



Technical Data Sheet

SILASTIC™ RTV-4131-P1 Liquid Silicone Rubber

High strength silicone pad printing rubber

Features & Benefits

- Fast thick section cure at room temperature
- If required the product cure can be heat accelerated
- Medium hardness
- High tear resistance
- Very low shrinkage and good dimensional stability

Applications

- SILASTIC™ RTV-4131-P1 Liquid Silicone Rubber is suited for producing silicone print pads. It can be colored with pigments and softened by adding fluid (see below).

Typical Properties

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

Test	Unit	Value
Base		
Viscosity	mPa.s	27,000
Color		Off White
Curing Agent		
Viscosity	mPa.s	40
Color		Clear
Base and Curing Agent Mixture (100:10 by weight)		
Viscosity	mPa.s	13,500
Cured for 24 hours at 25°C (77°F)		
Hardness (Shore A)		25
Tensile strength	kN/m	7.5
Elongation at break	%	850
Tear strength		23
Relative density at 25°C (77°F)		1.12
Linear shrinkage	%	< 0.1

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SILASTIC™ RTV-4131-P1 Liquid Silicone Rubber

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Description

SILASTIC RTV-4131-P1 Liquid Silicone Rubber is a two component material consisting of SILASTIC™ RTV-4131-P1 Base which when mixed with the SILASTIC™ RTV-4131-P1 Curing Agent cures at room temperature by an addition reaction.

How To Use

Mold Preparation

The surface of the molds in which the print pads are being cast should be clean and free of loose material.

In all cases, it is advisable to check before casting that no adhesion occurs between the cured SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent and the mold.

Mixing

Weigh 100 parts of SILASTIC RTV-4131-P1 Base and 10 parts of SILASTIC RTV-4131-P1 Curing Agent in a clean container, then 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 35°C (95°F). Mix sufficiently small quantities to ensure thorough mixing of the 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.

The base/curing agent ratio MUST be between 100:9.5 and 100:10.5.

Pouring The Mixture And Curing

Pour the mixed base and curing agent as soon as possible into the mold, avoiding air entrapment. The catalyzed material will cure to a flexible rubber within 8 hours at room temperature (22–24°C/71.6–75.2°F) and the pad can then be removed. If the working temperature is significantly lower, the cure time will be longer. Heat accelerating the cure is possible.

Additional Information

Reducing hardness of SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent depending on the shape and fragility of the objects to be printed, pads need to have a specific hardness. 100 parts SILASTIC RTV-4131-P1 Base cured with 10 parts SILASTIC RTV-4131-P1 Curing Agent result in a rubber with a Shore A hardness of 25. This is too hard for many applications. To reduce hardness, silicone oil can be added.

Up to 60–80 parts fluid will reduce SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent hardness to what is typically needed for printing pads. Table 1 gives some typical properties of SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent diluted with silicone oil, 50 cSt.

Please note that working time and cure time will be prolonged with fluid addition.

It is important that the mixing ratio of base and curing agent is always 100:10, independent of the amount of fluid added. It is recommended to first weigh the base and curing agent and then add fluid to avoid errors.

Additional
Information
(Cont.)

Coloring SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent
Color coding of silicone printing pads is sometimes desired.

The SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent pigment pastes are particularly well suited to color SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent. Additions of 1–2% by weight are recommended.

Inhibition Of Cure

All addition cured silicone elastomers are susceptible to cure inhibition when in contact with certain materials and chemicals. Inhibition has occurred if the elastomer is only partially cured after 24 hours, or has a sticky surface in contact with another material. Amines and sulphur containing materials are strong inhibitors, as are organo tin salts used in condensation cure silicone elastomers. Wet or moist surfaces can cause gas bubbles to be formed during cure in the silicone adjacent to the substrate surface. It is strongly recommended that mixing containers, molds, tools and additives be checked for any inhibition effect before use.

Note: SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent is an industrial product and must not be used in food molding, dental and human skin molding applications.

Table 1:
Typical Properties of SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent diluted with silicone, oil, 50 cSt

Parts fluid per 100 parts base	Hardness (Shore 00)	Elongation (%)	Tensile Strength (MPa)
40	61	630	2.6
60	52	550	1.8
70	48	550	1.5
80	45	550	1.5

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.

Usable Life And Storage

Product should be stored at or below 25°C (77°F) in original, unopened containers. The most up-to-date shelf life information can be found on the Dow Web site in the Product Detail page under Sales Specification.

SILASTIC RTV-4131-P1 Base and SILASTIC RTV-4131-P1 Curing Agent can be sensitive to moisture and contamination. Keep in original vented container and ensure it is well closed after use.

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.

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>

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