Product Family Technical Data Sheet

Version: V4.2 Revision Date: 2025-10-24

# Platinum Cured Silicone Rubber

## Addition Cured Silicone Rubber

## 1. DESCRIPTION

Platinum-cured silicone rubber, also known as addition-cured silicone rubber, is a high-purity, odorless RTV-2 silicone material. Both Component A and Component B exhibit a translucent, viscous state before mixing. When mixed in a 1:1 ratio and stirred evenly, the material can cure at room temperature or be heat-accelerated for faster curing. Based on a platinum catalyst system, the curing process produces no by-products and offers excellent resistance to high and low temperatures, superior tear strength, and outstanding dimensional stability.


**Curing Principle:** Platinum-catalyzed addition curing, also known as hydrosilylation, is a reaction between cross-linkers rich in Si-H and vinyl-functionalized polysiloxanes. Unlike tin-cured silicone, the cure is initiated by the platinum catalyst and not moisture, so there are no issues with section thickness. Two-part systems do not release reaction by-products, allowing them to cure in closed environments.

## 2. FEATURES

1. Easy 1:1 mix ratio & fast curing.
2. Low viscosity for excellent flow.
3. Room temperature or heat-accelerated curing.
4. Food-grade safe & odorless.
5. High tear & tensile strength.
6. Ultra-low shrinkage (≤0.1%).
7. No heat or by-products.
8. Heat resistance is up to 250°C (482°F).


## 3. APPLICATIONS

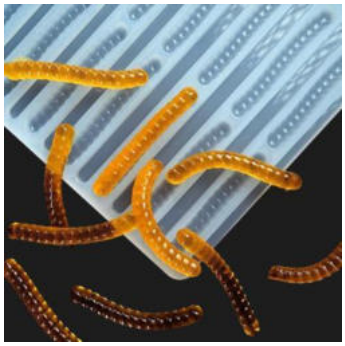
Platinum-cured silicone rubber is a highly versatile material due to its outstanding performance. Its food-grade, non-toxic properties make it perfect for culinary molds (baking, chocolate, candy). With ultra-low shrinkage and excellent detail reproduction, it is a top choice for rapid prototyping and industrial molds for casting resins, concrete, and foams. The high tear strength ensures durable, long-lasting molds suitable for repetitive casting cycles.

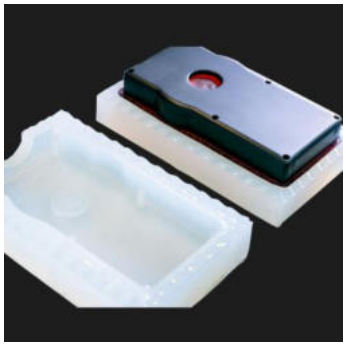

Cake Silicone Mold


Chocolate Silicone Mold


Resin Silicone Mold


Candle Silicone Mold


Candy Silicone Mold


Rapid Prototyping


Soap Silicone Mold


Cake Decoration Lace

## 4. TECHNICAL DATA

| Product Name | Hardness (Shore A) | Mix Ratio by Weight | Pot Life (Minute) | Cure Time (Hour) | Viscosity (Cps) | Tear Strength (N/mm) | Tensile Strength (Mpa) | Elongation at Break (%) |
|---|---|---|---|---|---|---|---|---|
| **RTV-4100** | 0±2 (C) | 1A:1B | 30-40 | 4-5 | 2,800±200 | 9±0.5 | 1.5±0.5 | 550±50 |
| **RTV-4105** | 5±1 | 1A:1B | 30-40 | 4-5 | 4,000±200 | 11±0.5 | 2.0±0.5 | 540±50 |
| **RTV-4110** | 10±1 | 1A:1B | 30-40 | 4-5 | 4,000±200 | 25±0.5 | 4.0±0.5 | 510±50 |
| **RTV-4115** | 15±1 | 1A:1B | 30-40 | 4-5 | 4,000±200 | 26±0.5 | 5.0±0.5 | 450±50 |
| **RTV-4120** | 20±1 | 1A:1B | 30-40 | 4-5 | 4,700±200 | 27±0.5 | 5.0±0.5 | 550±50 |
| **RTV-4125** | 25±1 | 1A:1B | 30-40 | 4-5 | 4,700±200 | 26±0.5 | 4.0±0.5 | 460±50 |
| **RTV-4130** | 30±1 | 1A:1B | 30-40 | 4-5 | 4,400±200 | 28±0.5 | 5.0±0.5 | 400±50 |
| **RTV-4135** | 35±1 | 1A:1B | 30-40 | 4-5 | 4,500±200 | 28±0.5 | 4.8±0.5 | 300±50 |
| **RTV-4140** | 40±1 | 1A:1B | 30-40 | 5-6 | 4,800±200 | 32±0.5 | 5.3±0.5 | 220±50 |
| **RTV-4145** | 45±2 | 1A:1B | 30-40 | 5-6 | 8,500±200 | 30±0.5 | 4.7±0.5 | 230±50 |
| **RTV-4150** | 50±2 | 1A:1B | 30-40 | 5-6 | 7,000±200 | 28±0.5 | 4.6±0.5 | 350±50 |

**Notes on Technical Data**

(1) All data is based on tests conducted at 25°C (77°F) and 50% relative humidity. Pot life and cure time are temperature-dependent.

(2) The RTV-4XXX series is naturally translucent. Pigments can be added to Part B to achieve custom colors.

(3) RTV-4100: Cures to an extremely soft silicone, though the surface may feel slightly tacky.

(4) RTV-4105, 4110, 4115: These low-viscosity grades cure to very soft and highly elastic rubbers that can stretch significantly without tearing and return to their original shape.

(5) RTV-4120 to 4140: This range offers a balance of flexibility and superior physical properties, resulting in durable, long-lasting molds.

(6) RTV-4145, 4150: These high-hardness grades provide maximum dimensional stability but are inherently more brittle with lower tear strength. They are best suited for applications where mold rigidity is the top priority.

## 5. PROCESSING NOTES

(1) Always use Part A and Part B from the same model and batch to ensure consistent performance.

(2) Before committing to a large project, it is highly recommended to conduct a small test to confirm the silicone's suitability with your specific materials and process.

(3) Do not use the silicone at temperatures below 15°C (60°F), as this can significantly slow down or prevent proper curing.

**Cure Inhibition Warning**

The platinum catalyst in this silicone is highly sensitive and can be neutralized by certain contaminants, preventing the silicone from curing properly. This is known as cure inhibition. Always ensure your master model and mixing tools are clean and free of the following substances:

- **Sulfur Compounds:** Sulfur-based modeling clays, natural rubber, latex gloves, some adhesives.
- **Tin Compounds:** Condensation-cure (tin-cured) RTV-2 silicones and their residues.
- **Amine Compounds:** Amine-catalyzed epoxy resins, some 3D printing resins (UV curable).
- **Organometallic Salts & Additives:** Notably those found in some PVC stabilizers.

## 6. SAFETY PRECAUTIONS

(1) Platinum-cured silicone is considered non-toxic and generally safe for skin contact. No special precautions are required. For personal comfort or hygiene, vinyl gloves are recommended. Avoid using latex gloves, as they may cause cure inhibition.

(2) For molds intended for food contact, wash the cured mold thoroughly with soap and warm water before its first use.

(3) Keep out of reach of children. Adult supervision is required.

## 7. STORAGE & SHELF LIFE

(1) **Storage Conditions:** Store the product at room temperature (15-25°C / 60-77°F) in a dry area. Keep away from direct sunlight.

(2) **Shelf Life:** The product has a shelf life of 24 months from the date of manufacture when stored under the recommended conditions. Storing at higher temperatures may reduce the usable shelf life.

(3) **Opened Containers:** Once opened, containers should be tightly resealed immediately after use to protect the material from contamination and moisture.

(4) **Beyond Shelf Life:** If the material is stored beyond its specified shelf life, it is not necessarily unusable. However, it is the user's responsibility to test and confirm its performance and suitability for the intended application.

## 8. PACKAGE

Our addition-cured silicone is supplied in matched kits containing Part A and Part B. We offer the following standard sizes:

| Total Kit Size | Part A | Part B |
|---|---|---|
| 2 kg | 1 kg | 1 kg |
| 10 kg | 5 kg | 5 kg |
| 50 kg | 25 kg | 25 kg |
| 400 kg | 200 kg | 200 kg |
| 2000 kg | 1000 kg | 1000 kg |

**Note:** We offer custom packaging services for OEM/ODM.