



## Technical Data Sheet (TDS)

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

# Transparent Silicone Rubber - High Hardness Series

RTV-5130 A/B, RTV-5140 A/B

RTV-5230 A/B, RTV-5240 A/B

## 1. DESCRIPTION

This series of transparent silicone is a high-hardness material. It consists of Part A and Part B. When mixed in a 1:1 or 10:1 ratio by weight, the material cures at room temperature or can be accelerated with slightly elevated temperatures. Its transparency is a key feature, supporting visual confirmation during casting and precise cutting of parting lines.



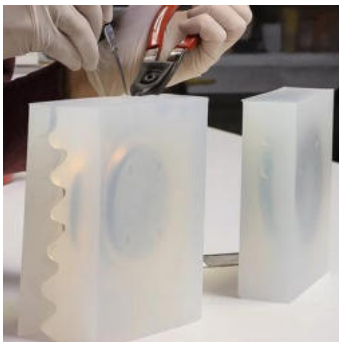
## 2. FEATURES



1. High hardness and strength.
2. High transparency for precise mold cutting
3. Ultra-low shrinkage ( $\leq 0.1\%$ )
4. Heat resistant up to 250 °C (482 °F).
5. Good release properties.
6. Excellent detail reproduction.

## 3. APPLICATIONS

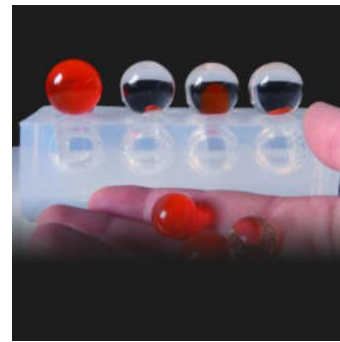
This series of high-hardness transparent silicone is engineered for applications requiring exceptional precision and durability. Its high strength and rigidity make it ideal for creating durable, non-deforming molds for rapid prototyping, jewelry lost-wax casting, and casting industrial materials such as epoxy and polyurethane resins. It is also well suited to producing prototype parts for the consumer electronics and automotive industries.



Rapid Prototyping



Lost Wax Process



Epoxy Resin Silicone Mold



Diamond Clear Mold

## 4. TECHNICAL DATA

Physical Property	RTV-5130 A/B	RTV-5140 A/B	RTV-5230 A/B	RTV-5240 A/B
<b>Unvulcanized Physical Properties @ 25°C/77°F</b>				
Physical State	Liquid / Fluid	Liquid / Fluid	Liquid / Fluid	Liquid / Fluid
Form	Viscous	Viscous	Viscous	Viscous
Odor	No Odors	No Odors	No Odors	No Odors
Part A (Base) Color	Transparent	Transparent	Transparent	Transparent
Part B (Catalyst) Color	Transparent	Transparent	Clear	Clear
Part A Viscosity, mPa.s	55,000	60,000	75,000	80,000
Part B Viscosity, mPa.s	50,000	55,000	200	200
Part A Specific Gravity, g/cm <sup>3</sup>	1.06-1.08	1.06-1.08	1.06-1.08	1.06-1.08
Part B Specific Gravity, g/cm <sup>3</sup>	1.06-1.08	1.06-1.08	1.00	1.00
<b>Part A and Part B mixed @ 25°C/77°F</b>				
Mix Ratio by Weight (A:B)	1:1	1:1	10:1	10:1
Working Time, Minutes	45	45	45	45
Curing Time, Hours	9	10	9	10
<b>Typical Properties of Cured Rubber @ 24 Hrs 25°C/77°F</b>				
Hardness, Shore A Durometer	30	40	30	40
Tear Strength, N/mm	13.0	14.0	13.0	14.0
Tensile Strength, Mpa	3.0	3.5	3.0	3.5
Elongation, %	350	300	350	300
Shrinkage, %	≤0.10	≤0.10	≤0.10	≤0.10
Heat Resistance, °C (°F)	250 (482)	250 (482)	250 (482)	250 (482)

## 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.

<b>Step 3: Measure &amp; Mix Components</b>	Accurately weigh or measure Part A (base) and Part B (catalyst) according to the mix ratio specified on the product label or the specific TDS (e.g., 10:1 or 1:1 by weight). Combine them in a clean container and mix thoroughly, scraping the sides and bottom until completely uniform.  <b>WARNING: CURE INHIBITION!</b> Ensure that tools and surfaces are perfectly clean and free of contaminants such as sulfur, tin, amines, moisture, etc.
<b>Step 4: Vacuum Degassing (Recommended)</b>	Due to the higher viscosity of transparent liquid silicone, vacuum degassing is essential for achieving bubble-free, highly transparent molds. 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 vacuuming for another 2-3 minutes.
<b>Step 5: Pouring the Silicone</b>	Pour the degassed silicone immediately. Slowly pour in a thin stream into the lowest point of the mold box, allowing it to flow naturally. A second degassing after pouring, if possible, can further reduce bubbles.
<b>Step 6: Cure &amp; Demold</b>	Transparent silicone fully cures at room temperature in 12 hours. Heat acceleration (e.g., 60-80°C) is possible. Curing below 20°C (68°F) may slow curing or make it difficult.

## 6. PROCESSING NOTES

- (1) **Batch Consistency & Pre-Testing:** Always use Part A and Part B from the same kit and batch. It is strongly recommended to conduct a small-scale test to confirm compatibility and suitability before starting a large project.
- (2) **Temperature & Curing:** To minimize shrinkage, cure at room temperature, 20-30°C (68-86°F). Curing below 20°C (68°F) is not recommended as it may reduce the final cured hardness.
- (3) **Catalyst Handling:** It is essential to tightly seal the Part B catalyst container immediately after use. Prolonged exposure to air can cause hydrolysis, which may result in incomplete curing.
- (4) **Cure Inhibition Warning:** The platinum catalyst is sensitive to contaminants. Ensure models and tools are clean and free of substances like sulfur (clays, latex), tin (condensation-cure silicones), and amines (some epoxy/UV resins).

## 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 with soap and water; seek medical advice if irritation persists.
- **Eye contact:** Rinse cautiously with clean water for at least 15 minutes; obtain medical attention if irritation continues.
- **Inhalation:** Not expected to present an inhalation hazard under normal use; move to fresh air if discomfort occurs.
- **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 in a cool, dry, well-ventilated area at room temperature (15-25°C / 60-77°F). Keep away from direct sunlight, high temperatures, and incompatible materials like 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 for the intended application before use.

## 9. PACKAGE

Our transparent liquid 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
1.1 kg	1 kg	100 g
5.5 kg	5 kg	500 g
22 kg	20 kg	2 kg
220 kg	200 kg	20 kg
2 kg	1 kg	1 kg
10 kg	5 kg	5 kg
50 kg	25 kg	25 kg
400 kg	200 kg	200 kg

Note: Part B for 10:1 ratio products is priced accordingly as part of the kit.