Safety Data Sheet

according to 29 CFR 1910.1200(g)

Arizona Test Dust (ATD)

1. Identification

Product identifier

Arizona Test Dust (ATD)

Further trade names

Arizona sand including Arizona Test Dust, Arizona Road Dust, Arizona Silica, AC Fine and AC Coarse Test Dusts, SAE Fine and Coarse Test Dusts, J726 Test Dusts, ISO 12103-1, A1 Ultrafine Test Dust, ISO 12103-1, A2 Fine Test Dust, ISO 12103-1, A3 Medium Test Dust and ISO 12103-1, A4 Coarse Test Dust, MIL STD 810F Blowing Dust, MIL STD 810G Blowing 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

Further Information

This safety data sheet was created by: ECI EnviroConsult Ingenieurbüro Dr. Lux e.K.

2. Hazard(s) identification

Classification of the chemical

Hazard categories:
Carcinogenicity: Carc. 1A
Hazard Statements:
May cause cancer by inhalation

Label elements

Signal word: Danger

Pictograms: health hazard

Hazard statements

May cause cancer by inhalation

Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
If exposed or concerned: Get medical advice/attention.
Store locked up.

Hazards not otherwise classified

No information available.

3. Composition/information on ingredients

Mixtures

Chemical characterization

powdered minerals

Hazardous components

CAS No	Components	Quantity
14808-60-7	silica (fine dust)	69-77 %
1344-28-1	aluminium oxide	8-14 %
1305-78-8	calcium oxide (mineral)	2.5-5.5 %
12136-45-7	potassium oxide (mineral)	2-5 %
1313-59-3	sodium oxide (mineral)	1-4 %
1309-37-1	Iron(III) oxide (hematite)	4-7 %
1309-48-4	magnesium oxide	1-2 %
13463-67-7	titanium dioxide	0-1 %

4. First-aid measures

Description of first aid measures

After inhalation

Provide fresh air. Medical care may be necessary. In case of irregular breathing or respiratory arrest provide artificial respiration. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After contact with skin

Wash with plenty of water. In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

After ingestion

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

May cause cancer by inhalation. 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 (CO_2)

Unsuitable extinguishing media

High power water jet.

Specific hazards arising from the chemical

Non-flammable.

Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

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 generation of dust. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Remove all sources of ignition. 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. 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 generation of dust. 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

No special fire protection measures are necessary.

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.

Advice on storage compatibility

No special measures are necessary.

8. Exposure controls/personal protection

Control parameters

Exposure limits

CAS No.	Substance	ppm	mg/m³	f/cc	Category	Origin
1305-78-8	Calcium oxide	-	5		TWA (8 h)	PEL
		-	2		TWA (8 h)	REL
1309-37-1	Iron oxide dust and fume (as Fe)	-	5		TWA (8 h)	REL
1309-37-1	Iron oxide fume	-	10		TWA (8 h)	PEL
1309-48-4	Magnesium oxide fume Total Particulate	-	15		TWA (8 h)	PEL
14808-60-7	Silica, crystalline (as respirable dust)	-	0.05		TWA (8 h)	REL
14808-60-7	Silica, crystalline quartz, total dust	-	(Z-3)		TWA (8 h)	PEL
13463-67-7	Titanium dioxide Total dust	-	15		TWA (8 h)	PEL
1344-28-1	alpha-Alumina Respirable fraction	-	5		TWA (8 h)	PEL

Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust. 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 generation of dust. 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 or drink.
Workspaces have to be equipped with eye shower and safety showers.

Eye/face protection

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

Hand protection

Hand protection: not required.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Suitable respiratory protective equipment: particulates filter device (DIN EN 143). Filtering device (full mask or mouthpiece) with filter: FFP2 / N95; HEPA

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	solid
Color:	yellow - red brown
Odor:	odourless

		Test method
pH-Value:	not determined	
Changes in the physical state		
Melting point/freezing point:	not determined	
Initial boiling point and boiling range:	not determined	
Flammability		
Solid:	not applicable	
Gas:	not applicable	
Auto-ignition temperature		
Solid:	not applicable	
Gas:	not applicable	
Decomposition temperature:	not applicable	
Oxidizing properties		
Not oxidizing.		
Density:	2,5-2,7 g/cm³	
Water solubility:	insoluble	
Solubility in other solvents		
not determined		
Partition coefficient:	not determined	
Vapour density:	not determined	
Evaporation rate:	not determined	

Other information

Solid content: 100,00 %

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

No known hazardous reactions.

Conditions to avoid

moisture. heat.

Incompatible materials

Oxidizing agents. halogenated hydrocarbons. Acid. Water.

Hazardous decomposition products

In case of fire may be liberated:

11. Toxicological information

Information on toxicological effects

Route(s) of Entry

inhalation

Severe effects after repeated or prolonged exposure

Silicosis: The major concern is silicosis, caused by the inhalation and retention of respirable crystalline silica dust. Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute. Chronic or Ordinary Silicosis (often referred to as Simple Silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (corpumonale). Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and progression is more rapid. Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is fatal.

Carcinogenic/mutagenic/toxic effects for reproduction

Contains: Crystalline silica, quartz. The IARC concluded that there is " sufficient evidence in humans for the carcinogenicity of crystalline silica in the form of quartz or cristobalite from occupational sources" are and that "sufficient evidence in experimental animals for the carcinogenicity of quartz and cristobalite" exist. The Overall IARC was that "crystalline silica, which is inhaled in the form of quartz or cristobalite from occupational sources, carcinogenic to humans (Group 1)" is. The evaluation of the IARC stated that "carcinogenicity was not detected in all industrial circumstances. The carcinogenicity may depend on inherent characteristics of crystalline silica or external factors affecting its biological activity or distribution of polymorphs. "For more information on the evaluation of the IARC see" IARC Monographs on the Evaluation of Carcinogenic Risks to Humans ", Volume 68, and "Silica, Some Silicates." (1997). Contains: Crystalline silica, quartz. Repeated or prolonged inhalation of fine dusts may cause (disease of the lower lung) a severe scarring of the lungs, known as a stone dust lung disease, and alveolar. Silicosis is caused by the inhalation and accumulation of respirable crystalline silica. Silicosis may come in different forms, chronic (or ordinary), accelerated, or acute, occur. Chronic or ordinary silicosis (often referred to as simple silicosis) is the most common form of silicosis. They can occur in the air after several years of exposure to relatively low concentrations of respirable crystalline silica. It is further defined as either simple or complex silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, characterized primarily in the upper lung zones. Often a simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and evolve into a complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 cm in diameter in. With complicated silicosis or PMF may not reflect symptoms need to be connected. However, symptoms of this shortness of breath, wheezing, cough and sputum are. Complicated silicosis or PMF may be associated with decreased lung function and lead to physical disability. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF may as a result of lung disease heart disease (cor pulmonale) cause. Accelerated silicosis can by exposure to high concentrations of respirable crystalline silica, often over a relatively short period, may occur; the lung lesions can appear within five (5) years after the initial exposure. The disease can progress rapidly. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and the progression runs faster.

Carcinogenicity (IARC): Silica, crystalline (inhaled in the form of quartz or cristobalite from occupational sources) (CAS 14808-60-7) is listed in group 1. Titanium dioxide (CAS 13463-67-7) is listed in group 2B.

Additional information on tests

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

Further information

Inhalation: May irritate the mucous membranes. Inhalation of dust may cause shortness of breath, tightness of the chest, sore throat and cough. Contains crystalline silica; by inhalation of particles can cause serious lung damage including silicosis at prolonged exposure. Upon contact with very high concentrations of respirable crystalline silica over a very short period of time, sometimes just a few months, an acute silicosis may occur. Signs of acute silicosis are increasing shortness of breath, fever, cough and weight loss. Acute silicosis is life-threatening. Skin contact: Non-irritating. May cause mechanical irritation. Eye contact: The description of possible adverse health effects is based on experience with this product. According to the EU classification criteria, the product is to be regarded as being an eye irritant. However, can cause mechanical irritation of the eyes of this product. May cause on the eyeball and cause immediate or delayed irritation, inflammation of the cornea, redness and tears scratches. Ingestion: Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

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

Advice on disposal

Dispose of waste according to applicable legislation.

Contaminated packaging

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)

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

All substances in this product are listed in the TSCA inventory.

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
SARA Section 313 Toxic release inventory:
Aluminum oxide (fibrous forms) (1344-28-1): De minimis limit = 1.0 %, Reportable threshold =

State Regulations

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

This product contains no 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:	0
Physical Hazard:	0

NFPA Hazard Ratings

Health:	2
Flammability:	0
Reactivity:	0
Unique Hazard:	
Revision date:	04.02.2016
Revision No:	1,07

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

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.

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