

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

1.1. Product identifier

Trade name or designation of the mixture	VERSAGUN 60 ADTECH; VERSAGUN 60 ADTECH DS; VERSAGUN 60 ADTECH WF
Registration number	-
Synonyms	None.
Brand Code	2840, 745A, 4082
Issue date	24-June-2015
Version number	01

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

Identified uses	For Industrial Use Only
Uses advised against	Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name	HarbisonWalker International		
Address	1305 Cherrington Parkway, Suite 100 Moon Township, PA 15108, USA United States		
Division			
Telephone	General Phone:	412-375-6600	
	CHEMTREC 24 HOUR	1-800-424-9300	
	EMERGENCY #		
	INTERNATIONAL #	1-703-527-3887	
e-mail	REACH@thinkHWI.com		
Contact person	ANH USA		

1.4. Emergency telephone number Not available.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

This preparation does not meet the criteria for classification according to Directive 1999/45/EC as amended.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards		
Carcinogenicity	Category 1A	H350 - May cause cancer.

Hazard summary

Physical hazards	Not classified for physical hazards.
Health hazards	Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.
Environmental hazards	Not classified for hazards to the environment.
Specific hazards	Prolonged exposure may cause chronic effects.
Main symptoms	Direct contact with eyes may cause temporary irritation.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains:	Cristobalite, Quartz (SiO ₂), Titanium dioxide
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Hazard pictograms**Signal word**

Danger

Hazard statements

H350

May cause cancer.

Precautionary statements**Prevention**

P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and understood.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

Response

P308 + P313

IF exposed or concerned: Get medical advice/attention.

Storage

P405

Store locked up.

Disposal

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, which is a progressive and irreversible lung disease. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Aluminium Oxide (Non-Fibrous)	10 - < 20	1344-28-1 215-691-6	01-2119529248-35-0134	-	
Classification:					
DSD:	-				
CLP:	-				
Cement, Alumina, Chemicals	5 - < 10	65997-16-2 266-045-5	-	-	
Classification:					
DSD:	-				
CLP:	-				
Titanium dioxide	1 - < 3	13463-67-7 236-675-5	-	-	
Classification:					
DSD:	-				
CLP:	Carc. 2;H351				
Quartz (SiO ₂)	< 1	14808-60-7 238-878-4	-	-	
Classification:					
DSD:	-				
CLP:	Carc. 1A;H350				
Cristobalite	< 0,3	14464-46-1 238-455-4	-	-	
Classification:					
DSD:	-				
CLP:	Carc. 1A;H350				
Other components below reportable levels	70 - < 80				

List of abbreviations and symbols that may be used above

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Community workplace exposure limit(s).

Composition comments The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed Direct contact with eyes may cause temporary irritation.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media Not available.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

Special fire fighting procedures Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

6.4. Reference to other sections For personal protection, see section 8. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not breathe dust. Avoid prolonged exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits****Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001**

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	MAK	5 mg/m ³	Respirable fume.
		5 mg/m ³	Respirable fraction.
	STEL	10 mg/m ³	Inhalable fraction.
		20 mg/m ³	Inhalable fraction.
		10 mg/m ³	Respirable fraction.
Cristobalite (CAS 14464-46-1)	MAK	10 mg/m ³	Respirable fume.
		0,15 mg/m ³	Respirable dust.
Fumes, Silica (CAS 69012-64-2)	MAK	0,3 mg/m ³	Respirable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	MAK	0,15 mg/m ³	Respirable dust.
Silicon dioxide (CAS 7631-86-9)	MAK	4 mg/m ³	Inhalable fraction.
Titanium dioxide (CAS 13463-67-7)	MAK	5 mg/m ³	Respirable dust.
	STEL	10 mg/m ³	Respirable dust.

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.
Cristobalite (CAS 14464-46-1)	TWA	0,05 mg/m ³	Respirable dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable dust.
Silicon dioxide (CAS 7631-86-9)	TWA	10 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	10 mg/m ³	Dust.
Cristobalite (CAS 14464-46-1)	TWA	1,5 mg/m ³	Respirable fraction.
		1 fibers/cm ³	Respirable fraction.
Fumes, Silica (CAS 69012-64-2)	TWA	6 mg/m ³	Inhalable fraction.
		10 mg/m ³	Inhalable fraction.
Kyanite (CAS 1302-76-7)	TWA	0,07 mg/m ³	Respirable fraction.
		2 mg/m ³	
Mullite (CAS 1302-93-8)	TWA	2 mg/m ³	
		0,07 mg/m ³	Respirable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,07 mg/m ³	Respirable fraction.
Silicon dioxide (CAS 7631-86-9)	TWA	10 mg/m ³	Inhalable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	0,07 mg/m ³	Respirable fraction.
		10 mg/m ³	Respirable dust.

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	MAC	4 mg/m ³	Respirable dust.
Cristobalite (CAS 14464-46-1)	MAC	10 mg/m ³	Total dust.
Fumes, Silica (CAS 69012-64-2)	MAC	0,05 mg/m ³	Total dust.
Quartz (SiO ₂) (CAS 14808-60-7)	MAC	6 mg/m ³	Total dust.
Silicon dioxide (CAS 7631-86-9)	MAC	2,4 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	MAC	0,1 mg/m ³	Total dust.
	STEL	6 mg/m ³	Total dust.
		2,4 mg/m ³	Respirable dust.
		4 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	10 mg/m ³	Fiber or dust.
Fumes, Silica (CAS 69012-64-2)	TWA	2 mg/m ³	
Silicon dioxide (CAS 7631-86-9)	TWA	2 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	0,1 mg/m ³	Respirable dust.
Cristobalite (CAS 14464-46-1)	TWA	0,1 mg/m ³	Respirable dust.
Fumes, Silica (CAS 69012-64-2)	TWA	4 mg/m ³	Dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable dust.
Silicon dioxide (CAS 7631-86-9)	TWA	4 mg/m ³	Dust.

Denmark. Exposure Limit Values

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TLV	5 mg/m ³	Total
Cristobalite (CAS 14464-46-1)	TLV	2 mg/m ³	Respirable.
Fumes, Silica (CAS 69012-64-2)	TLV	0,15 mg/m ³	Total
Quartz (SiO ₂) (CAS 14808-60-7)	TLV	0,05 mg/m ³	Respirable.
Titanium dioxide (CAS 13463-67-7)	TLV	2 mg/m ³	Respirable.
		0,3 mg/m ³	Total
		0,1 mg/m ³	Respirable.
		6 mg/m ³	

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Respirable dust.
Cristobalite (CAS 14464-46-1)	TWA	10 mg/m ³ 0,05 mg/m ³	Total dust. Respirable dust.
Fumes, Silica (CAS 69012-64-2)	TWA	2 mg/m ³	Respirable dust.
Kyanite (CAS 1302-76-7)	TWA	2 mg/m ³	
Mullite (CAS 1302-93-8)	TWA	2 mg/m ³	
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable dust.
Silicon dioxide (CAS 7631-86-9)	TWA	2 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	

Finland. Workplace Exposure Limits

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	0,05 mg/m ³	Respirable.
Fumes, Silica (CAS 69012-64-2)	TWA	5 mg/m ³	
Kyanite (CAS 1302-76-7)	TWA	2 mg/m ³	
Mullite (CAS 1302-93-8)	TWA	2 mg/m ³	
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,05 mg/m ³	Respirable.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	Dust.

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	VME	10 mg/m ³	
Cristobalite (CAS 14464-46-1)	VME	0,05 mg/m ³	Respirable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	VME	0,1 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	VME	10 mg/m ³	

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Inhalable dust.
		1,5 mg/m ³	Respirable dust.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	AGW	10 mg/m ³	Inhalable fraction.
Fumes, Silica (CAS 69012-64-2)	AGW	1,25 mg/m ³ 0,3 mg/m ³	Respirable fraction. Respirable fraction.
Silicon dioxide (CAS 7631-86-9)	AGW	4 mg/m ³	Inhalable fraction.
Titanium dioxide (CAS 13463-67-7)	AGW	10 mg/m ³	Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	5 mg/m ³	Inhalable
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	Respirable.
		5 mg/m ³	Respirable.
		10 mg/m ³	Inhalable

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	6 mg/m ³	Respirable.
Cristobalite (CAS 14464-46-1)	TWA	0,15 mg/m ³	Respirable.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,15 mg/m ³	Respirable.

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	10 mg/m ³	
Cristobalite (CAS 14464-46-1)	TWA	0,15 mg/m ³	Total dust.
		0,05 mg/m ³	Respirable dust.
Fumes, Silica (CAS 69012-64-2)	TWA	2 mg/m ³	Respirable mist.
Kyanite (CAS 1302-76-7)	TWA	2 mg/m ³	
Mullite (CAS 1302-93-8)	TWA	2 mg/m ³	
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,3 mg/m ³	Total dust.
		0,1 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	6 mg/m ³	

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Respirable dust.
Cristobalite (CAS 14464-46-1)	TWA	10 mg/m ³	Total inhalable dust.
		0,1 mg/m ³	Respirable dust.
Fumes, Silica (CAS 69012-64-2)	TWA	6 mg/m ³	Total inhalable dust.
		2,4 mg/m ³	Respirable dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable dust.
Silicon dioxide (CAS 7631-86-9)	TWA	6 mg/m ³	Total inhalable dust.
		2,4 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	4 mg/m ³	Respirable dust.
		10 mg/m ³	Total inhalable dust.

Italy. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.
Cristobalite (CAS 14464-46-1)	TWA	0,025 mg/m ³	Respirable fraction.
Kyanite (CAS 1302-76-7)	TWA	1 mg/m ³	Respirable fraction.
Mullite (CAS 1302-93-8)	TWA	1 mg/m ³	Respirable fraction.

Italy. Occupational Exposure Limits

Components	Type	Value	Form
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,025 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	6 mg/m ³	Decomposition aerosol.
		4 mg/m ³	
Fumes, Silica (CAS 69012-64-2)	TWA	1 mg/m ³	
Kyanite (CAS 1302-76-7)	TWA	2 mg/m ³	
Silicon dioxide (CAS 7631-86-9)	TWA	1 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	5 mg/m ³	Inhalable fraction.
		2 mg/m ³	Respirable fraction.
Cristobalite (CAS 14464-46-1)	TWA	0,05 mg/m ³	Respirable fraction.
Kyanite (CAS 1302-76-7)	TWA	1 mg/m ³	
Mullite (CAS 1302-93-8)	TWA	1 mg/m ³	
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	

Netherlands. OELs (binding)

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	0,075 mg/m ³	Respirable dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,075 mg/m ³	Respirable dust.

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TLV	10 mg/m ³	
Cristobalite (CAS 14464-46-1)	TLV	0,15 mg/m ³	Total dust.
		0,05 mg/m ³	Respirable dust.
Fumes, Silica (CAS 69012-64-2)	TLV	1,5 mg/m ³	Respirable dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TLV	0,3 mg/m ³	Total dust.
		0,1 mg/m ³	Respirable dust.
Silicon dioxide (CAS 7631-86-9)	TLV	1,5 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	TLV	5 mg/m ³	

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	2,5 mg/m ³	Fume, total dust.

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value	Form
		1,2 mg/m ³	Respirable dust and/or fume.
Cristobalite (CAS 14464-46-1)	TWA	2 mg/m ³	Total dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,3 mg/m ³ 2 mg/m ³	Respirable dust. Total dust.
Silicon dioxide (CAS 7631-86-9)	TWA	0,3 mg/m ³ 2 mg/m ³	Respirable dust. Respirable dust.
Titanium dioxide (CAS 13463-67-7)	STEL	10 mg/m ³ 30 mg/m ³	Total dust.
	TWA	10 mg/m ³	Total dust.

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	10 mg/m ³	
Cristobalite (CAS 14464-46-1)	TWA	0,025 mg/m ³	Respirable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,025 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	STEL	5 mg/m ³	Aerosol
	TWA	1,2 ppm 2 mg/m ³ 0,5 ppm	Aerosol Aerosol Aerosol
Cristobalite (CAS 14464-46-1)	TWA	0,05 mg/m ³	Respirable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	STEL	15 mg/m ³	
	TWA	10 mg/m ³	

Romania. OELs/CMRs. Protection of workers from exposure to carcinogen and mutagen agents. Hotarâre Nr. 1093 din 16 august 2006, Annex 3

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	0,05 mg/m ³	Respirable dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable dust.

Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances

Components	Type	Value	Form
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable fraction.

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Inhalable fraction.
		1,5 mg/m ³ 0,1 mg/m ³	Respirable fraction.
Cristobalite (CAS 14464-46-1)	TWA	0,1 mg/m ³	

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value	Form
Fumes, Silica (CAS 69012-64-2)	TWA	0,3 mg/m ³	
Silicon dioxide (CAS 7631-86-9)	TWA	0,3 mg/m ³	
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	0,15 mg/m ³	Respirable fraction.
Fumes, Silica (CAS 69012-64-2)	TWA	4 mg/m ³	Inhalable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,15 mg/m ³	Respirable fraction.
Silicon dioxide (CAS 7631-86-9)	TWA	4 mg/m ³	Inhalable fraction.

Spain. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	10 mg/m ³	
Cristobalite (CAS 14464-46-1)	TWA	0,05 mg/m ³	Respirable fraction.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	5 mg/m ³	Total dust.
Cristobalite (CAS 14464-46-1)	TWA	2 mg/m ³ 0,05 mg/m ³	Respirable dust. Respirable dust.
Kyanite (CAS 1302-76-7)	TWA	1 mg/m ³	Total dust.
Mullite (CAS 1302-93-8)	TWA	1 mg/m ³	Total dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	STEL	24 mg/m ³	Fume and respirable dust.
	TWA	3 mg/m ³ 3 mg/m ³	Respirable dust. Fume and respirable dust.
Cristobalite (CAS 14464-46-1)	TWA	0,15 mg/m ³	Respirable dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,15 mg/m ³	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	3 mg/m ³	Respirable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	4 mg/m ³	Respirable dust.
		10 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	1 fibers/mL	Fiber.
		5 mg/m ³	Fiber.
Fumes, Silica (CAS 69012-64-2)	TWA	0,1 mg/m ³	Respirable.
		6 mg/m ³	Inhalable dust.
		2,4 mg/m ³	Respirable dust.
Quartz (SiO ₂) (CAS 14808-60-7)	TWA	0,1 mg/m ³	Respirable.
Silicon dioxide (CAS 7631-86-9)	TWA	6 mg/m ³	Inhalable dust.
Titanium dioxide (CAS 13463-67-7)	TWA	2,4 mg/m ³	Respirable dust.
		4 mg/m ³	Respirable.
		10 mg/m ³	Inhalable

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no-effect level (DNEL)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

8.2. Exposure controls**Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**General information**

Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

If contact is likely, safety glasses with side shields are recommended.

Skin protection**- Hand protection**

Wear appropriate chemical resistant gloves.

- Other

Use of an impervious apron is recommended.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Hygiene measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls

Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties****Appearance****Physical state**

Solid.

Form

Solid.

Colour

Not available.

Odour

Not available.

Odour threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Solubility (other)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidizing properties	Not available.
9.2. Other information	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Contact with incompatible materials.
10.5. Incompatible materials	Acids. Fluorine. Chlorine. Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure. Contact your sales representative for clarification.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
Symptoms	Exposure may cause temporary irritation, redness, or discomfort.
11.1. Information on toxicological effects	
Acute toxicity	No data available.
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation	Due to partial or complete lack of data the classification is not possible.
Respiratory sensitisation	Due to partial or complete lack of data the classification is not possible.
Skin sensitisation	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.

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 in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (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) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cristobalite (CAS 14464-46-1)	1 Carcinogenic to humans.
Quartz (SiO ₂) (CAS 14808-60-7)	1 Carcinogenic to humans.
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
12.2. Persistence and degradability	No data is available on the degradability of this product.
12.3. Bioaccumulative potential	No data available.
Partition coefficient n-octanol/water (log K_{ow})	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	Not available.
12.6. Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Not available.
Contaminated packaging	Not available.
EU waste code	Not available.

SECTION 14: Transport information

ADR

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use

Not regulated.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Not listed.

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Not listed.

Directive 94/33/EC on the protection of young people at work

Not listed.

Other regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work. Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations	Not available.
References	Not available.
Information on evaluation method leading to the classification of mixture	Not available.
Full text of any statements or R-phrases and H-statements under Sections 2 to 15	H350 May cause cancer. H351 Suspected of causing cancer.
Revision information	None.
Training information	Not available.
Disclaimer	This information is based on our present knowledge on creation date. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.