

PRODUCT INFORMATION

A-4125 / A-4140

Liquid Silicone Rubber - 10:1 Systems

PRODUCT DESCRIPTION:

A-4125 and A-4140 are two-component, platinum-catalyzed liquid silicone rubber (LSR) systems designed for injection molding and casting of healthcare and medical devices. Each product is supplied as matched Part A and Part B components that must be accurately measured at 10 parts Part A to 1 part Part B by weight and thoroughly mixed prior to use.

Both materials are flowable, self-leveling and clear/pigmentable. A-4125 provides a lower-durometer cured elastomer, while A-4140 provides a firmer cured elastomer. Both cure rapidly at elevated temperatures and can achieve their typical physical properties without post-cure. Post-curing may be used when appropriate for a specific application.

Applications

Designed for healthcare and medical-device fabrication, including applications involving less than 30 days of implantation in the human body. The end user is responsible for confirming suitability, safety, regulatory requirements and compliance for the intended application.

An affidavit of intended use must be filed with Factor II before purchase of these materials.

Features & Benefits

- 10:1 mix ratio for controlled processing.
- Flowable and self-leveling.
- Rapid cure at elevated temperatures; see cure instructions for temperature, time and mold considerations.
- Post-cure is not required to achieve typical physical properties.
- Clear, pigmentable materials.
- Suitable for standard liquid injection molding or casting techniques.
- Airless mixing, metering and dispensing equipment are recommended for production operations.

PROPERTIES

TYPICAL PROPERTY	ASTM / TEST	A-4125	A-4140
Appearance	TP 038	Clear	Clear
Mix Ratio	—	10:1	10:1
Viscosity - Part A, cP	TP 001	85,000	100,000
Viscosity - Part B, cP	TP 001	2,200	300
Specific Gravity	TP 013	1.08	1.09
Hardness, Shore A	ASTM D2240	28	40
Tensile Strength, psi	ASTM D412	770	975
Elongation at Break, %	ASTM D412	480	350
Tear Strength, Die B, pli	ASTM D624	76	140
Work Life, hr	—	>2	>2

Typical cured-property values are based on a press cure of 5 minutes at 177°C (350°F). Typical values are not intended for use in preparing specifications.

Instructions for Use

Mixing

A-4125 and A-4140 are supplied as matched Part A and Part B components. Measure and mix each system at 10 parts Part A to 1 part Part B by weight. Accurate measuring and complete mixing are essential to obtaining consistent results. Standard liquid injection molding or casting equipment and techniques may be used. Airless mixing, metering and dispensing equipment are recommended for production operations.

De-airing

If air is introduced during mixing, either material may be de-gassed under vacuum prior to molding or casting.

Cure Instructions

A-4125 and A-4140 are heat-cure LSR materials and are not designed as room-temperature-vulcanizing (RTV) elastomers. Cure is initiated after Part A and Part B are mixed and is accelerated by heat. Cure time depends on temperature, part size, mold material and mold design.

Manufacturer press-cure reference: A press cure of 5 minutes at 177°C (350°F) in a metal mold is the condition used to establish the typical physical properties listed in this document.

Factor II processing guidance: The manufacturer press-cure condition is not ideal for every mold construction. For silicone, gypsum, epoxy or other non-metal mold systems, the entire mold must be allowed to heat through sufficiently. Depending on mold mass and design, Factor II has used dry-heat oven conditions in the range of 165°F to 180°F (74°C to 82°C) for approximately 90 minutes to 3 hours, followed by turning the oven off and allowing the mold to cool before demolding. This slower cycle can help protect mold integrity.

Because cure performance is strongly influenced by mold material, geometry, section thickness and oven performance, Factor II strongly recommends testing and validating the specific mold design and cure cycle before production use.

Cure Inhibition

Maintain clean molds, mixing equipment and work areas. Traces of amines, sulfur, nitrogen oxide, organotin compounds, carbon monoxide and certain other foreign materials can poison the platinum catalyst and inhibit cure. Organic rubbers should not be processed on the same equipment unless the equipment has been thoroughly cleaned.

Post-Curing

Post-cure is not required to achieve the typical physical properties of A-4125 or A-4140. Post-curing may be used when appropriate for the specific application.

Regulatory / Biocompatibility

The manufacturer reports that these materials meet or exceed United States Pharmacopoeia (USP) Class VI testing requirements. Biocompatibility testing addresses cytotoxicity, skin sensitization and skin irritation categories specified in ISO 10993. These materials are not suitable for devices requiring human implantation for greater than 30 days.

Storage

When stored in original packaging, A-4125 Part A 10:1 and A-4140 Part A 10:1 may be stored between -20°C (-4°F) and 50°C (122°F) for up to 12 months from the date of manufacture. A-4125 Part B 10:1 and A-4140 Part B 10:1 may be stored between -20°C (-4°F) and 30°C (86°F) for up to 12 months from the date of manufacture. Follow the storage instructions and expiration information shown on the product packaging.

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