

# SILASTIC® P-1 Base and Curing Agent

## FEATURES

- 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

## High strength silicone pad printing rubber

## APPLICATIONS

- SILASTIC P-1 is suited for producing silicone print pads. It can be coloured with pigments and softened by adding fluid (see below).

## TYPICAL PROPERTIES

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

Property	Unit	Value
<b>Base</b>		
Viscosity	mPa.s	27,000
Color		Off white
<b>Curing Agent</b>		
Viscosity	mPa.s	140
Color		Clear
<b>Base and Curing Agent mixture (100:10 by weight)</b>		
Viscosity	mPa.s	13,500
<b>Cured for 24 hours at 25°C (77°F)</b>		
Hardness (Shore A)		25
Tensile strength	MPa	7.5
Elongation at break	%	850
Tear strength	kN/m	23
Relative density at 25°C (77°F)		1.12
Linear shrinkage	%	<0.1

## DESCRIPTION

SILASTIC P-1 is a two component material consisting of SILASTIC P-1 Base, which when mixed with the SILASTIC P-1 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 P-1 and

the mold.

### Mixing

Weigh 100 parts of SILASTIC P-1 Base and 10 parts of SILASTIC P-1 Curing Agent (see handling precautions) 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 mould, avoiding air entrapment. The catalysed 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 P-1**

Depending on the shape and fragility of the objects to be printed, pads need to have a specific hardness. 100 parts SILASTIC P-1 Base cured with 10 parts SILASTIC P-1 Curing Agent result in a rubber with a Shore A hardness of 25. This is too hard for many applications. To reduce hardness, inert DOW CORNING® 200 Silicone Fluid can be added. Up to 60-80 parts fluid will reduce SILASTIC P-1 hardness to what is typically needed for printing pads. Table 1 gives some typical properties of SILASTIC P-1 diluted with DOW CORNING 200 Fluid, 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.

### **Coloring SILASTIC P-1**

Color coding of silicone printing pads is sometimes desired. The SILASTIC® LPX pigment pastes are particularly well suited to color SILASTIC P-1. 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, moulds, tools and additives be checked for any inhibition effect before use.

#### **Note:**

SILASTIC P-1 is an industrial product and must not be used in food molding, dental and human skin molding applications.

### **HANDLING PRECAUTIONS**

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. 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 FROM YOUR LOCAL DOW CORNING SALES REPRESENTATIVE.

### **USABLE LIFE AND STORAGE**

When stored at or below 25°C (77°F) in the original unopened containers, SILASTIC P-1 Base and SILASTIC P-1 Curing Agent have a usable life of 12 months from the date of

production.

SILASTIC P-1 Curing Agent can be sensitive to moisture and contamination. Keep in original vented container and ensure it is well closed after use.

### **PACKAGING**

SILASTIC P-1 Base and SILASTIC P-1 Curing Agent are available in 5.5kg, 22kg and 220kg kits.

### **LIMITATIONS**

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

### **HEALTH AND ENVIRONMENTAL INFORMATION**

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area.

For further information, please consult your local Dow Corning representative.

### **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 Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. 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. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Dow Corning provides you with a

specific, duly signed endorsement of fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.

**Table 1: Typical Properties of SILASTIC P-1 diluted with DOW CORNING 200 Fluid, 50 cSt.**

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