

**RS-D1 ST****SECTION 1. IDENTIFICATION**

<b>Product Identifier</b>	RS-D1 ST
<b>Other Means of Identification</b>	RS-D1 Steel Fiber Shotcrete
<b>Product Family</b>	KING Shotcrete Solutions-Shotcrete
<b>Recommended Use</b>	Ground support applications for mining, tunneling and other underground openings. Construction of underground bulkheads, backfill barricades, pillars, ventilation walls and other underground concrete structures.
<b>Restrictions on Use</b>	None known.
<b>Manufacturer</b>	King Packaged Materials Company, 3385 Harvester Road, Burlington, Ontario, L7R 3Y5, www.kpmindustries.com
<b>Emergency Phone No.</b>	King Packaged Materials Company, (800) 461-0566, 8:30am-4:30pm Chemtec, (800) 424-9300, 24 hours/7 days a week
<b>SDS No.</b>	0288
<b>Date of Preparation</b>	March 15, 2016

**SECTION 2. HAZARD IDENTIFICATION****Classification**

Skin irritation - Category 2; Serious eye damage - Category 1; Skin sensitization - Category 1; Carcinogenicity - Category 1A; Specific target organ toxicity (single exposure) - Category 3; Specific target organ toxicity (repeated exposure) - Category 1

**Label Elements**

Signal Word:

Danger

Hazard Statement(s):

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

May cause cancer.

May cause respiratory irritation.

Causes damage to organs (lungs) through prolonged or repeated exposure.

Precautionary Statement(s):

Obtain special instructions before use.

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

Wash hands thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

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

Use only outdoors or in a well-ventilated area.

Do not breathe dust/fume/gas/mist/vapours/spray.

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Do not eat, drink or smoke when using this product.  
IF exposed or concerned: Get medical advice/attention.  
IF ON SKIN: Wash with plenty of water.  
Take off contaminated clothing and wash it before reuse.  
If skin irritation or rash occurs: Get medical advice/attention.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Immediately call a POISON CENTRE or doctor.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTRE or doctor if you feel unwell.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents and container in accordance with local, regional, national and international regulations.  
10% of the mixture consists of ingredient(s) of unknown acute toxicity.

#### Other Hazards

None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Silica, total quartz	14808-60-7	60-100%	Not applicable
Calcium Sulfoaluminate Cement	960375-09-1	10-30%	Not applicable

#### Notes

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

### SECTION 4. FIRST-AID MEASURES

#### First-aid Measures

##### Inhalation

Move to fresh air. Keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor if you feel unwell.

##### Skin Contact

Rinse with lukewarm, gently flowing water for 5 minutes. Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely. If skin irritation or a rash occurs, get medical advice or attention.

##### Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. Immediately call a Poison Centre or doctor.

##### Ingestion

Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Get medical advice or attention if you feel unwell or are concerned.

#### Most Important Symptoms and Effects, Acute and Delayed

If inhaled: can irritate the nose and throat. Can cause lung injury. If on skin: skin sensitizer. May cause an allergic skin reaction in some people. May cause moderate to severe irritation. If in eyes: causes moderate to severe irritation. Symptoms include sore, red eyes, and tearing. If swallowed: can irritate the mouth, throat and stomach. Symptoms may include nausea, vomiting, stomach cramps and diarrhea.

#### Immediate Medical Attention and Special Treatment

##### Special Instructions

Not applicable.

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## SECTION 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### Suitable Extinguishing Media

Not combustible. Use extinguishing agent suitable for surrounding fire.

#### Unsuitable Extinguishing Media

None known.

### Specific Hazards Arising from the Product

This product presents no unusual hazards in a fire situation.

### Special Protective Equipment and Precautions for Fire-fighters

Approach fire from upwind to avoid hazardous vapours or gases.

Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel.

### Environmental Precautions

It is good practice to prevent releases into the environment. Do not allow into any sewer, on the ground or into any waterway.

### Methods and Materials for Containment and Cleaning Up

Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal. Avoid generating dust.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Avoid repeated or prolonged skin contact. Do not swallow. Do not breathe in this product. Avoid generating dusts. Keep containers tightly closed when not in use or empty. Do NOT eat, drink or store food in work areas.

### Conditions for Safe Storage

Store in the original, labelled, shipping container. Store in an area that is: dry, well-ventilated. Protect product from contact with water, including humidity. Prevent rainwater and ground water from reaching storage area.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Silica, total quartz	0.05 mg/m3 (R) A2		0.1 mg/m3			
Calcium Sulfoaluminate Cement	10 mg/m3		5 mg/m3 (R)			

### Appropriate Engineering Controls

Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air.

### Individual Protection Measures

#### Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible.

#### Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

## Respiratory Protection

Wear a NIOSH approved particulate respiratory equipped with an N95, R95, or P95 filter.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Appearance</b>	Grey powder.
<b>Odour</b>	Odourless
<b>Odour Threshold</b>	Not available
<b>pH</b>	Not available
<b>Melting Point/Freezing Point</b>	Not available (melting); Not available (freezing)
<b>Initial Boiling Point/Range</b>	Not available
<b>Flash Point</b>	Not available
<b>Evaporation Rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not applicable
<b>Upper/Lower Flammability or Explosive Limit</b>	Not available (upper); Not available (lower)
<b>Vapour Pressure</b>	Not available
<b>Vapour Density (air = 1)</b>	Not available
<b>Relative Density (water = 1)</b>	2.5
<b>Solubility</b>	Not available in water; Not available (in other liquids)
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not available
<b>Auto-ignition Temperature</b>	Not available
<b>Decomposition Temperature</b>	Not available
<b>Viscosity</b>	Not available (kinematic); Not available (dynamic)
<b>Other Information</b>	
<b>Physical State</b>	Solid

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions of use.

### Chemical Stability

Normally stable.

### Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

### Conditions to Avoid

Water, moisture or humidity.

### Incompatible Materials

None known.

### Hazardous Decomposition Products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

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## Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Silica, total quartz		500 mg/kg (rat)	

## Skin Corrosion/Irritation

May cause moderate or severe irritation based on information for closely related materials.

## Serious Eye Damage/Irritation

May cause serious eye damage based on information for closely related materials.

## STOT (Specific Target Organ Toxicity) - Single Exposure

### Inhalation

May cause severe nose and throat irritation, severe lung injury.

### Skin Absorption

No information was located.

### Ingestion

May be harmful based on information for closely related materials.

## Aspiration Hazard

Can cause lung damage if aspirated based on human experience.

## STOT (Specific Target Organ Toxicity) - Repeated Exposure

Causes irritation of the respiratory system. Respiratory tract injury has been observed. Respirable crystalline silica in the form of quartz or cristobalite from occupational sources is listed by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a lung carcinogen. Prolonged exposure to respirable crystalline silica has been known to cause silicosis, a lung disease, which may be disabling. While there may be a factor of individual susceptibility to a given exposure to respirable silica dust, the risk of contracting silicosis and the severity of the disease is clearly related to the amount of dust exposure and the length of time (usually years) of exposure.

## Respiratory and/or Skin Sensitization

May cause an allergic reaction (skin sensitization) based on information for closely related chemicals.

## Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Silica, total quartz	Group 1	A2	Known carcinogen	

May cause cancer.

## Reproductive Toxicity

### Development of Offspring

No information was located.

### Sexual Function and Fertility

No information was located.

### Effects on or via Lactation

No information was located.

## Germ Cell Mutagenicity

No information was located.

## Interactive Effects

No information was located.

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

May cause long lasting harmful effects to aquatic life.

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**Persistence and Degradability**

No information was located.

**Bioaccumulative Potential**

No information was located.

**Mobility in Soil**

No information was located.

**Other Adverse Effects**

There is no information available.

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal Methods**

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction.

**SECTION 14. TRANSPORT INFORMATION**

Not regulated under US DOT Regulations.

**Environmental Hazards** Not applicable

**Special Precautions** Not applicable

**Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**SECTION 15. REGULATORY INFORMATION****Safety, Health and Environmental Regulations****Canada****WHMIS 1988 Classification**

Class D2A



Class E

D2A - Very Toxic (Chronic toxicity; Carcinogenicity); E - Corrosive

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

**USA****Toxic Substances Control Act (TSCA) Section 8(b)**

All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

**Additional USA Regulatory Lists**

This product contains a chemical known to the State of California to cause cancer.

**SECTION 16. OTHER INFORMATION**

**SDS Prepared By** King Packaged Materials Company

**Phone No.** 905-639-2993

**Date of Preparation** March 15, 2016

**Disclaimer** To the best of our knowledge, the information contained herein is accurate. However, neither KPM Industries Ltd., nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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