WACKER SILICONES

Material Safety Data Sheet

Material: 70703839 **WACKER BELSIL® RG 100**

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1 Product and company identification

1.1 Identification of the substance or preparation:

Commercial product name: WACKER BELSIL® RG 100
Product group: R&D Material, Silicone Gel
Use of substance / preparation: Industrial.
Raw material for: cosmetics .

1.2 Company/undertaking identification:

Manufacturer/distributor:
Wacker Chemical Corporation
3301 Sutton Road
Adrian, MI 49221-9397
USA

Customer information:
Customer Care Center:
Tel (517) 264-8240, Fax (517) 264-8740Hours of operation:
Monday - Friday, 8 am to 5 pm (eastern standard time)
Corporate website www.wackersilicones.com

Emergency telephone no. (24h): (517) 264-8500
Transportation emergency: (800) 424-9300 (CHEMTREC, USA)
(703) 527-3887 (CHEMTREC, international)(613) 996-6666 (CANUTEC, Canada)

This MSDS was prepared by the Regulatory Affairs and Product Safety Department (RAPS) of Wacker Chemical Corporation.

2 Composition/information on ingredients

2.1 Chemical characterization (preparation):

Chemical characteristics
Crosslinked siloxane polymer dispersed in cycles

2.2 Information on ingredients:

Type	CAS No.	Substance	Content [wt. %]		Note
			Lower	Upper	
INHA	541-02-6	Decamethyl cyclopentasiloxane	>=60.0	<=100.0	
VERU	556-67-2	Octamethyl cyclotetrasiloxane	>=0.1	<=1.0	R

Type: HYD - by-product upon hydrolysis, INHA - ingredient, NEBE - by-product, MONO - residual monomer, VERU - impurity, VUL - by-product upon vulcanization. *** **Note:** C1 - IARC carcinogen, C2 - NTP carcinogen, C3 - OSHA carcinogen, NH - non-hazardous, R - reproductive toxin.

Substances listed in the Subsections "HAPS" and "California Proposition 65 Carcinogens / Reproductive Toxins" that are not listed in Section 2 are only present at quantities below 0.1% for California Proposition 65 listed toxins or below 1% for non-carcinogenic HAPS or they are inextricably bound in the product.

3 Hazards identification

3.1 Hazards classifications
HMIS® rating (product as packaged):
Health: 1* Fire: 2 Reactivity: 0 PPE: G

(HMIS codes are based on contact with the product as packaged and any hydrolysis by-products, if present.) Hazardous Materials Identification System and HMIS are registered trademarks of the National Paint and Coatings Association. Note: Respiratory protection is only recommended in the event that ventilation or engineering controls are unable to maintain exposures below recommended levels; or in the event of a spill or other emergency response situation.

Canadian WHMIS Classification: D2A, B3

3.2 Emergency overview and potential hazards

Signal Word:
CAUTION
Physical Hazards:
Combustible liquid and vapor.

Acute health effects
Route of entry or possible contact:
eyes , skin
Eye contact:
May cause slight transient eye irritation.
Skin contact:
No known skin hazards.
Inhalation:
See Sect. 3.3 "Chronic health effects". Inhalation caused reproductive effects in animals.
Mucous membrane contact:
No known mucous membrane hazards.
Ingestion:
Not expected in industrial use.
Additional information on acute health effects:
Ingestion is not expected during industrial use.

3.3 Further information:

Chronic health effects:
Prolonged or repeated inhalation of vapors may have adverse effects on the reproductive system, based on animal testing of a component of this material. Oral or inhalative exposure at relatively high dosages in animal test causes increases in liver weight.
Medical conditions which may be aggravated by exposure:
none known
Target organs affected:
Liver and Female Reproductive System.
Signs and Symptoms of Exposure:
Refer to Acute Health Effects, listed above.
Carcinogens/Reproductive toxins:
Product contains Octamethylcyclotetrasiloxane. Based on animal tests. This material contains >= 0.1% of a known animal carcinogen. This material contains between 0.1% and 1% of a known reproductive toxin. However, the relevance to humans has not been determined. Based on available data the carcinogenic potential of decamethylcyclopentasiloxane (D5) in animals can not be defined at this time.

See Section 11 for Toxicological Information, if any.

4 First-aid measures

4.1 General information:
Get medical attention if irritation or other symptoms occur. Before seeking medical attention remove contaminated clothing and shoes. Take a copy of the Safety Data Sheet when going for medical treatment.

4.2 After inhalation:
If inhaled remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen.

4.3 After contact with the skin:
If contact with skin, immediately flush skin with plenty of water for at least 15 min.

4.4 After contact with the eyes:
If contact with eyes, immediately flush eyes with plenty of water for at least 15 min. Keep eyelids well open to rinse the whole eye surface and eyelids with water.

4.5 After swallowing:
For ingestion, if conscious, give several glasses of water but do not induce vomiting. If vomiting does occur, give additional fluids. If unconscious place in stable sideways position.

5 Fire-fighting measures

5.1 Flammable properties:

		Method
Flash point	63 °C (145 °F)	(ASTM D93)
Boiling point / boiling range	210 °C (410 °F) at 1013 hPa	
Lower explosion limit (LEL)	not determined	
Upper explosion limit (UEL)	not determined	
Ignition temperature	385 °C (725 °F)	(DIN 51794)
NFPA Hazard Class (comb./flam.liquid)	IIIA	

5.2 Fire and explosion hazards:
Material supports combustion. Vapors are heavier than air and may travel along the ground, be moved by ventilation systems, settle in pits or low areas, and be ignited by ignition sources distant from the handling point. The material is lighter than water, burning spilled material will float on top of any water released from hose or sprinkler systems spreading the fire beyond the initial fire response area. Never use welding or cutting torch on or near any container of this material, even if empty, because an explosion could occur.

5.3 Recommended extinguishing media:
AFFF alcohol compatible foam. Carbon dioxide. Water may be used to cool tanks and structures adjacent to the fire.

5.4 Unsuitable extinguishing media:
Water may be ineffective in controling fires of this material. Do not use water to fight these fires.

5.5 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:
Hazardous decomposition products: none known .

5.6 Fire fighting procedures:
Full turn-out gear and Self Contained Breathing Apparatus (SCBA) should be worn when fighting large fires.

6 Accidental release measures

6.1 Precautions:
Wear personal protection equipment (see section 8). Avoid inhaling mists and vapours. Avoid contact with eyes and skin.
HAZWOPER PPE Level: C

6.2 Containment:
Prevent material from entering sewers or surface waters. Contain any fluid that runs out using suitable material (e.g. earth).
Spills of material which could reach surface waters must be reported to the United States Coast Guard National Response Center's toll free phone number (800) 424-8802.

6.3 Methods for cleaning up:
Do not flush away with water. Take up mechanically and dispose of according to local/state/federal regulations. For small amounts: Absorb with a liquid binding material such as diatomaceous earth and dispose of according to local/state/federal regulations. Contain larger amounts and pump up into suitable containers.

6.4 Further information:
Eliminate all sources of ignition. Do not seal collecting vessel gas-tight.

7 Handling and storage

7.1 Handling
Precautions for safe handling:
Use with adequate ventilation. Keep container closed when not in use.
Precautions against fire and explosion:
Keep away from sources of ignition and do not smoke. In partly emptied containers formation of explosive mixtures is possible. Take precautionary measures against electrostatic charging.

7.2 Storage
Conditions for storage rooms and vessels:
none known
Advice for storage of incompatible materials:
Keep away from alkalis.

Further information for storage:
Store in a dry location to prevent exposure to water or moist air. Keep container tightly closed and store in a cool, well ventilated place. Store in a well ventilated area to limit the accumulation of vapors released from vented or unsealed containers. Store in the original container.

8 Exposure controls and personal protection

8.1 Engineering controls

Ventilation:
Use only with adequate ventilation.

Local exhaust:
To control flammable/combustible vapors: Local exhaust ventilation which meets the requirements of ANSI Z9.2 is recommended to control airborne contaminants at the point of use.

8.2 Associate substances with specific control parameters such as limit values

Further information:
Maximum concentration at workplace recommended by producer: octamethylcyclotetrasiloxane (D4, CAS no. 556-67-2) = 10 ppm (123 mg/m3)

8.3 Personal protection equipment (PPE)

Respiratory protection:
Respiratory protection is not normally required. Recommendation in case of long or strong exposure: A NIOSH approved air purifying respirator equipped with universal multi-contaminant multi-gas/vapor cartridges is recommended if overexposure to chemical vapors could occur.

Hand protection:
Any liquid-tight rubber or vinyl gloves.

Eye protection:
Safety glasses with side shields or chemical safety goggles.

Other protective clothing or equipment:
Additional protective clothing or equipment is not normally required. Provide eye bath and safety shower.

8.4 General hygiene and protection measures:
Avoid contact with eyes, skin and clothing. Avoid breathing dust/vapor/mist/gas/aerosol. When handling do not eat, drink, smoke or apply cosmetics. Wash thoroughly after handling.

9 Physical and chemical properties

9.1 Appearance

Physical state / form	Semi-Liquid Gel
Colour	clear, Cloudy
Odour	slight, characteristic

9.2 Safety parameters

		Method
Melting point / melting range	44 °C (111 °F)	
Boiling point / boiling range	210 °C (410 °F) at 1013 hPa	
Flash point	63 °C (145 °F)	(ASTM D93)
Ignition temperature	385 °C (725 °F)	(DIN 51794)
Lower explosion limit (LEL)	not determined	
Upper explosion limit (UEL)	not determined	
Vapour pressure	1.3 hPa at 20 °C (68 °F)	
Density	0.94 g/cm3	
Water solubility / miscibility	virtually insoluble	
pH-Value	not applicable	
Viscosity (dynamic)	100000 mPa*s at 25 °C (77 °F)	

9.3 Further information

Percent Volatiles	80 %

10 Stability and reactivity

10.0 General information:
If stored and handled in accordance with standard industrial practices no hazardous reactions are known.

10.1 Conditions to avoid:
Although this product is not expected to react with commonly used materials of construction and process equipment, it is advised that any rubber or plastic items such as hoses and gaskets be tested prior to large scale processing to ensure there is no degradation of performance or durability.

10.2 Materials to avoid:
none known .

10.3 Hazardous decomposition products:
Measurements have shown the formation of small amounts of formaldehyde at temperatures above about 150 °C (302 °F) through oxidation.

10.4 Further information:
Hazardous polymerization cannot occur.

11 Toxicological information

11.1 General information:
The toxicology information listed below is based on the components of the material.

11.2 Toxicological data:
Additional information / remarks:
Oral toxicity: A 14 day oral gavage study in rats with D5 also showed an increase in liver weights in female rats at dose levels of 100, 400 and 1600 mg/kg. Male rats showed increased liver weights at the 400 and 1600 mg/kg dose levels. Ingestion of D5, however, is not expected in industrial use. Large oral doses (1600 mg/day for 14 days) of OMCTS/D4 caused an increase in the number of liver cells (hyperplasia) in laboratory rats. Ingestion of OMCTS/D4 is not expected in industrial use.

Inhalation toxicity: In a female rat gender-specific range finding study (inhalation exposure) with OMCTS/D4 decreases in mean live litter size and in the number of implantation sites were seen at the 700 ppm exposure level.

Toxicity to reproduction/fertility: In a two generation reproductive study via inhalation with OMCTS/D4 in rats, decreased mean live litter size and prolonged labor (dystocia) were observed at the 500 ppm and 700 ppm exposure levels. These same effects were not seen at the lower dose levels of 70 ppm and 300 ppm. Because these effects are only seen at very high exposure levels, it is unlikely that industrial, commercial and/or consumer uses of products containing OMCTS/D4 would result in a significant risk to humans. Previous inhalation developmental studies did not show birth defects at doses ranging up to 700 ppm in rats and 500 ppm in rabbits. The significance of these effects in humans cannot be determined at this time.

Chronic toxicity / carcinogenicity: In a two year combined chronic toxicity and carcinogenicity inhalation study with octamethylcyclotetrasiloxane (OMCTS/D4) in rats, an increased incidence of (uterine) endometrial cell hyperplasia and endometrial adenomas were observed at the highest exposure level of 700 ppm in female rats. These same effects were not seen at the other dose levels of 10, 30, and 150 ppm. Since these effects only occurred at 700 ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing OMCTS/D4 would result in a significant risk to humans. In a two year combined chronic toxicity and carcinogenicity inhalation study with decamethylcyclopentasiloxane (D5) in rats, an increased incidence for (uterine) endometrial tumors was observed in the highest exposure level of 160 ppm in female rats. The same effects were not seen at the other dose levels of 10 and 40 ppm. Whether or not this increase in incidence is truly related to the exposure to D5 is questionable and yet to be determined. Based on our present knowledge it is unlikely that industrial, commercial or consumer uses of products containing D5 would result in a significant risk to humans.

Experience with man:
-

12 Ecological information

12.1 Information on elimination (persistence and degradability)

Biodegradation / further information:
Biologically not degradable.

Further information:
Elimination by adsorption in activated sludge.
not determined

12.2 Behaviour in environmental compartments

Mobility
Forms thin oil film on surface of water. Absorbed by floating particles. Separation by sedimentation.

Further information:
Bioaccumulation is not expected to occur.
not determined

12.3 Ecotoxicological effects:

According to past experience toxicity to fish is improbable.

Effects in sewage treatment plants (bacteria toxicity: respiration-/reproduction inhibition):

According to current knowledge adverse effects on water purification plants are not expected.
none known

12.4 Additional information

Other harmful effects
-

General information:
No environmental problems expected if handled and treated in accordance with standard industrial practices and local regulations where applicable.

13 Disposal considerations

13.1 Product disposal
Recommendation:
Material that cannot be used or chemically reprocessed should be disposed of at an approved facility in accordance with any applicable governmental regulations. State and local regulations may be more stringent than Federal regulations.

13.2 Packaging diposal
Recommendation:
Uncleaned packaging should be treated with the same precautions as the material.

14 Transport information

14.1 US DOT & CANADA TDG SURFACE
Valuation.....: Not regulated for transport
Corrosive to Steel or Aluminum: Not corrosive to steel or aluminum.

14.2 Transport by sea IMDG-Code
Valuation.....: Not regulated for transport

14.3 Air transport ICAO-TI/IATA-DGR
Valuation.....: Not regulated for transport

15 Regulatory information

15.1 U.S. Federal regulations

TSCA inventory status and TSCA information:
The TSCA status of this material has not been determined. Until the status is determined it is for R&D use only. This material is exempt from TSCA regulations if it is used in an application regulated solely by the Federal Food, Drug and Cosmetic Act (FDCA). This is a research and development material and must be handled under the supervision of a technically qualified person.

TSCA 12(b) Export Notification:
This material does not contain any TSCA 12(b) regulated chemicals.

CERCLA Regulated Chemicals:
This material does not contain any CERCLA regulated chemicals.

SARA 302 EHS Chemicals:
This material does not contain any SARA extremely hazardous substances.

SARA 311/312 Hazard Class:
Fire hazard.

HAPS (Hazardous Air Pollutants):
This material does not contain any hazardous air pollutants.

15.2 U.S. State regulations

California Proposition 65 Carcinogens:
This material does not contain any chemicals known to the state of California to cause cancer.

California Proposition 65 Reproductive Toxins:
This material does not contain any chemicals known to the state of California to cause reproductive effects.

Massachusetts Substance List:
This material contains no listed components.

New Jersey Right-to-Know Hazardous Substance List:
This material contains no listed components.

Pennsylvania Right-to-Know Hazardous Substance List:
This material contains no listed components.

15.3 Canadian regulations

This product has been classified in accordance with the Hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Hazard Classes:
D2A, B3

DSL Status:
This material or one or more of its components is not listed on the Canadian Domestic Substances List.

Non-DSL Chemicals:

CAS No.	Chemical	Upper limit wt. %
None Assigned	Wacker Proprietary Non-DSL Polymer	<= 20.0

Canadian Ingredient Disclosure List:
This material contains no listed components.

15.4 Other international regulations

EU Risk Phrases:

R-Phrase	Description
R-	-

EU Safety Phrases:

S-Phrase	Description
S-	-

Details of international registration status
Listed on the following inventories:
ENCS - Japan
EINECS - Europe

16 Other information

16.1 Additional information:

This Material Safety Data Sheet (MSDS) meets the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR. This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee expressed or implied, is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license under valid patents. This MSDS provides selected regulatory information on this product, including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

16.2 Glossary of Terms:

ACGIH - American Conference of Governmental Industrial Hygienists
DOT - Department of Transportation
hPa - Hectopascals
mPa*s - Milli Pascal-Seconds
OSHA - Occupational Safety and Health Administration
PEL - Permissible Exposure Limit
ppm - Parts per Million
SARA - Superfund Amendments and Reauthorization Act
STEL - Short Term Exposure Limit
TSCA - Toxic Substances Control Act
TWA - Time Weighted Average
WHMIS - Canadian Workplace Hazardous Materials Identification System

Flash point determination methods	**Common name**
ASTM D56	Tagliabue (Tag) closed cup
ASTM D92, DIN 51376, ISO 2592	Cleveland open cup
ASTM D93, DIN 51758, ISO 2719	Pensky-Martens closed cup
ASTM D3278, DIN 55680, ISO 3679	Setaflash or Rapid closed cup
DIN 51755	Abel-Pensky closed cup

16.3 Conversion table:

Pressure: 1 hPa * 0.75 = 1 mm Hg = 1 Torr; 1 bar = 1000 hPa
Viscosity: 1 mPa*s = 1 Centipoise (Cp)