SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
   Trade name : SORBSIL® CHAMELEON®

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Use of the Substance/Mixture : Desiccant for chemical and pharmaceutical products, Food, electronic and optical components

1.3 Details of the supplier of the safety data sheet
   Company : OKER-CHEMIE GMBH
             Im Schleeke 77
             38642 Goslar
             Germany
   Telephone : +49 (0)53 21 - 7 51-34 15

1.4 Emergency telephone number
   E-mail address : infoSDS@hcstarck.com
   Responsible Department : Corporate HSEQ
   Emergency telephone : +49(0)551/19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

   Classification (67/548/EEC, 1999/45/EC)
   No classification, This substance is not classified as dangerous according to Directive 67/548/EEC.

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   No labelling required

2.3 Other hazards
   silicon dioxide : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
   Ammonium iron (III) sulphate dodecahydrate : no data available

SECTION 3: Composition/information on ingredients

3.2 Mixtures
   Chemical nature : Mixture
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

SORBSIL® CHAMELEON®
Version 2.2 Revision Date 11.03.2013  Print Date 11.03.2013

Hazardous components

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>silicon dioxide</td>
<td>7631-86-9</td>
<td></td>
<td></td>
<td>&gt;= 93</td>
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<tr>
<td></td>
<td>231-545-4</td>
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<td></td>
<td>01-2119379499-16</td>
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<tr>
<td>Ammonium iron bis(sulfate) dodecahydrate</td>
<td>7783-83-7</td>
<td></td>
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<td>&lt;= 5</td>
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<tr>
<td></td>
<td>233-382-4</td>
<td></td>
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</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled: Remove to fresh air. If symptoms persist, call a physician.
In case of skin contact: Wash off with soap and water. If skin irritation occurs, seek medical advice/attention.
In case of eye contact: Rinse with plenty of water. If eye irritation persists, consult a specialist.
If swallowed: Clean mouth with water and drink afterwards plenty of water. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: No information available.
Risks: No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Extinguishing methods depends upon fire in vicinity poses., The product itself does not burn.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: nitrogen oxides (NOx)
sulfuric oxides (SOx)

5.3 Advice for firefighters

Special protective equipment for: In the event of fire, wear self-contained breathing apparatus.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid formation and deposition of dust. Use personal protective equipment.

Further information: Prevent fire extinguishing water from contaminating surface water or the ground water system.

6.2 Environmental precautions

Environmental precautions: Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up: Use mechanical handling equipment. Avoid dust formation. Fill into labelled, sealable containers.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Avoid dust formation. Ensure adequate ventilation and, if necessary, exhaust ventilation when handling or transferring the product. Ensure that the occupational exposure limit value(s) (OEL) and/or other limit values are complied with.

Advice on protection against fire and explosion: No special precautions required.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Keep working clothes separately.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Comply with the directives governing water law.

Further information on storage conditions: Store in tightly closed containers in a dry place.

7.3 Specific end use(s)

Specific use(s): no data available
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>silicon dioxide</td>
<td>7631-86-9</td>
<td>TWA (Inhalable)</td>
<td>6 mg/m³</td>
<td>2005-04-06</td>
<td>GB EH40</td>
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</table>

Further information: 15: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust. The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit. Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3. Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.

<table>
<thead>
<tr>
<th></th>
<th>TWA</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Respirable)</td>
<td>2,4 mg/m³</td>
<td>2005-04-06</td>
<td>GB EH40</td>
</tr>
</tbody>
</table>

Further information: 15: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust. The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit. Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3. Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.
DNEL
silicon dioxide : End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term local effects
Value: 4 mg/kg

Ammonium iron (III) sulphate dodecahydrate : no data available

PNEC
silicon dioxide : no data available
Ammonium iron (III) sulphate dodecahydrate : no data available

8.2 Exposure controls

Personal protective equipment
Eye protection : Safety glasses

Hand protection
Material : Butyl-rubber, Natural rubber, Nitrile rubber
Remarks : The data about break through time/strength of material is not valid for undissolved solids/dust.

Skin and body protection : Protective suit

Respiratory protection : Avoid breathing dust.
In case of insufficient ventilation, wear suitable respiratory equipment.
Respiratory protective device with particle filter EN 143

Environmental exposure controls
General advice : Do not flush into surface water or sanitary sewer system.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : granular
Colour : orange
Odour : odourless
pH : > 2.0 - 5.0, Concentration: 50.00 g/l at 20 °C
aqueous suspension

Melting point/range : > 1.000 °C
Flammability : no data available

Lower explosion limit : no data available
Bulk density : 680 - 780 kg/m3

Water solubility : practically insoluble
Auto-ignition temperature : no data available
Thermal decomposition : > 150 °C

9.2 Other information

Burning number : no data available
Flammability (contact with water) : no data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No hazards to be specially mentioned.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

Hazardous decomposition products : 
Other information : Ammonia
Sulphur oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Components:
Silicon dioxide:
Acute oral toxicity: LD50 Oral: > 3.100 mg/kg
   Method: OECD Test Guideline 401
   GLP: no

Acute inhalation toxicity: LC0 rat, male and female: 140 mg/l
   Exposure time: 4 h
   Method: OECD Test Guideline 403
   GLP: yes
   The substance or mixture has no acute inhalation toxicity
   Remarks: (maximum technically producible dust concentration)

Acute dermal toxicity: LD50 Dermal rabbit: > 5.000 mg/kg
   Method: No information available.
   GLP: no

Skin corrosion/irritation: Species: rabbit
   Exposure time: 4 h
   Result: No skin irritation
   Method: OECD Test Guideline 404

Serious eye damage/eye irritation: Species: rabbit
   Result: Mild eye irritation
   Method: OECD Test Guideline 405

Respiratory or skin sensitization: Patch test on human volunteers did not demonstrate sensitization properties.

Germ cell mutagenicity
Genotoxicity in vitro: Type: Ames test
   Test species: Salmonella typhimurium, E. coli with or without metabolic activation
   Result: negative
   Method: OECD Test Guideline 471
   GLP: yes
   No indication of mutagenic effects.

   Type: Chromosome aberration test in vitro
   Test species: Chinese hamster ovary (CHO) cells with or without metabolic activation
   Result: negative
   Method: OECD Test Guideline 473
   GLP: yes
   No indication of mutagenic effects.

Carcinogenicity: Species: rat, male and female
   Application Route: Oral
   Method: No information available.
   No evidence of carcinogenicity in animal studies (when indicated)

STOT - single exposure: Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.
Repeated dose toxicity: rat, male and female: NOAEL: \( \geq 4.000 \text{ mg/kg} \)

Application Route: Oral
Exposure time: 90-day
Method: OECD TG 408

STOT - repeated exposure: Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Further information: None known.

Ammonium iron bis(sulfate) dodecahydrate:
Acute oral toxicity: no data available
Acute inhalation toxicity: no data available
Acute dermal toxicity: no data available
Skin corrosion/irritation: no data available
Serious eye damage/eye irritation: no data available
Respiratory or skin sensitization: no data available

Germ cell mutagenicity
Genotoxicity in vitro: no data available
Genotoxicity in vivo: no data available
Carcinogenicity: no data available
Reproductive toxicity: no data available
Teratogenicity: no data available

STOT - single exposure: Remarks: no data available
Repeated dose toxicity: Remarks: no data available
STOT - repeated exposure: Remarks: no data available
Further information: None known.
SECTION 12: Ecological information

12.1 Toxicity

**Components:**

**Silicon dioxide:**
- Toxicity to fish: LL0 (Danio rerio (zebra fish)): 10.000 mg/l
  - Exposure time: 96 h
  - Test Method: static test
  - Test substance: Read across
  - Method: OECD Test Guideline 203
  - GLP: No information available.

- Toxicity to daphnia and other aquatic invertebrates: EL0 (Daphnia magna (Water flea)): 1.000 mg/l
  - Exposure time: 24 h
  - Test Method: static test
  - Test substance: Read across
  - Method: OECD Test Guideline 202
  - GLP: No information available.

**Ammonium iron bis(sulfate) dodecahydrate:**
- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to bacteria: no data available
- Toxicity to fish (Chronic toxicity): no data available
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): no data available
- Toxicity to soil dwelling organisms: no data available
- Plant toxicity: no data available
- Toxicity to terrestrial organisms: no data available

12.2 Persistence and degradability

**Components:**

**Silicon dioxide:**
- Biodegradability: The methods for determining biodegradability are not applicable to inorganic substances.
- Stability in water: no data available

**Ammonium iron bis(sulfate) dodecahydrate:**
- Biodegradability: no data available
- Stability in water: no data available

12.3 Bioaccumulative potential
Components:
Silicon dioxide :
Bioaccumulation : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
Partition coefficient: n-octanol/water : not applicable
Ammonium iron bis(sulfate) dodecahydrate :
Bioaccumulation : no data available
Partition coefficient: n-octanol/water : not applicable

12.4 Mobility in soil
Components:
Silicon dioxide :
Mobility : no data available
Ammonium iron bis(sulfate) dodecahydrate :
Mobility : no data available

12.5 Results of PBT and vPvB assessment
Components:
Silicon dioxide :
Assessment : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
Ammonium iron bis(sulfate) dodecahydrate :
Assessment : no data available

12.6 Other adverse effects
Components:
Silicon dioxide :
Ozone-Depletion Potential : no data available
Additional ecological information : None known.
Ammonium iron bis(sulfate) dodecahydrate :
Ozone-Depletion Potential : no data available
Additional ecological information : None known.

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Product : The Federal, regional and local rules and regulations governing disposal must be complied with.
This product cannot be classified with disposal identification key acc. to the EU disposal directives as a classification results from the intended utilisation purpose of the consumer.

SECTION 14: Transport information
14.1 UN number
ADR
Not dangerous goods
IMDG
Not dangerous goods
IATA
000010004861 10/12 OCG_GB (EN)
Not dangerous goods

14.2 Proper shipping name
   ADR
   Not dangerous goods
   IMDG
   Not dangerous goods
   IATA
   Not dangerous goods

14.3 Transport hazard class
   ADR
   Not dangerous goods
   IMDG
   Not dangerous goods
   IATA
   Not dangerous goods

14.4 Packing group
   ADR
   Not dangerous goods
   IMDG
   Not dangerous goods
   IATA
   Not dangerous goods

14.5 Environmental hazards
   ADR
   Not dangerous goods
   IMDG
   Not dangerous goods
   IATA
   Not dangerous goods

14.6 Special precautions for user
   For personal protection see section 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
   No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
   Is not subject to the Seveso II Directive.

15.2 Chemical Safety Assessment

SECTION 16: Other information
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.