WACKER

Safety Data Sheet

Material: 60008517 **SEMICOSIL® 989/1K**

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1. Product and company identification

1.1 Identification of the substance or preparation:

Commercial product name: **SEMICOSIL® 989/1K**

Use of substance / preparation: Industrial.
Adhesive / sealant

1.2 Company/undertaking identification:

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

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

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

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

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (GHS):

Not a hazardous substance or mixture.

2.2 Label elements

Labelling (GHS):

No labeling according to GHS required.

2.3 Other hazards

Product can release hydrogen. Risk of hydrogen gas formation with water, alcohols, acids, metallic salts, amines and alkalis. In combination with oxygen, the released hydrogen can form oxyhydrogen. The product hydrolyses under formation of methanol (CAS-Nr. 67-56-1). Methanol is classified concerning both physical and health hazards. The hydrolysis rate and consequently the relevance for the hazard profile of the product is strongly dependent on the specific conditions.

3. Composition/information on ingredients

3.1 Chemical characterization (preparation)

Chemical characteristics
Polydimethylsiloxane with functional groups and auxiliaries for addition cross-linking

3.2 Information on ingredients:

Type	CAS No.	Substance	Content [wt. %]		Note
			Lower	Upper	
INHA	2530-83-8	(3-(2,3-Epoxypropoxy)propyl) trimethoxysilane		<3.0	

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 this section 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. Specific chemical identities and/or exact percentage (concentration) of the composition may have been withheld as a trade secret.

4. First-aid measures

4.1 General information:

Get medical attention if irritation occurs or if breathing becomes difficult. Remove contaminated clothing and shoes.

4.2 After inhalation

No special treatment required.

4.3 After contact with the skin

Remove material with a waterless skin cleaner from skin and clothing. Wash with soap and water.

4.4 After contact with the eyes

If contact with eyes, immediately hold eyelids apart and flush with plenty of water for at least 15 min.

4.5 After swallowing

If swallowed, give victim several glasses of water. If swallowed, induce vomiting.

4.6 Advice for the physician

Methanol (CAS 67-56-1) is readily and rapidly absorbed at all exposure routes and is toxic by all routes. Methanol may cause irritation of the mucosa, as well as nausea, vomiting, headaches, vertigo and visual disorders, including blindness (irreversible damage to the optic nerve), acidosis, spasms, narcosis and coma. There may be a delay in the onset of these effects after exposure.

5. Fire-fighting measures

5.1 Flammable properties:

Property:	Value:	Method:
Flash point	> 200 °C (> 392 °F)	(DIN 51376)
Boiling point / boiling range	not applicable	
Lower explosion limit (LEL)	not applicable	
Upper explosion limit (UEL)	not applicable	
Ignition temperature	> 400 °C (> 752 °F)	(DIN 51794)

5.2 Fire and explosion hazards:

Caution! This product is not flammable but it may evolve flammable hydrogen gas under certain conditions, which may accumulate in the container headspace. Do not use a welding or cutting torch on or near any container of this material, even if empty, because an explosion could occur. Spontaneous ignition is possible due to electrostatic discharge. The generation of hydrogen gas is increased under circumstances mentioned in Sect. 10 "Stability and reactivity". Contact with contaminated piping or vessels or with corroded and rusty containers can increase the rate of hydrogen formation. Explosion limits for hydrolysis product: 4-75.6% v/v (hydrogen) , 5.5-44% v/v (methanol) .

5.3 Recommended extinguishing media:

carbon dioxide , alcohol-resistant foam .

5.4 Unsuitable extinguishing media:

water , dry chemical , halones .

5.5 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases

Hazardous decomposition products: carbon monoxide , carbon dioxide , silicon dioxide , formaldehyde , incompletely burnt hydrocarbons .

5.6 Fire fighting procedures:

Fire fighters should wear full protective clothing including a self-contained breathing apparatus.

6. Accidental release measures

6.1 Precautions:

Secure the area. Wear personal protection equipment (see section 8). Keep unprotected persons away. Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. If material is released indicate risk of slipping. Do not walk through spilled material.

HAZWOPER PPE Level: D

6.2 Containment:

Prevent material from entering surface waters, drains or sewers and soil. Close leak if possible without risk. Retain contaminated water/extinguishing water. Dispose of in prescribed marked containers. Inform authorities if substance leaks into surface waters, sewerage or ground.

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

Scoop up large quantities after dusting surfaces with sand or Fuller's earth to prevent sticking. Sweep or scrape up the spilled material and place in an appropriate chemical waste container. Clean any slippery coating that remains using a detergent / soap solution or another biodegradable cleaner. Apply sand or other inert granular material to improve traction.

6.4 Further information:

Exhaust vapours. Eliminate all sources of ignition. Consider explosion protection. Material designated for disposal must be segregated from incompatible substances or materials specified in Sect. 10. Do not blend contaminated material with uncontaminated material. Do not seal collecting vessel gas-tight. Observe notes under section 7.

7. Handling and storage

7.1 Handling

Precautions for safe handling:
Ensure adequate ventilation. Must be syphoned off in situ. Open and handle container with care. Keep container closed when not in use. Keep away from incompatible substances in accordance with section 10. Where possible, inert process equipment and blanket vessels, tanks and containers with nitrogen to reduce the available oxygen level. Contact WACKER for additional publications on the safe Handling of SiH Products. Observe information in section 8.

Precautions against fire and explosion:
Product can release hydrogen. Product can separate methanol. Flammable vapors may accumulate and form explosive mixtures with air in containers, process vessels, including partial, empty and uncleaned containers and vessels, or other enclosed spaces. Keep away from sources of ignition and do not smoke. Take precautionary measures against electrostatic charging. Cool endangered containers with water.

7.2 Storage

Conditions for storage rooms and vessels:
Do not store in virgin glass containers with basic surface. Observe local/state/federal regulations.

Advice for storage of incompatible materials:
Do not store with: basic substances (e.g. alkalis, ammonia, amines) , oxidizing agents , strong acids . Observe local/state/federal regulations.

Further information for storage:
Store in a dry and cool place. Protect against moisture. Store container in a well ventilated place.
Minimum temperature allowed during storage and transportation: 5 °C (41 °F)
Maximum temperature allowed during storage and transportation: 25 °C (77 °F)

8. Exposure controls and personal protection

8.1 Engineering controls

Ventilation:
Use only with adequate ventilation.

Local exhaust:
recommended

8.2 Associate substances with specific control parameters such as limit values

Maximum airborne concentrations at the workplace:

CAS No.	Material	Type	mg/m³	ppm	Dust fract.
67-56-1	Methanol	OSHA PEL	260.0	200.0	
67-56-1	Methanol	ACGIH TWA		200.0	

Re Methanol (CAS-no. 67-56-1): STEL is 250 ppm, skin notation (ACGIH); STEL is 250 ppm, skin notation (NIOSH).

8.3 Personal protection equipment (PPE)

Respiratory protection:
In case of long or strong exposure use a NIOSH approved respirator for: organic vapors .

Hand protection:
Recommendation: butyl rubber protective gloves .

Eye protection:
chemical safety goggles .

Other protective clothing or equipment:
Recommendation: antistatic protective clothing and shoes . Provide eye bath and safety shower.

8.4 General hygiene and protection measures:

Avoid breathing dust/vapor/mist/gas/aerosol. Avoid contact with eyes and skin. Do not eat, drink or smoke when handling. Wash thoroughly after handling.

9. Physical and chemical properties

9.1 Appearance

Physical state / form ..... : paste
Colour ..... : translucent
Odour ..... : faint

9.2 Safety parameters

Property:		Value:	Method:
Melting point / melting range	:	not applicable	
Boiling point / boiling range	:	not applicable	
Flash point	:	> 200 °C (> 392 °F)	(DIN 51376)
Ignition temperature	:	> 400 °C (> 752 °F)	(DIN 51794)
Lower explosion limit (LEL)	:	not applicable	
Upper explosion limit (UEL)	:	not applicable	
Vapour pressure	:	not applicable	
Density	:	approx. 1.1 g/cm³ at 23 °C (73 °F)	(DIN 53479)
Water solubility / miscibility	:	virtually insoluble	
pH-Value	:	not applicable	
Viscosity (dynamic)	:	300000 mPa.s at 25 °C (77 °F) shear rate: 0.5 1/S	(DIN EN ISO 3219)
Viscosity (dynamic)	:	30000 mPa.s at 25 °C (77 °F) shear rate: 25 1/S	(DIN EN ISO 3219)

9.3 Further information

Explosion limits for released hydrogen: 4 - 75.6%(V). Explosion limits for released methanol: 5.5 - 44%(V).

Odour limit ..... : no data available
Thermal decomposition ..... : > 250 °C (> 482 °F)

10. Stability and reactivity

10.1 General information:

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

10.2 Conditions to avoid

moisture , Heat, open flames, and other sources of ignition. Contact with contaminated piping or vessels or with corroded and rusty containers can increase the rate of hydrogen formation. Observe information in section 7.

10.3 Materials to avoid

proton-active substances . Reacts with: acids , basic substances (e.g. alkalis, ammonia, amines) . alcohols , water , moisture , oxidizing agents , catalyst . Reaction causes the formation of: hydrogen and methanol .

10.4 Hazardous decomposition products

By hydrolysis: methanol . Upon contact with the substances mentioned in 10. hydrogen . Measurements have shown the formation of small amounts of formaldehyde at temperatures above about 150 °C (302 °F) through oxidation.

10.5 Further information:

Hazardous polymerization cannot occur.

11. Toxicological information

11.1 Information on toxicological effects

11.1.1 Acute toxicity

Product details:

Route of exposure	Result/Effect	Species/Test system	Source
oral	LD_{50}: > 2000 mg/kg	rat	Conclusion by analogy
dermal	LD_{50}: > 2000 mg/kg	rabbit	Conclusion by analogy

Acute toxicity estimate (ATE):
ATE_{mix} (oral): > 2000 mg/kg

11.1.2 Skin corrosion/irritation

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.3 Serious eye damage / eye irritation

Product details:

Result/Effect	Species/Test system	Source
not irritating	rabbit	Conclusion by analogy OECD 405

11.1.4 Respiratory or skin sensitization

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.5 Germ cell mutagenicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.6 Carcinogenicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.7 Reproductive toxicity

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.8 Specific target organ toxicity (single exposure)

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.9 Specific target organ toxicity (repeated exposure)

Assessment:

For this endpoint no toxicological test data is available for the whole product.

11.1.10 Aspiration hazard

Assessment:

Based on the physical-chemical properties of the product no aspiration hazard must be expected.

11.1.11 Further toxicological information

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other information: Hydrolysis product / impurity: Methanol (CAS 67-56-1) is readily and rapidly absorbed at all exposure routes and is toxic by all routes. Methanol may cause irritation of the mucosa, as well as nausea, vomiting, headaches, vertigo and visual disorders, including blindness (irreversible damage to the optic nerve), acidosis, spasms, narcosis and coma. There may be a delay in the onset of these effects after exposure.

12. Ecological information

12.1 Toxicity

Assessment:

Assessment based on ecotoxicological tests with similar products under consideration of the physical-chemical properties: For this product no effects on aquatic organisms, relevant for classification, are expected. According to current knowledge adverse effects on water purification plants are not expected.

12.2 Persistence and degradability

Assessment:

Silicone content: biologically not degradable. Separation by sedimentation. The product of hydrolysis (methanol) is readily biodegradable.

12.3 Bioaccumulative potential

Assessment:

Bioaccumulation is not expected to occur.

12.4 Mobility in soil

Assessment:

Silicone content: Insoluble in water.

12.5 Other adverse effects

none known

13. Disposal considerations

13.1 Product disposal

Recommendation:
Risk of oxyhydrogen formation upon contact with the substances mentioned in 10. Material designated for disposal must be segregated from incompatible substances or materials specified in Sect. 10. Wastes of this material should not be mixed with other wastes. Provide measures such as vented bungs to ensure pressure relief in the waste containers. Material that cannot be used, reprocessed or recycled should be disposed of in accordance with Federal, State, and local regulations at an approved facility. Depending on the regulations, waste treatment methods may include, e.g., landfill or incineration.

13.2 Packaging disposal

Recommendation:
Containers may contain hazardous quantities of hydrogen gas. Uncleaned containers should not be reused to hold another material due to the potential for reaction between residual product and incompatible materials. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local/state/federal regulations. 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
Other Information .....: Temperature Sensitive Material.
Refrigerated Transport Required.

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:
This material or its components are listed on or are in compliance with the requirements of the TSCA Chemical Substance Inventory.

TSCA 12(b) Export Notification:
This material does not contain reportable amounts of any TSCA 12(b) listed 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:
This product does not present any SARA 311/312 hazards.

SARA 313 Chemicals:
This material does not contain any SARA 313 chemicals above de minimus levels.

HAPS (Hazardous Air Pollutants):

CAS No.	Chemical	Upper limit wt. %
108-88-3	Toluene	<=0.0283

15.2 U.S. State regulations

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

This material does not contain any chemicals known to the State of California to cause cancer.

California Proposition 65 Reproductive Toxins:

108-88-3 Toluene

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 Details of international registration status

Relevant information about individual substance inventories, where available, is given below.

South Korea (Republic of Korea) ..... : **ECL** (Existing Chemicals List):
This product is listed in, or complies with, the substance inventory.

Japan ..... : **ENCS** (Handbook of Existing and New Chemical Substances):
This product is listed in, or complies with, the substance inventory.

Australia ..... : **AICS** (Australian Inventory of Chemical Substances):
This product is listed in, or complies with, the substance inventory.

People's Republic of China ..... : **IECSC** (Inventory of Existing Chemical Substances in China):
This product is listed in, or complies with, the substance inventory.

Canada ..... : **DSL** (Domestic Substance List):
This product is listed in, or complies with, the substance inventory.

Philippines..... : **PICCS** (Philippine Inventory of Chemicals and Chemical Substances):
This product is listed in, or complies with, the substance inventory.

United States of America (USA)..... : **TSCA** (Toxic Substance Control Act Chemical Substance Inventory):
All components of this product are listed as active or are in compliance with the substance inventory.

Taiwan (Republic of China)..... : **TCSI** (Taiwan Chemical Substance Inventory):
This product is listed in, or complies with, the substance inventory. General note: The Taiwanese chemicals regulation requires a phase 1 registration for TCSI-listed or TCSI-compliant substances if imports to Taiwan or manufacturing in Taiwan exceed the trigger quantity of 100 kg/a (for mixtures to be calculated per each ingredient). It is the duty of the importing/manufacturing legal entity to take care of this obligation.

European Economic Area (EEA)..... : **REACH** (Regulation (EC) No 1907/2006):
General note: the registration obligations for substances imported into the EEA or manufactured within the EEA by the supplier mentioned in section 1 are fulfilled by the said supplier. The registration obligations for substances imported into the EEA by customers or other downstream users must be fulfilled by the latter.

16. Other information

16.1 Additional information:

This Safety Data Sheet (SDS) meets the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200).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 SDS 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.

Vertical lines in the left-hand margin indicate changes compared with the previous version.

All deliveries are subject to the WACKER SILICONES Health Care Policy, which is available at www.wacker.com.

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)