1. **Product and company identification**

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

- **Commercial product name:** HDK® N20 HYDROPHILIC PYROGENIC SILICA
- **Use of substance / preparation:**
  - Industrial.

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 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**

- No data available.

3. **Composition/information on ingredients**

3.1 **Chemical characterization (substance)**

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Chemical characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>112945-52-5</td>
<td>Pyrogenic micro-dispersed silica, synthetic X-ray amorphous silicon dioxide (SiO2)</td>
</tr>
</tbody>
</table>

3.2 **Information on ingredients:**

This material does not contain any reportable hazardous ingredients.

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.
4. First-aid measures

4.1 General information:
Get medical attention if irritation occurs or if breathing becomes difficult.

4.2 After inhalation
If inhaled, remove to fresh air.

4.3 After contact with the skin
If contact with skin, wash skin with plenty of water or with water and soap.

4.4 After contact with the eyes
If contact with eyes, immediately flush eyes with plenty of water.

4.5 After swallowing
Drink plenty of water. Get medical attention if symptoms occur. Show label if possible.

5. Fire-fighting measures

5.1 Flammable properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Lower explosion limit (LEL)</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>not applicable</td>
<td></td>
</tr>
</tbody>
</table>

5.2 Fire and explosion hazards:
Material does not burn. Electrostatic charging is possible.

5.3 Recommended extinguishing media:
Use extinguishing measures appropriate to the source of fire.

5.4 Unsuitable extinguishing media:
not applicable

5.5 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
not applicable

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:
Avoid dust formation. Do not breathe dust. Wear personal protection equipment (see section 8).

| HAZWOPER PPE Level               | D                      |

6.2 Containment:
Cover any spilled material in accordance with regulations to prevent dispersal by wind.
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
Damp down dust and fill into containers.

7. Handling and storage
7.1 Handling
Precautions for safe handling:
Avoid dust formation.

Precautions against fire and explosion:
Electrostatic discharge possible during transport and processing. Take precautionary measures against electrostatic charging.
Ensure all parts of equipment are well earthed. Use inert gas when working with combustible and explosive liquids. Avoid dust deposit, remove dust regularly.

7.2 Storage
Conditions for storage rooms and vessels:
none known

Advice for storage of incompatible materials:
not applicable

Further information for storage:
Keep container dry and tightly closed.

8. Exposure controls and personal protection

8.1 Engineering controls
Ventilation:
Use only with adequate ventilation.

Local exhaust:
In case of dust formation: (To maintain concentration below TLV.) 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
Maximum airborne concentrations at the workplace:

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Material Type</th>
<th>mg/m³</th>
<th>ppm</th>
<th>Dust fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>7631-86-9</td>
<td>Silica, amorphous</td>
<td>OSHA PEL</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Particulates not otherwise classified</td>
<td>ACGIH TWA</td>
<td>10.0</td>
<td>Inhalable dust/mist</td>
</tr>
<tr>
<td></td>
<td>Particulates not otherwise classified</td>
<td>ACGIH TWA</td>
<td>3.0</td>
<td>Respirable dust/mist</td>
</tr>
</tbody>
</table>

Re Silica, amorphous: The exposure limits given for CAS-No. 7631-86-9 cover all types of synthetic amorphous silica; it appears, that there is an error in the OSHA PEL entry for amorphous silica. There should have been a footnote to the Z-3 Table indicating that the percent SiO2 in formula (80 mg/m3 + % SiO2) refers to crystalline silica content and not to amorphous silica. For evaluation of U.S. exposure measurements WACKER recommends use of the current NIOSH REL (6 mg/m3) instead of the old Z-3 Table entry.

Re Particulates not otherwise classified: The value is for particulate matter containing no asbestos and < 1% crystalline silica (ACGIH).

8.3 Personal protection equipment (PPE)
Respiratory protection:
In case of dust formation: A NIOSH approved particulate respirator with a P95 or higher rating.

Hand protection:
Recommendation: rubber gloves.

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

Other protective clothing or equipment:
Barrier cream may be used to prevent dryness of skin.

8.4 General hygiene and protection measures:
Do not breathe dust/vapor/mist/gas/aerosol. Wash thoroughly after handling.
9. Physical and chemical properties

9.1 Appearance

- Physical state / form: solid - powder
- Colour: white
- 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>1700 °C (3,092 °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>not applicable</td>
<td></td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Lower explosion limit (LEL)</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. 2.2 g/cm³ at 20 °C (68 °F)</td>
<td>(DIN 51757)</td>
</tr>
<tr>
<td>Bulk density</td>
<td>20 - 130 kg/m³</td>
<td></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>3.6 - 4.5 (DIN EN ISO 787-9)</td>
<td></td>
</tr>
<tr>
<td>Viscosity (dynamic)</td>
<td>not applicable</td>
<td></td>
</tr>
</tbody>
</table>

9.3 Further information

VOC: This material does not contain any reportable VOCs. 0 g/l (calculated value)

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

10.3 Materials to avoid

none known

10.4 Hazardous decomposition products

If stored and handled properly: none known.

10.5 Further information:

Hazardous polymerization cannot occur.

11. Toxicological information

11.1 Information on toxicological effects

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. Based on the available data acute toxic effects are not expected after short-term inhalative 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; 5000mg/kg</td>
<td>rat</td>
<td>literature</td>
</tr>
<tr>
<td>dermal</td>
<td>LD₅₀: &gt; 5000mg/kg</td>
<td>rabbit</td>
<td>literature</td>
</tr>
</tbody>
</table>
by inhalation (dust)  
LC₅₀: > 0.139 mg/l; 4 h  
At the technically highest possible concentration no mortality in animal test.

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>no irritating</td>
<td>rabbit</td>
<td>literature</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>no irritating</td>
<td>rabbit</td>
<td>literature</td>
</tr>
</tbody>
</table>

11.1.4 Respiratory or skin sensitization

Assessment:
By handling the product for many years no damage to health was observed.

11.1.5 Germ cell mutagenicity

Assessment:
According to our present state of knowledge not mutagenic.

11.1.6 Carcinogenicity

Assessment:
Animal tests have not revealed any carcinogenic effects.

11.1.7 Reproductive toxicity

Assessment:
In animal experiments there have not been any indications of reproduction toxicity.

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:
Changes in the lungs (inflammatory processes) observed in animal experiments after chronic inhalative exposure were reversible; no indication of silicosis.

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

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.
12. Ecological information

12.1 Toxicity

Assessment:
No expected damaging effects to aquatic organisms. According to current knowledge adverse effects on water purification plants are not expected.

<table>
<thead>
<tr>
<th>Result/Effect</th>
<th>Species/Test system</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50: &gt; 10000 mg/l</td>
<td>zebra fish (Danio rerio) (96 h)</td>
<td>literature</td>
</tr>
<tr>
<td>EC50: &gt; 10000 mg/l</td>
<td>Daphnia magna (24 h)</td>
<td>literature</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Assessment:
The substance is degradable in abiotic processes.

12.3 Bioaccumulative potential

Assessment:
No adverse effects expected.

12.4 Mobility in soil

Assessment:
No adverse effects expected.

12.5 Other adverse effects

none known

12.6 Additional information

Insoluble in water.

13. Disposal considerations

13.1 Product disposal

Recommendation:
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:
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 |

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. This material is in compliance with TSCA under CAS Number 7631-86-9 (silica, amorphous).

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.

Massachusetts Substance List:
112945-52-5 Silica, amorphous, fumed

New Jersey Right-to-Know Hazardous Substance List:
112945-52-5 Silica, amorphous, fumed

Pennsylvania Right-to-Know Hazardous Substance List:
112945-52-5 Silica, amorphous, fumed

15.3 Canadian regulations

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

WHMIS Hazard Classes:
None.

15.4 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.
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 product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS 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 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:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>DOT</td>
<td>Department of Transportation</td>
</tr>
<tr>
<td>hPa</td>
<td>Hectopascals</td>
</tr>
<tr>
<td>mPa*s</td>
<td>Milli Pascal-Seconds</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>STEL</td>
<td>Short Term Exposure Limit</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts per Million</td>
</tr>
<tr>
<td>STEL</td>
<td>Short Term Exposure Limit</td>
</tr>
<tr>
<td>STEL</td>
<td>Short Term Exposure Limit</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>WHMIS</td>
<td>Canadian Workplace Hazardous Materials Identification System</td>
</tr>
</tbody>
</table>

Flash point determination methods

- ASTM D56, Tagliabue (Tag) closed cup
- ASTM D92, Cleveland open cup
- ASTM D93, Pensky-Martens closed cup
- ASTM D3278, 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)