

MATERIAL SAFETY DATA SHEET

Section 1: Product and Company Information

Manufacturer: Kel Kem Ltd.
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Product Name: High Temp Cement

Product Code(s): KK0283 (Kel Kem brand)

Product Use: Bonding brick and gasket material in high temperature environments

Date: March 25, 2004

Prepared by: Gerry van Konynenburg

WHMIS Classification: D2A (Quartz)

Section 2: Composition/Information on Ingredients

Ingredient	CAS Number	Percent (Wt. %)	OSHA PEL (TWA) mg/m ³	NIOSH REL (TWA) mg/m ³
Kaolin, Hydrous Aluminum Silicate	1332-58-7	5 - 10	15 (total) 5 (resp)	10 (total) 5 (resp)
• Titanium Dioxide < 2.6%w	13463-67-7		5	Not available
• Free Silica (Quartz) < 1%w	14808-60-7		0.1	Not available
Crystalline Silica (Quartz)	14808-60-7	10 - 30	0.1	0.05
Wollastonite	13983-17-0	10 - 30	5 (resp)	10 (total) 3 (resp)
Bentonite Clay*	1302-78-9	5 - 10	See Crystalline Silica	See Crystalline Silica
Sodium silicate	1344-09-8	10 - 30	Not Established	Not Established
Water	7732-18-5	10 - 30	Not Established	Not Established

*Crystalline Silica (Quartz) is also a naturally occurring constituent of Bentonite Clay
The ingredients listed above are controlled products as defined in CPR, am. SOR/88-555 or 29 CFR 1910.1200

Section 3: Hazards Identification

Emergency Overview:

Alkaline - pH approaches 12.

No unusual fire or spill hazard. Dust from handling, cutting or tearing out of cured material may be irritating to skin, eyes, and mucous membranes. See Sections 7 & 8.

Primary Route(s) of Entry:

Inhalation: Yes (cured product dust) **Skin:** No **Other:** No **Ingestion:** No

Potential Adverse Health Effects:

Acute: Eye: May irritate and/or abrade eyes.

Skin: Possible dryness or irritation after prolonged contact, especially bruised or sensitive skin. Absorption is unlikely.

Inhalation: As supplied (aqueous paste) inhalation unlikely. Dust of this product may be irritating to the respiratory tract.

Ingestion: Not likely; causes minor damage to digestive tract (alkaline)

Chronic: Eye: None Known.

Skin: None known.

Inhalation: Prolonged or repeated inhalation of dusts of this product in excess of the stated PEL or TLV may cause lung disease (Silicosis). According to IARC, there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite from occupational sources.

Carcinogenicity: Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1, IARC, NTP).

California Proposition 65: This product contains crystalline silica, a chemical known to the State of California to cause cancer.

Signs and Symptoms of Overexposure: Coughing can result from overexposure to dust.

Medical Conditions Generally Aggravated by Exposure to Particles: Pre-existing lung diseases or other conditions.

WHMIS HAZARD SYMBOL(S):



Section 4: First Aid Measures

Eye contact: Flush product from eyes using large amounts of water. If irritation continues, seek medical attention.

Skin contact: Wash product from skin using soap and water. If irritation continues, seek medical attention.

Inhalation: If exposed to excessive levels of dust from cured product, remove victim to fresh air. Seek medical attention if coughing or other symptoms persist.

Ingestion: As shipped, product is not likely to be ingested, but if it occurs, do not induce vomiting. Patient should drink lots of water or milk. Seek medical attention.

Section 5: Fire Fighting Measures

Not Flammable (29 CFR 1910.1200).

Flash Point: Not Applicable

Flammability Limits: Lower Explosion Limit - Not Applicable

Upper Explosion Limit - Not Applicable

Autoignition Temperature: Not Applicable.

Hazardous Combustion Products: None.

Sensitivity to Mechanical Impact: None

Sensitivity to Static Discharge: None

Section 6: Accidental Release Measures

FRESH - Dilute with water and flush to sewer. Take care as diluted product may be slippery.

HARDENED - Chip loose and remove with regular trash.

Section 7: Handling and Storage

Handling: Avoid creating and breathing dust. Wet sawing is recommended because dry sawing creates dust that may contain crystalline silica. Avoid direct contact with product or dust from product by wearing protective clothing, using approved respiratory protection (NIOSH or MSHA Approved Dust Respirator) and wearing impermeable type gloves.

Storage: Keep containers closed. Store in clean steel or plastic containers. Separate from acids, reactive metals, and ammonium salts. Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers. Store in cool place. Keep from freezing.

Section 8: Exposure Controls/Personal Protection

Note: Refer to ASTM E1132-86 *Standard Practice for Health Requirements Relating to Occupational Exposure to Quartz Dust*.

Engineering Controls: Process enclosures, local exhaust ventilation, or other engineering process controls may be necessary to keep any air contaminants associated with this product within their TLV's if the user operation generates dust.

Respiratory Protection: NIOSH or MSHA Approved Dust Respirator. **Eye Protection:** Industrial-type safety glasses offer some protection; goggles or full face-piece respirators offer more.

Protective Gloves: Use as needed to prevent direct skin contact.

Othe Protective Clothing or Equipment: Safety shoes. Wear clothing designed to limit direct exposure to product, or dust associated with this product. Wash hands thoroughly before eating, drinking or smoking.

Section 9: Physical and Chemical Properties

Physical State	Liquid (Thixotropic paste)	Odour & Appearance	No odour, various colours
Odour Threshold (ppm)	Not applicable	Specific Gravity	Approx. 3.0
Vapour Pressure (MM)	Not applicable	Vapour Density (Air=1)	> 1.0
Evaporation Rate	Not applicable	Boiling Point (C)	> 100
Freezing Point (C)	< 0	Solubility in Water (20C)	< 30%
% Volatile (by weight)	Approx. 13%	pH	Approx. 12
Coefficient of water/oil distribution	Not known		

Section 10: Stability and Reactivity

Chemical Stability (Yes or No) Yes

If No, under which conditions?

Reactivity (Yes or No) Yes May react with ammonium salts resulting in evolution of ammonia gas.

Under what conditions?

Incompatibility to other substances (Materials to Avoid) Yes Flammable hydrogen gas may be produced on contact with aluminum, tin, lead, and zinc. Gels and generates heat when mixed with acid

Hazardous decomposition products Hydrogen

Section 11: Toxicological Information

Exposure Limits:	Not available for this product.
Effects of overexposure:	Repeated and prolonged inhalations may cause silicosis. This product contains micro crystalline silica which is a known carcinogen by inhalation.
Sensitization:	None known.
Carcinogenicity:	This product contains crystalline silica which is a known carcinogen by inhalation. Therefore, avoid long term inhalation of dried product residues.
Reproductive Toxicity:	None known.
Teratogenicity:	None known.
Mutagenicity:	None known.
Synergistic Products:	None known.
Other effects:	Pre-existing diseases or other conditions of the lungs, skin, eyes, and mucous membranes may be aggravated by exposure to this product.

Section 12: Ecological Information

Not established for this product.

Section 13: Disposal Considerations

Dried material may be disposed of a regular waste.

Section 14: Transport Information

TDG: Not Regulated

Section 15: Regulatory Information

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Kel Kem Ltd. considers this product to be hazardous as defined by the OSHA Hazardous Communications Standard (29 CFR 1910.1200). Section 2 chemicals, which must be addressed, and the summary of regulatory and other lists upon which they appear are:

Ingredient	CAS Number	LIST
Crystalline Silica (Total)	Not Applicable	Not Applicable
Cristabolite	14464-46-1	1, 2, 3, 4
Tridymite	15468-32-3	1, 2, 3, 4
Quartz	14808-60-7	1, 2, 3, 4
Calcium Aluminate Cement	12042-68-1	4

The lists are as follows:

- 1) ACGIH TLV "Threshold Limit Values" (1997)
- 2) OSHA Air Contaminates-Permissible Exposure Limits (1989)
- 3) Canadian Domestic Substance List
- 4) EPA TSCA Chemical Inventory List (1992)

Section 16: Other Information

Notice to the Reader: The information is provided in good faith and is correct to the best of Kel Kem Ltd.'s knowledge as of the date hereof and is designed to assist our customers; however Kel Kem Ltd. makes no representation as to its completeness or accuracy. Final determination of suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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