SAFETY DATA SHEET

1. Identification

Product identifier **Monolith 7018-1**

Other means of identification Not available.

Recommended use Shielded Metal Arc Welding (SMAW)

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name PrJSC Plasmatec

Address 18, Pravednykiv svitu Street
Vinnytsia, 21036, Ukraine

Telephone 38(067)433-54-64
38(0432)55-49-71

E-mail quality@plasmatec.com.ua

Emergency phone number

Europe	+38 (067) 433-1936
North America	+1 (368) 997-8889

Supplier Monolith Bison Inc.
#204, 40 Elizabeth Street
Okotoks, AB, Canada T1S 1B3
E-mail sales@monolith-bison.ca
Telephone +1 (368) 997-9960

2. Hazard identification

Physical hazards	Combustible dusts	Category 1
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1A
	Specific target organ toxicity following repeated exposure	Category 1
Environmental hazards	Not classified.	
WHMIS 2015 defined hazards	Not classified	

Label elements

Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye irritation. May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves, protective clothing, eye protection and face protection.

Response IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. IF exposed or concerned: Get medical attention.

Storage Not available.

Disposal Dispose of container in accordance with local, regional, national and international regulations.

WHMIS 2015: Health Hazard(s) not otherwise classified (HHNOC)

When this product is used in welding, the most important hazards are welding fumes, heat, radiation and electric shock.

Electrical shock can kill. Arc rays can injure eyes and burn skin. Welding arcs and sparks can ignite combustibles and flammable materials. Overexposure to welding fumes and gases can be hazardous.

WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC)

When this product is used in welding, the most important hazards are welding fumes, heat, radiation and electric shock.

Electrical shock can kill. Arc rays can injure eyes and burn skin. Welding arcs and sparks can ignite combustibles and flammable materials. Overexposure to welding fumes and gases can be hazardous.

Hazard(s) not otherwise classified (HNOC)

When this product is used in welding, the most important hazards are welding fumes, heat, radiation and electric shock.

Electrical shock can kill. Arc rays can injure eyes and burn skin. Welding arcs and sparks can ignite combustibles and flammable materials. Overexposure to welding fumes and gases can be hazardous.

Supplemental information

Under GHS, the product is classified as non-hazardous in its solid form. However, certain processes such as cutting, milling, grinding and welding could result in some hazardous material being emitted.

The classification information is for the hazardous elements which may be emitted during these processes.

3. Composition/Information on ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Calcium fluoride		7789-75-5	3 - 10
Carbonic acid calcium salt (1:1)		471-34-1	3 - 10
Potassium silicate		1312-76-1	1 - 5
Crystalline silica		14808-60-7	0.5 - 5
Manganese		7439-96-5	0.5 - 5
Silicon		7440-21-3	0.5 - 5
Titanium oxide		13463-67-7	0.5 - 5

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments

CANADA GHS: The exact percentage (concentration) of composition has been withheld as a trade secret.

US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

4. First-aid measures

Inhalation

In solid form, not a normal route of exposure. However during further processing (welding, grinding, burning, etc.): Call a physician if symptoms develop or persist.

Skin contact

For skin burns from arc radiation, immediately flush with cold water. Get medical attention for burns or irritations that persist. For reddened or blistered skin, or thermal burns, obtain medical assistance immediately.

Eye contact

Arc rays can injure eyes. For radiation burns due to arc flash, obtain medical attention IMMEDIATELY. If dust or fumes get in eyes: Rinse cautiously with water for several minutes. Call a physician immediately.

Ingestion

Avoid eating and drinking when in contact with fluxes, metal fume or powder which can cause ingestion of particulates. Do not induce vomiting. Never give anything by mouth if victim is unconscious or is convulsing. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Short term exposure to fumes and gases from welding and other processes may result in metal fume fever, dizziness, nausea or dryness or irritation in the throat, nose or eyes. These emissions might also exacerbate pre-existing respiratory conditions like asthma or emphysema.

Long term exposure to fumes and gases could result in conditions such as siderosis (iron deposits in the lungs), impacts on the central nervous system effects, bronchitis and other pulmonary effects.

Indication of immediate medical attention and special treatment needed

Symptoms may be delayed. Treat symptomatically.

General information

IF exposed or concerned: Get medical attention. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. Welding arcs and sparks can ignite combustible and flammable materials. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	May form combustible dust concentrations in air. As shipped, this product is nonflammable.
Hazardous combustion products	May include and are not limited to: Oxides of carbon. Irritating gases. Toxic fumes.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Absorb in vermiculite, dry sand or earth and place into containers. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not taste or swallow. Minimise dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat, sparks, open flames, hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Take preventive measures to prevent electric shock and excessive exposure to fumes and gases. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.
Conditions for safe storage, including any incompatibilities	Keep out of reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture and heat. Store locked up.

8. Exposure controls/Personal protection

Occupational exposure limits

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	TWA	10 mg/m3	
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable particles.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0.2 mg/m3	
Silicon (CAS 7440-21-3)	TWA	3 mg/m3	Respirable particles.
		10 mg/m3	Total
Titanium oxide (CAS 13463-67-7)	TWA	10 mg/m3	

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	STEL	20 mg/m3	Total dust.
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Manganese (CAS 7439-96-5)	TWA	0.2 mg/m3	Total
		0.02 mg/m3	Respirable.
Silicon (CAS 7440-21-3)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
Titanium oxide (CAS 13463-67-7)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Manganese (CAS 7439-96-5)	TWA	0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.
Titanium oxide (CAS 13463-67-7)	TWA	2.5 mg/m3	Respirable finescale particles
		0.2 mg/m3	Respirable nanoscale particles

Canada. New Brunswick Regulation 91-191, as amended

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	TWA	10 mg/m3	
Crystalline silica (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.
Manganese (CAS 7439-96-5)	TWA	0.2 mg/m3	
Silicon (CAS 7440-21-3)	TWA	10 mg/m3	
Titanium oxide (CAS 13463-67-7)	TWA	10 mg/m3	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	
Crystalline silica (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0.2 mg/m3	
		0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.
Titanium oxide (CAS 13463-67-7)	TWA	10 mg/m3	

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	TWA	10 mg/m3	Total dust.
Crystalline silica (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable dust.
Manganese (CAS 7439-96-5)	TWA	0.2 mg/m3	Fume, total dust.
Silicon (CAS 7440-21-3)	TWA	10 mg/m3	Total dust.
Titanium oxide (CAS 13463-67-7)	TWA	10 mg/m3	Total dust.

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 2020. S-15.1 Reg. 10. Table 18)

Components	Type	Value
Calcium fluoride (CAS 7789-75-5)	15 minute	5 mg/m3
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	15 minute	20 mg/m3
Manganese (CAS 7439-96-5)	15 minute	0.6 mg/m3
Silicon (CAS 7440-21-3)	15 minute	20 mg/m3
Titanium oxide (CAS 13463-67-7)	15 minute	20 mg/m3

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	PEL	2.5 mg/m3	
Crystalline silica (CAS 14808-60-7)	PEL	0.05 mg/m3	Respirable dust.
Manganese (CAS 7439-96-5)	Ceiling	5 mg/m3	Fume.
Silicon (CAS 7440-21-3)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Titanium oxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	Dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 Mppcf	Total dust.
		15 Mppcf	Respirable fraction.
Crystalline silica (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.
		2.39999999999999 99 Mppcf	Respirable.
Silicon (CAS 7440-21-3)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
		50 Mppcf	Total dust.
		15 Mppcf	Respirable fraction.
Titanium oxide (CAS 13463-67-7)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 Mppcf	Total dust.
		15 Mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Manganese (CAS 7439-96-5)	TWA	0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.
Titanium oxide (CAS 13463-67-7)	TWA	2.5 mg/m3	Respirable finescale particles
		0.2 mg/m3	Respirable nanoscale particles

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Crystalline silica (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
Manganese (CAS 7439-96-5)	STEL	3 mg/m3	Fume.
	TWA	1 mg/m3	Fume.
Silicon (CAS 7440-21-3)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Calcium fluoride (CAS 7789-75-5)	3 mg/L	Fluoride	Urine	*
	2 mg/L	Fluoride	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. 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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear a welder's face shield to protect your face from radiation and flying particles.

Wear a fire-resistant skull cap or balaclava hood under your helmet to protect your head from burns and UV radiation.

Skin protection

Hand protection

Wear gauntlet-type cuff leather gloves or protective sleeves of similar material, to protect wrists and forearms. Leather is a good electrical insulator if kept dry.

Other	Wear high-top boots fully laced to prevent sparks from entering into the boots. Use fire-resistant boot protectors or spats strapped around the pant legs and boot tops, to prevent sparks from bouncing in the top of the boots. Wear layers of clothing. To prevent sweating, avoid overdressing in cold weather. Sweaty clothes cause rapid heat loss. Leather welding jackets are not very breathable and can make you sweat if you are overdressed.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).
Thermal hazards	Using a shield can help keep any sparks spray away from your clothing. Wear leather aprons to protect your chest and lap from sparks when standing or sitting.
General hygiene considerations	When using, do not eat, drink or smoke. 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.

9. Physical and chemical properties

Appearance	Steel rod with a flux coating
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.
Specific gravity	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.
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Pour point	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Chemical stability	Material is stable under normal conditions.

Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Minimise dust generation and accumulation.
Incompatible materials	None known.
Hazardous decomposition products	Does not decompose under normal conditions.

11. Toxicological information

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

Information on likely routes of exposure

Ingestion May cause stomach distress, nausea or vomiting.

Inhalation Inhaling welding fumes and gases can pose health risks. Dust may irritate respiratory system. Prolonged inhalation may be harmful.

Skin contact Arc rays can burn skin. Dust or powder may irritate the skin.

Eye contact Arc rays can injure eyes. Mechanical cutting could produce dust that may cause irritation.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Not known.

Components	Species	Test Results
Calcium fluoride (CAS 7789-75-5)		
Acute		
Dermal		
LD50		
Inhalation		
LC50		
Oral		
LD50	Rat	4250 mg/kg
Carbonic acid calcium salt (1:1) (CAS 471-34-1)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg, 24 Hours, ECHA
Inhalation		
LC50	Rat	> 3 mg/L, 4 Hours, ECHA
Oral		
LD50	Mouse	6450 mg/kg, HSDB
	Rat	> 2000 mg/kg, ECHA
Crystalline silica (CAS 14808-60-7)		
Acute		
Dermal		
LD50	Not available	
Inhalation		
LC50	Not available	
Oral		
LD50	Not available	
Manganese (CAS 7439-96-5)		
Acute		
Inhalation		
LC50	Not available	
Oral		
LD50	Mouse	1715 mg/kg
	Rat	9000 mg/kg

Components	Species	Test Results
Potassium silicate (CAS 1312-76-1)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg, 24 Hours, ECHA
Inhalation		
LC50	Rat	> 2.1 mg/L, 4 Hours, ECHA
Oral		
LD50	Rat	> 5000 mg/kg, ECHA
Silicon (CAS 7440-21-3)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, 24 Hours, ECHA
Inhalation		
LC50	Not available	
Oral		
LD50	Rat	> 5000 mg/kg, ECHA
Titanium oxide (CAS 13463-67-7)		
Acute		
Dermal		
LD50	Not available	
Inhalation		
LC50	Rat	> 6.8 mg/L, 4 Hours, ECHA
Oral		
LD50	Rat	> 2000 mg/kg, ECHA

Skin corrosion/irritation	Causes skin irritation.
Exposure minutes	Not available.
Erythema value	Not available.
Oedema value	Not available.
Serious eye damage/eye irritation	Causes serious eye irritation.
Corneal opacity value	Not available.
Iris lesion value	Not available.
Conjunctival reddening value	Not available.
Conjunctival oedema value	Not available.
Recover days	Not available.
Respiratory or skin sensitisation	
Canada - Alberta OELs: Irritant	
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	Irritant
Silicon (CAS 7440-21-3)	Irritant
Titanium oxide (CAS 13463-67-7)	Irritant
Respiratory sensitisation	Not a respiratory sensitizer.
Skin sensitisation	This product is not expected to cause skin sensitisation.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

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.

ACGIH Carcinogens

Crystalline silica (CAS 14808-60-7)	A2 Suspected human carcinogen.
Titanium oxide (CAS 13463-67-7)	A3 Confirmed animal carcinogen with unknown relevance to humans.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Crystalline silica (CAS 14808-60-7)
Titanium oxide (CAS 13463-67-7)

Canada - Alberta OELs: Carcinogen category

Crystalline silica (CAS 14808-60-7)	Suspected human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Crystalline silica (CAS 14808-60-7)	Suspected human carcinogen.
Titanium oxide (CAS 13463-67-7)	Confirmed animal carcinogen with unknown relevance to humans.

Canada - Quebec OELs: Carcinogen category

Crystalline silica (CAS 14808-60-7)	Suspected carcinogenic effect in humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Calcium fluoride (CAS 7789-75-5)	Volume 27, Supplement 7 - 3 Not classifiable as to carcinogenicity to humans.
Crystalline silica (CAS 14808-60-7)	Supplement 7, Volume 68, Volume 100C 1 Carcinogenic to humans.
Titanium oxide (CAS 13463-67-7)	Volume 47, Volume 93 - 2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Crystalline silica (CAS 14808-60-7)	Cancer

US NTP Report on Carcinogens: Known carcinogen

Crystalline silica (CAS 14808-60-7)	Known To Be Human Carcinogen.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Teratogenicity Not available.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity See below

Ecotoxicological data

Components		Species	Test Results
Carbonic acid calcium salt (1:1) (CAS 471-34-1)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	> 56000 mg/L, 96 hours
Manganese (CAS 7439-96-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	40 mg/L, 48 hours
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/L, 48 hours

Components		Species	Test Results
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/L, 96 hours

Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Mobility in general Not available.

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.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

Transport of Dangerous Goods (TDG) Proof of Classification Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations. If applicable, the technical name and the classification of the product will appear below.

U.S. Department of Transportation (DOT)

Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG - Canada)

Not regulated as dangerous goods.

15. Regulatory information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Canada CEPA Schedule I: Listed substance

Calcium fluoride (CAS 7789-75-5)	Listed.
Carbonic acid calcium salt (1:1) (CAS 471-34-1)	Listed.
Silicon (CAS 7440-21-3)	Listed.
Titanium oxide (CAS 13463-67-7)	Listed.

Canada DSL Challenge Substances: Listed substance

Crystalline silica (CAS 14808-60-7)	Listed.

Canada Priority Substances List (Second List): Listed substance

Carbonic acid calcium salt (1:1) (CAS 471-34-1)	Listed.
Silicon (CAS 7440-21-3)	Listed.
Titanium oxide (CAS 13463-67-7)	Listed.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

WHMIS 2015 Exemptions Not applicable

US Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Manganese (CAS 7439-96-5)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Crystalline silica (CAS 14808-60-7)	Cancer

lung effects
immune system effects
kidney effects

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance No

Classified hazard categories
Skin corrosion or irritation
Serious eye damage or eye irritation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Manganese	7439-96-5	0.5 - 5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Manganese (CAS 7439-96-5)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

US state regulations

US - California Hazardous Substances (Director's): Listed substance

Calcium fluoride (CAS 7789-75-5) Listed.
Manganese (CAS 7439-96-5) Listed.

US - Illinois Chemical Safety Act: Listed substance

Manganese (CAS 7439-96-5)

US - Louisiana Spill Reporting: Listed substance

Manganese (CAS 7439-96-5) Listed.

US - Minnesota Haz Subs: Listed substance

Crystalline silica (CAS 14808-60-7) Listed.
Manganese (CAS 7439-96-5) Listed.
Silicon (CAS 7440-21-3) Listed.
Titanium oxide (CAS 13463-67-7) Listed.

US - North Carolina Toxic Air Pollutants: Listed substance

Calcium fluoride (CAS 7789-75-5)
Manganese (CAS 7439-96-5)

US - Texas Effects Screening Levels: Listed substance

Calcium fluoride (CAS 7789-75-5) Listed.
Carbonic acid calcium salt (1:1) (CAS 471-34-1) Listed.
Crystalline silica (CAS 14808-60-7) Listed.
Manganese (CAS 7439-96-5) Listed.
Potassium silicate (CAS 1312-76-1) Listed.
Silicon (CAS 7440-21-3) Listed.
Titanium oxide (CAS 13463-67-7) Listed.

US. Massachusetts RTK - Substance List

Carbonic acid calcium salt (1:1) (CAS 471-34-1)
Crystalline silica (CAS 14808-60-7)
Manganese (CAS 7439-96-5)
Silicon (CAS 7440-21-3)
Titanium oxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Calcium fluoride (CAS 7789-75-5)
Carbonic acid calcium salt (1:1) (CAS 471-34-1)
Crystalline silica (CAS 14808-60-7)
Manganese (CAS 7439-96-5)
Silicon (CAS 7440-21-3)
Titanium oxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Calcium fluoride (CAS 7789-75-5)
Carbonic acid calcium salt (1:1) (CAS 471-34-1)
Crystalline silica (CAS 14808-60-7)
Manganese (CAS 7439-96-5)
Silicon (CAS 7440-21-3)
Titanium oxide (CAS 13463-67-7)

US. Rhode Island RTK

Calcium fluoride (CAS 7789-75-5)
Crystalline silica (CAS 14808-60-7)

Manganese (CAS 7439-96-5)
Silicon (CAS 7440-21-3)
Titanium oxide (CAS 13463-67-7)

US. California Proposition 65

This product can expose you to chemicals including Crystalline silica, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Crystalline silica (CAS 14808-60-7)	Listed: October 1, 1988
Titanium oxide (CAS 13463-67-7)	Listed: September 2, 2011

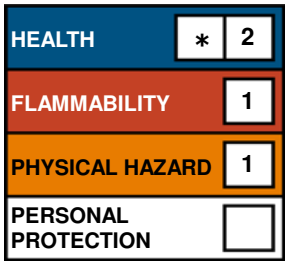
Inventory status

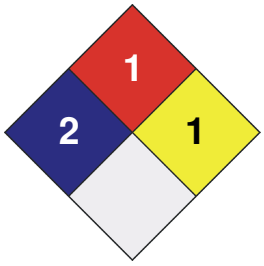
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0





Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Further information Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.