

Section 1: Identification of the substance/mixture and of the company

1.1 Product Identifier

Product form:	Substance, Silica
Trade name:	Diatomaceous Earth (Kieselguhr)
Synonyms:	Diatomite flux-calcined; Kieselguhr flux-calcined
Catalog Number:	DE1/DE2
Appearance:	Powder provided in a plastic container

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

Relevant identified uses:	Filter aid, carrier, silica source, functional additive for paint, plastics, rubber, or other applications
Uses advised against:	None known

1.3 Details of the supplier of the Material Safety Data Sheet

Company Name:	ANKOM Technology
Address:	2052 O'Neil Rd., Macedon, NY USA 14502
Email:	service@ankom.com

1.4 Emergency telephone number


(315) 986-3857 8am-5pm EST

Section 2: Hazards Identification

2.1 Classification of the substance or mixture (Kieselguhr Flux-calcined with less than 1% respirable cristobalite)

Classification according to OSHA:	Carcinogen: H350	Organ Toxicity: H372
Classification according to Regulation (EC) No. 1272/2008 [CLP]:	No classification	
Classification according to Directive 67/548/EEC or 1999/45/EC:	No classification	
Adverse physicochemical, human health and environmental effects:	No additional information available	
For full text of H and R-phrases, see section 16.		

2.2 Label elements according to OSHA

Hazard pictograms (CLP):	
	GHS08
Signal word (CLP):	Danger
Hazard statements (CLP):	H350 – May cause cancer by inhalation. H372 – Causes damage to lungs through prolonged or repeated exposure.
Precautionary statements (CLP):	P201 – Obtain special instructions before use. P202 – Do not handle until all safety precautions have been read and understood. P260 – Do not breathe dust. P280 –Wear eye protection. P308+P313 – If exposed or concerned, get medical advice. P501 – Dispose of contents in accordance with local, state, and federal regulations.

2.2.1 Label elements according to EC 1272/2008 and EU (67/548/EEC)

None

2.3 Other hazards

Acute inhalation can cause dryness of the nasal passage and lung congestion, coughing and general throat irritation. Chronic inhalation of dust should be avoided. May cause irritation (tear formation and redness) if dust gets in eyes. Although not absorbed by the skin, may cause dryness if prolonged exposure. Ingestion of small to moderate quantities is not considered harmful, but may cause irritation of the mouth, throat, and stomach.

Section 3: Composition / Information on Ingredients (for full text of R, H, and EUH-phrases see section 16)

3.1 Substances
Not applicable

3.2 Mixture

Ingredient Name	% by weight	CAS Number	EINECS Number
Diatomaceous Earth, Flux-calcined (Kieselguhr)	100%	68855-54-9	272-489-0
Crystalline Silica - Cristobalite (respirable) Respirable crystalline silica per SWERF calculation (particle size distribution)	< 1%	14464-46-1	238-455-4

Section 4: First Aid Measures

4.1 Descriptions of first aid measures

Eye Contact: Flush eyes with generous amounts of water. Get medical advice/attention if irritation persists.

Skin Contact: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If dryness occurs, use moisture renewing lotions.

Ingestion: Rinse mouth. Drink generous amounts of water to reduce bulk and drying effects.

Inhalation: If breathing is difficult, remove to fresh air and keep in a position comfortable for breathing. Blow nose to evacuate dust.

4.2 Most important symptoms and effects, both acute and delayed

Eye Contact: May cause abrasive irritation (tear formation and redness) if dust gets in eyes.

Skin Contact: Although not absorbed by the skin, may cause dryness if prolonged exposure.

Ingestion: Ingestion of small to moderate quantities is not considered harmful, but may cause irritation of the mouth, throat, and stomach.

Inhalation: Acute inhalation can cause dryness of the nasal passage and lung congestion, coughing and general throat irritation. Chronic inhalation of dust should be avoided. Prolonged inhalation of respirable dust containing silica may cause a progressive lung disease, silicosis and lung cancer. See Section 11 for additional information.

4.3 Indication of any immediate medical attention and special treatment needed

No specific actions are required. However, it is recommended to move to fresh air and blow nose to evacuate dust. If dust irritates the eyes, seek medical attention.

Section 5: Fire Fighting Measures

5.1 Extinguishing media

No specific extinguishing media is needed. The material is not flammable. No hazardous thermal decomposition. Use of extinguishing agent suitable for surrounding fire is recommended.

5.2 Special hazards arising from the substance or mixture

The substance is not flammable and does not spontaneously combust; substance is not explosive.

5.3 Advice for firefighters

No specific fire-fighting protection is required.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid airborne dust generation. If dust is present, use respirator fitted with a particulate filter as specified in Section 8. Wear personal protective equipment in compliance with national legislation. Protect eyes with goggles.

6.2 Environmental precautions

No special requirements.

6.3 Methods and material for containment and cleaning up

Avoid dry sweeping and use water spraying or vacuum cleaning systems to prevent airborne dust generation. Wear personal protective equipment in compliance with national legislation.

6.4 Reference to other sections

See sections 8 and 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Avoid airborne dust generation. Provide appropriate exhaust ventilation at places where airborne dust is generated. In case of insufficient ventilation, wear suitable respiratory and eye protective equipment. Handle packaged products carefully to prevent accidental bursting. Repair or dispose of broken bags. If you require advice on safe handling techniques, please check the Good Practices Guide referred to in section 16. Observe all label precautions and warnings.

7.2 Conditions for safe storage, including any incompatibilities

Minimize airborne dust generation and prevent wind dispersal during loading and unloading. Keep containers closed and store packaged products so as to prevent accidental bursting. Store in a dry place to maintain packaging integrity and product quality. Do not store near hydrofluoric acid or concentrated caustic solutions.

7.3 Specific end use(s)

If you require advice on specific uses, please check the Good Practices Guide referred to in section 16.

Section 8: Exposure Controls / Personal Protection

8.1 Control parameters

Follow workplace regulatory exposure limits for all types of airborne dust (e.g., total dust, respirable dust) in compliance with applicable national legislation.

Occupational Exposure Limits Table

Countries	Cristobalite - Respirable Fraction (mg/m ³)
Canada (Alberta, British Columbia, Manitoba, New Foundland, Nova Scotia, Prince Edward Island), Italy, Portugal, United States (ACGIH)	0.025
Chile	0.04
Argentina, Belgium, Canada (New Brunswick, Northwest Territories, Ontario, Quebec, Saskatchewan), Denmark, Estonia, France, Greece, Ireland, Korea, Lithuania, Mexico, Norway, Peru, Romania, Spain, Sweden, United States (NIOSH)	0.05
Bulgaria	0.07
Netherlands	0.075
Australia, Czech Republic, Finland, Hungary, New Zealand, Slovakia, United Kingdom	0.1
Austria, Luxemburg, Slovenia, Switzerland	0.15
Poland (dusts with >50% crystalline silica content)	0.3
Poland (dusts with 2-50% crystalline silica content), Russia	1
Thailand	10

Exposure Guidelines

Component	OSHA PEL	ACGIH TLV	MSHA PEL	NIOSH PEL
Diatomaceous Earth, Flux Calcined (kieselguhr)	Respirable dust: 5 mg/m ³ Total dust: 15 mg/m ³	None established	Respirable dust: 5 mg/m ³ Total dust: 15 mg/m ³	None established
Crystalline Silica (Cristobalite)	Respirable dust: 0.5 x $\frac{10 \text{ mg/m}^3}{\% \text{ SiO}_2+2}$ Total dust: 0.5 x $\frac{30 \text{ mg/m}^3}{\% \text{ SiO}_2+2}$	Respirable dust: 0.025 mg/m ³	Respirable dust: 0.5 x $\frac{10 \text{ mg/m}^3}{\% \text{ SiO}_2+2}$ Total dust: 0.5 x $\frac{30 \text{ mg/m}^3}{\% \text{ SiO}_2+2}$	Respirable dust: 0.05 mg/m ³

8.2 Exposure controls

Occupational Exposure Control: Minimize airborne dust generation. Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below specified exposure limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne particles below the exposure limit. Refer to ACGIH publication "Industrial Ventilation" or similar publications for design of ventilation systems. Apply organizational measures (e.g., by isolating personnel from dusty areas).

Eye/Face protection: Wear safety glasses with side-shields in circumstances where there is a risk of penetrative eye injuries.

Skin protection: Appropriate protection (e.g., gloves, barrier cream) is recommended for workers who suffer from dermatitis or sensitive skin. Wash hands at the end of each work session.

8.2 Exposure controls (continued)	
Respiratory protection:	In case of prolonged exposure to airborne dust concentrations, wear respiratory protective equipment that complies with the requirements of the governing legislation. Respirators fitted with filters certified to standard 42CFR84 under series N95 should be worn when dust is present. If the dust concentration is less than ten (10) times the Permissible Exposure Limit (PEL), use a quarter or half-mask respirator with an N95 dust filter or a single use dust mask rated N95. If dust concentration is greater than ten (10) times and less than fifty (50) times the PEL, a full-face piece respirator fitted with replaceable N95 filters is recommended. If dust concentration is greater than fifty (50) and less than two hundred (200) times the PEL, use a positive pressure power air-purifying respirator with a replaceable N95 filter. If dust concentration is greater than two hundred (200) times the PEL, use a type C supplied air respirator (continuous flow, positive pressure), with a full-face piece, hood, or helmet.
General hygiene:	Avoid breathing dust. Avoid contact with eyes. Wash hands after handling and before eating or drinking. Remove and wash soiled clothing.
Environmental Exposure Control:	Avoid wind dispersal.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance, Color:	Light pink to white powder	Odor:	Odorless
Physical state:	Solid	pH (10% Suspension):	10
Vapor Pressure:	Does not exist as a vapor	Vapor Density:	Does not exist as a vapor
Boiling point:	Decomposes before boiling	Melting point:	> 1300°C
Flash point:	Not flammable	Flammability (solid, gas):	Not flammable
Flammability Limits:	Not flammable	Self-ignition temperature:	Not applicable
Decomposition temperature:	> 1300°C	Spec. Gravity / Relative Density:	2.3
Evaporation Rate:	Not applicable	COEFF. - Water/Oil	Not applicable
Odor Threshold:	Not applicable	Solubility - Water:	< 1%
Partition Coefficient:	Not applicable	Viscosity:	Not applicable
Explosive properties:	Not applicable	Oxidizing properties:	Not applicable

9.2 Other information

No additional information available

Section 10: Stability and Reactivity

10.1 Reactivity

The substance is not reactive.

10.2 Chemical stability

The substance is chemically stable.

10.3 Possibility of hazardous reactions

Do not use this substance with hydrofluoric acid. It may react violently.

10.4 Conditions to avoid

Do not leave this substance in enclosed spaces when mixed with highly flammable material, as heat can build up over long periods of time and flammable material may eventually ignite.

10.5 Incompatible materials

This substance is incompatible with hydrofluoric acid and concentrated caustic solutions. Products containing silica may react violently with hydrofluoric acid and concentrated caustic solutions.

10.6 Hazardous decomposition products

There is no danger of hazardous decomposition.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:	Not classified
Chronic Effects:	This product contains crystalline silica. Respirable crystalline silica may cause lung cancer and lung disease (silicosis) if inhaled for prolonged periods. Symptoms of silicosis include wheezing, coughing, and shortness of breath.
Eye damage/irritation:	May cause abrasive irritation (tear formation and redness) if dust gets in eyes.
Skin corrosion/irritation:	Although not absorbed by the skin, may cause dryness if prolonged exposure.
Ingestion:	Ingestion of small quantities is not considered harmful, but may cause irritation of the mouth, throat, and stomach.
Respiratory sensitization:	Acute inhalation can cause dryness of the nasal passage and lung congestion, coughing and general throat irritation. Chronic inhalation of dust should be avoided. Prolonged inhalation of respirable dust containing silica may cause a progressive lung disease, silicosis and lung cancer.
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Flux-calcined diatomaceous earth (Kieselguhr) is composed of amorphous and crystalline silica. Respirable crystalline silica (cristobalite) is classified by IARC and NTP as a known human carcinogen. Crystalline silica is only known to cause cancer when inhaled in a respirable form. It is not known to cause cancer by any other route of exposure.
Reproductive toxicity:	Not classified
Specific target organ toxicity (single exposure):	Not classified
Specific target organ toxicity (repeated exposure):	Causes damage to lungs through prolonged or repeated exposure.
Aspiration hazard:	Not classified

Section 12: Ecological Information

12.1 Toxicity

Diatomaceous earth products have shown some efficacy as a natural insecticide, but otherwise have no demonstrated toxicity with regards to aquatic or terrestrial life.

12.2 Persistence and degradability

Not relevant

12.3 Bioaccumulative potential

Little potential for bioaccumulation

12.4 Mobility in soil

Negligible

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No specific adverse effects known

Section 13: Disposal Considerations

13.1 Waste treatment methods

Waste from residues / unused products:	Where possible, recycling is preferable to disposal. May be disposed of in a non-hazardous sanitary landfill when not mixed with a hazardous substance. Check with local and government agencies prior to disposal.
Packaging:	Dust formation from residues in packaging should be avoided and suitable worker protection assured. Store used packaging in enclosed receptacles. Recycling and disposal of packaging should be carried out in compliance with local regulations. The re-use of packaging is not recommended. Repair all broken bags. Recycling and disposal of packaging should be carried out by an authorized waste management company.

Section 14: Transport Information (in accordance with ADR / RID / ADNR / IMDG / ICAO / IATA)

14.1 UN number	Not relevant
14.2 UN proper shipping name	This substance is not listed on the Dangerous Goods list.
14.3 Transportation hazard classes	ADR: Not classified IMDG: Not classified ICAO/IATA: Not classified RID: Not classified
14.4 Packing group	Not relevant
14.5 Environmental hazards	Not relevant
14.6 Special precautions for user	No special precautions
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Technical name is "Diatomaceous Earth". No special transport classification is in effect. DOT shipping classification is 55 (no restrictions).

Section 15: Regulatory Information

15.1 Safety, health, and environmental regulations/legislation specific to the substance or mixture

United States (federal and state)

TSCA No.: Kieselguhr appears on the EPA TSCA inventory under the CAS No. 61790-53-2, but is otherwise not regulated by the Toxic Substances Control Act or its regulations.

RCRA: This product is NOT classified as a hazardous waste under the Resource Conservation and Recovery Act or its regulations, 40 CFR Sec. 261 et.seq.

CERCLA: This product is NOT classified as a hazardous waste under the regulations of the Comprehensive Environmental Response Compensation and Liability ACT (CERCLA), 40 CFR Sec. 302.

SARA Title III: This product is NOT classified as an extremely hazardous waste under Section 302 and is NOT a toxic chemical subject to the requirements of Section 313.

California Proposition 65: Crystalline silica (respirable) is classified as a substance known to the State of California to be a carcinogen.

HMIS Rating: Health **1** Fire **0** Reactivity **0** Personal Protection **E**

NFPA Rating: Health **1** Flammability **0** Reactivity **0** Specific Hazard **0**

Canada

WHMIS Classification: Cristobalite is classified as a D2A substance.

WHMIS Ingredient Disclosure List: Silica, crystalline, cristobalite

Europe

REACH: Registration No. ECHA-91c93c61-1663-47da-a5f0-545c3a0a3cdf

Austria: Ordinance on Limit Values for Workplace Substances and on Carcinogens (Government Gazette II BGBl II No. 243/2007)

Belgium: Royal order (May 19, 2009) relative to protection of health and safety of workers against the risks linked to chemical agents in the workplace

Bulgaria: Regulation 13 Regarding the Protection of Workers from Hazards Related to Exposure to Chemical Agents at Work (amended August 17, 2007)

Czech Republic: Governmental Directive n°441/2004

Denmark: Executive Order on Work with Substances and Materials (chemical agents)

Estonia: Regulation No. 293: Limit Values for Chemical Hazards in the Working Environment

Finland: Concentrations known to be Hazardous, 557/2009

France: Occupational Exposure Limit Values to Chemical Agents (2006)

Greece: Legislation for mining activities Ministerial Decree II-5th/φ/17402/84 of 1984 (as amended)

Hungary: Joint Decree No. 25/2000 (IX. 30) on chemical safety at work

Ireland: 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents)

15.1 Safety, health, and environmental regulations/legislation specific to the substance or mixture (continued)

Europe (continued)

Italy: Decree of August 20, 1999; Valori Limite di Soglia 2010

Lithuania: Order -827/A1-287 (October 15, 2007); Lithuanian Hygiene Standard HN 23:2007

Netherlands: Values for substances harmful to health 2009-2010

Norway: Administrative norms regarding contamination in work atmosphere

Poland: Ordinance on maximum permissible concentrations and intensities of hazardous agents in the working environment; Dz.U.Nr. 161, 1142 of August 30, 2007, as amended

Portugal: prNP 1796:2007 Instituto Portuges da Qualidade, Hygiene & Safety at Workplace

Romania: Governmental Decision 1218 from 06/09/2006 on the minimum health and safety Published in the OJ Part I no. 845 from 13/10/2006 Binding Occupational Exposure Limit Values Annex No. 1 requirements for protection of workers from the risks related to exposure to chemical agents

Slovakia: Government Decree 45 of January 16, 2002 on the protection of health when working with chemical agents, amended by Government Decrees 355/2006 and 300/2007

Slovenia: Regulations on the amendments to the Regulations for protection of workers against risks. The Official Journal of the Republic of Slovenia, No. 53/2007, June 15, 2007 Annex I - List of Binding Occupational Exposure Limit Values related to exposure to chemical substances at the workplace

Spain: Royal Decree 374/2001 Judicial Ordinance Directive for the National Institute of Safety and Hygiene in the Workplace (INSHT) to publish the annual Professional Exposure Limits of Chemical Agents in Spain - 2010 revision

Sweden: Provisions of the Swedish Work Environment Authority on Occupational Exposure Limit Values and Measures against Air Contaminants, together with General Recommendations on the Implementations of the Provisions - Statute Book of the Swedish Work Environment Authority AFS 2005:17 amended by AFS 2007:02

Switzerland: Occupational Limit Values 2009

United Kingdom: EH40/2005; Control of Substances Hazardous to Health Regulations 2002 (COSHH, as amended 2005)

15.2 Chemical safety assessment

Subject to REACH Registration. A chemical safety assessment has been carried out on behalf of the manufacturer.

Section 16: Other Information

Indication of changes: Not relevant

Training: Workers must be informed of the presence of crystalline silica and trained in the proper use and handling of this product as required under applicable regulations.

Social Dialogue on Respirable Crystalline Silica

A multi-sectoral social dialogue agreement on Workers Health Protection through the Good Handling and Use of Crystalline Silica and Products Containing it was signed on 25 April 2006. This autonomous agreement, which receives the European Commission's financial support, is based on a Good Practices Guide. The requirements of the Agreement came into force on 25 October 2006. The Agreement was published in the Official Journal of the European Union (2006/C 279/02). The text of the Agreement and its annexes, including the Good Practices Guide, are available from <http://www.nepsi.eu> and provide useful information and guidance for the handling of products containing respirable crystalline silica. Literature references are available on request from EUROSIL, the European Association of Industrial Silica Producers. Prolonged and/or massive exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica.

In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However it pointed out that not all industrial circumstances, nor all crystalline silica types, were to be incriminated. (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)

In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003).

So there is a body of evidence supporting the statement that increased cancer risk would be limited to people already suffering from silicosis. Worker protection against silicosis should be assured by respecting the existing regulatory occupational exposure limits and implementing additional risk management measures where required.

16.1 Full text of R, H, and EUH-phrases

H350: May cause cancer.

H372: Causes damage to organs through prolonged or repeated exposure.

Information in this document is based on our current knowledge and is intended to describe the product for the purposes of health, safety, and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.