1. Identification

Product identifier

JIS Z8901 Classes 7, 8, 11 Kanto Loam
Substance name: Silica (fine dust)
CAS No: 14808-60-7

Recommended use of the chemical and restrictions on use

Use of the substance/mixture
test dust

Details of the supplier of the safety data sheet

Company name: Powder Technology Inc.
Street: 1300 Grey Fox Road
Place: USA-55112 Arden Hills, MN
Telephone: +1 952 894 -8737
e-mail: sales@powdertechnologyinc.com
Internet: http://www.powdertechnologyinc.com

Emergency phone number: +1 952 894 -8737

2. Hazard(s) identification

Classification of the chemical

29 CFR Part 1910.1200
Carcinogenicity: Carc. 2
Specific target organ toxicity repeated or prolonged exposure: STOT RE 1

Label elements

29 CFR Part 1910.1200
Signal word: Danger

Pictograms:

Hazard statements

Suspected of causing cancer
Causes damage to organs through prolonged or repeated exposure

Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
If exposed or concerned: Get medical advice/attention.
Store locked up.

Hazard not otherwise classified

No information available.

3. Composition/information on ingredients

Substances
Chemical characterization

Powder-Sand

Mineral bound:
Aluminium oxide; Alumina 26 - 32 %
CAS No. 1344-28-1

Potassium oxide (mineral) 2 - 5 %
CAS No. 12136-45-7

Iron (III) oxide (hematite) 17 - 23 %
CAS No. 1309-37-1

Magnesium oxide 3 - 7 %
CAS No. 1309-48-4

Hazardous components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Components</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>14808-60-7</td>
<td>Silica (fine dust)</td>
<td>34 - 40 %</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>titanium dioxide</td>
<td>2.5 - 4 %</td>
</tr>
<tr>
<td>1305-78-8</td>
<td>calcium oxide (mineral)</td>
<td>3 %</td>
</tr>
</tbody>
</table>

4. First-aid measures

Description of first aid measures

General information
In all cases of doubt, or when symptoms persist, seek medical advice.

After inhalation
Provide fresh air. In case of irregular breathing or respiratory arrest provide artificial respiration. If experiencing respiratory symptoms: Call a doctor.

After contact with skin
Wash with plenty of water. Take off immediately all contaminated clothing and wash it before reuse. In case of skin reactions, consult a physician.

After contact with eyes
Rinse immediately carefully and thorough with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

After ingestion
Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. Call a physician immediately.

Most important symptoms and effects, both acute and delayed
Suspected of causing cancer if inhaled. A repeated, excessive dust exposure can cause pneumoconiosis.
Irritating to eyes.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
Co-ordinate fire-fighting measures to the fire surroundings.
Suitable extinguishing media: Foam. Dry extinguishing powder. Atomized water. Carbon dioxide (CO2)
Unsuitable extinguishing media
High power water jet.

Specific hazards arising from the chemical
Non-flammable.
In case of fire: Metal oxide smoke, toxic.

Special protective equipment and precautions for fire-fighters
Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information
Knock down dust with water spray jet. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Provide adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Remove persons to safety.

Environmental precautions
Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up
Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal. Ventilate affected area. Collect in closed containers for disposal.

Reference to other sections
Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling
If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid dust formation. Do not breathe dust. Wear personal protection equipment. Avoid contact with skin, eyes and clothes. Avoid:
Generation/formation of dust

Advice on protection against fire and explosion
Usual measures for fire prevention.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.

Hints on joint storage
Do not store together with: Strong acid

8. Exposure controls/personal protection

Control parameters
Exposure limits

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>f/cc</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1305-78-8</td>
<td>Calcium oxide</td>
<td>-</td>
<td>5</td>
<td></td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
<tr>
<td>1309-37-1</td>
<td>Iron oxide (Fe2O3) (respirable fraction)</td>
<td>-</td>
<td>2</td>
<td></td>
<td>TWA (8 h)</td>
<td>REL</td>
</tr>
<tr>
<td>1309-37-1</td>
<td>Iron oxide dust and fume (as Fe)</td>
<td>-</td>
<td>2</td>
<td></td>
<td>TWA (8 h)</td>
<td>ACGIH-2019</td>
</tr>
<tr>
<td>1309-37-1</td>
<td>Iron oxide fume</td>
<td>-</td>
<td>5</td>
<td></td>
<td>TWA (8 h)</td>
<td>REL</td>
</tr>
<tr>
<td>1309-48-4</td>
<td>Magnesium oxide (inhalable fraction)</td>
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<td></td>
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<td>ACGIH-2019</td>
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<tr>
<td>1309-48-4</td>
<td>Magnesium oxide fume Total Particulate</td>
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<td>15</td>
<td></td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Silica, crystalline (as respirable dust)</td>
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<td>0.05</td>
<td></td>
<td>TWA (8 h)</td>
<td>REL</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Silica, crystalline - alpha-quartz (respirable</td>
<td>-</td>
<td>0.025</td>
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<td>TWA (8 h)</td>
<td>ACGIH-2019</td>
</tr>
<tr>
<td></td>
<td>fraction)</td>
<td>(Z-3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Silica, crystalline quartz, respirable dust (Z-3)</td>
<td></td>
<td></td>
<td></td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Silica, crystalline quartz, total dust</td>
<td>-</td>
<td>(Z-3)</td>
<td></td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>Titanium dioxide Total dust</td>
<td>-</td>
<td>15</td>
<td></td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>Titanium dioxide</td>
<td></td>
<td></td>
<td></td>
<td>TWA (8 h)</td>
<td>ACGIH-2019</td>
</tr>
<tr>
<td>1344-28-1</td>
<td>alpha-Alumina Respirable fraction</td>
<td>-</td>
<td>5</td>
<td></td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
<tr>
<td>1344-28-1</td>
<td>alpha-Alumina Total dust</td>
<td>-</td>
<td>15</td>
<td></td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
</tbody>
</table>

Exposure controls

Appropriate engineering controls
- If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

Protective and hygiene measures
- Do not breathe dust. Avoid dust formation. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes.

Eye/face protection
- Wear eye protection/face protection.
- Suitable eye protection: Dust protection goggles.

Hand protection
- Wear suitable gloves.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection
- Wear suitable protective clothing.

Respiratory protection
- In case of inadequate ventilation wear respiratory protection. Respiratory protection necessary at: Generation/formation of dust.

Suitable respiratory protective equipment: particulates filter device (DIN EN 143). Filtering device (full mask or mouthpiece) with filter: FFP2 / N95; High efficiency particulate air filter (HEPA filter).
9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state: solid
Color: red brown
Odor: odourless

Changes in the physical state
Melting point/freezing point: not determined
Initial boiling point and boiling range: 2226 °C
Flash point: not applicable

Flammability
Solid: not applicable
Gas: not applicable

Explosive properties
The product is not: Explosive.
Lower explosion limits: not determined
Upper explosion limits: not determined
Ignition temperature: not determined

Auto-ignition temperature
Solid: not determined
Gas: not determined

Decomposition temperature: not determined

Oxidizing properties
Not oxidising.

Vapor pressure: not determined
(at 20 °C)
Density: 2.9 -3.1 g/cm³
Water solubility: practically insoluble

Solubility in other solvents
not determined
Partition coefficient: not determined
Viscosity / dynamic: not applicable
Viscosity / kinematic: not applicable
Vapor density: not determined

Other information
Solid content: 100.00 %
Odour threshold: not applicable

10. Stability and reactivity

Reactivity
No hazardous reaction when handled and stored according to provisions.

Chemical stability
### Stability

The product is stable under storage at normal ambient temperatures.

### Possibility of hazardous reactions

**Hazardous reactions:** Will not occur

### Conditions to avoid

No known hazardous reactions.

**Incompatible materials**

- Strong acid

**Hazardous decomposition products**

In case of fire: Metal oxide smoke, toxic.

### 11. Toxicological information

**Information on toxicological effects**

**Route(s) of Entry**

Inhalation, dermal, oral, Eye contact.

**Acute toxicity**

Based on available data, the classification criteria are not met.

**Irritation and corrosivity**

Based on available data, the classification criteria are not met.

**Sensitizing effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

- Suspected of causing cancer (titanium dioxide)
- Germ cell mutagenicity: Based on available data, the classification criteria are not met.
- Reproductive toxicity: Based on available data, the classification criteria are not met.
- Contains: Silica (fine dust).

**Specific target organ toxicity (STOT) - single exposure**

Based on available data, the classification criteria are not met.

**Specific target organ toxicity (STOT) - repeated exposure**

Causes damage to organs through prolonged or repeated exposure (Silica (fine dust))

Extended inhalation at levels above the workplace limit value can cause irreversible damage to the lungs (silicosis). A repeated, excessive dust exposure can cause pneumoconiosis. Inhalation of dust may cause irritation of the respiratory system.

- **Carcinogenicity (OSHA):** Not listed.
- **Carcinogenicity (IARC):** Silica dust, crystalline, in the form of quartz or cristobalite (CAS 14808-60-7) is listed in group 1. Ferric oxide (CAS 1309-37-1) is listed in group 3. Titanium dioxide (CAS 13463-67-7) is listed in group 2B.
- **Carcinogenicity (NTP):** Not listed.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Further information**

- Inhalation of dust may cause irritation of the respiratory system. The following symptoms may occur:
  - Respiratory complaints, Cough.

- Extended inhalation at levels above the workplace limit value can cause irreversible damage to the lungs (silicosis). Symptoms: Respiratory complaints, Fever, Cough. acute Symptoms: Fatal if inhaled.

- Skin contact: slightly irritant but not relevant for classification.
After eye contact: slightly irritant but not relevant for classification.
After ingestion: Gastrointestinal complaints, Nausea, Vomiting.

12. Ecological information

Ecotoxicity
The product is not: Ecotoxic.

Persistence and degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential
The product has not been tested.

Mobility in soil
The product has not been tested.

Other adverse effects
No information available.

Further information
Avoid release to the environment.

13. Disposal considerations

Waste treatment methods

Disposal recommendations
Dispose of waste according to applicable legislation.

Contaminated packaging
Wash with plenty of water. Completely emptied packages can be recycled.

14. Transport information

US DOT 49 CFR 172.101

Proper shipping name: Not a hazardous material with respect to these transport regulations.

Marine transport (IMDG)

UN number: No dangerous good in sense of this transport regulation.
UN proper shipping name: No dangerous good in sense of this transport regulation.
Transport hazard class(es): No dangerous good in sense of this transport regulation.
Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

UN number: No dangerous good in sense of this transport regulation.
UN proper shipping name: No dangerous good in sense of this transport regulation.
Transport hazard class(es): No dangerous good in sense of this transport regulation.
Packing group: No dangerous good in sense of this transport regulation.

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

Special precautions for user
No information available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable

15. Regulatory information
U.S. Regulations

National Inventory TSCA
- CAS No. 14808-60-7: Yes.
- CAS No. 13463-67-7: Yes.
- CAS No. 1305-78-8: Yes.
- CAS No. 1309-37-1: Yes.
- CAS No. 12136-45-7: Yes.
- CAS No. 1309-48-4: Yes.
- CAS No. 1344-28-1: Yes.

National regulatory information
- SARA Section 311/312 Hazards:
  - Silica (fine dust) (14808-60-7): Delayed (chronic) health hazard
  - Titanium dioxide (13463-67-7): Delayed (chronic) health hazard
  - Calcium oxide (mineral) (1305-78-8): Immediate (acute) health hazard
- SARA Section 313 Toxic release inventory:
  - Aluminum oxide (fibrous forms) (1344-28-1): De minimis limit = 1.0 %, Reportable threshold = Standard

State Regulations

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)
- This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other information

Hazardous Materials Information Label (HMIS)
- Health: ★3
- Flammability: 0
- Physical Hazard: 0

NFPA Hazard Ratings
- Health: 3
- Flammability: 0
- Reactivity: 0
- Unique Hazard: 0

Revision date: 06.04.2020
Revision No: 1,00

Abbreviations and acronyms
- ACGIH: American Conference of Governmental Industrial Hygienists
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- ICAO: International Civil Aviation Organization
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- IARC: International Agency for Research on Cancer
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- CAS: Chemical Abstracts Service
- NFPA: National Fire Protection Association
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- PEL: permissible exposure limit
- REL: recommended exposure limit
- SARA: Superfund Amendments and Reauthorization Act
- STEL: Short-term exposure limit
- TSCA: Toxic Substances Control Act
TWA: time-weighted average
TI: Technical Instructions
DGR: Dangerous Goods Regulations
UN: United Nations
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds

Other data
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.