1. Identification

Product identifier

ANSI / ASHRAE Standard 52.2P Test Dust

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
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

3. Composition/information on ingredients

Mixtures
ANSI / ASHRAE Standard 52.2P Test Dust

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Chemical characterization
Powder-Sand, Fibres (Second-cut cotton linters (cellulose))

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

potassium oxide (mineral)
CAS No. 12136-45-7

sodium oxide (mineral)
CAS No. 1313-59-3

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

Magnesium oxide
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>65 - 70 %</td>
</tr>
<tr>
<td>1305-78-8</td>
<td>calcium oxide (mineral)</td>
<td>2.5 - 4 %</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>titanium dioxide</td>
<td>&lt; 1 %</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 thoroughly 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
No information available.

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.

**Unsuitable extinguishing media**
High power water jet.

**Specific hazards arising from the chemical**
Non-flammable. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.
In case of fire: Carbon dioxide (CO2), Carbon monoxide (CO), Gases/vapours, irritant.

**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**
Keep away from sources of ignition - No smoking. 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**
No special environmental measures are necessary.

**Methods and material for containment and cleaning up**
Take up mechanically. Treat the recovered material as prescribed in the section on waste 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.

**Advice on protection against fire and explosion**
Usual measures for fire prevention. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

**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 exhaust at critical locations.

**Hints on joint storage**
Do not store together with: Hydrofluoric acid; Fluorine; Oxidising agent, strong; Acid, concentrated.

### 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>9004-34-6</td>
<td>Cellulose (total)</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>TWA (8 h)</td>
<td>REL</td>
</tr>
<tr>
<td>9004-34-6</td>
<td>Cellulose Respirable fraction</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
<tr>
<td>9004-34-6</td>
<td>Cellulose Total dust</td>
<td>-</td>
<td>15</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>5</td>
<td>-</td>
<td>TWA (8 h)</td>
<td>ACGIH-2019</td>
</tr>
<tr>
<td>1309-37-1</td>
<td>Iron oxide dust and fume (as Fe)</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>TWA (8 h)</td>
<td>REL</td>
</tr>
<tr>
<td>1309-37-1</td>
<td>Iron oxide fume</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>TWA (8 h)</td>
<td>PEL</td>
</tr>
<tr>
<td>1309-48-4</td>
<td>Magnesium oxide (inhalable fraction)</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>TWA (8 h)</td>
<td>ACGIH-2019</td>
</tr>
<tr>
<td>1309-48-4</td>
<td>Magnesium oxide fume Total Particulate</td>
<td>-</td>
<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>
<td>-</td>
<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 fraction)</td>
<td>(Z-3)</td>
<td>0.025</td>
<td>-</td>
<td>TWA (8 h)</td>
<td>ACGIH-2019</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Silica, crystalline quartz, respirable dust</td>
<td>(Z-3)</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>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).

Environmental exposure controls
No special environmental measures are necessary.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state: solid
Color: grey
Odor: odourless
pH-Value: not determined

Changes in the physical state
Melting point/freezing point: not determined
Initial boiling point and boiling range: 2980 °C
Flash point: 210 °C

Flammability
Solid: not determined
Gas: not applicable

Explosive properties
The product is not: Explosive. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

Lower explosion limits: not determined
Upper explosion limits: not determined
Ignition temperature: not determined

Auto-ignition temperature
Solid: 407 °C
Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties
Not oxidising.

Vapor pressure: not determined
(at 20 °C)
Density: ~2 g/cm³
Water solubility: Immiscible

Solubility in other solvents
not determined

Partition coefficient: not determined
Viscosity / dynamic: not applicable
Viscosity / kinematic: not applicable
Vapor density: not determined
Evaporation rate: 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: Stable
The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions
Hazardous reactions: Will not occur
Explosive reaction with: Hydrofluoric acid; Fluorine.
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible materials
Hydrofluoric acid; Fluorine; Oxidising agent, strong; Acid, concentrated.

Hazardous decomposition products

11. Toxicological information

Information on toxicological effects

Route(s) of Entry
Inhalation, oral, Eye contact, dermal.

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): No ingredient of this mixture is 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): No ingredient of this mixture is listed.

Aspiration hazard
Based on available data, the classification criteria are not met.
Additional information on tests
The mixture is classified as hazardous according to Directive 1999/45/EC. Special hazards arising from the substance or mixture!

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 product has not been tested.

Bioaccumulative potential
The product has not been tested.

Mobility in soil
The product has not been tested.

Other adverse effects
No information available.

13. Disposal considerations

Waste treatment methods

Disposal recommendations
Dispose of waste according to applicable legislation.

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
ENVIROMENTALLY 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. 1333-86-4: Yes.
CAS No. 9004-34-6: Yes.
CAS No. 1344-28-1: Yes.
CAS No. 12136-45-7: Yes.
CAS No. 1313-59-3: Yes.
CAS No. 1309-37-1: Yes.
CAS No. 1309-48-4: Yes.

National regulatory information
SARA Section 311/312 Hazards:
Silica (fine dust) (14808-60-7): Delayed (chronic) health hazard
calcium oxide (mineral) (1305-78-8): Immediate (acute) health hazard
titanium dioxide (13463-67-7): Delayed (chronic) 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: *2
Flammability: 1
Physical Hazard: 0

NFPA Hazard Ratings
Health: 2
Flammability: 1
Reactivity: 1

Unique Hazard:
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
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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)