Technical Data Sheet

SILASTIC™ RTV-4230-E Silicone Rubber

High-strength, tear-resistant silicone rubber creates flexible molds to reproduce intricate detail

Features & Benefits

- Easy release
- High elongation
- Minimum shrinkage
- Long working time
- Heat-accelerable cure
- High strength
- Tear resistance
- Acceptable for food contact

Composition

- Two-part silicone rubber supplied as pourable liquid; cures to a flexible rubber

Applications

After mixing with its curing agent, SILASTIC™ RTV-4230-E Silicone Rubber becomes a pourable liquid capable of forming durable, flexible molds for producing parts with unusual configurations, severe undercuts and close tolerances.

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test[1]	Property	Unit	Result
	As Supplied		
0176	Appearance		
	Base		White
	Curing Agent		Clear
	Mixing Ratio, Base to Curing Agent, by weight		10:1
	As Catalyzed – 10:1 Ratio, by weight		
0176	Appearance		White
0050	Viscosity[2] at 25°C (77°F)	mPa-s (poise)	55,000 (550)
0055	Pot Life[3]	hours	2
0092A	Cure Time[4] at 25°C (77°F)	hours	24

1. CTMs (Corporate Testing Methods) correspond to ASTM standard tests in most instances. Copies of CTM procedures are available upon request.
2. Brookfield® Viscometer Model HAF, spindle #6 at 5 rpm.
3. Time required to double initial catalyzed viscosity.
4. Based on sample mass of one cubic inch.

Form No. 95-945-01 A

Typical Properties (Cont.)

Test	Property	Unit	Result
	As Cured – Physical Properties[5]		
0099	Durometer Hardness, Shore A	points	35
0137A	Tensile Strength	MPa (psi)	5.5 (800)
0137A	Elongation, Die C	percent	350
0159A	Tear Strength, Die B	kN/m (ppi)	19 (110)
0022	Specific Gravity at 25°C (77°F)		1.14
0157	Linear Shrink		
	24 hours	percent	Nil
	7 days	percent	0.1

5. Based on sample thickness of 125 mils, cured 24 hours at 25°C (77°F).

Description

SILASTIC RTV-4230-E Silicone Rubber is a two-part silicone rubber kit designed for use as a flexible moldmaking material. This high-strength, tear-resistant silicone rubber cures at room temperature with an addition-reaction cure.

An easy-to-mix ratio of 10:1 base to curing agent ensures accurate measuring or blending by hand or machine. The material cures in unlimited thickness, regardless of part configuration or degree of confinement.

How To Use

Pattern Preparation

Patterns to be molded should be thoroughly cleaned to remove grease, oil and other surface contaminants. Certain contaminants sometimes used in moldmaking operations can prevent SILASTIC RTV-4230-E Silicone Rubber from curing. Care should also be taken to ensure that corners, crevices and draws are free of dirt or particles of foreign matter. A light “blow over” with compressed air is advised when the pattern has convoluted draws or undercuts. Then place the original model or pattern in a light frame of cardboard, foil, wood or other material. Allow approximately 1/4 inch clearance on all sides and over the top of the pattern. Attach the pattern securely to the bottom of the frame so that it does not float.

A pattern release agent should then be wiped or sprayed on the pattern. A light coat of release agent on the sides and underside of the top of the frame will facilitate release.

Addition of Curing Agent

SILASTIC™ RTV-4230-E Silicone Rubber Base and its curing agent are produced in matched lots; the two parts should be used in the kit form, as supplied. For the best curing results, use metal cans, clean glassware or unwaxed paper containers for mixing the base and curing agent. SILASTIC™ RTV-4230-E Curing Agent should be mixed into the base material just before use (with either manual or mechanical stirring) in the amount of one part curing agent to ten parts base by weight. Note: Varying the ratio of the SILASTIC RTV-4230-E Silicone Rubber will not hasten or slow the rate of cure. However, it will result in lowering the physical properties of the cured rubber. Inclusion of air during mixing may cause voids in the finished mold. Entrapped air may be removed by applying a vacuum of 28 to 29 inches of mercury. Under such a vacuum, the material will expand four to five times its original volume. As the froth collapses, the mixture will recede to its original volume.

How To Use (Cont.)

The vacuum should be held one or two minutes longer before releasing. Pressure casting may be substituted with equal success. With the curing agent added, 0.45 kg (1 lb) of SILASTIC RTV-4230-E Silicone Rubber will produce 409.7 cubic centimeters (25 cubic inches) of rubber.

Working Time

Unlike conventional organotin catalyzed RTV rubbers that double or triple viscosity immediately after addition of curing agent, SILASTIC RTV-4230-E Silicone Rubber remains a pourable material of less than 1500 poise for up to two hours after being mixed with its curing agent.

Curing

The cure of SILASTIC RTV-4230-E Silicone Rubber occurs by a reaction between the base polymer and the curing agent. This polymerization requires 24 hours after the addition of the curing agent at room temperature. This material will not revert or depolymerize, even under conditions of elevated temperature and confinement. Vulcanization can be accelerated by heating the catalyzed material. However, this will increase the shrinkage. The rate at which thick sections will set up depends on the size and shape of the piece.

Inhibition

Localized inhibition of cure may be encountered at the interface when SILASTIC RTV-4230-E Silicone Rubber, during the curing process, comes in contact with certain contaminants. Among materials found to cause inhibition are sulphur-containing and organometallic salt-containing compounds, such as organic rubbers, and many RTV silicone rubbers. Surfaces previously in contact with any of the above materials may also cause inhibition. If in doubt, test for compatibility by brushing a small amount of catalyzed SILASTIC RTV-4230-E Silicone Rubber over a localized area of the surface to be reproduced. Inhibition has occurred if the rubber is gummy or uncured after the curing period has elapsed.

Disposal Guidance

Cured moldmaking materials may be safely and economically disposed as nonhazardous solid waste under current US Environmental Protection Agency (EPA) regulations. Typically, regulations in other countries are similar to these, but always check local regulations before disposal. If it is necessary to dispose of mold making base and catalyst, it is recommended that they first be mixed together and allowed to produce a cured nonhazardous solid material. Discarding unreacted catalyst or curing agent requires labeling as “hazardous waste” under current US EPA regulations. This necessity could result in added cost as incineration is typically the recommended disposal method. Unreacted base material is currently classified as nonhazardous waste if discarded alone. Specific disposal regulatory information is provided in each product safety sheet.

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Not intended for human injection.

Health And Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.

http://www.silastic.com