XIAMETER® RTV-3496, 3497, 3498 Bases and XIAMETER® RTV-3081 Curing Agent

High strength silicone mold making rubbers with improved mold life for polyester resins

FEATURES

- High flowability and long working time for complex molds
- Outstanding release and high tear resistance for intricate originals and deep undercuts
- High elasticity, for easy removal of complex parts
- Choice of bases and curing agents for various rubber properties

APPLICATIONS

- High strength silicone mold making rubber developed for the detailed reproduction of figurines, art objects and similar items.

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local XIAMETER® sales representative prior to writing specifications on this product.

Property	Unit	Value		
Bases		**XIAMETER® RTV-3496 Base**	**XIAMETER® RTV-3497 Base**	**XIAMETER® RTV-3498 Base**
Color		Off-White	Off-White	Light Beige
Viscosity	mPa.s	18,600	24,800	27,200
Rel. density at 25ºC(77ºF)		1.16	1.21	1.23
Curing Agents		**XIAMETER® RTV-3081**	**XIAMETER® RTV-3081-R**	**XIAMETER® RTV-3081-F**
Color		Clear	Clear	Clear

Typical properties of Base and Curing Agent mixture and of cured material can be found in Table 1.

DESCRIPTION

XIAMETER® RTV-3496, 3497, 3498 Bases are two-component materials consisting of a base, which when mixed with XIAMETER® RTV-3081 Curing Agent, cures at room temperature by a condensation reaction. The materials are formulated to have an improved mold life for polyester resins.

HOW TO USE

Substrate preparation

The surface of the original should be clean and free of loose material. If necessary, and in particular with porous substrates, use a suitable release agent such as petroleum jelly or soap solution.

Mixing

Thoroughly stir XIAMETER RTV-3496, 3497, 3498 Bases before use, as filler separation may occur upon prolonged storage.

Weigh 100 parts of XIAMETER RTV-3496, 3497, 3498 Bases and 5 parts XIAMETER RTV-3081 Curing Agent into a clean container.

Mix together until the curing agent is completely dispersed in the base. Hand or mechanical mixing can be used, but do not mix for an extended period of time or allow the temperature to exceed 35ºC(95ºF).

Mix suitable small quantities to ensure thorough mixing of base and curing agent.

It is strongly recommended that entrapped air be removed in a vacuum chamber, allowing the mix to completely expand and then collapse. After a further 1-2 minutes under vacuum, the mix should be inspected and if free of air bubbles, can then be used.

A volume increase of 3-5 times will occur on vacuum de-airing the mixture, so a suitably large container should be chosen.

Caution: prolonged vacuum will remove volatile components from the mix and may result in poor thick section cure and non-typical properties.

Note: If no vacuum de-airing equipment is available, air entrapment can be minimized by mixing a small quantity of base and curing agent, then using a brush, painting the original with a thin layer. Leave at room temperature until the surface is bubble free and the layer has begun to cure. Mix a further quantity of base and curing agent and proceed as follows to produce a final mold.

Pouring the mixture and curing

Pour the mixed base and curing agent as soon as possible onto the original, avoiding air entrapment. The catalyzed material will cure to a flexible rubber and the mold can then be removed (see table of typical properties for details). If the working temperature is significantly lower than 23ºC (73.4ºF), the cure time will be longer. If the room temperature or humidity is very high, the working time of the catalyzed mixture will be reduced. The final mechanical properties will be reached within 7 days.

Use at high temperatures

Some molds produced from condensation cure silicone rubbers can degrade when exposed to temperatures above 150ºC (302ºF) over a period of time or when totally confined in storage at high ambient temperatures. This can result in softening and loss of elastic properties.

Resistance to casting material

The chemical resistance of fully cured XIAMETER RTV-3496, 3497, 3498 Bases is excellent. The materials are formulated to have an improved mold life for polyester resins. It should be noted however that ultimately, resins and other aggressive casting materials will attack silicone molds, changing physical properties, surface release and possibly mold dimensions. Molds should be checked periodically during long production runs. XIAMETER RTV-3496, 3497, 3498 Bases are industrial products and must not be used in food molding, dental and human skin molding applications.

PRODUCT SAFETY INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL, ENVIRONMENTAL, AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE XIAMETER WEB SITE AT WWW.XIAMETER.COM.

STORAGE

Product should be stored at or below 32°C (89.6°F) in original, unopened containers. The most up-to-date shelf life information can be found on the XIAMETER® Web site in the Product Detail page under Sales Specification.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses. Not intended for human injection. Not intended for food use.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

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Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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Table 1: Typical properties of Base and Curing Agent mixture and of cured material after 2 days at 23ºC (73ºF)

XIAMETER RTV-3496 Base		RTV-3496 / RTV-3081 Curing Agent	RTV-3496 / RTV-3081-R Curing Agent	RTV-3496 / RTV-3081-F Curing Agent
Base and Curing Agent mixture (100:5 by weight)				
Mixed viscosity	mPa.s	11,400	14,600	13,000
Working time, minimum	min	120-180	120-180	60-90
Curing time, maximum	hours	24	24	8
Cured for 2 days at 23ºC (73ºF)				
Hardness (Shore A)		13	12	15
Tensile strength	psi	522	580	537
	MPa	3.6	4.0	3.7
Elongation at break	%	689	765	585
Tear strength	ppi	160	154	160
	kN/mm	28	27	28
Linear shrinkage	%	0.2-0.4	0.2-0.4	0.2-0.4

XIAMETER RTV 3497 Base		RTV-3497 / RTV-3081 Curing Agent	RTV-3497 / RTV-3081-R Curing Agent	RTV-3497 / RTV-3081-F Curing Agent
Base and Curing Agent mixture (100:5 by weight)				
Mixed viscosity	mPa.s	19,000	16,200	16,600
Working time, minimum	min	120-180	120-180	60-90
Curing time, maximum	hours	24	24	8
Cured for 2 days at 23ºC (73ºF)				
Hardness (Shore A)		23	18	24
Tensile strength	psi	696	609	696
	MPa	4.8	4.2	4.8
Elongation at break	%	568	582	528
Tear strength	ppi	131	154	143
	kN/mm	23	27	25
Linear shrinkage	%	0.2-0.4	0.2-0.4	0.2-0.4

XIAMETER RTV 3498 Base		RTV-3498/ RTV-3081 Curing Agent	RTV-3498/ RTV-3081-R Curing Agent	RTV-3498/ RTV-3081-F Curing Agent
Base and Curing Agent mixture (100:5 by weight)				
Mixed viscosity	mPa.s	14,700	17,100	16,900
Working time, minimum	min	120-180	120-180	60-90
Curing time, maximum	hours	24	24	8
Cured for 2 days at 23ºC (73ºF)				
Hardness (Shore A)		28	23	27
Tensile strength	psi	711	711	682
	MPa	4.9	4.9	4.7
Elongation at break	%	537	568	483
Tear strength	ppi	171	154	131
	kN/mm	30	27	23
Linear Shrinkage	%	0.2-0.4	0.2-0.4	0.2-0.4