



Technical Data Sheet (TDS)

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

Vacuum Casting Silicone Rubber

Rapid Prototyping Silicone Rubber

1. DESCRIPTION

Vacuum casting silicone refers to a range of RTV-2 silicones, including both tin-cured and platinum-cured systems, engineered for the rapid prototyping industry. This product line focuses on high-hardness and high-strength grades prized for their exceptional detail reproduction (high fidelity) and reliable demolding properties. These characteristics are essential for creating durable molds that can withstand the stresses of vacuum casting while enabling the small-batch production of prototype parts.

2. FEATURES



1. High hardness & strength.
2. Exceptional detail reproduction.
3. High dimensional stability.
4. Clarity for precise mold cutting.
5. Excellent release properties.

3. APPLICATIONS

Vacuum casting silicone is the industry-standard mold-making material for rapid prototyping applications, widely used to produce small batches of industrial and commercial parts with fine detail and excellent surface finish.

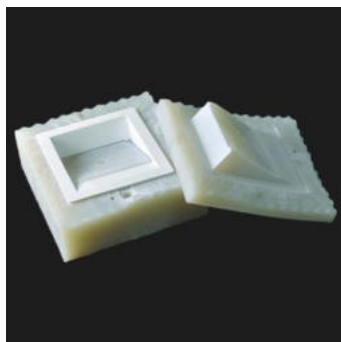
Typical Uses:

- **Automotive Components:** Dashboards, grilles, and interior trim.
- **Consumer Electronics:** Enclosures, casings, and interface panels.
- **Medical Devices:** Housings and anatomical models.
- **General Prototyping:** Exhibition models, robotics, and scientific instruments.

Compatible Casting Materials:

This silicone is suitable for casting a wide variety of polyurethane (PU) resins that simulate production plastics, including:

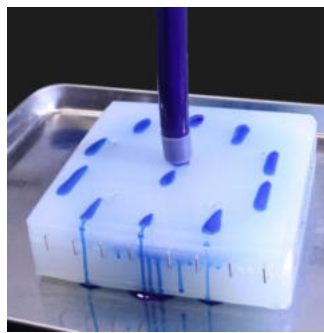
- ABS-like and POM-like resins
- PC-like and PMMA-like (clear) resins
- TPE-like (elastomeric) resins
- Glass-filled Nylon-like resins



Switch Prototype



Thin-Walled Casings



Reaction Injection Molding



Clear Component

4. TECHNICAL DATA

4.1 Tin Cured Silicone

Product Name	Color	Hardness (Shore A)	Mix Ratio by Weight	Pot Life (Minute)	Cure Time (Hour)	Part A Viscosity (Cps)	Tear Strength (N/mm)	Tensile Strength (Mpa)
RTV-3135	White	35±2	100A:3±1B	35-45	10-12	18,000±2,000	23.0±0.5	4.1±0.5
RTV-3235	Translucent	35±2	100A:3±1B	35-45	10-12	18,000±2,000	24.0±0.5	4.2±0.5
RTV-3140	White	38±2	100A:3±1B	35-45	10-12	18,000±2,000	21.0±0.5	4.1±0.5
RTV-3240	Translucent	37±2	100A:3±1B	35-45	10-12	18,000±2,000	22.0±0.5	4.2±0.5

4.2 Platinum Cured Silicone

Product Name	Color	Hardness (Shore A)	Mix Ratio by Weight	Pot Life (Minute)	Cure Time (Hour)	Viscosity (Cps)	Tear Strength (N/mm)	Tensile Strength (Mpa)
RTV-4140	Translucent	40±1	1A:1B	30-40	5-6	4,800±200	32±0.5	5.3±0.5
RTV-4145	Translucent	45±2	1A:1B	30-40	5-6	8,500±200	30±0.5	4.7±0.5
RTV-4150	Translucent	50±2	1A:1B	30-40	5-6	7,000±200	28±0.5	4.6±0.5
RTV-5140	Transparent	40±2	1A:1B	40-50	8-10	60,000±5,000	14±0.5	3.5±0.5
RTV-5240	Transparent	40±2	10A:1B	40-50	8-10	80,000±5,000	14±0.5	3.5±0.5

5. PROCESSING NOTES

For consistent results, 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 material compatibility and suitability before starting any large project.

- **For Tin-Cured Systems (RTV-3xxx Series):**

Catalyst Handling: Immediately reseal the Part B catalyst container after use. Prolonged exposure to air will cause the tin catalyst to hydrolyze (indicated by a surface film), which can result in incomplete curing.

- **For Platinum-Cured Systems (RTV-4xxx/5xxx Series):**

Cure Inhibition Warning: The platinum catalyst is highly sensitive to contaminants. Ensure all models,

mixing tools, and containers are clean and completely free of substances such as sulfur (from clays/latex), tin compounds (from condensation-cure silicones), amines (from some epoxy resins), and moisture. Contact with these materials will prevent the silicone from curing.

6. SAFETY PRECAUTIONS

- (1) **Tin-Cured Systems:** These products release by-products (e.g., alcohol, acetic acid) during curing and have a characteristic odor. Always use in a well-ventilated area. If ventilation is inadequate, respiratory protection is recommended.
- (2) **Platinum-Cured Systems:** These products are odorless and considered non-toxic. However, standard industrial hygiene practices should still be followed.
- (3) Keep all chemical products out of reach of children.

7. STORAGE & SHELF LIFE

- (1) **Recommended Storage:** Store in a cool, dry place at room temperature (15–25 °C / 60–77 °F). Keep away from direct sunlight.
- (2) **Shelf Life:** This product has a shelf life of 12 months from the date of manufacture when stored properly.
- (3) **Opened Containers:** Once opened, containers must be tightly resealed immediately after use to prevent contamination and moisture ingress, which can affect performance.
- (4) **Beyond Shelf Life:** If stored beyond its specified shelf life, the product may still be usable. However, the user is responsible for testing and confirming its performance and suitability for the intended application before use.