV-3081-R Curing Agent
As Catalyzed										
Appearance	All White	White	White	White	White	Red	Beige	Off White	Off White	Light Beige
Viscosity, mPa.s	20,000-36,400	16,000	15,000	16,000	27,000	30,500	20,000	11,400-14,600	16,200-19,000	14,700-17,100
As-Cured Physical Properties¹										
Durometer Hardness, Shore A, points	24, 23, 19, 25	13	8	45	58	56	16	13, 15, 12	23, 24, 18	28, 27, 23
Tensile Strength, MPa	4.7, 4.6, 4.6, 4.1	3.9	2.6	2.7	4.4	4.0	3.2	3.6, 3.7, 4.0	4.8, 4.8, 4.2	4.9, 4.7, 4.9
Elongation, percent	544, 543, 622, 438	680	650	170	127	128	534	689, 585, 765	568, 528, 582	537, 483, 568
Tear Strength die B, N/mm	26, 24, 26, 25	25	13	<5	<7	7	<5	28, 28, 27	23, 25, 27	30, 23, 27
Linear Shrink, percent	0.2-0.4 (all)	0.2-0.4	0.2-0.4	0.2-0.4	0.4-0.6	–	0.2-0.4	0.2-0.4 (all)	0.2-0.4 (all)	0.2-0.4 (all)

[†] These values are not intended for use in preparing specifications.

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

² Cured for 7 days @ 23°C (73°F).

Typical Properties† Addition Cure Materials

	XIAMETER® Silicone Rubber								
	RTV-4136-M	RTV-4131-P1	RTV-4250-S	RTV-4251-S2	RTV-4232-T2	RTV-4232-T2 HDCA ³	RTV-4234-T4	RTV-4234-T4 O ⁴	RTV-4260-V
As Supplied									
Specific Gravity	1.29	1.12	1.12	1.13	1.12	1.12	1.1	1.1	1.35
As Catalyzed									
Appearance	Regal Blue	Off White	Green	Off White	Translucent	Translucent	Translucent	Translucent	Purple
Viscosity, mPa.s	90,000	13,500	12,800	12,000	55,000	55,000	35,000	35,000	19,000
As-Cured Physical Properties¹									
Durometer Hardness, Shore A, points	59	25	26	20	42	47-53	40	40	38
Tensile Strength, MPa	4.5	7.5	6.9	6.3	5.5	5.5-6.9	6.7	6.5	6.3
Elongation, percent	250	850	900	600	300	250	400	375	500
Tear Strength die B, N/mm	16	23	25	23	21	23-25	27	32	32
Linear Shrink, percent									
After 24 hrs @ 25°C (77°F)	Nil ²	Nil ²	Nil ²	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	0.1	0.1	0.1

† These values are not intended for use in preparing specifications.

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 T2 HDCA — RTV-4232-T2 Base/RTV-4232-T2 High Durometer Curing Agent; Cure 2 hrs @ 60°C (140°F).

⁴ T4 O — RTV-4234-T4 Base/RTV-4234-T4 O Curing Agent.

Other *Dow Corning*[®] and XIAMETER[®] products for the moldmaking industry

Two brands to serve you

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If you need to buy high-quality, standard silicone materials at market-based prices, we can help you achieve that through our web-enabled XIAMETER[®] brand and business model. Learn more at www.xiameter.com.

Dow Corning[®] 732 Multipurpose Sealant, Clear^Δ:

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

Dow Corning[®] 734 Flowable Sealant^Δ:

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 50CS:

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 XIAMETER RTV-3481, 3483, 3487, 3498, RTV-4131-P1, RTV-4250-S, RTV-4251-S2, RTV-4232-T2, RTV-4234-T4 and RTV-4260-V 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 20°C (68°F), XIAMETER RTV-3011 Thixo Additive may solidify; apply heat to re-liquefy by placing the closed container into hot water.

^Δ While this product is a Dow Corning[®] brand product, it is sold via the XIAMETER[®] Web-enabled business model from Dow Corning. Visit www.xiameter.com to order these products or to learn more.

Contact Us

Visit www.xiameter.com to learn more about the many product options available to you from the XIAMETER® brand.

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