

Product Name: **Silicone Viscosity Standards**



Revision Date: *March 3, 2011*

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MSDS ref CII1-004

# MATERIAL SAFETY DATA SHEET

<b>SECTION 1</b>	<b>PRODUCT AND COMPANY IDENTIFICATION</b>
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## PRODUCT

**Product name:** **Silicone Viscosity Standards (5 cSt to 100,000 cSt)**

**Alternate description/ brand:** RT5, RT10, RT50, RT100, RT500, RT1000, RT5000, RT12500, RT30000, RT60000, RT100000  
Dow Corning 200® Fluids

**Product description:** Colorless silicone fluid

**Product code:** 9727-Z10, 9727-Z14, 9727-Z18, 9727-Z22, 9727-Z26, 9727-Z30, 9727-Z34, 9727-Z38, 9727-Z42, 9727-Z46, 9727-Z50

**Intended use:** Rotational viscometer viscosity calibration standards

## COMPANY IDENTIFICATION

**Supplier:** Cannon Instrument Company  
2139 High Tech Road  
State College, Pennsylvania 16803

**Product Technical Information:** (814) 353-8000

**Product MSDS Information:** (814) 353-8000

## EMERGENCY TELEPHONE NUMBER:

**24-Hour Transportation Emergency:** (800) 255-3924 Domestic CHEM-TEL Inc.

**24-Hour Health Emergency:** +1 (813) 248-0585 Overseas CHEM-TEL Inc. (please call collect)

<b>SECTION 2</b>	<b>COMPOSITION/INFORMATION ON INGREDIENTS</b>
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- **OSHA Hazardous Substance(s) or Complex Substance(s)**

None present. This is not a hazardous substance as defined in the OSHA Hazard Communication Standard

<b>SECTION 3</b>	<b>HAZARD IDENTIFICATION</b>
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## EFFECTS OF OVEREXPOSURE:

### Acute effects

**Eye:** Direct contact may cause temporary redness and discomfort.

**Skin:** No significant irritation expected from a single short-term exposure

**Inhalation:** No significant effects expected from a single short-term exposure

**Oral:** Low ingestion hazard in normal use

### Prolonged/ repeated exposure effects

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**Skin:** No known applicable information

**Inhalation:** No known applicable information

**Oral:** No known applicable information

**Signs and symptoms of overexposure:**

No known applicable information

**Medical conditions aggravated by exposure**

No known applicable information

**NFPA HAZARD ID:** Health: 0 Flammability: 1 Reactivity: 0  
(National Fire Protection Association)

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person

**SECTION 4 FIRST AID MEASURES**

**INHALATION** No first aid should be needed  
**SKIN CONTACT** No first aid should be needed  
**EYE CONTACT** Immediately flush with water  
**INGESTION** No first aid should be needed

**NOTE TO PHYSICIAN** Treat symptomatically

**SECTION 5 FIRE-FIGHTING MEASURES**

**EXTINGUISHING MEDIA**

**Appropriate extinguishing media:** On large fires, use dry chemical, foam or water spray. On small fires, use carbon dioxide (CO<sub>2</sub>), dry chemical or water spray. Water can be used to cool fire exposed containers

**FIRE FIGHTING**

**Fire fighting instructions:** Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep the exposed containers cool.

**Unusual fire hazards:** None identified

**Hazardous combustion products:** Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde

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### FLAMMABILITY PROPERTIES

**Flash point °C (°F) [method]:** 101 °C (214 °F) to 321 °C (610 °F) [Closed Cup]

**Flammable limits (approx. Volume % in air):** not determined

**Autoignition temperature °C (°F):** not determined

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### SECTION 6 ACCIDENTAL RELEASE MEASURES

#### CONTAINMENT/ CLEANUP

Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in sections 5 and 6 (below). For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in an appropriate container. Clean up remaining materials from spill with suitable absorbent. Clean area as appropriate, since some silicone materials, even in small quantities, may present a slip hazard. Final cleaning may require the use of steam, solvents or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items used in the cleanup of releases. You will need to determine which federal, state and local regulations are applicable. See sections 13 and 15 of this MSDS.

#### PERSONAL PROTECTIVE EQUIPMENT FOR SPILLS

**Eyes:** Use proper protection . safety glasses as a minimum

**Skin:** Washing at mealtime and end-of-shift is adequate

**Inhalation:** No respiratory protection should be needed

**Precautionary measures:** Avoid eye contact. Use reasonable care

#### Comments:

When heated to temperatures above 150 degrees centigrade in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin and digestive system. Safe handling conditions can be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

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### SECTION 7 HANDLING AND STORAGE

#### HANDLING

Use with adequate ventilation

#### STORAGE

Use reasonable care and store away from oxidizing materials

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### SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

#### EXPOSURE LIMIT VALUES

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There are no components with workplace exposure limits

#### **ENGINEERING CONTROLS**

General ventilation is recommended. No local exhaust ventilation should be needed

#### **PERSONAL PROTECTION**

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

##### **Respiratory Protection:**

No respiratory protection should be needed

##### **Hand Protection:**

No special protection needed

##### **Eye Protection:**

Use proper protection . safety glasses as a minimum

##### **Skin and Body Protection:**

Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

##### **Specific Hygiene Measures:**

Washing at mealtime and end-of-shift is adequate

**Note:** These precautions are for room temperature handling. Use at elevated temperatures or aerosol/ spray applications may require added precautions. For further information regarding aerosol inhalation toxicity, please refer to the guidance document regarding the use of silicone-based materials in aerosol applications that has been developed by the silicone industry ([www.SEHSC.com](http://www.sehsc.com)).  
<http://www.sehsc.com/PDFs/Guidance%20for%20Aerosol%20Applications-Sep%2001.pdf>

### **SECTION 9**

### **PHYSICAL AND CHEMICAL PROPERTIES**

**Typical physical and chemical properties are given below. Consult the Cannon Instrument Company as indicated in Section 1 for additional data.**

#### **GENERAL INFORMATION**

<b>Physical state:</b>	Liquid
<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	odorless (lower viscosity grades) to characteristic odor
<b>Odor threshold:</b>	not available

#### **IMPORTANT HEALTH, SAFETY AND ENVIRONMENTAL INFORMATION**

**Specific Gravity @ 25°C:** 0.915 (lowest viscosity grade) to 0.97 (higher viscosity grades)

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**Bulk density g/cc:** not available  
**Density, kg/m<sup>3</sup> (lbs./gal.):** not available  
**Flash point °C (°F) [method]:** 101 °C (214 °F) to 321 °C (610 °F) [Closed Cup]  
**Flammable limits (approx. Volume % in air) -** not available  
**Ignition temperature (polymers) °C (°F):** not available  
**Autoignition temperature °C (°F):** not available  
**Boiling point/range °C (°F):** >35 °C (> 95 °F) to >273 °C (>523 °F) for 100,000 cSt grade  
**Vapor density @ 101 kPa (air =1):** not available  
**Vapor pressure @ 20°C, kPa (mm Hg):** not available  
**Evaporation rate (n-butyl acetate =1):** not available  
**pH:** not available  
**Log Pow (n-Octanol/water partition coefficient):** not available  
**Solubility in water (20 °C):** not available

**Viscosity:** 5 cSt to 100,000 cSt . see product specification for each grade

#### OTHER INFORMATION

**Freezing point °C (°F):** not available  
**Melting Point °C (°F):** not available  
**Pour point °C (°F):** not available  
**Molecular weight:** not available  
**Hygroscopic:** not available  
**Coefficient of thermal expansion:** not available

### SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Stable

**CONDITIONS TO AVOID:** None

**MATERIALS TO AVOID:** Oxidizing materials can cause a reaction

**HAZARDOUS DECOMPOSITION PRODUCTS:** Formaldehyde may be formed at elevated temperatures. See section 6.

**HAZARDOUS POLYMERIZATION:** Hazardous polymerization will not occur

### SECTION 11 TOXICOLOGICAL INFORMATION

#### Special hazard information on components

No known applicable information

### SECTION 12 ECOLOGICAL INFORMATION

#### Environmental fate and distribution

**Air:** This product is a high molecular weight liquid polymer which has a very low vapor pressure

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(<1mm Hg). As a result, it is unlikely to become an atmospheric contaminant unless generated as an aerosol

**Water:** This product has very low water solubility (<100ppb). As it has a specific gravity of <1, if discharged to water, it will initially form a surface film. As the product is non-volatile and has a high binding affinity for particulate matter, it will absorb to particulates and sediment out.

**Soil:** If discharged to surface water, this product will bind to sediment. If discharged in effluent to a waste water treatment plant, the product is removed from the aqueous phase by binding to sewage sludge. If the sewage sludge is subsequently spread on soil, the silicone product is expected to degrade.

**Degradation:** This product, polydimethylsiloxane, degrades in soil abiotically to form smaller molecules. These in turn are either biodegraded in soil or volatilized into the air where they are broken down in the presence of sunlight. Under appropriate conditions, the ultimate degradation products are inorganic silica, carbon dioxide and water vapor. Due to the very low water solubility of this product, standard OECD protocols for ready and inherent biodegradability are not suitable for measuring the biodegradability of this product. The product is removed >80% during the sewage treatment process.

### Environmental effects

**Toxicity to water organisms:** Based on analogy to similar materials, this product is expected to exhibit low toxicity to aquatic organisms

**Toxicity to soil organisms:** Experiments show that when sewage sludge containing polydimethylsiloxane is added to soil, it has no effect on soil micro-organisms, earthworms or subsequent crops grown in the soil

**Bioaccumulation:** This product is a liquid and is a high molecular weight polymer. Due to its physical state it is unable to pass through or be absorbed by biological membranes. This has been confirmed by testing or analogy with similar products

### Fate and effects in water treatment plants

This product or similar products have been shown to be non-toxic to sewage sludge bacteria

<b>SECTION 13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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When a decision is made to discard this material, it is not considered a hazardous waste (RCRA Hazard Class (40 CFR 261)

State or local laws may impose additional regulatory requirements regarding disposal

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**Note:** The information provided below may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional requirements and mode-specific, material-specific, or quantity-specific shipping requirements.

**United States Department of Transportation (US DOT):**

UN/ID#	Proper Shipping Name	Class/Division	Hazard Label(s)	Packing Group
Not Regulated As A Hazardous Material Or Dangerous Good For This Mode of Transportation.				

**International Air Transport Association (IATA):**

UN/ID#	Proper Shipping Name	Class/Division	Hazard Label(s)	Packing Group
Not Regulated As A Hazardous Material Or Dangerous Good For This Mode of Transportation.				

**SECTION 15 REGULATORY INFORMATION**

**OSHA HAZARD COMMUNICATION STANDARD:** When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

**NATIONAL CHEMICAL INVENTORY LISTING:** This product, and/ or its constituents, is listed on the US EPA/ TSCA (Toxic Substances Control Act) Inventory

**COMMUNITY RTK:**

Chemical Name	CAS Number	Typical Value	Component TPQ	Product TPQ
Polydimethylsiloxane	63148-62-9	>60%	Not applicable	Not applicable

**California Proposition 65:** California Proposition 65 requires that listed substances bear the warning: *This product contains the following chemical(s) listed by the state of California under the Safe Drinking Water and toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.*

This product contains no chemicals listed under California Proposition 65

**Section 304 CERCLA HAZARDOUS SUBSTANCES:**

This product contains no chemicals that are classified as hazardous under CERCLA

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:**

This product contains no chemicals that are classified as hazardous under SARA 312

**SARA (313) TOXIC RELEASE INVENTORY:**

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This product contains no chemicals that are regulated under SARA 313

## International chemical inventories and hazard classifications

**This product and/ or its components are on the Canadian Domestic Substance List/ NDSL, or are otherwise in compliance with related regulations.**

### WHMIS Classifications (Canada):

This series of fluids is generally not controlled under provisions of WHMIS; however, the supplier has recommended classification of several, based on the presence of a toxic substance (CAS# 556-67-2) at very low concentrations. Therefore, Silicone Viscosity Standards RT5000 and RT12500 should be labeled/ annotated as follows:

D2A - Poisonous and infectious material - Other Effects . Very Toxic Material



**This product and/ or its components are on EINECS (European Inventory of Existing Chemical Substances) and/ or ELINCS (European Library of Notified Chemical Substances), or is otherwise in conformance with related EU directives/ regulations.**

### EU Hazard Classification, risk and safety phrases (Europe):

This series of fluids is generally not classified as dangerous according to EU directives and regulations; however, the supplier has recommended classification of one of these products. Therefore, Silicone Viscosity Standard RT100000 should be labeled/ annotated as follows:

S23: Do not breathe spray

S51: Use only in well-ventilated areas

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

#### Revision Summary:

- **October 15, 2005 -- This MSDS has been fully reviewed and reformatted to conform to changes in standard format**
- **February 27, 2007: Added Canadian and European classification and labeling information, based on current regulations and/or recommendations from suppliers (see Section 15)**
- **May 2, 2007: Updated and standardized format of Transport Information (see Section 14)**
- **March 6, 2008: Clarified wording of Section 304/CERCLA chemical classification in Regulatory Information (see Section 15)**
- **March 3, 2011: Reviewed content. Updated Flammability Properties of Fire-Fighting Measures (see Section 5). Updated Important Health, Safety, and Environmental Information of Physical and Chemical Properties (see Section 9).**

#### NOTES:

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