

**DOW CORNING CORPORATION
Material Safety Data Sheet****DOW CORNING 200(R) FLUID, 200 CS.****1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY**

Dow Corning Corporation
South Saginaw Road
Midland, Michigan 48686

24 Hour Emergency Telephone: (989) 496-5900
Customer Service: (989) 496-6000
Product Disposal Information: (989) 496-6315
CHEMTREC: (800) 424-9300

MSDS No.: 01013203

Revision Date: 2003/12/19

Generic Description: Silicone
Physical Form: Liquid
Color: Colorless
Odor: Characteristic odor

NFPA Profile: Health 0 Flammability 1 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

2. OSHA HAZARDOUS COMPONENTS

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

3. EFFECTS OF OVEREXPOSUREAcute 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

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.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

DOW CORNING 200(R) FLUID, 200 CS.**4. FIRST AID MEASURES**

Eye: Immediately flush with water.

Skin: No first aid should be needed.

Inhalation: No first aid should be needed.

Oral: No first aid should be needed.

Comments: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point: > 214 °F / > 101.1 °C (Closed Cup)

Autoignition Temperature: Not determined.

Flammability Limits in Air: Not determined.

Extinguishing Media: On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO₂), dry chemical or water spray. Water can be used to cool fire exposed containers.

Fire Fighting Measures: 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 fire exposed containers cool.

Unusual Fire Hazards: None.

Hazardous Decomposition 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.

6. ACCIDENTAL RELEASE MEASURES

DOW CORNING 200(R) FLUID, 200 CS.

Containment/Clean up: 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 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbant. Clean area as appropriate since some silicone materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant 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 employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See section 8 for Personal Protective Equipment for Spills. Call Dow Corning Corporation, (989) 496-5900, if additional information is required.

7. HANDLING AND STORAGE

Use with adequate ventilation. Avoid eye contact.

Use reasonable care and store away from oxidizing materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Component Exposure Limits**

There are no components with workplace exposure limits.

Engineering Controls

Local Ventilation: None should be needed.
General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling

Eyes: Use proper protection - safety glasses as a minimum.
Skin: Washing at mealtime and end of shift is adequate.
Suitable Gloves: No special protection needed.
Inhalation: No respiratory protection should be needed.
Suitable Respirator: None should be needed.

Personal Protective Equipment for Spills

Eyes: Use proper protection - safety glasses as a minimum.
Skin: Washing at mealtime and end of shift is adequate.

DOW CORNING 200(R) FLUID, 200 CS.

Inhalation/Suitable
Respirator: No respiratory protection should be needed.

Precautionary Measures: Avoid eye contact. Use reasonable care.

Comments: When heated to temperatures above 150 degrees C 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 may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

Note: These precautions are for room temperature handling. Use at elevated temperature 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) or contact the Dow Corning customer service group.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid
Color: Colorless
Odor: Characteristic odor
Specific Gravity @ 25°C: 0.97
Viscosity: 200 cSt

Freezing/Melting Point: Not determined.
Boiling Point: > 65 °C
Vapor Pressure @ 25°C: Not determined.
Vapor Density: Not determined.
Solubility in Water: Not determined.
pH: Not determined.
Volatile Content: Not determined.

Note: The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Hazardous polymerization will not occur.
Conditions to Avoid: None.

Materials to Avoid: Oxidizing material can cause a reaction.

11. TOXICOLOGICAL INFORMATION**Special Hazard Information on Components**

No known applicable information.

DOW CORNING 200(R) FLUID, 200 CS.

12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution

Air: This product is a high molecular weight liquid polymer which has a very low vapour pressure (<1 mm Hg). As a result it is unlikely to become an atmospheric contaminant unless generated as an aerosol.

Water: This product has a very low water solubility (< 100 ppb). 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 adsorb 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 vapour. 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 size 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 Waste Water Treatment Plants

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

Ecotoxicity Classification Criteria

Hazard Parameters (LC50 or EC50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100
Acute Terrestrial Toxicity	<=100	>100 and <= 2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

13. DISPOSAL CONSIDERATIONS

DOW CORNING 200(R) FLUID, 200 CS.**RCRA Hazard Class (40 CFR 261)**

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

State or local laws may impose additional regulatory requirements regarding disposal.

Call Dow Corning Corporate Environmental Management, (989) 496-6315, if additional information is required.

14. TRANSPORT INFORMATION**DOT Road Shipment Information (49 CFR 172.101)**

Not subject to DOT.

Ocean Shipment (IMDG)

Not subject to IMDG code.

Air Shipment (IATA)

Not subject to IATA regulations.

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings**Section 302 Extremely Hazardous Substances:**

None.

Section 304 CERCLA Hazardous Substances:

None.

Section 312 Hazard Class:

Acute: No
Chronic: No
Fire: No
Pressure: No
Reactive: No

Section 313 Toxic Chemicals:

None present or none present in regulated quantities.

DOW CORNING 200(R) FLUID, 200 CS.**Supplemental State Compliance Information****California**

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.

None known.

Massachusetts

No ingredient regulated by MA Right-to-Know Law present.

New Jersey

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
63148-62-9	> 60.0	Polydimethylsiloxane

Pennsylvania

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
63148-62-9	> 60.0	Polydimethylsiloxane

16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

(R) indicates Registered Trademark

Information About Medium Viscosity Silicone Fluids:

200[®] Fluid, 50 cs

200[®] Fluid, 100 cs

200[®] Fluid, 200 cs

200[®] Fluid, 350 cs

200[®] Fluid, 500 cs

200[®] Fluid, 1,000 cs

Chemical Name

Polydimethylsiloxane

INCI/CTFA Name

Dimethicone

Physical Form

Medium viscosity fluid

Special Properties

Clear; nongreasy; nonocclusive; nonstinging on skin

Primary Uses

Vehicle or ingredient in cosmetic and personal care product formulations

DESCRIPTION

200[®] Fluids from Dow Corning, 50-1,000 centistokes (cs), are medium viscosity polydimethylsiloxane polymers manufactured to yield linear polymers with average kinematic viscosities ranging from 50 to 1,000 cs.

COMPOSITION

Linear polydimethylsiloxane polymers characteristically have the following typical chemical composition:



Commercial bulk-polymerized dimethyl silicone fluids, such as 200 Fluids, 50-1,000 cs, typically contain trace amounts of process impurities.

BENEFITS

200 Fluids, 50-1,000 cs, have the following product characteristics:

- Clear
 - Nongreasy
 - Nonocclusive
 - Nonstinging on skin
- 200 Fluids, 50-1,000 cs, when compared with other materials that may be substituted in a given application, may offer one or more of these comparative characteristics:
- High compressibility
 - High damping action
 - High oxidation resistance
 - High shearability without breakdown
 - High spreadability
 - High temperature serviceability
 - High compatibility
 - High water repellency
 - Low fire hazard
 - Low odor
 - Low reactivity
 - Low surface energy
 - Low temperature serviceability
 - Low vapor pressure
 - Good heat stability
 - Good leveling and easy rubout
 - Soft feel and lubricity on skin

USES

200 Fluids, 50-1,000 cs, are intended for use in cosmetic and personal care product formulations.

LIMITATIONS

Dow Corning neither represents nor tests this material for medical device or pharmaceutical applications. Not for human injection.

HOW TO USE

Since the applications for these fluids are numerous and varied, application methods and recommended concentration levels must be considered on an individual basis. Contact Dow Corning Customer Service for specifics.

SHIPPING LIMITATIONS

None.

STORAGE AND SHELF LIFE

Shelf life information is subject to change. Refer to the Sales Specification for current shelf life information.

PACKAGING

200 Fluids, 50-1,000 cs, are supplied in 40- and 440-lb (18.1- and 199.6-kg) containers, net weight. Smaller containers are available from repackagers.

TOXICOLOGICAL INFORMATION

Please refer to the Material Safety Data Sheet for toxicological information.

SAFE HANDLING INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY WRITING TO DOW CORNING CUSTOMER SERVICE, OR BY CALLING (517) 496-6000.

LIMITED WARRANTY –

PLEASE READ CAREFULLY

Dow Corning believes that the information in this publication is an accurate description of the typical characteristics and/or uses of the

TYPICAL PROPERTIES¹

These values are not intended for use in preparing specifications.

As Supplied	200 Fluid, 50 cs	200 Fluid, 100 cs	200 Fluid, 200 cs	200 Fluid, 350 cs	200 Fluid, 500 cs	200 Fluid, 1000 cs
Appearance	Crystal clear liquid free from suspended matter and sediment.					
Specific Gravity at 25°C (77°F)	0.960	0.964	0.967	0.968	0.969	0.970
Refractive Index at 25°C (77°F)	1.4022	1.4030	1.4032	1.4034	1.4034	1.4035
Color, APHA	5	5	5	5	5	5
Flash Point, open cup, °C (°F)	318 (605)	>326 (>620)	>326 (>620)	>326 (>620)	>326 (>620)	>326 (>620)
Acid Number, BCP	trace	trace	trace	trace	trace	trace
Melt Point, °C (°F) ^{2,3}	-41 (-42)	-28 (-18)	-27 (-17)	-26 (-15)	-26 (-15)	-25 (-13)
Pour Point, °C (°F)	-70 (-94)	-65 (-85)	-65 (-85)	-65 (-85)	-50 (-58)	-50 (-58)
Surface Tension at 25°C (77°F), dynes/cm	20.8	20.9	21.0	21.1	21.1	21.2
Volatile Content, at 150°C (302°F), percent	0.3	0.02	0.07	0.09	0.15	0.11
Viscosity Temperature Coefficient	0.59	0.60	0.60	0.60	0.60	0.61
Coefficient of Expansion, cc/cc/°C	0.00104	0.00096	0.00096	0.00096	0.00096	0.00096
Thermal Conductivity at 50°C (122°F), cal/cm-sec-°C	-	0.00037	-	0.00038	-	0.00038
Specific Heat at 25°C (77°F), cal/g °C	-	0.352	-	0.350	-	0.349
Solubility Parameter ⁴	7.3	7.4	7.4	7.4	7.4	7.4
Solubility in Typical Solvents,						
Chlorinated solvents	High	High	High	High	High	High
Aromatic solvents	High	High	High	High	High	High
Aliphatic solvents	High	High	High	High	High	High
Dry Alcohols	Poor	Poor	Poor	Poor	Poor	Poor
Water	Poor	Poor	Poor	Poor	Poor	Poor

¹Dow Corning does not routinely test all these physical properties. Users should independently test these properties when they are critical in the application.

²The melt point temperature is a typical value and may vary somewhat due to molecular distribution (especially 50 cs or less). If the melting point is critical to your application then several lots should be thoroughly evaluated.

³Due to different rates of cooling, this test method may yield pour points lower than the temperature at which these fluids would melt.

⁴Fedors Method: R.F. Fedors, *Polymer Engineering and Science*, Feb. 1974.

Specification Writers: Please obtain a copy of the Dow Corning Sales Specification for this product, and use it as a basis for your specifications. It may be obtained from any Dow Corning Sales Office, or from Dow Corning Customer Service in Midland, MI. Call (517) 496-6000.

product or products, but it is your responsibility to thoroughly test the product in your specific application to determine its performance, efficacy and safety. Suggestions of uses should not be taken as inducements to infringe any particular patent.

Unless Dow Corning provides you with a specific written warranty of fitness for

a particular use, Dow Corning's sole warranty is that the product or products, as supplied, will meet Dow Corning's then current sales specifications.

DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR

USE. Your exclusive remedy and Dow Corning's sole liability for breach of warranty is limited to refund of the purchase price or replacement of any product shown to be other than as warranted, and Dow Corning expressly disclaims any liability for incidental or consequential damages.

Table I: Compatibility of 200 Fluid With Various Cosmetic Ingredients

<u>Type of Material</u>	<u>Ratio¹ to 200 Fluid</u>	<u>Compatibility²</u>		
		<u>50 cs</u>	<u>100 cs</u>	<u>350 cs</u>
Water	All ratios	I ³	I ³	I ³
Alcohols				
Ethanol (95 percent)	All ratios	I	I	I
Isopropanol (99 percent)	All ratios	I	I	I
Stearyl alcohol	All ratios	I	I	I
Solvents				
Ethyl ether	All ratios	C	C	C
Methylene chloride	All ratios	C	C	C
Naphtha	All ratios	C	C	C
Cosmetic Materials				
Beeswax	All ratios	I	I	I
Diethylene glycol stearate	All ratios	I	I	I
Glycerol	All ratios	I	I	I
Glycerol monostearate	All ratios	I	I	I
Isopropyl myristate	All ratios	C	C	C
Lanolin	All ratios	I	I	I
Mineral oil (light or heavy)	All ratios	I ⁴	I	I
Oleic acid	All ratios	I	I	I
Paraffin wax	All ratios	I ⁴	I	I
Petrolatum	All ratios	I	I	I
Propylene glycol	All ratios	I	I	I
Silicones				
Dow Corning [®] 225 Fluid	All ratios	C	C	C
Dow Corning [®] 556 Cosmetic-Grade Silicone Fluid	All ratios	C	C	C

¹Tested at ratios of 10:1, 1:1, and 1:10.

²I = incompatible; C = compatible

³Fluid can be emulsified if water dispersibility is desired.

⁴50 cs compatible at 10:1 silicone:organic ratio.

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DOW CORNING

