



Technical Data Sheet (TDS)

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

Platinum Cured Silicone Rubber - High Hardness Series

RTV-4140 A/B, RTV-4145 A/B, RTV-4150 A/B

1. DESCRIPTION

This series of addition-cure (platinum-catalyzed) silicone is a high-hardness material, characterized by its excellent dimensional stability. Both Part A and Part B are translucent, viscous liquids and can be colored with silicone pigments to achieve a variety of colors. After mixing in a 1:1 ratio by weight, the material cures within several hours at room temperature; heating can accelerate the cure.



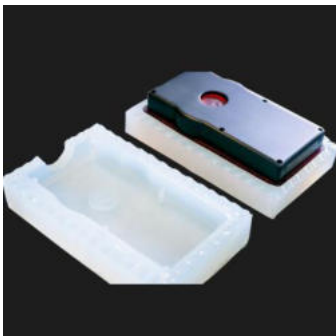
2. FEATURES



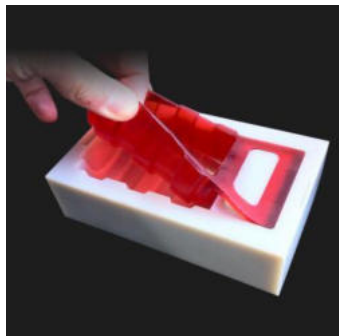
1. High hardness for mold rigidity.
2. Excellent dimensional stability.
3. Ultra-low shrinkage ($\leq 0.1\%$).
4. Fine detail reproduction.
5. High heat resistance (up to 250°C / 482°F).
6. Room temperature or heat-accelerated curing.

3. APPLICATIONS

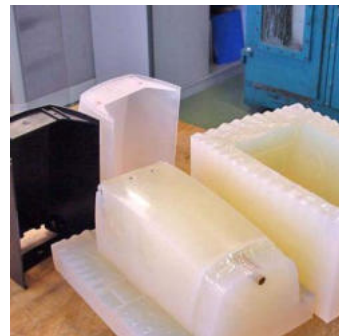
This series of high-hardness platinum-cured silicone is engineered for applications demanding maximum rigidity and precision. Its outstanding dimensional stability makes it the premier choice for creating robust, non-deforming molds for rapid prototyping, composite manufacturing (fiberglass), and casting industrial materials such as resins (epoxy, polyurethane), concrete, and parts for the automotive and electronics industries.



Rapid Prototyping



Polyurethane Casting Mold



Thin Shell Model Casting



Cultural Brick Mold

4. TECHNICAL DATA

Physical Property	RTV-4140 A/B	RTV-4145 A/B	RTV-4150 A/B
Unvulcanized Physical Properties @ 25°C/77°F			
Physical State	Liquid	Liquid	Liquid
Form	Viscous	Viscous	Viscous
Odor	No Odors	No Odors	No Odors
Part A Color	Translucent	Translucent	Translucent
Part B Color	Translucent	Translucent	Translucent
Part A Viscosity, mPa.s	4,800	8,500	7,000
Part B Viscosity, mPa.s	4,300	7,500	6,500
Specific Gravity, g/cm ³	1.08-1.10	1.08-1.10	1.08-1.10
Part A and Part B mixed @ 25°C/77°F			
Mix Ratio by Weight (A:B)	1:1	1:1	1:1
Working Time, Minutes	35	35	35
Curing Time, Hours	6	6	6
Typical Properties of Cured Rubber @ 24 Hrs 25°C/77°F			
Hardness, Shore A Durometer	40	45	50
Tear Strength, N/mm	32.0	30.0	28.0
Tensile Strength, Mpa	5.3	4.7	4.6
Elongation, %	220	230	350
Shrinkage, %	≤0.1	≤0.1	≤0.1
Heat Resistance, °C (°F)	250 (482)	250 (482)	250 (482)

Custom Colors: The standard product is translucent. Pigment is added to Part B for custom colors. Appearance depends on the Part A base:

- (1) **Translucent:** Part A (translucent) + Part B (pigmented)
- (2) **Opaque (solid):** Part A (white base) + Part B (pigmented)

5. PROCESSING STEPS

Step 1: Prepare the Master Pattern	Ensure the master pattern is clean, dry, properly sealed if porous, and free of cure inhibitors (see Step 3 Warning). Secure the pattern within the mold box.
Step 2: Apply Release Agent (If Necessary)	Spray or apply a thin, even coat of silicone-specific release agent if needed (e.g., for porous surfaces, complex shapes, or maximum mold life). Avoid agents that inhibit cure.
Step 3: Measure & Mix Components	<p>Accurately measure equal amounts of Part A and Part B by weight (1:1 ratio). Combine them in a clean container and mix thoroughly, scraping the sides and bottom.</p> <p>WARNING: CURE INHIBITION! Ensure tools and surfaces are perfectly clean and free of contaminants such as sulfur, tin, amines, moisture, etc.</p>
Step 4: Vacuum Degassing (Recommended)	<p>For bubble-free molds, vacuum degassing is recommended. Place the mixed silicone in a container 3-5 times its volume. Apply vacuum in a chamber until the silicone rises, breaks, and settles. Continue for another 1-2 minutes.</p> <p>Note: Complete degassing and pouring within the silicone's pot life.</p>
Step 5: Pouring the Silicone	Pour the degassed silicone immediately. Slowly pour in a thin stream into the mold's lowest point, letting it flow up and around the master pattern. Ensure the silicone covers the highest point of the pattern by at least 0.5 cm (approx. 0.2 inch).
Step 6: Cure & Demold	Platinum-cured silicone typically fully cures within 4-5 hours at room temperature, and curing can be accelerated with heat. Curing below 15°C (60°F) may be slow or difficult.

6. PROCESSING NOTES

- (1) Always use Part A and Part B from the same model and batch. If using different batches, a small test is required to ensure suitability.
- (2) It is strongly recommended to conduct a small-scale test to confirm compatibility with your specific materials before starting a large project.
- (3) For best results, mix and cure the material between 20-30°C (68-86°F) with relative humidity below 50%, as high humidity can cause curing defects.
- (4) Do not use at temperatures below 15°C (60°F), as this may prevent proper curing.

Cure Inhibition Warning

The platinum catalyst is sensitive and can be neutralized by contaminants, which prevents the silicone from curing (a tacky surface will remain). Ensure master models and tools are clean and free of the following substances:

- Sulfur compounds (e.g., sulfur-based clays, natural rubber, latex gloves).
- Tin compounds (e.g., condensation-cure silicones).
- Amine compounds (e.g., some epoxy and UV resins).
- Certain PVC stabilizers and newly cast polyesters.

7. SAFETY PRECAUTIONS

- (1) Under normal storage and handling conditions, this product is stable and will not undergo hazardous reactions.
- (2) Keep out of reach of children.

First Aid Measures

- **Skin Contact:** Wash the affected skin thoroughly with soap and water. Seek medical attention if symptoms persist.
- **Eye Contact:** In case of contact, flush eyes immediately with plenty of water for at least 15 minutes and seek medical attention.
- **Inhalation:** Under normal conditions of intended use, this material is not considered an inhalation hazard.
- **Ingestion:** Do not induce vomiting. Rinse mouth thoroughly with water and seek medical attention.

8. STORAGE & SHELF LIFE

- (1) **Recommended Storage:** For optimal results, store the material in a cool, dry place at room temperature (15-25°C / 60-77°F), away from direct sunlight and incompatible materials such as acids and bases.
- (2) **Shelf Life:** This product has a shelf life of 12 months from the date of manufacture when stored correctly. Storing at higher temperatures may reduce the usable shelf life.
- (3) **Opened Containers:** Once opened, containers must be tightly resealed immediately after use to prevent contamination and leakage.
- (4) **Beyond Shelf Life:** If the product 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 before use.

9. 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.