



Enabling Your Technology

**GELEST RG® 05 LOW VOLATILITY REPROGRAPHIC SILICONE**

Safety Data Sheet PP2-RG05

Date of issue: 12/18/2015

Version: 1.0

**SECTION 1: Identification****1.1. Identification**

Product name : GELEST RG® 05 LOW VOLATILITY REPROGRAPHIC SILICONE  
 Product code : PP2-RG05  
 Product form : Mixture  
 Physical state : Liquid  
 Synonyms : 2-COMPONENT SILICONE RTV; VINYL, METHYL MODIFIED SILICA in POLY(DIMETHYLSILOXANE), VINYLTERMINATED with (part B) HYDRIDE FUNCTIONAL CROSSLINKER  
 Chemical family : ORGANOSILOXANE

**1.2. Recommended use and restrictions on use**

Recommended use : Chemical intermediate

**1.3. Supplier****GELEST, INC.**

11 East Steel Road  
 Morrisville, PA 19067

**USA**

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

[info@gelest.com](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)

**1.4. Emergency telephone number**

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

**SECTION 2: Hazard(s) identification****2.1. Classification of the substance or mixture****GHS-US classification**

Not classified

**2.2. GHS Label elements, including precautionary statements****GHS US labeling**

No labeling applicable

**2.3. Hazards not otherwise classified (HNOC)**

No additional information available

**2.4. Unknown acute toxicity (GHS US)**

Not applicable

**SECTION 3: Composition/Information on ingredients****3.1. Substances**

Not applicable

**3.2. Mixtures**

| Name   | Product identifier   | %    | GHS-US classification |
|--|----------------------|------|-----------------------|
| Part A: Vinyl terminated polydimethylsiloxane  | (CAS-No.) 68083-19-2 | > 70 | Not classified        |
| Part B: Methylhydrosiloxane-dimethylsiloxane copolymer, trimethylsiloxane terminated | (CAS-No.) 68037-59-2 | < 50 | Not classified        |
| Part A: Vinyl, methyl modified silica  | (CAS-No.) 68988-89-6 | > 30 | Not classified        |

Full text of hazard classes and H-statements : see section 16

**SECTION 4: First-aid measures****4.1. Description of first aid measures**

First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash with plenty of soap and water. Get medical advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

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First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : No information available.  
Symptoms/effects after skin contact : May cause mild skin irritation.  
Symptoms/effects after eye contact : May cause eye irritation.  
Symptoms/effects after ingestion : No information available.

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Water fog. Foam. Carbon dioxide. Dry chemical.  
Unsuitable extinguishing media : None known.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.  
Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.  
Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Use only in well ventilated areas.  
Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.  
Incompatible materials : Alkalis. Metal salts. Oxidizing agent. Precious metals.  
Storage area : Store in a well-ventilated place. Store away from heat.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

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### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

#### Hand protection:

Neoprene or nitrile rubber gloves

#### Eye protection:

Chemical goggles. Contact lenses should not be worn

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|   |                                   |
|---|-----------------------------------|
| Physical state                              | : Liquid                          |
| Appearance                                  | : Clear liquid. Viscous.          |
| Molecular mass                              | : (mixture)                       |
| Color                                       | : Translucent.                    |
| Odor  | : No data available               |
| Odor threshold                              | : No data available               |
| Refractive index                            | : No data available               |
| pH  | : No data available               |
| Relative evaporation rate (butyl acetate=1) | : No data available               |
| Melting point                               | : < -60 °C                        |
| Freezing point                              | : No data available               |
| Boiling point                               | : > 205 °C                        |
| Flash point                                 | : 121 °C                          |
| Auto-ignition temperature                   | : No data available               |
| Decomposition temperature                   | : No data available               |
| Flammability (solid, gas)                   | : No data available               |
| Vapor pressure                              | : < 1 mm Hg @ 20°C                |
| Relative vapor density at 20 °C             | : No data available               |
| Relative density                            | : 1.04                            |
| % Volatiles                                 | : < 1 %                           |
| Solubility                                  | : Insoluble in water.             |
| Log Pow                                     | : No data available               |
| Log Kow                                     | : No data available               |
| Viscosity, kinematic                        | : A: 4000-6000 cSt; B: 50-125 cSt |
| Viscosity, dynamic                          | : No data available               |
| Explosive properties                        | : No data available               |
| Oxidizing properties                        | : No data available               |
| Explosion limits                            | : No data available               |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable in sealed containers stored under a dry inert atmosphere.

### 10.3. Possibility of hazardous reactions

B-part is reactive with metal salts and precious metals.

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### 10.4. Conditions to avoid

Heat. Open flame. Sparks.

### 10.5. Incompatible materials

Alkalis. Metal salts. Oxidizing agent. Precious metals.

### 10.6. Hazardous decomposition products

Formaldehyde. Organic acid vapors. Silicon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

#### Part A: Vinyl terminated polydimethylsiloxane (68083-19-2)

|               |            |
|---------------|------------|
| LD50 oral rat | > 16 ml/kg |
|---------------|------------|

|                    |            |
|--------------------|------------|
| LD50 dermal rabbit | > 16 ml/kg |
|--------------------|------------|

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Symptoms/effects after inhalation : No information available.

Symptoms/effects after skin contact : May cause mild skin irritation.

Symptoms/effects after eye contact : May cause eye irritation.

Symptoms/effects after ingestion : No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

No additional information available

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on the ozone layer : No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Product/Packaging disposal recommendations : Incinerate. Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

### 14.1. UN number

Not regulated for transport.

### 14.2. UN proper shipping name

Not applicable

### 14.3. Additional information

Other information : No supplementary information available.

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### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Part A: Vinyl terminated polydimethylsiloxane (68083-19-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Part A: Vinyl, methyl modified silica (68988-89-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Part B: Methylhydrosiloxane-dimethylsiloxane copolymer, trimethylsiloxane terminated (68037-59-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

#### Part A: Vinyl terminated polydimethylsiloxane (68083-19-2)

Listed on the Canadian DSL (Domestic Substances List)

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Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

No additional information available

### National regulations

#### Part A: Vinyl terminated polydimethylsiloxane (68083-19-2)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

#### Part A: Vinyl, methyl modified silica (68988-89-6)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
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#### Part B: Methylhydrosiloxane-dimethylsiloxane copolymer, trimethylsiloxane terminated (68037-59-2)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16: Other information

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### Abbreviations and acronyms

: Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor.

### Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible  
Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)  
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.

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SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

*The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.*

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## Gelest® RG 05 2-Part Low Volatile Content Reprographic Silicone Elastomer (10:1 kit)

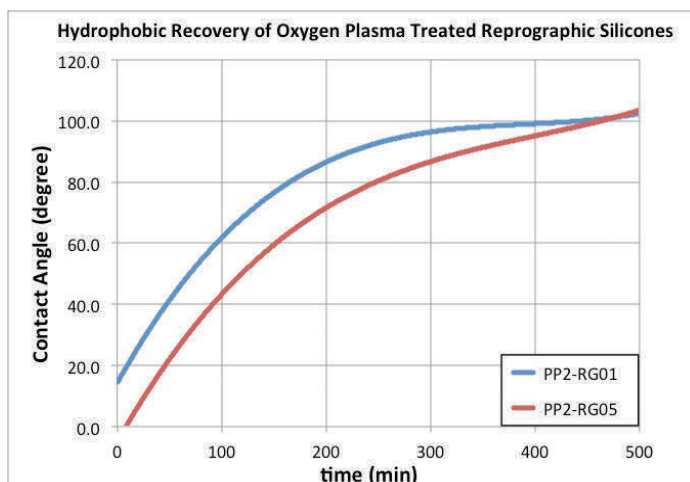
Capsular Description: **Thick**  
 Thickness: **thick**  
 Cure: **Pt catalyst**  
 Hardness: **medium**  
 Type: **100% active 2-part**

### Description

Gelest® RG 05 is a flexible, clear, high definition molding and encapsulation compound with low volatile content and greater dimensional stability. This low volatility formulation offers lower extractables and reduces the rate of hydrophobic recovery, providing improved performance in micro-electronic and medical applications. The low volatile content allows for a greater window for long-term surface treatments.

### Cured Properties

|                                  |                 |
|----------------------------------|-----------------|
| Tensile Strength                 | 5.5-7.0 MPa     |
| Elongation                       | 80-100%         |
| Durometer, Shore A               | 45-60           |
| Refractive Index (25°C)          | 1.43            |
| <b>Volatiles (4 hours/150°C)</b> | <b>≤0.2 wt%</b> |
| Dielectric Constant              | 2.7             |
| Critical Surface Tension         | 23-24 mN/m      |
| Tear Strength                    | 1.75-2.60 kN/m  |
| Specific Gravity                 | 1.04            |
| Contact Angle, water             | 105-110°        |



### Uncured Properties of Gelest® RG 05

|                             |               |
|-----------------------------|---------------|
| Viscosity (10:1) catalyzed: | 3500-5000 cSt |
| Part A (base):              | 5000-6000 cSt |
| Part B (crosslinker):       | 50-75 cSt     |

Standard Reprographic PDMS

Volatiles (4 hours/150°C) ≥ 1.0 wt%

### Application Methods

Thoroughly mix Part A and Part B in a 10:1 ratio. Try to avoid introducing bubbles. For critical applications, de-air mix under vacuum for about 20 minutes. The pot-life is 12 hours at 25°C. Avoid entrapping air during transfer and casting. Cure at 80°C for 4 hours or at room temperature for 36 hours.

### Standard Packaging

- PP2-RG05 Gelest® RG 05
- 100 g SpeedMixer™ kit
- 220 g kit (200g RG05-A, 20g RG05-B)
- 1.1 kg kit (1000g RG05-A, 100g RG05-B)