

# XL-FUME SAFETY DATA SHEET

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identity:** XL-FUME

**Manufacturer:**

Cementec Industries Inc.  
13 Industry Way SE Calgary,  
Alberta, Canada T3S 0A2  
Emergency Telephone: 403-720-6699

**Supplier:**

Cementec Industries Inc.  
13 Industry Way SE Calgary,  
Alberta, Canada T3S 0A2

**MSDS Preparer:**

Cementec Industries Inc.  
13 Industry Way SE Calgary,  
Alberta, Canada T3S 0A2

**Date of MSDS Preparation:** September 19, 2005.

**Revised:** February 1, 2016.

**Product Use:** Cement additive for Portland cement-based concrete materials.

## SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Approximate Percent by Weight	C.A.S. Number	Occupational Exposure Limits (OELs) (also see footnote)		LD50/LC50 Species and Route
Silicon Dioxide (amorphous)	85 - 92	69012-64-2	OSHA PEL	30 mg/m <sup>3</sup> / %SiO <sub>2</sub> (total)	>22,000 mg/kg rat - oral >15,000 mg/kg mouse - oral
			ACGIH TLV	10 mg/m <sup>3</sup> / %SiO <sub>2</sub> +2 (resp) Withdrawn due to insufficient data	
			NIOSH REL	6 mg/m <sup>3</sup>	
Iron Oxide	2-5 (as Fe)	1309-37-1	OSHA PEL	10 mg/m <sup>3</sup> (total)	No Data
			ACGIH TLV	5 mg/m <sup>3</sup> (resp)	
			NIOSH REL	None established	
Aluminum Oxide	1-3	1344-28-1	OSHA PEL	15 mg/m <sup>3</sup> (total)	No Data
			ACGIH TLV	5 mg/m <sup>3</sup> (resp)	
			NIOSH REL	10 mg/m <sup>3</sup> None established	
Calcium Oxide	1-3	1305-78-8	OSHA PEL	5 mg/m <sup>3</sup> (total)	No Data
			ACGIH TLV	3.5 mg/m <sup>3</sup> (total)	
			NIOSH REL	None established	
Magnesium Oxide	1-2	1309-48-4	OSHA PEL	15 mg/m <sup>3</sup> (total)	No Data
			ACGIH TLV	10 mg/m <sup>3</sup> (total)	
			NIOSH REL	None established	
Silicon dioxide (crystalline quartz)	< 2	14808-60-7	OSHA PEL	30 mg/m <sup>3</sup> / %SiO <sub>2</sub> +2 (total)	500 mg/kg bw /Quartz 10-200 μ rat - iv
			ACGIH TLV	10 mg/m <sup>3</sup> / %SiO <sub>2</sub> +2 (resp) 0.025 mg/ m <sup>3</sup> (resp)	
			NIOSH REL	0.05 mg/ m <sup>3</sup> (resp)	

This product also contains other minor constituents including potassium and sodium minerals each less than approximately 2% by weight (calculated as their respective oxides.)

NOTE: OELs for individual jurisdictions may differ from OSHA PELs. Check with local authorities for the applicable OELs in your jurisdiction.  
OSHA - Occupational Safety and Health Administration; ACGIH - American Conference of Governmental Industrial Hygienists; NIOSH - National Institute for Occupational Safety and Health. OEL - Occupational Exposure Limit, PEL - Permissible Exposure Limit, TLV - Threshold Limit Value, REL - Recommended Exposure Limit, (resp) - respirable dust fraction as defined in Appendix D of the ACGIH TLV booklet.

**Trade Names and Synonyms:** Silica Fume

### SECTION 3. HAZARDS IDENTIFICATION

**Emergency Overview:** A solid grey-powder material that is not flammable and combustible at room temperatures. This product is relatively non-toxic and does not pose an immediate hazard to the health of emergency response personnel or to the environment in an emergency situation.

**Potential Health Effects:** Acute exposure to iron oxide ( $\text{Fe}_2\text{O}_3$ ) dust or fume can cause x-ray changes (siderosis or iron pigmentation) in the lungs as a result of long-term exposure. Siderosis is a benign condition and is not associated with pulmonary fibrosis. Chronic overexposure to particulates of respirable size may cause lung inflammation, difficult breathing, chest pain, coughing, and pneumoconiosis or possible fibrotic changes in the lungs. Prolonged overexposure to respirable crystalline silica in excess of the TLV may result in irreversible fibrosis of the lungs (silicosis.)

**Potential Environmental Effects:** The product has a high degree of intrinsic chemical stability and is relatively non-toxic in the environment. This material is normally stored in closed containers.

### SECTION 4. FIRST AID MEASURES

**Eye Contact:** The product is a powder, and may be a mechanical irritant in the eyes. Flush eyes with water until irritation is removed.

**Skin Contact:** Remove contaminated clothing and wash exposed area with soap and water.

**Inhalation:** Use adequate respiratory protection and remove victim from exposure area to fresh air. Medical oxygen may be administered, if available, where breathing is difficult. If irritation persists or cough or other symptoms develop, seek medical attention.

**Ingestion:** If swallowed, do not induce vomiting. Consult a physician if necessary.

### SECTION 5. FIRE FIGHTING MEASURES

**Fire and Explosion Hazards:** The product is non-combustible and not an explosion hazard.

**Extinguishing Media:** Not applicable

**Fire Fighting:** As with any fire, fire fighters should be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face piece mask.

**Flashpoint and Method:** None

**Upper and Lower Flammable Limit:** Not applicable

**Autoignition Temperature:** Not applicable

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**Procedures for Cleanup:** Ensure personal safety and control source of spillage. Clean up spilled material immediately, observing precautions in Section 8, Personal Protection and using methods that will minimize dust generation (e.g., vacuum solids, dampen material and shovel or wet sweep). Return uncontaminated spilled material to the process if possible. Place contaminated material in suitable labeled containers for recovery or disposal. Treat or dispose of waste material in accordance with all local, regional, and national requirements.

**Personal Precautions:** Persons responding to an accidental release should wear protective clothing, gloves and a dust respirator (see also Section 8). Close-fitting safety goggles may be necessary in some circumstances to prevent eye contact with dust.

**Environmental Precautions:** Care should be taken to prevent the spillage of this product to aquatic and terrestrial environments. Measures to control dust generation from product spills should be applied in dry dusty locations.

## SECTION 7. HANDLING AND STORAGE

Material is to be stored in suitable containers. Handle and open the container with care in accordance with good storage and handling practices. After handling, always wash hands thoroughly with soap and water.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Protective Clothing:** Gloves and coveralls or other work clothing are recommended to prevent prolonged or repeated direct skin contact. Appropriate eye protection should be worn where dust is generated. Safety type boots are recommended.

**Ventilation:** Use adequate local or general ventilation to maintain the concentration of dust in the work environment well below recommended occupational exposure limits.

**Respirators:** Where excessive dust is generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH-approved respiratory protection equipment for very fine particulates.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b> Grey powder	<b>Odour:</b> None	<b>Physical State:</b> Solid	<b>pH:</b> 6.30
<b>Vapour Pressure:</b> Not Applicable	<b>Vapour Density:</b> Not Applicable	<b>Boiling Point/Range:</b> Not Applicable	<b>Freezing/Melting Point/Range:</b> Not determined
<b>Specific Gravity:</b> Approx. 2.2	<b>Evaporation Rate:</b> Not Applicable	<b>Coefficient of Water/Oil Distribution:</b> Not Applicable	<b>Odour Threshold:</b> Not Applicable
<b>Solubility in Water:</b> Negligible	<b>Particle Size:</b> $\leq 1$ micron		

## SECTION 10. STABILITY AND REACTIVITY

**Stability and Reactivity:** This material is stable and non-reactive under normal room temperatures and pressures.

**Incompatibilities:** Strong oxidizing agents. Material may react with strong oxidizers, halogens, unsaturated oils, and strong acids. Upon reaction with hydrofluoric acid, silicon tetrafluoride, a toxic substance, is formed.

**Hazardous Decomposition Products:** Product is non-combustible.

## SECTION 11. TOXICOLOGICAL INFORMATION

**General:** In the powder form in which this material is sold it is relatively non-toxic. Normal handling should not cause either acute or chronic health effects. This product has not undergone testing for either acute or chronic toxic effects.

**Acute:** Acute exposure to iron oxide ( $\text{Fe}_2\text{O}_3$ ) dust or fume can cause x-ray changes (siderosis or iron pigmentation) in the lungs as a result of long term exposure. Siderosis is a benign condition and is not associated with pulmonary fibrosis. Airborne respirable dust may cause irritation to the nose, throat, and lungs.

**Skin:** Components are probably not irritating to the skin. There is no human or animal information available.

**Eye:** Dust particles may mechanically irritate the eyes and impair vision.

**Inhalation:** Chronic overexposure to particulates of respirable size may cause lung inflammation, difficult breathing, chest pain, coughing, and pneumoconiosis or possible fibrotic changes in the lungs. Prolonged overexposure to respirable crystalline silica in excess of the TLV may result in irreversible fibrosis of the lungs (silicosis) with symptoms of coughing, shortness of breath, wheezing and impaired pulmonary function. The IARC has classified inhalable crystalline silica as Group 1, with sufficient evidence that crystalline silica may be carcinogenic to humans.

**Ingestion:** Not established.

## SECTION 12. ECOLOGICAL INFORMATION

The principle constituents of this product are chemically stable and, as such, it will be relatively inert in the environment. Material should, however, be kept in suitable containers and spilled material cleaned-up.

## SECTION 13. DISPOSAL CONSIDERATIONS

If material cannot be returned to process or salvage, dispose of in accordance with applicable regulations. Material may be disposed of in a sanitary landfill.

## SECTION 14. TRANSPORT INFORMATION

PROPER SHIPPING NAME.....	Not regulated
TRANSPORT CANADA CLASSIFICATION.....	Not applicable.
US DOT HAZARD CLASSIFICATION.....	Not applicable.
TRANSPORT CANADA PRODUCT IDENTIFICATION NUMBER.....	Not applicable.
US DOT PRODUCT IDENTIFICATION NUMBER.....	Not applicable.
MARINE POLLUTANT.....	Not applicable.
IMO CLASSIFICATION.....	Not applicable.

## SECTION 15. REGULATORY INFORMATION

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

### U.S.

INGREDIENTS LISTED ON TSCA INVENTORY ..... Yes

HAZARDOUS UNDER HAZARD COMMUNICATION STANDARD.....	Yes
CERCLA SECTION 103 HAZARDOUS SUBSTANCES.....	No
SARA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE .....	No ingredients apply
SARA SECTION 311/312 HAZARD CATEGORIES.....	Chronic health
SARA SECTION 313 TOXIC RELEASE INVENTORY.....	No ingredients apply

**CANADIAN:**

LISTED ON THE DOMESTIC SUBSTANCES LIST.....	Yes
LISTED ON THE NATIONAL POLLUTANT RELEASE INVENTORY.....	No
WHMIS CLASSIFICATION: .....	D-2A

<b>SECTION 16. OTHER INFORMATION</b>
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The information in this Material Safety Data Sheet is based on the following references:

American Conference of Governmental Industrial Hygienists, 1991, Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition plus supplements.

American Conference of Governmental Industrial Hygienists, 2006, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.

Canadian Centre for Occupational Health and Safety (CCOHS) CHEMpendium Chemical Information Data Base, Disk A2 (2000-2).

Clayton and Clayton, 1994, Patty's Industrial Hygiene and Toxicology, Fourth Edition.

US National Library of Medicine, Toxicology Data Network, Hazardous Substances Data Bank; Web Site, Industry Canada, SOR/88-66, Controlled Products Regulations, as amended.

Merck & Co., Inc., 1983, The Merck Index, An Encyclopedia of Chemicals, Drugs, and Biologicals, Tenth Edition.

Sax, N. Irving, 1989, Dangerous Properties of Industrial Materials, Seventh Edition.

Urben, P. G., 1995, Bretherick's Handbook of Reactive Chemical Hazards, Fifth Edition.

U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, 1990, NIOSH Pocket Guide to Chemical Hazards. CD-ROM Edition DHHS (NIOSH) Publication No 99-115, April 1999

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