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

1.1 Product

Substance name / trade name: **Arizona dust ARIZ-ISO quartz**
Blowing Dust, Settling Dust acc. to MIL-STD-810
Test dust according to ECE R 16
Test dust acc. to JIS Z8901 Class 2
Test dust according to JIS Z8901 Class 3
Test dust DIN EN 60068-2-68 variant 1
Test dust DIN EN 60068-2-68 variant 2
esqua DOR3, DOR7, DOR15, DOR25, DOR40

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Test dust
Uses advised against: -

1.3 Details of the supplier of the safety data sheet

Manufacturer/ Supplier KSL staubtechnik gmbh
Street/ P.O. Box: Westendstrasse 11
Nat.-Kenn./ PLZ/ Ort: DE - 89415 Lauingen
Phone/ Fax/ E-Mail: +49 (0) 9072 / 95 00-0 / Fax: -50 / info@ksl-staubtechnik.de

1.4 Emergency number

+49 (0) 9072 / 95 00-0 (Availability: Mon-Thu 08:00-16:00, Fri 08:00-12:00)

SECTION 2: Potential hazards

2.1 Classification of the substance or mixture

This product is contaminated with respirable quartz and is therefore classified as STOT RE1 according to the criteria defined in Regulation (EC) No 1272/2008.
Depending on the handling and processing of the product, the formation of airborne respirable crystalline silica is possible. Prolonged and/or intensive inhalation of respirable crystalline silica may cause dust lung disease (silicosis). The main symptoms of silicosis are coughing and breathing problems/difficulty breathing. Appropriate protective and monitoring measures should be in place in the event of exposure to respirable crystalline silica. According to TRGS 906, activities involving respirable crystalline silica in the form of quartz and cristobalite have a carcinogenic effect on humans.
The product should be handled with particular care to avoid dust formation.

2.1.1 Classification according to Regulation (EC) No 1272/2008

Hazard class: STOT RE1
Hazard category: 1
Hazard statements: H372 Causes damage to lungs through prolonged or repeated exposure if inhaled.
This product contains more than 10% respirable quartz.

2.2 Labeling elements

2.2.1 Label elements according to Regulation (EC) No. 1272/2008

GHS08

Signal word: Danger
Hazard statement: H372: Causes damage to lungs through prolonged or repeated exposure if inhaled.
Precautionary statements: P260: Do not breathe dust
P284: Wear respiratory protection if ventilation is inadequate.
P501: Dispose of contents (residues)/container properly in accordance with local regulations. (avoid dust formation).

2.3 Other hazards

The product is an inorganic substance and does not meet the criteria for PBT and vPvB substances according to Annex XIII of REACH Regulation 1907/2006/EC.

SECTION 3: Composition/information on ingredients

3.1 Substances

Description of the substance: Quartz (SiO_2)
Hazardous components: This product contains more than 10% respirable quartz, which is classified as STOT RE1.

Name	CAS No.	EC no.	Concentration range [wt.%]	Classification according to Regulation (EC) No. 1272/2008
Silicon dioxide SiO_2	14808-60-7	238-878-4	>= 98%	- H372 - STOT RE1 - Category 1

3.2 Mixtures
This product is a substance.

SECTION 4: First aid measures

4.1 Description of first aid measures
General information:
If symptoms persist, it is advisable to consult a doctor. Substance/product and measures taken
Specify doctor.
After inhalation:
Provide fresh air. Dust from the throat and nose should be removed quickly. If symptoms such as discomfort, coughing or persistent irritation occur, consult a doctor. Inhalation should generally be avoided.
After skin contact:
Wash off with soap and water.
After eye contact:
If necessary, remove the contact lens and rinse the eye under running water with the eyelid open to remove all particles. If possible, use isotonic eye rinsing solution (0.9% NaCl). Do not rub the eye dry, as additional corneal damage is possible due to the mechanical stress.
After ingestion:
Rinse mouth with plenty of water.

4.2 Most important symptoms and effects, both acute and delayed
Repeated inhalation of larger quantities over a longer period of time increases the risk of lung diseases (silicosis). The main symptoms of silicosis are coughing and breathing problems / shortness of breath. May cause eye irritation (due to exposure to foreign bodies)

4.3 Information on immediate medical assistance or special treatment
No special measures are known.

SECTION 5: Fire-fighting measures

5.1 Extinguishing agent
Suitable:
Match the extinguishing agent to the work area/environment.
Unsuitable:
none

5.2 Special hazards arising from the substance or mixture
None. Non-flammable.

5.3 Instructions for firefighting
none

5.4 Additional notes
No measures are required as the substance is not flammable.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
6.1.1 Personnel not trained for emergencies
Avoid dust formation. Wear protective clothing as described in section 8. Follow the instructions for safe handling as described in section 7.
6.1.2 Emergency services
Emergency plans are not required. However, respiratory protection is required in case of high dust exposure.

6.2 Environmental protection measures
No special environmental protection measures required.

6.3 Methods and material for containment and cleaning
6.3.1 Notes on retention
Avoid dust formation.
6.3.2 Notes on cleaning
Avoid inhalation. Avoid dry sweeping. Use approved spray and suction systems for cleaning. Use protective equipment.
6.3.3 Notes on unsuitable retention and cleaning methods
Blowing off for cleaning purposes is not permitted.

6.4 Reference to other sections
See also sections 8 and 13. Personal protective equipment is specified in section 8 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Protective measures for safe handling
7.1.1 Notes on safe handling
Avoid dust formation and deposits. Handle packaged products carefully to prevent the packaging from bursting. is avoided. Areas with dust formation must be equipped with suitable ventilation systems. If the workplace atmosphere is not sufficiently dedusted, wear suitable respiratory protection (in accordance with EN 143). Gloves according to EN 374 are recommended

Measures to protect against fire and explosions
No special measures required.

Measures to prevent aerosol and dust formation
Only sweep with a suitable sweeping brush. If possible, use suitable dry-cleaning methods such as vacuum suction, which do not generate dust.

Measures to protect the environment
No special measures required.

7.1.2 Notes on general hygiene measures
Do not eat, drink or smoke while working. Wash hands after use/contact. Wear a respirator and safety goggles in dusty atmospheres.

7.2 Conditions for safe storage taking into account incompatibilities
Information on the storage conditions
Store dry and tightly closed, if possible, in the original container. Keep away from food and beverages.

Requirements for storage rooms and containers
No special measures are required.

Storage class
VCI: 10-13 (non-combustible solids)

7.3 Specific end uses
Industry and sector-specific guidelines
Use appropriately and sparingly with suitable test equipment depending on the intended use. No additional information is available for the specific end uses (see section 1.2).
Further information can be found in the guide to good practice on protecting workers' health through good handling and use of crystalline silica and products containing it (see section 16).

SECTION 8: Exposure controls / Personal protective equipment

8.1 Parameters to be monitored
Components with limit values that require monitoring at the workplace:

Chem. Identity	CAS No.	EC no.	National Limit value	Exposure type	DNEL/ PNEC value	Remark/ Legal regulation
More general Dust limit value	-	-	1.25 (A) mg/m³ (alveolar)	inhalative		Occupational exposure limit TRGS 900
More general Dust limit value	-	-	10 (E) mg/m³ (inhalable)	inhalative		Occupational exposure limit TRGS 900
Silicon dioxide SiO_2	14808-60-7	238-878-4	*	inhalative	not available	List of carcinogenic activities or processes TRGS 906

* For activities or processes in which employees are exposed to respirable dusts of crystalline silica in the form of quartz, a limit value of 50µg/m³exists in Germany.
The protective regulations, in particular the third and fourth sections of the Hazardous Substances Ordinance (GefStoffV), must be observed. The occupational exposure limits (OEL/Occupational Exposure Limit) for respirable crystalline silica valid for EU countries, Norway and Switzerland can be found at https://www.nepsi.eu/ .
Information on the limit values of other countries can be obtained from experts in occupational hygiene or the responsible regulatory authority in the respective country.

8.2 Exposure controls and monitoring
A combination of technical and individual protective measures is often required to comply with the occupational exposure limit values. For the identified uses (section 1.2), technical control devices and individual protective measures are recommended. Technical measures and the selection of suitable procedures have priority over the use of personal protective equipment.

8.2.1 Suitable technical control devices
Avoid or minimize dust formation. Use closed processes and local exhaust ventilation to keep the dust concentration below the permissible exposure limit. Use a ventilation system if there is a high proportion of dust in the air. If dust formation cannot be avoided, use ventilation to keep the dust content of the air below the exposure limit values. Apply organizational measures, e.g. by keeping people away from dusty areas.
Recommended measurement methods for workplace measurements: See publication series of the Employer's Liability Insurance Association.

8.2.2 Individual protective measures, for example personal protective equipment

General
No personal protective equipment is required if the product is used as intended. Handle the product in accordance with the safety instructions.

Face/eye protection
If dust is generated, wear closed safety goggles in accordance with EN 166.

protection
People who suffer from dermatitis or have particularly sensitive skin should take suitable protective measures (e.g. wear gloves or use protective cream). Wash hands after finishing work. The use of gloves according to EN 374 is advantageous.

Respiratory protection
Install effective extraction and/or ventilate sufficiently. If the permissible exposure limit values are exceeded at the workplace, a respirator mask must be worn that complies with the applicable EU or national regulations (e.g. particle filter P2 or P3 in accordance with EN 143). Half or full-face masks of class 2 or 3 (FFP2 - FFP3) are recommended.

Hygiene measures
Do not eat, drink or smoke at work. Wash hands before breaks and at the end of work and shower if necessary. Avoid contact with eyes and skin. After work, workers should wash or shower and use skin care products. Clean contaminated clothing, shoes, watches etc. before reuse.

8.2.3 Limitation and monitoring of environmental exposure
See also sections 6 and 7.

Air
Avoid drifting due to wind. Compliance with the dust emission limit values in accordance with the Technical Instructions on Air Quality Control.

Water
Waste water and groundwater regulations must be observed.

Floor
Compliance with the Federal Soil Protection Ordinance. No special control measures required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a)	**Physical state**	Powder - solid
(b)	**color**	whitish
(c)	**odor**	odorless
(d)	**Melting point**	> 1610° C
(e)	**Boiling point or initial boiling point and boiling range**	not applicable
(f)	**Flammability**	not applicable / not flammable
(g)	**Lower and upper limit**	does not apply to solids according to Regulation (EU) 2020/878.
(h)	**Flash point**	does not apply to gases, aerosols and solids according to Regulation (EU) 2020/878
(i)	**Ignition temperature**	only applies to gases and liquids according to Regulation (EU) 2020/878
(j)	**Decomposition temperature**	not applicable
(k)	**pH**	5 - 8 (400 g/l at 20° C)
(l)	**Kinematic**	only applies to liquids according to Regulation (EU) 2020/878.
(m)	**Solubility**	negligible
(n)	**Partition coefficient n-octanol/water (log value)**	not applicable
(o)	**Vapor pressure**	not applicable
(p)	**Density and/or relative**	2 - 3 g/cm^3
(q)	**Relative density**	only applies to gases and liquids according to Regulation (EU) 2020/878.
(r)	**Particle properties**	The x_{50}value is between 0µm and 250µm.

9.2 Other information

Quartz is completely oxidized and chemically stable under normal conditions, non-combustible and non-flammable. It is a rock-forming mineral. Its behavior under the influence of temperature is known from its use as a raw material in porcelain and glass production.

9.2.1 Information on physical properties
Not applicable

9.2.2 Other safety-related parameters
Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity
No dangerous reactions are known if stored and handled properly.

10.2 Chemical stability
Quartz is chemically stable in contact with dilute acids or alkalis. Quartz is soluble in hydrofluoric acid FH.

10.3 Possibility of hazardous reactions
None

10.4 Conditions to avoid
Moisture and water during storage can lead to lump formation and loss of product quality.

10.5 Incompatible materials
none

10.6 Hazardous decomposition products
none

SECTION 11: Toxicological information

11.1 Information on hazard classes according to Regulation (EC) No. 1272/2008

(a) Acute toxicity
Based on available data, the classification criteria are not met.

(b) Corrosive/irritant effect on the skin
Based on available data, the classification criteria are not met.

(c) serious eye damage/irritation
Based on available data, the classification criteria are not met.

(d) Sensitization of the respiratory tract/skin
Based on available data, the classification criteria are not met.

(e) Germ cell mutagenicity
Based on available data, the classification criteria are not met.

(f) Carcinogenicity
Based on available data, the classification criteria are not met.

(g) Reproductive toxicity
Based on available data, the classification criteria are not met.

(h) Specific target organ toxicity (single exposure)
Based on available data, the classification criteria are not met.

(i) Specific target organ toxicity - repeated exposure
May cause silicosis, a dust lung disease, through repeated exposure.

(j) Aspiration hazard
Based on available data, the classification criteria are not met.

Delayed and immediate effects as well as chronic effects after short or long-term exposure
Immediate effects
Irritation in the eye due to exposure to foreign bodies is possible
Chronic effects with prolonged exposure
This product is contaminated with more than 10% respirable quartz and is therefore classified as STOT RE1 according to the criteria defined in Regulation (EC) No 1272/2008.
Prolonged and/or intense exposure to dust containing respirable crystalline silica can cause silicosis. This disease is a nodular pulmonary fibrosis caused by inhalation and deposition of mineral dust.
In 1997, the International Agency for Research on Cancer (IARC) concluded that occupational exposure to crystalline silica can cause lung cancer in humans. However, the IARC qualified that this does not apply to all forms of exposure or all types of crystalline silica. (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans from Chemicals, Silica, Silica-containing Dusts and Organic Fibers, 1997, Volume 68, IARC, Lyon, France).
In 2003, the EU Scientific Committee on Occupational Exposure Limits to Chemical Agents (SCOEL) concluded that the main effect of inhalation of respirable crystalline silica dust in humans is silicosis. "There is sufficient information to conclude that there is an increased relative risk of lung cancer for people suffering from silicosis. People working in quarries or in the ceramics industry who are exposed to silica dust but do not suffer from silicosis do not appear to be affected by this increased risk of lung cancer. It can therefore be assumed that avoiding silicosis also reduces the risk of cancer..." (SCOEL SUM Doc 1994-final, June 2003).
There are therefore numerous indications that an increased risk of lung cancer is limited to people who already suffer from silicosis. The protection of workers from silicosis should be ensured by complying with occupational exposure limits set by the authorities and, if necessary, by implementing additional risk management measures (see section 16).

11.2 Information on other hazards
Quartz has no endocrine disrupting properties according to the criteria of Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 12: Environmental information

No ecotoxicological data is available for the product. Quartz is a naturally occurring mineral and is found worldwide. Adverse effects on the environment can be ruled out.

12.1 Toxicity
Quartz is not classified as hazardous to water according to 1272/2008/EC.

12.2 Persistence and degradability
Quartz is a chemically stable, inorganic material, so abiotic or biological degradation is not to be expected.

12.3 Bioaccumulative potential
Quartz is an inorganic substance, bioaccumulation is therefore not to be expected.

12.4 Mobility in soil
Quartz is insoluble in water. Mobility in the soil is therefore negligible.

12.5 Results of PBT and vPvB assessment
Quartz does not meet the criteria for classification as PBT or vPvB.

12.6 Endocrine disrupting properties
The data available for quartz have been reviewed against the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100, (EU) No 2018/605 and found not to be applicable.

12.7 Other adverse effects
No specific adverse effects known.

SECTION 13: Notes on disposal

13.1 Waste treatment processes
Pick up product dry. Generally avoid dust formation.
Can be disposed of in accordance with local regulations. If necessary, coordinate disposal with the local authorities.
Recommendation
Agree the exact waste code with the disposal company.
Waste code according to the Waste Catalogue Ordinance (AVV)
010410 - dusty and powdery waste
Treatment of cleaned/uncleaned packaging
150106 - Mixed packaging according to material recycling

The formation of dust as a result of residues in the packaging should be avoided. Contaminated packaging materials should be stored in closed containers. Recycling and disposal of packaging material must be carried out in accordance with local regulations and should be carried out by a certified waste disposal company. Do not reuse packaging material.

SECTION 14: Transport information

The product is not a dangerous good according to the transportation regulations (ADR, RID, ADN, IMDG, ICAO/IATA).

14.1 UN number or ID number
Not applicable

14.2 UN proper shipping name
Not applicable

14.3 Transport hazard classes
No classification

14.4 Packaging group
Not applicable

14.5 Environmental hazards
Not applicable

14.6 Special precautions for the user
Avoid dust formation, e.g. through closed transportation or covering.

14.7 Transport in bulk by sea in accordance with IMO instruments
Not applicable

SECTION 15: Legislation

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
The product does not fall under the registration obligation of EC Regulation 1907/2006 (REACH).

EU regulations
National regulations
When handling this product, the current version of the statutory regulations must be observed, including

AwSV Water hazard class: nwg - not hazardous to water
TRGS 500 "Protective measures"
TRGS 510 "Storage of hazardous substances in portable containers"
TRGS 559 "Quartz-containing dust"
TRGS 900 "Occupational exposure limits"
TRGS 906 "List of carcinogenic activities or processes according to §3 para. 2 no. 3 GefStoffV"
MuSchG "Maternity Protection Act"
JuSchG "Youth Protection Act"
Technical Instructions on Air Quality Control
Ordinance on Occupational Health Care (ArbMedVV)
BG principles for occupational medical check-ups

15.2 Chemical safety assessment
Quartz is exempt from REACH registration according to Annex V.7 of Regulation (EU) 1907/2006 and therefore no formal chemical safety assessment has been carried out by the supplier for this substance.

SECTION 16: Other information

16.1 Changes compared to the previous version

Paragraph 1.1: editorial changes; Paragraph 8.2.2: respiratory protection added; Paragraph 9.1: additions; Paragraph 9.2: text revised; Paragraph 10.2: revised; Paragraph 11.2: revised; Paragraph 12: entire section revised; Paragraph 14.3, 14.6: adapted; Paragraph 15.1: name corrected; Paragraph 15.2: revised.
(The entire document has already been adapted to Regulation (EU) 2020/878 in version 4).

16.2 Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ArbMedVV	Ordinance on preventive occupational health care
AwSV	Ordinance on Installations for the Handling of Substances Hazardous to Water
BImSchV	Federal Immission Control Ordinance
BG	Employer's Liability Insurance Association
CAS	Chemical Abstracts Service
CLP	Classification, labeling and packaging (Regulation (EC) No 1272/2008)
GefStoffV	Hazardous Substances Ordinance
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International agreement on the Maritime transport of Dangerous Goods
PBT	Persistent, bio-accumulative and toxic (persistent, bio-accumulative, toxic)
REACH	Registration, Evaluation and Authorization of Chemicals (Regulation (EC) 1907/2006)
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SCOEL	Scientific Committee for Occupational Exposure Limits
MSDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
SWeRF	Size Weighted Relevant Fine Fraction
TRGS	Technical rules for hazardous substances
VCI	German Chemical Industry Association
vPvB	Very persistent, very bioaccumulative (very persistent, very bioaccumulative)

16.3 References and data sources

As sources of the most important data and technical information, we refer to information provided by the raw material suppliers/manufacturers or the ECHA database on the classification and labeling inventory.

16.4 Training for employees

In addition to training programs for employees on health, safety and the environment, companies must ensure that their employees can read and understand the safety data sheet and implement the requirements.
Employees must be made aware of the presence of crystalline quartz and trained in the proper handling of the product.

16.5 Social dialog on respirable crystalline silica

On April 25, 2006, a cross-industry agreement on the protection of workers' health through the good handling and use of crystalline silica and products containing it was signed. This autonomous agreement, which was financially supported by the European Commission, is based on a guide to good practice. The provisions laid down in the agreement entered into force on October 25, 2006. The agreement was published in the Official Journal of the European Union (2006/C 279/02). The text of the agreement, its annexes and the best practice guide are available at http://www.nepsi.eu and provide useful information and guidance on the handling of products containing respirable crystalline silica. References are available from EUROSIL (European Association of Industrial Silica Manufacturers).

Occupational exposure limits can also be found at http://www.nepsi.eu.

The respirable dust content of this product was determined using the SWeRF method.

16.6 Information about NANO

We do not use any nanotechnology processes, and no synthetic nanomaterials are used in production. However, we cannot rule out the possibility that small quantities of nanoparticles may be present in the material. In order to obtain the desired particle size distribution in our product, the product is crushed and then sieved. It could be that some nanoparticles are produced in such a crushing process. The same also applies to products such as flour or sugar! It is therefore not possible to exclude NANO material.

16.7 Exclusion clause

The information in this safety data sheet describes the safety requirements of our product and is based on our current knowledge. It does not constitute a guarantee of product properties and does not establish a contractual legal relationship. This safety data sheet is intended solely as a source of information for the user. It has been compiled with the utmost care; no guarantee can be given for the correctness of the data or liability accepted for the consequences of printing, typesetting or transmission errors. Existing laws, ordinances and regulations, including those not mentioned in this data sheet, must be observed by the recipient of our products on his own responsibility.
The translation was carried out with the help of an online tool.