

# RHODORSIL® RTV 581

December 1991

TECHNICAL DATA SHEET

## Description

**RHODORSIL® RTV 581** is a two-component silicone elastomer which cures at room temperature by a polycondensation reaction. Curing can be speeded up by heating moderately.

**RHODORSIL® RTV 581** is supplied in the form of a viscous liquid which, after **CATALYST 11 016** has been added, is transformed into a rubbery material.

## Advantages

Self-adhesion : **RHODORSIL® RTV 581** offers an advantage over other RTV silicone elastomers in that it adheres to a large number of materials without a primer. This simplifies processing, because articles to be encapsulated only need degreasing.

## Uses

A coating, bonding and filling material for electronic components and electrical engineering equipment.

## Characteristics

### 1. Before catalysis

**RHODORSIL® CATALYST 11 016  
RTV 581**

Aspect.....	viscous liquid	fluid liquid
Colour .....	whitish	blue
Specific gravity at 25 °C, approx	1.2	1.0
Viscosity at 25 °C mPa/s, approx. .	20 000	

### 2. Catalysis

<b>RHODORSIL® RTV 581</b> .....	100 parts
<b>CATALYST 11 016</b> .....	3 parts
Pot life of the catalysed mixture at 25 °C, approx. ....	45 minutes
Time after which the elastomer (or object) can be handled, approx. ....	24 hours

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## Characteristics (cont.)

### 3. After curing

#### 3.1. Mechanical properties

Measurements made after 3 days' curing at 25° C, relative humidity approximately 50 %.

##### 3.1.1. Specimen 6 mm thick :

Shore A hardness, points, approx.

(ASTM D 2 240). ..... 30

##### 3.1.2. Film 2 mm thick :

Breaking strenght, MPa, approx.

(AFNOR NF T 46 002 - specimen H2) ..... 1.7

Breaking elongation, %, approx.

(AFNOR NF T 46 002 - specimen H2) ..... 200

#### 3.2 Physical properties

Expansion coefficient, K<sup>-1</sup>, approx. .... 8 x 10<sup>-4</sup>

Heat conductivity, W/ (m×K), approx. .... 0.27

#### 3.3. Dielectric properties

Dielectric strength, kV/mm, approx.

(AFNOR NF C 26 225 and CEI 243) ..... 12

Dielectric constant at 1 kHz, approx.

(AFNOR NF C 26 230 and CEI 250) ..... 3

Power factor at 1 kHz, approx.

(AFNOR NF C 26 230 and CEI 250) ..... 1 x 10<sup>-2</sup>

Volume resistivity, Ω/cm, approx.

(AFNOR NF C 26 215 and CEI 93) ..... 5 x 10<sup>12</sup>

**Remark :** the above values are approximate and may not be used in drawing up specifications. Please consult us about such specifications.

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## Processing

### 1. Catalysis\*

CATALYST 11 016 should be added to **RHODORSIL® RTV 581** immediately before use, in a proportion of 3 parts of CATALYST 11 016 by weight to 100 parts of **RHODORSIL® RTV 581**. The two products may be mixed by hand or with a mechanical stirrer running at low speed for a few minutes, or with a two-component machine. The blue colour of the catalyst helps in judging when the mixture is even.

### 2. Degassing

It may sometimes be necessary to degas the catalysed mixture in a vacuum to eliminate air bubbles which might remain in the finished article.

Degassing is generally performed in a 30 to 50 mbar vacuum for about ten minutes, applying the vacuum twice. Degassing can be speeded up by using a container with a large diameter in relation to depth.

### 3. Adhesive properties

The adhesive properties of this **RHODORSIL® RTV** make a primer unnecessary. Articles to be encapsulated may simply require degreasing.

The natural adhesion of **RHODORSIL® RTV 581** is :

• *Good on :*

metals : steel, brass, aluminium, copper,  
composites : glass-epoxy fabric, melamine, polyester, silicone, asbestos sheets,  
thermoplastic polyester film, polyimide, one-component silicone elastomers, such as Rhodorsil CAF.

• *Moderate on :*

polyethylene, polyamide, polycarbonate, polyurethane, PVC, heat-curing silicone elastomers (EVC), high tear-strength RTV-2.

• *Nil on :*

polystyrene, polymethacrylate, PTFE, ABS.

\* RTV should always be homogenised well before it is taken from the original container.

#### 4. Curing

**RHODORSIL® RTV 581** cures completely in 3 days at a temperature of 20 to 25 °C. This time can be reduced by heating at 60 °C for 8 hours.

In all cases, we recommend a maximum thickness of 10 mm to avoid the risk of bubbles.

*To accelerate curing*

Curing can also be accelerated without heating by adding **RHODORSIL Accelerator PA 65** in a proportion of between 0.1 and 1 part to 100 parts of the mixture of **RHODORSIL® RTV 581** and **CATALYST 11 016**, but the resulting catalysed mixtures have a short pot life and are highly thixotropic. In addition, after curing, hardness is increased by several Shore A points.

The other physical and dielectric properties are practically unchanged, and the lifetime of the cured product is still limited if it is exposed to a high temperature in a confined space.

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## Packaging

**RHODORSIL® RTV 581** and **CATALYST 11 016** are supplied in kits of :

- 1 kg of RTV + 30 g of catalyst
- 5 kg of RTV + 150 g of catalyst.

**RHODORSIL® RTV 581** is also available in 25 kg drums with the appropriate quantity of **CATALYST 11 016**.

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## Storage and shelf life

**RHODORSIL® RTV 581** AND **CATALYST 11 016** MUST BE USED WITHIN 6 MONTHS OF DELIVERY.

To preserve all the properties of **RHODORSIL® RTV 581** and **CATALYST 11 016**, they must be kept in the original closed drums at a temperature below 30 °C, and used as soon as the drums are opened.

RTV 581

PLEASE NOTE

Shelf Life Updated To:  
16 Months

CATALYST 11016

PLEASE NOTE

Shelf Life Updated to:  
24 Months



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## Safety

Please consult the Safety Data Sheets on **RHODORSIL® RTV 581** and **CATALYST 11 016**.

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## Important

The information in this document is given in good faith but it is intended only as a guide and does not constitute a guarantee on our part, nor does it hold us responsible, particularly in the case of legal action by a third party in connection with the use of our products.

The approximate formulas given as illustrations are based on tests made by Rhône-Poulenc Chimie, which reserves the right to make technical modifications to the product.

These formulas must on no account be used substitutes for prior tests, which are essential to ensure that the product is suitable for each specific case.

In all cases, local regulations applicable to the use of our product should be checked.

We are at your disposal to provide information and literature.

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**RHÔNE-POULENC CHIMIE**  
SECTEUR SPECIALITES CHIMIQUES  
**ACTIVITE SILICONES**  
CEDEX 29 - 92097 PARIS LA DEFENSE  
TEL : (1) 47.68.12.34 - FAX : (1) 47.68.09.00 - TLX : 610 500 F  
SOCIETE ANONYME AU CAPITAL DE 2.249.870.000 F  
RCS NANTERRE B 642 014 526

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