1. **Product and company identification**

1.1 **Identification of the substance or preparation:**

   **Commercial product name:** WACKER® AK 1 000
   **SILICONE FLUID**

   **Use of substance / preparation:**
   Industrial, Intermediate chemical

1.2 **Company/undertaking identification:**

   **Manufacturer/distributor:** Wacker Chemie AG
   Hanns-Seidel-Platz 4
   81737 München
   Germany

   **Customer information:** Wacker Chemical Corporation
   3301 Sutton Road
   Adrian, Michigan 49221-9397
   USA
   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 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 (substance)**

   **Chemical characteristics:**
   Polydimethylsiloxane

2.2 **Information on ingredients:**

   This material does not contain any hazardous substances at or above OSHA and WHMIS reportable levels.

   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: 1  Reactivity: 0  PPE: B

   Hazardous Materials Identification System and HMIS are registered trademarks of the National Paint and Coatings Association. (HMIS codes are based on contact with the product as packaged and any hydrolysis by-products, if present.)

   **Canadian WHMIS Classification:** None.

3.2 **Emergency overview and potential hazards**

   This material is not hazardous under OSHA criteria. This material is not hazardous under WHMIS criteria. Liquid silicone based materials have lubricating properties that can substantially reduce or eliminate traction and may pose a slip hazard. Please use warning labels on consumer products where traction is essential for safety.
Physical Hazards:
No known physical hazards.

Acute health effects
Route of entry or possible contact:
eyes, skin.
Eye contact:
May cause slight eye irritation.
Skin contact:
No acute toxic effects are expected.
Inhalation:
Inhalation is not expected due to low vapor pressure.
Ingestion:
No acute toxic effects are known.

Additional information on acute health effects:
Ingestion is not expected during industrial use. The toxicological evaluation is based on test results with a similar product.

3.3 Further information:
Chronic health effects:
No known or expected chronic health effects.

Medical conditions which may be aggravated by exposure:
none known

Target organs affected:
No known internal organ effects.

Signs and Symptoms of Exposure:
Refer to Acute Health Effects, listed above.

Carcinogens/Reproductive toxins:
This material does not contain any reproductive toxins at or above OSHA or WHMIS reportable levels. This material does not contain any reportable carcinogenic ingredients.

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
Material cannot be inhaled under normal conditions.

4.3 After contact with the skin
For skin contact, immediately wipe away excess material. Use a waterless hand cleaner to remove as much of the remaining material as possible. 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
After swallowing No special treatment is required.

4.6 Advice for the physician
Treat symptomatically.

5. Fire-fighting measures

5.1 Flammable properties:
5.2 Fire and explosion hazards:
This material does not present any unusual fire or explosion hazards.

5.3 Recommended extinguishing media:
- water-mist
- carbon dioxide
- sand
- dry chemical or alcohol-resistant foam

5.4 Unsuitable extinguishing media:
- water-spray
- sharp water jet

5.5 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
Hazardous decomposition products: carbon dioxide, carbon monoxide, formaldehyde, silicon dioxide and incompletely burnt hydrocarbons.

5.6 Fire fighting procedures:
Fire fighters should wear full protective clothing including a self-contained breathing apparatus. Cool endangered containers with water.

6. Accidental release measures

6.1 Precautions:
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. Contain any fluid that runs out using suitable material (e.g. earth). Close leak if possible without risk.

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
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. 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.

7. Handling and storage

7.1 General information:
No special protective measures required.

7.2 Handling
Precautions for safe handling:
Spilled substance increases risk of slipping.

Precautions against fire and explosion:
Observe the general rules for fire prevention.

7.3 Storage
Conditions for storage rooms and vessels:
none known
Advice for storage of incompatible materials:
not applicable

Further information for storage:
Keep container tightly closed. Store in a dry and cool place.
Maximum temperature allowed during storage and transportation: 50 °C (122 °F)

8. Exposure controls and personal protection

8.1 Engineering controls
Ventilation:
Use with adequate ventilation.
Local exhaust:
No special ventilation required.

8.2 Associate substances with specific control parameters such as limit values
none known.

8.3 Personal protection equipment (PPE)
Respiratory protection:
Respiratory protection is not normally required.
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. Do not eat, drink or smoke when handling. Follow standard industrial hygiene practices when using this material. Wash thoroughly after handling.

9. Physical and chemical properties

9.1 Appearance
Physical state / form: liquid
Colour: colourless, clear
Odour: odourless

9.2 Safety parameters

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point / melting range</td>
<td>-50 °C (-58 °F)</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 300 °C (&gt; 572 °F)</td>
<td>(ISO 2592)</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>approx. 450 °C (842 °F)</td>
<td>(DIN 51794)</td>
</tr>
<tr>
<td>Lower explosion limit (LEL)</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Upper explosion limit (UEL)</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>approx. 0.97 g/cm³ at 25 °C (77 °F)</td>
<td>(DIN 51757)</td>
</tr>
<tr>
<td>Water solubility / miscibility</td>
<td>virtually insoluble at 20 °C (68 °F)</td>
<td>(-)</td>
</tr>
<tr>
<td>pH-Value</td>
<td>approx. 7</td>
<td></td>
</tr>
<tr>
<td>Viscosity (dynamic)</td>
<td>1000 mPa.s at 25 °C (77 °F)</td>
<td>(DIN 53018)</td>
</tr>
<tr>
<td>Viscosity (kinematic)</td>
<td>approx. 1000 mm²/s at 25 °C (77 °F)</td>
<td></td>
</tr>
</tbody>
</table>

9.3 Further information
Thermal decomposition: Decomposition begins at > 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
none known

10.3 Materials to avoid
none known

10.4 Hazardous decomposition products
If stored and handled properly: none known. 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
Toxicological testing has been conducted with similar product(s).

11.1.1 Acute toxicity
Assessment:
Based on the available data acute toxic effects are not expected after single oral exposure. Based on the available data acute toxic effects are not expected after single dermal exposure.

Product details:

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Result/Effect</th>
<th>Species/Test system</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD₅₀: &gt; 5000 mg/kg</td>
<td>rat</td>
<td>Conclusion by analogy</td>
</tr>
<tr>
<td>dermal</td>
<td>LD₅₀: &gt; 2008 mg/kg</td>
<td>rat</td>
<td>Conclusion by analogy</td>
</tr>
</tbody>
</table>

11.1.2 Skin corrosion/irritation
Assessment:
Based on the available data a clinically relevant skin irritation hazard is not expected.

Product details:

<table>
<thead>
<tr>
<th>Result/Effect</th>
<th>Species/Test system</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>not irritating</td>
<td>rabbit</td>
<td>Conclusion by analogy</td>
</tr>
</tbody>
</table>

11.1.3 Serious eye damage / eye irritation
Assessment:
Based on the available data a clinically relevant eye irritation hazard is not expected.

Product details:

<table>
<thead>
<tr>
<th>Result/Effect</th>
<th>Species/Test system</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>not irritating</td>
<td>rabbit</td>
<td>Conclusion by analogy</td>
</tr>
</tbody>
</table>

11.1.4 Respiratory or skin sensitization
Assessment:
Based on the available data a sensitization reaction is not expected from this product.
11.1.5 Germ cell mutagenicity

Assessment:
Based on known data a significant mutagenic potential may be excluded.

Product details:

<table>
<thead>
<tr>
<th>Result/Effect</th>
<th>Species/Test system</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative</td>
<td>mutation assay (in vitro)</td>
<td>Conclusion by analogy</td>
</tr>
<tr>
<td></td>
<td>bacterial cells</td>
<td>OECD 471</td>
</tr>
</tbody>
</table>

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

11.1.11 Further toxicological information

Other information: Human patch test: Product displays good compatibility with the skin.

12. Ecological information

12.1 Toxicity

Assessment:
Evaluation on basis of physical-chemical properties: No expected damaging effects to aquatic organisms. According to current knowledge adverse effects on water purification plants are not expected.

12.2 Persistence and degradability

Assessment:
Biologically not degradable. Absorbed by floating particles. Separation by sedimentation. Polydimethylsiloxanes are degradable to a certain extent in abiotic processes.

12.3 Bioaccumulative potential

Assessment:
Bioaccumulation is not expected to occur.
12.4 Mobility in soil

Assessment:
Insoluble in water. Forms thin oil film on surface of water. Absorbed by floating particles. Separation by sedimentation.

12.5 Other adverse effects

none known

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.

13.2 Packaging disposal
Recommendation:
Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local/state/federal regulations.

14. Transport information

14.1 US DOT & CANADA TDG SURFACE

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 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:
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):
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.
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:
None.

DSL Status:
This material or its components are listed on the Canadian Domestic Substances List.

15.4 Other international regulations

EU Risk Phrases:

<table>
<thead>
<tr>
<th>R-Phrase</th>
<th>Description</th>
</tr>
</thead>
</table>

EU Safety Phrases:

<table>
<thead>
<tr>
<th>S-Phrase</th>
<th>Description</th>
</tr>
</thead>
</table>

Details of international registration status
Listed on or in accordance with the following inventories:
IECSC - China
EINECS - Europe
ENCS - Japan
PICCS - Philippines
ECL - Korea
DSL - Canada
TSCA - USA
AICS - Australia

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.

Vertical lines in the left-hand margin indicate changes compared with the previous version.
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
- TWA - Time Weighted Average
- WHMIS - Canadian Workplace Hazardous Materials Identification System

Flash point determination methods

<table>
<thead>
<tr>
<th>Common name</th>
<th>Flash point determination methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tagliabue (Tag) closed cup</td>
<td>ASTM D56</td>
</tr>
<tr>
<td>Cleveland open cup</td>
<td>ASTM D92, DIN 51376, ISO 2592</td>
</tr>
<tr>
<td>Pensky-Martens closed cup</td>
<td>ASTM D93, DIN 51758, ISO 2719</td>
</tr>
<tr>
<td>Setaflash or Rapid closed cup</td>
<td>ASTM D3278, DIN 55680, ISO 3679</td>
</tr>
<tr>
<td>Abel-Pensky closed cup</td>
<td>DIN 51755</td>
</tr>
</tbody>
</table>

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)