Kyanite Safety Data Sheet according to Regulation (EC) No. 453/2010 Date of issue: 30/1/2013

Date	of issue: 30/1/2013
SECTION 1: Identification of the	substance/mixture and of the company/undertaking
1.1. Product identifier	
Product name.	: Kyanite
1.2. Relevant identified uses of the s	substance or mixture and uses advised against
1.2.1. Relevant identified uses	
Use of the substance/mixture	: Mining Product - Primarily aluminum silicates
1.2.2 Uses advised against	
No additional information available	
1.2 Details of the sumplier of the set	
Kvanite Mining Corporation	ety data sheet
30 Willis Mountain Plant Lane Dilwyn, VA 23936	
1.4. Emergency telephone number	
SECTION 2: Hazards identificatio	n .
2.1. Classification of the substance	or mixture
Classification according to Regulation (E	C) No. 1272/2008 [CLP]
STOT SE 3 H335	
STOT RE 2 H373	
Full text of H-phrases: see section 16	
Depending on the type of handling and use ( massive inhalation of respirable crystalline s cough and breathlessness. Occupational ex handled with care to avoid dust generation.	(e.g. grinding, drying), airborne respirable crystalline silica may be generated. Prolonged and/or ilica dust may cause lung fibrosis, commonly referred to as silicosis. Principal symptoms of silicosis are posure to respirable crystalline silica dust should be monitored and controlled. This product should be
Classification according to Directive 67/5	48/EEC or 1999/45/EC
Not classified	
Adverse physicschemical human haalth	and any incompanies official
No additional information available	and environmental effects
2.2. Label elements	
Labelling according to Regulation (EC) N	o. 1272/2008 [CLP]
Hazard pictograms (CLP)	
Signal word (CLP)	: Warning
Hazard statements (CLP)	: H335 - May cause respiratory irritation H373 - May cause damage to lungs through prolonged or repeated exposure
Precautionary statements (CLP)	: P260 - Do not breathe dust
	<ul> <li>P271 - Use only outdoors or in a well-ventilated area</li> <li>P281 - Use personal protective equipment as required</li> <li>P304+P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing</li> <li>P312 - Call a POISON CENTER/doctor/physician if you feel unwell</li> <li>P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.</li> </ul>
EUH phrases	: EUH210 - Safety data sheet available on request
EUH phrases 2.3. Other hazards	: EUH210 - Safety data sheet available on request

Safety Data Sheet according to Regulation (EC) No. 453/2010

### **SECTION 3: Composition/information on ingredients**

### Substances 3.1.

Not applicable

3.2. Mixture			
Name	Product identifier	%	Classification according to Directive 67/548/EEC
Kyanite	(CAS No.) 1302-76-7 (EC no) 215-106-4	85 - 95	Not classified
Quartz	(CAS No.) 14808-60-7 (EC no) 238-878-4	5 - 10	Not classified
Rutile (TiO2)	(CAS No.) 1317-80-2 (EC no) 215-282-2	1 - 5	Not classified
Silica, cristobalite	(CAS No.) 14464-46-1 (EC no) 238-455-4	< 0.1	Not classified
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Kyanite	(CAS No.) 1302-76-7 (EC no) 215-106-4	85 - 95	Not classified
Quartz	(CAS No.) 14808-60-7	5 10	STOT DE 2 H272
	(EC no) 238-878-4	5-10	STOT RE 2, 11373
Rutile (TiO2)	(EC no) 238-878-4 (CAS No.) 1317-80-2 (EC no) 215-282-2	1 - 5	Not classified

Full text of R-, H- and EUH-phrases: see section 16

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures after inhalation :	Immediate effects are not expected. If high concentrations of dust are inhaled, remove to fresh air. If breathing problems occur, a certified professional should administer oxygen or artificial respiration as indicated and obtain immediate medical attention.
First-aid measures after skin contact :	None required.
First-aid measures after eye contact :	Dusts and particles may case physical abrasion. Do not rub eyes. Rinse eyes with lukewarm water for at least 15 minutes. Open and close the eyelids during rinsing to remove all dusts and particles. If irritation persists, seek medical attention.
First-aid measures after ingestion :	None required for small amounts. If substantial quantities are ingested, give 4-8 ounces of water or milk to dilute and seek medical advice.
4.2. Most important symptoms and effects	, both acute and delayed
Symptoms/injuries after inhalation :	Inhalation of high dust concentrations may cause coughing and mild irritation. Repeated inhalation of dusts containing crystalline silica over time can cause progressive fibrotic lung disease (silicosis) and increase the risks of developing respiratory cancer. Lung damage may progress even if the worker is removed from exposure. Silicosis can result in death from cardiac failure or the destruction of lung tissue. The extent and severity of lung damage depends on a variety of factors including particle size, percentage of silica, natural resistance, dust concentration, and length of exposure. Aluminum silicates may also cause milder lung effects.
Symptoms/injuries after skin contact :	Irritation is not expected.
Symptoms/injuries after eye contact :	Chemical irritation is not expected. Dusts and particles may scratch the eyes.
Symptoms/injuries after ingestion :	Not considered a likely route of exposure under normal product use conditions. May cause gastrointestinal irritation if swallowed. Product is relatively non-toxic.

Indication of any immediate medical attention and special treatment needed 4.3.

No additional information available

SECTIO	ON 5: Firefighting measures	
5.1.	Extinguishing media	
Suitable e	extinguishing media	: Does not burn. Use extinguishing media appropriate for surrounding fire.
Unsuitabl	e extinguishing media	: None.
5.2.	Special hazards arising from the sub	stance or mixture
Fire haza	rd	: Not flammable.
Explosion	hazard	: None known.
Reactivity	,	: None.
5.3.	Advice for firefighters	
Protectior	n during firefighting	: Firefighters should wear full protective gear.

SECTION 5: Accidental refease measures 6:1. Personal precautions, protective equipment and emergency procedures 6:1. Personal precautions, protective equipment and emergency procedures 6:1. For energency personal 8:1. For energency resonal 8:2. Environmental precautions 8: Stop the flow of material, if this is without risk. 8: Environmental precautions 8: Stop the flow of material, if this is without risk. 8: Environment 8: Stop the flow of material, if this is without risk. 8: Environment 8: Stop the flow of material, if this is without risk. 8: Environment 8: Stop the flow of material, if this is without risk. 8: Environment 8: Stop the flow of material, if this is without risk. 8: Environment 8: Stop the flow of material, if this is without risk. 8: Environment 8: Stop the flow of material, if this is without risk. 8: Environment 8: Stop the flow of material, if this is without risk. 8: Environment 8: Stop the flow of material is a vacuum to remove small amounts. The 9: Vacuum rust be equipped with a fluxtion system sufficiency particulate all filter 9: High link is recommended, Ferlags splik, us a line vade spray of material. 8: Environment 9: Stop the risk of disks to prevent recordistical and vacuum spray of material. 8: Evolution of stafe handling 9: Plant processes should be designed to control aliborns dusts at or below acceptable exposure 9: gladelines. DO NOT use compressed all or dy sweeping to remove dust rows at ran. Dust 9: Stop the relation of provesses period by diversion on which were arguing protection should be 9: the last article or low areas should be accommated on this prove dust frameding. 9: Stop the relation of provesses provesses on the bearding or d	Kyanite Safety Data Sheet according to Regulation (EC) No. 453/2010				
6.1       Personal precautions, protective equipment and emergency procedures         6.1.1.       For non-emergency personnel         No additional information available       6.1.1.         6.1.2.       For emergency personnel         No additional information available       6.2.1.         6.2.1.2.       Environmental precautions         Avoid release to the environment.       6.3.1.         6.3.1.       Methods and material for containment and cleaning up         For containment       : Stop the flow of material, if this is without risk.         Retroduces and material for containment and cleaning up involves within all thick object of start in this of starts in the encore and prevent the resource and prevent and theresource and prevent the resource and prevent	<b>SECTION 6: Accidental</b>	release measu	res		
General measures       : A void inhabition of dust from the spilled material. Do not walk through or scatter spilled material.         6.1.1. For energency personnel No additional information available       Not additional information available         6.2. Environmental precautions       Avaid release to the environment.         6.3. Methods and material for containment and cleaning up For containment       Stop the flow of material, if this is without risk.         Methods for cleaning up       : Use wet clean-up methods (wing), mopping, ctc.) or a vacuum to remove small amounts. The vacuum must be equipped with a fitterion system sufficiency particulate all faith creation and caterials (a recurre equipped with a fitterion system sufficiency particulate all faith creation and caterials (a recurre equipped with a fitterion system sufficiency particulate all faith creation and caterials (a recurre equipped with a fitterion system sufficiency particulate all faith creation and caterials (a recurre equipped with a fitterion system sufficiency particulate all faith creation and caterial (a recurre equipped with a fitterion system sufficiency particulate all faith creation and valational information available         8.4. Reference to other sections       Not Use DKY SWEEPINO OK COMPRESSED AR TO CLEAN SPLIS. To exacution (Ges Section 8), NOT Use DKY SWEEPINO OK COMPRESSED AR TO CLEAN SPLIS. To exacute the system sufficiency particulate and the system sufficiency particulate and all faith is switch and particulate system sufficiency particulate and take a particulate proteon dusts at or helow succeptable exposure most and all faith is switch and particulate system sufficiency particulate and take a particulate proteon dusts at or helow succeptable exposure a should be designed to control eintonne dusts at	6.1. Personal precaution	s, protective equip	ment and emergency procedures		
6.1.1. For non-emergency personnel         No additional information available         6.1.2. For emergency responders         No additional information available         6.2. Environmental precations         Avoid release to the environment.         6.3. Methods and material for containment and cleaning up         For containment       : Stop the floor of material, if this is without risk.         Methods for cleaning up       : Stop the floor of material, if this is without risk.         Methods for cleaning up       : Use wet clean-up methods (wping, mopping, etc.) or a vacuum to remove small amounts. The vacuum must be equipped with a fittingho system autificial to remove and prevent the creation and cardially assessma autificial the remove and prevent the creation and cardially assessment the cleaning on the system is a distant to prevent rescalation of mystelline silon in the workplace. Do NOT USE DRY SWEEPINC OF COMPRESS DAR TO CLEAN SPILS. Clean-up personnel must wear appropriate protective equipment including respiratory protection GRee Section 8).         6.4. Reference to other sections       : Plant processes should be designed to control airborne dusts to revee dust norm work area. Dust about about be resourced using vacuum or wet clean-up methods (wet towels, use of musts, etc.).         Precautions for safe handling       : Plant processes should be designed to control airborne dusts at or below acceptable exposure contains and activity conditions, employees should were reversal is or ather available work colhing. Contaminent dotting ingrating vacuum or wet dean-up methods (wet towels, use of musts, etc.).         7	General measures	:	Avoid inhalation of dust from the spille	ed material. Do not walk through or scatter spilled material.	
6.1.2. For emergency responders         No additional information available         6.2.1. Environmental processions         Scall Methods for cleaning up         For containment         1.3. Methods and material for containment and cleaning up         For containment       : Step the flow of material, if this is without risk.         Methods for cleaning up       : Step the flow of material, if this is without risk.         Methods for cleaning up       : Step the flow of material, if this is without risk.         Step the flow of material, if this is without risk.       a flow water space provide any methods (wping, mopping, etc.) (or 3 vacuum to remove small amounts. The invest space provide space provide space provide any methods (wping, mopping, etc.) (Step Step Step Step Cot Cot Leak SFILLS. Clean-up permonnel must was appropriate provide space	6.1.1. For non-emergency personnel No additional information available				
6.2.       Environmental presentations         Avoid release to the environment.       So the flow of material, if this is without risk.         Behods and material for containment and cleaning up       For containment       : Stop the flow of material, if this is without risk.         Methods for cleaning up       : Use wer clean-up methods (wiping, mopping, etc.) or a vacuum to remove small amounts. The vacuum must be equipped with a hittiton system sufficient to remove and a prevent the rescinction of cystabilities sile (a vacuum equipped with a high-efficiency particulate affilter (HEPA) filter is recommended). For large splits, use a fine water spape risk to order dist. Competent ecologial on distry sufficient to remove any attract to central distry competent ecologial on distry sufficient to remove any prevent the rescince on the sections.         Na additional information available       SECTION 7.1 Handling and storage         Tot.       Precautions for safe handling         Precautions for safe handling       : Plant processes should be designed to control airborne dusts at or below acceptable exposure guidelines. Storage and work area. Dust should be tremoved using vacuum or well-store for and respiratory protection should be the tast atcled clothing removed. DO NOT REMOVE dusts from dusting home.         7.2       Conditions for safe storage.including any incompatibilities         Storage conditions       : Store in a dry area in alcosed containment dowing home.         7.3       Specific end use(6)         No additional information available       Storage conditing home.         Sto	6.1.2. For emergency resp No additional information available	onders ble			
Avaid release to the environment.          6.3. Methods and material for containment and cleaning up <ul> <li>For containment</li> <li>Stop the flow of material, if this is without risk.</li> <li>Methods for cleaning up</li> <li>Stop the flow of material, if this is without risk.</li> <li>Use wet clean-up methods (wiping, mopping, etc.) or a vacuum to remove small amounts. The vacuum must be equipped with a high-afficiant to carring dama (PAP) films in serving splits, use it liem water spray or misical to control dama (PAP) films in serving splits, use it liem water spray or misical to control dama (PAP) films in serving splits, use it liem water spray or misical not corted dama (PAP) films in serving splits, use it liem water spray or misical not corted dama (PAP) films in serving splits, use it liem water spray or misical not corted dama (PAP) films in serving splits the proceed serving splits in the workplace. Do NOT USE DEPX SWEPHNO RC OCMPRESSED AIR TO CLEAN SPLILS. Clean-up personned must wear appropriate protective equipment including respiratory protection (See Section 8).</li> <li><b>7.1. Precautions for sale handling</b> <ul> <li>Plaint processes should be designed to control airborne dust fa or below acceptable exposure guidelines. DO NOT use compresses thould water coverils or other valuable work clohing, bothing. Contaminated doubling must be vacuum or wet clean-up methods (wet towels, use of missing.)</li> </ul> </li> <li><b>7.2. Conditions for sale handling</b> <ul> <li>Plaint processes should be designed to control airborne dust faw or below acceptable exposure guidelines. DO NOT secompresses should water coverils or other valuable work colhing. Contaminated doubling must be vacuum and respiratory protection should be the list atricle of oothing neophyses should water coverils or other valuable work colhing. Contaminated doubling must be</li></ul></li></ul>	6.2. Environmental preca	autions			
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Under dusty conditions, employees should wear coveralls or other suitable work clothing. Contaminated clothing moved. DO NOT REMOVE dusts from clothing by blowing or shaking. Practice good housekeeping. Wash thoroughly after handling. Launder contaminated clothing before re-wearing. Do not take contaminated clothing home.         7.2. Conditions for safe storage, including any incompatibilities         Storage conditions       : Store in a dry area in closed containers. Storage and work areas should be periodically cleaned to minimize dust accumulation.         7.3. Specific end use(s)         No additional information available         SECTION 8: Exposure controls/personal protection         8.1. Control parameters         Kyanite (1302-76-7)         Latvia       OEL TWA (mg/m <sup>3</sup> )         Silica, cristobalite (14464-46-1)         Austria       MAK (mg/m <sup>3</sup> )         Belgium       Limit value (mg/m <sup>3</sup> )         Bulgaria       OEL TWA (mg/m <sup>3</sup> )         OEL TWA (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Bulgaria       OEL TWA (mg/m <sup>3</sup> )         USA NIOSH       NIOSH REL (TWA) (mg/m <sup>3</sup> )         Sp	Precautions for safe handling	:	Plant processes should be designed a guidelines. DO NOT use compressed should be removed using vacuum or	to control airborne dusts at or below acceptable exposure d air or dry sweeping to remove dust from work area. Dusts wet clean-up methods (wet towels, use of mists, etc.).	
7.2. Conditions for safe storage, including any incompatibilities         Storage conditions       : Store in a dry area in closed containers. Storage and work areas should be periodically cleaned to minimize dust accumulation.         7.3. Specific end use(s)       No additional information available         SECTION 8: Exposure controls/personal protection         8.1. Control parameters       2 mg/m³         Silica, cristobalite (14464-46-1)         Austria         Austria       MAK (mg/m³)         Bulgaria       OEL TWA (mg/m³)         0.05 mg/m³ (yearly average till 12/31/2013)         Belgium       Limit value (mg/m³)         0.05 mg/m³       0.05 mg/m³         Bulgaria       OEL TWA (mg/m³)         0.025 mg/m³       0.025 mg/m³         USA NIOSH       NIOSH REL (TWA) (mg/m3)       0.025 mg/m³         USA NIOSH       NIOSH REL (TWA) (mg/m3)       0.05 mg/m³         Spain       VLA-ED (mg/m³)       0.05 mg/m³         Synizerland       VME (mg/m³)       0.05 mg/m³         Swizerland       MAC TGG 8H (mg/m³)       0.05 mg/m³         The Netherlands       MAC TGG 8H (mg/m3)       0.05 mg/m³         Denmark       Grænseværdie (langvarig) (mg/m3)       0.05 mg/m³         Denmark       Grænseværdie (			Under dusty conditions, employees si Contaminated clothing must be vacuu the last article of clothing removed. I shaking. Practice good housekeeping clothing before re-wearing. Do not ta	hould wear coveralls or other suitable work clothing. umed before removal and respiratory protection should be DO NOT REMOVE dusts from clothing by blowing or g. Wash thoroughly after handling. Launder contaminated ke contaminated clothing home.	
Storage conditions       : Store in a dry area in closed containers. Storage and work areas should be periodically cleaned to minimize dust accumulation.         7.3.       Specific end use(s)         No additional information available         SECTION 8: Exposure controls/personal protection         8.1.       Control parameters         Kyanite (1302-76-7)         Latvia       OEL TWA (mg/m <sup>3</sup> )         Austria       MAK (mg/m <sup>3</sup> )         Belgium       Limit value (mg/m <sup>3</sup> )         Bulgaria       OEL TWA (mg/m <sup>3</sup> )         Portugal - USA ACGIH       ACGIH TWA (mg/m <sup>3</sup> )         USA NIOSH       NIOSH REL (TWA) (mg/m <sup>3</sup> )         USA NIOSH       NIOSH REL (TWA) (mg/m <sup>3</sup> )         Spain       VLA-ED (mg/m <sup>3</sup> )         Switzerland       VME (mg/m <sup>3</sup> )         Spain       VLA-ED (mg/m <sup>3</sup> )         Spain       VLA-ED (mg/m <sup>3</sup> )         Spain       VLA-ED (mg/m <sup>3</sup> )         OSE mg/m <sup>3</sup> O.55 mg/m <sup>3</sup> USA NIOSH       NIOSH REL (TWA) (mg/m <sup>3</sup> )         Spain       VLA-ED (mg/m <sup>3</sup> )         O.55 mg/m <sup>3</sup> O.55 mg/m <sup>3</sup> The Netherlands       MAC TGG BH (mg/m <sup>3</sup> )         Denmark       Grænseværdie (langvarig) (mg/m3)         Denmark       Grænseværdie	7.2. Conditions for safe s	storage, including	any incompatibilities		
Specific end use(s)         No additional information available         SECTION 8: Exposure controls/personal protection         8.1. Control parameters         Kyanite (1302-76-7)         Latvia       DEL TWA (mg/m <sup>3</sup> )       2 mg/m <sup>3</sup> Silica, cristobalite (14464-46-1)         Austria       MAK (mg/m <sup>3</sup> )       0.15 mg/m <sup>3</sup> (yearly average till 12/31/2013)         Belgium       Limit value (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Bulgaria       OEL TWA (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Bulgaria       OEL TWA (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Bulgaria       OEL TWA (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Bulgaria       OEL TWA (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Italy - Portugal - USA ACGIH       ACGIH TWA (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> USA NIOSH       NIOSH REL (TWA) (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> USA NIOSH       NIOSH REL (TWA) (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Spain       VLA-ED (mg/m <sup>3</sup> )        OEC Tegrade (mg/m <sup>3</sup> )<	Storage conditions	:	Store in a dry area in closed container to minimize dust accumulation.	ers. Storage and work areas should be periodically cleaned	
No additional information available SECTION 8: Exposure controls/personal protection 8.1. Control parameters  Kyanite (1302-76-7) Latvia OEL TWA (mg/m <sup>3</sup> ) 2 mg/m <sup>3</sup> Silica, cristobalite (14464-46-1) Austria MAK (mg/m <sup>3</sup> ) 0.15 mg/m <sup>3</sup> (yearly average till 12/31/2013) Belgium Limit value (mg/m <sup>3</sup> ) 0.05 mg/m <sup>3</sup> Bulgaria OEL TWA (mg/m <sup>3</sup> ) 0.05 mg/m <sup>3</sup> Bulgaria OEL TWA (mg/m <sup>3</sup> ) 0.05 mg/m <sup>3</sup> Bulgaria OEL TWA (mg/m <sup>3</sup> ) 0.05 mg/m <sup>3</sup> USA mg/m <sup>3</sup> (Sarace VME (mg/m <sup>3</sup> ) 0.025 mg/m <sup>3</sup> (restrictive limit) Italy - Portugal - USA ACGIH ACGIH TWA (mg/m3) 0.025 mg/m <sup>3</sup> USA NIOSH NIOSH REL (TWA (mg/m3) 0.05 mg/m <sup>3</sup> Spain VLA-ED (mg/m <sup>3</sup> ) 0.05 mg/m <sup>3</sup> (spain VLA-ED (mg/m <sup>3</sup> ) 0.15 mg/m <sup>3</sup> (czech Republic Expoziční limity (PEL) (mg/m3) 0.05 mg/m <sup>3</sup> Denmark Grænseværdie (langvarig) (mg/m3) 0.05 mg/m <sup>3</sup> Hungary AK-érték 0.15 mg/m <sup>3</sup>	7.3. Specific end use(s)				
SECTION 8: Exposure controls/personal protection         8.1. Control parameters         Kyanite (1302-76-7)         Latvia       OEL TWA (mg/m <sup>3</sup> )       2 mg/m <sup>3</sup> Silica, cristobalite (14464-46-1)         Austria       MAK (mg/m <sup>3</sup> )       0.15 mg/m <sup>3</sup> (yearly average till 12/31/2013)         Belgium       Limit value (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Bulgaria       OEL TWA (mg/m <sup>3</sup> )       0.07 mg/m <sup>3</sup> France       VME (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> USA ACGIH       ACGIH TWA (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> USA NIOSH       ALGE IT WA (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> USA NIOSH       VIE (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> USA NIOSH       NIOSH REL (TWA) (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Spain       VLA-ED (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> O.05 mg/m <sup>3</sup> Spain       VLA-ED (mg/m <sup>3</sup> )       0.075 mg/m <sup>3</sup> Creach Republic       Expoziční limity (PEL) (mg/m <sup>3</sup> )       0.075 mg/m <sup>3</sup>	No additional information availal	ble			
8.1. Control parameters         Kyanite (1302-76-7)         Latvia       OEL TWA (mg/m <sup>3</sup> )       2 mg/m <sup>3</sup> Silica, cristobalite (14464-46-1)         Austria       MAK (mg/m <sup>3</sup> )       0.15 mg/m <sup>3</sup> (yearly average till 12/31/2013)         Belgium       Limit value (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Bulgaria       OEL TWA (mg/m <sup>3</sup> )       0.07 mg/m <sup>3</sup> France       VME (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> (restrictive limit)         Italy - Portugal - USA ACGIH       ACGIH TWA (mg/m <sup>3</sup> )       0.025 mg/m <sup>3</sup> USA IDLH       US IDLH (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> USA NIOSH       NIOSH REL (TWA) (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Spain       VLA-ED (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> Switzerland       VME (mg/m <sup>3</sup> )       0.05 mg/m <sup>3</sup> The Netherlands       MAC TGG 8H (mg/m <sup>3</sup> )       0.075 mg/m <sup>3</sup> Czech Republic       Expoziční limity (PEL) (mg/m3)       0.1 mg/m <sup>3</sup> Denmark       Grænseværdie (langvarig) (mg/m3)       0.05 mg/m <sup>3</sup> Finland       HTP-arvo (8h (mg/m3)       0.05 mg/m <sup>3</sup> Hungary       AK-érték       0.15 mg/m <sup>3</sup>	<b>SECTION 8: Exposure c</b>	ontrols/person	al protection		
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Finland     HTP-arvo (8h) (mg/m3)     0.05 mg/m³       Hungary     AK-érték     0.15 mg/m³	Denmark	Grænseværdie (la	angvarig) (mg/m3)	0.05 mg/m <sup>3</sup>	
Hungary     AK-érték     0.15 mg/m³	Finland	HTP-arvo (8h) (mg/m3) 0.05 mg/m <sup>3</sup>			
	Hungary	AK-érték 0.15 mɑ/m³			
	00/04/0040				

### Safety Data Sheet

according to Regulation (EC) No. 453/2010

Silica, cristobalite (14464-46-1)			
Ireland	OEL (8 hours ref) (mg/m3) 0.1 mg/m <sup>3</sup>		
Lithuania	IPRV (mg/m3)	0.05 mg/m <sup>3</sup>	
Norway	Gjennomsnittsverdier (AN) (mg/m3)	0.05 mg/m <sup>3</sup> (Dust containing .alphaQuartz, Cristobalite and/or Tridymite is evaluated by summation formula)	
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m3)	0.15 mg/m <sup>3</sup> (Dust containing .alphaQuartz, Cristobalite and/or Tridymite is evaluated by summation formula)	
Poland	NDS (mg/m3)	1.0 mg/m <sup>3</sup> (2% to 50% free crystalline silica)	
Romania	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>	
Slovakia	NPHV (priemerná) (mg/m3)	0.1 mg/m <sup>3</sup>	
Sweden	nivågränsvärde (NVG) (mg/m3)	0.05 mg/m <sup>3</sup>	
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>	
Portugal	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>	
Portugal	OEL chemical category (PT)	A2 - Suspected Human Carcinogen	
Quartz (14808-60-7)			
Austria	MAK (mg/m³)	4 mg/m <sup>3</sup> (when it contains >1% or more of the substance, yearly average)	
Belgium	Limit value (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>	
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	0.07 mg/m <sup>3</sup>	
France	VME (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (restrictive limit)	
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>	
USA IDLH	US IDLH (mg/m3)	50 mg/m³	
USA NIOSH	NIOSH REL (TWA) (mg/m3)	0.05 mg/m <sup>3</sup>	
Spain	VLA-ED (mg/m³)	0.1 mg/m <sup>3</sup> (reclassified IARC group 2A to group 1)	
Switzerland	VME (mg/m <sup>3</sup> )	0.15 mg/m <sup>3</sup>	
The Netherlands	MAC TGG 8H (mg/m <sup>3</sup> )	0.075 mg/m³	
United Kingdom	WEL TWA (mg/m³)	0.1 mg/m <sup>3</sup>	
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	0.3 mg/m <sup>3</sup> (calculated)	
Denmark	Grænseværdie (langvarig) (mg/m3)	0.1 mg/m <sup>3</sup>	
Finland	HTP-arvo (8h) (mg/m3)	0.2 mg/m <sup>3</sup> (blasting and quarrying)	
Hungary	AK-érték	0.15 mg/m <sup>3</sup>	
Ireland	OEL (8 hours ref) (mg/m3)	0.1 mg/m <sup>3</sup>	
Lithuania	IPRV (mg/m3)	0.1 mg/m <sup>3</sup>	
Norway	Gjennomsnittsverdier (AN) (mg/m3)	0.1 mg/m <sup>3</sup> (Dust containing .alphaQuartz, Cristobalite and/or Tridymite is evaluated by summation formula)	
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m3)	0.3 mg/m <sup>3</sup> (Dust containing .alphaQuartz, Cristobalite and/or Tridymite is evaluated by summation formula)	
Poland	NDS (mg/m3)	1.0 mg/m <sup>3</sup> (2% to 50% free crystalline silica)	
Romania	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>	
Slovakia	NPHV (priemerná) (mg/m3)	0.1 mg/m <sup>3</sup> (in Cristobalite or Tridymite)	
Sweden	nivågränsvärde (NVG) (mg/m3)	0.1 mg/m <sup>3</sup>	
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>	
Portugal	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>	
Portugal	OEL chemical category (PT)	A2 - Suspected Human Carcinogen	

### 8.2. Exposure controls

Appropriate engineering controls: Use local exhaust and general ventilation as necessary to control air contaminants at or below<br/>acceptable exposure guidelines. Collection systems must be designed and maintained to<br/>prevent the accumulation and recirculation of respirable silica into the workplace. Additional<br/>controls to limit exposure to crystalline silica may include but are not limited to: wet processes,<br/>installation of dust collection systems, dust control additives, enclosed work processes, and<br/>automated processes.Hand protection: Protective gloves are recommended.Eye protection: Safety glasses with side shields or goggles to prevent dust and particles from entering the eyes.Skin and body protection: Use body protection appropriate for task.

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Respiratory protection

: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

SECTION 9: Physical and chemical	properties
9.1. Information on basic physical and o	chemical properties
Physical state	: Solid mineral
Appearance	: Vitreous
Colour	: Pearly-gray
Odour	: Odourless.
Odour threshold	: No data available
рН	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: P.C.E. 36-37
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Specific gravity	: 3.2-3.7
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION	SECTION 10: Stability and reactivity			
10.1.	Reactivity			
None.				
10.2.	Chemical stability			
Stable ur	nder normal conditions.			
10.3.	Possibility of hazardous reactions			
Will not o	occur.			
10.4.	Conditions to avoid			
None.				
10.5.	Incompatible materials			
Strong or	Strong oxidizing agents.			

10.6. Hazardous decomposition products

Quartz may convert to cristobalite at high temperature (> 1470 °C). Kyanite will decompose to form mullite and cristobalite at high temperatures (~ 1450 °C). This conversion is associated with a large irreversible volume change.

SECTION 11: Toxicological information		
11.1. Information on toxicological effects		
Acute toxicity	: Not classified	
Quartz (14808-60-7)		
LD50 oral rat	500 mg/kg	
ATE (oral)	500 mg/kg	
Skin corrosion/irritation	: Not classified	
Serious eye damage/irritation	: Not classified	

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Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	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 fact 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
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	The short-term or immediate effects of dust inhalation are expected to be coughing and mild respiratory irritation. Scratching or physical damage to the eyes can cause irritation, pain, redness, tears, blurred vision, and light sensitivity. There may be no symptoms during the early stages of chronic silicosis. As the disease progresses, the symptoms include tiredness, shortness of breath, severe cough, and characteristic x-rays. Shortness of breath upon exertion is one of the most common symptoms and limited chest expansion is the most common physical sign.
Specific target organ toxicity (repeated exposure)	:	May cause damage to lungs through prolonged or repeated exposure. Silicosis is a progressive fibrotic pneumoconiosis that greatly decreases the ability of the lungs to provide oxygen (decreased pulmonary capacity). Three types of silicosis have been identified. Acute silicosis can occur several weeks or months following exposure to very high levels of crystalline silica and can result in death in months or within several years. Accelerated silicosis can occur 5-10 years after exposure to higher levels of crystalline silica. Chronic silicosis is the most common type and usually occurs after 10 or more years of exposure to low levels of crystalline silica.
		Similar aluminum silicate minerals such as kaolin have been found to cause lung fibrosis in the absence of crystalline silica. The disease is not as severe as silicosis but can cause respiratory symptoms and changes. Crystalline silica exposure appears to enhance the severity of the disease.
		Animal studies indicate that cristobalite has a greater potential to produce fibrosis than quartz. Cristobalite produces a more severe response than quartz and fibrosis elicited is diffuse rather than nodular.
		Other: Silica particles less than 10 m are considered respirable; however, particles retained in the lungs are generally much smaller. A median diameter of particles retained in the lungs has been cited as 0.5-0.7 m.
Aspiration hazard	:	Not classified

## **SECTION 12: Ecological information**

### 12.1. Toxicity

This product is an ecologically inert material. It does not contain ozone depleting substances and is not expected to exert an ecotoxic effect or bioconcentrate in the food chain.

12.2.	Persistence and degradability	
No additio	onal information available	
12.3.	Bioaccumulative potential	
No additio	onal information available	
12.4.	Mobility in soil	
No additio	onal information available	
12.5.	Results of PBT and vPvB assessment	
No additio	onal information available	
12.6.	Other adverse effects	
No additional information available		

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ccording t	Regulation (EC) No. 453/2010	
SECTI	ON 13: Disposal consideratio	ons
13.1.	Waste treatment methods	
Waste d	sposal recommendations	: Dispose of contents/container in accordance with local/regional/national/international regulations.
SECTI	ON 14: Transport information	
In accord	dance with ADR / RID / ADNR / IMDG /	/ ICAO / IATA
14.1.	UN number	
Not a da	ngerous good in sense of transport reg	ulations.
14.2.	UN proper shipping name	
Not appl	icable	
14.3.	Transport hazard class(es)	
Not appl	icable	
14.4.	Packing group	
Not appl	icable	
14.5.	Environmental hazards	
Other inf	ormation	: No supplementary information available.
14.6.	Special precautions for user	
14.6.1.	Overland transport	
No addit	ional information available	
14.6.2.	Transport by sea	
No addit	ional information available	
14.6.3.	Air transport	
No addit	ional information available	
14.7.	Transport in bulk according to Ann	nex II of MARPOL 73/78 and the IBC Code
Not appl	icable	
SECTI	ON 15: Regulatory informatio	on de la constant de
15.1.	Safety, health and environmental re	egulations/legislation specific for the substance or mixture
15.1.1.	EU-Regulations	
No REA	CH Annex XVII restrictions	
Contains	no REACH candidate substance	
15.1.2.	National regulations	
No addit	ional information available	
15.1.3.	International regulations	
	ral: As a naturally occurring minoral, th	is product is exampt from TSCA inventory requirements

US Federal: As a naturally occurring mineral, this product is exempt from TSCA inventory requirements.

15.2. Chemical safety assessment

No additional information available

### **SECTION 16: Other information**

### Full text of R-, H- and EUH-phrases::

,	•
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure

This information 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.