SECTION 1: IDENTIFICATION

PRODUCT NAME: Feldspar, various grades

SYNONYMS: Aluminosilicic acid, potassium salt

SECTION 2: COMPONENTS

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Component</th>
<th>Percentage</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>68476-25-5</td>
<td>Feldspar</td>
<td>93-94%</td>
<td>PEL - 5 mg/m³ TWA (respirable fraction)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TLV - 10 mg/m³ TWA (total dust)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MSHA - 5 mg/m³ TWA (respirable fraction)</td>
</tr>
<tr>
<td>14808-60-7</td>
<td>Crystalline Silica (Quartz)</td>
<td>6-7%</td>
<td>PEL - See Below</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TLV - 0.1 mg/m³ TWA (respirable fraction)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MSHA - See Below</td>
</tr>
</tbody>
</table>

OSHA PEL and MSHA Exposure Limit for Crystalline Silica (Respirable): 10 mg/m³

National Institute for Occupational Safety and Health (NIOSH) has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m³) as determined by a full shift sample up to 10 hour working day, 40 hours per week. The 1974 NIOSH Criteria for a recommended Standard for Occupational Exposure to Crystalline Silica should be consulted for more detailed information.

PEL means OSHA Permissible Exposure Limit.
TLV means American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value.
MSHA means Mine Safety and Health Administration Exposure Limit.
TWA means 8 hour time weighted average.

Note: The Permissible Exposure Limits (PEL) reported above are the pre-1989 limits that were reinstated by OSHA June 30, 1993 following a decision by the 11th Circuit Court of Appeals. These PELs are now being enforced by Federal OSHA. Be aware that more restrictive exposure limits may be enforced by some states, agencies or other
SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This product is a chemically inert, non-combustible mineral. A single exposure will not result in serious adverse effects. Excessive inhalation of dust may cause lung disease, silicosis, with symptoms of shortness of breath and reduced pulmonary function. See "Cancer Status" in this Section 3.

HEALTH HAZARDS:

Inhalation: Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have the following serious chronic health effects:

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer has determined that there is "sufficient evidence" for carcinogenicity of crystalline silica to experimental animals and "limited evidence" with respect to humans (Group 2A - probably carcinogenic to humans). The National Toxicology Program classifies respirable crystalline silica as "reasonably anticipated to be a carcinogen". IARC will be convening during October 1996 to update its evaluation of crystalline silica. The updated information, when ultimately published, will appear in IARC Monograph 68, Silica, Some Silicates and Organic Fibres and must be consulted in conjunction with the use of these materials.

Other Data with Possible Relevance to Human Health:

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) and kidney disease.

Inhalation of dust may cause irritation of the nose throat and respiratory passages. Feldspar is considered a nuisance dust.

Skin Contact: No adverse effects expected.
Eye Contact: Contact may cause mechanical irritation and possible injury.

Ingestion: No adverse effects expected for normal, incidental ingestion.

Chronic Health Effects: See "Inhalation" subsection above with respect to silicosis, cancer status and other data with possible relevance to human health.

Medical Conditions Aggravated by Exposure: Individuals with respiratory disease, including but not limited to, asthma and bronchitis, or subject to eye irritation should not be exposed to respirable quartz dust.

Signs and Symptoms of Exposure: There are generally no signs or symptoms of exposure to crystalline silica (quartz). See "Inhalation" subsection above for symptoms of silicosis.

SECTION 4: FIRST AID

Gross Inhalation: Remove victim to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get prompt medical attention.

Skin Contact: No first aid should be needed since this product does not affect the skin. Wash exposed skin with soap and water before breaks and at the end of the shift.

Eye Contact: Flush the eyes immediately with large amounts of running water, lifting the upper and lower lids occasionally. If irritation persists or for imbedded foreign body, get immediate medical attention.

Ingestion: If large amounts are swallowed, get immediate medical attention.

SECTION 5: FIRE AND EXPLOSION DATA

Flash Point (Method Used): Fully oxidized, will not burn.
Autoignition Temp: Will not burn.

Flammable Limits: LEL: Not applicable UEL: Not applicable

Extinguishing Media: This product will not burn but is compatible with all extinguishing media. Use any media that is appropriate for the surrounding fire.

Special Fire Fighting Procedures: None required with respect to this product. Firefighters should always wear self-contained breathing apparatus for fires indoors or in confined areas.

Unusual Fire and Explosion Hazards: None.

Hazardous Combustion Products: None.
SECTION 6: ACCIDENTAL RELEASE MEASURES

Wear appropriate protective equipment. If uncontaminated, collect using dustless method (HEPA vacuum or wet method) and place in appropriate container for use. If contaminated: a) use appropriate method for the nature of contamination, b) consider possible toxic or fire hazards associated with the contaminating substances. Collect for disposal.

SECTION 7: HANDLING AND STORAGE

Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a visible dust cloud. Use normal precautions against bag breakage or spills of bulk material. Avoid creation of respirable dust. Use good housekeeping in storage and use areas to prevent accumulation of dust in work area.

Use adequate ventilation and dust collection. Maintain and use proper, clean respiratory equipment (See Section 8). Launder clothing that has become dusty. WARN and TRAIN employees in accordance with state and federal regulations.

WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS - USERS IN CASE OF RESALE) BY POSTING AND OTHER MEANS OF THE HAZARDS AND OSHA PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT OSHA PRECAUTIONS.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Use local exhaust as required to maintain exposures below applicable occupational exposure limits. See also ACGIH "Industrial Ventilation - A Manual for Recommended Practice", (current edition).

Respiratory Protection: Use appropriate respiratory protection for respirable particulates based on consideration of airborne workplace concentrations and duration of exposure. Refer to the most recent standards of ANSI (Z88.2) OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57) and NIOSH Respirator Decision Logic.

Gloves: Protective gloves recommended.

Eye Protection: Safety glasses or goggles recommended.

Other Protective Equipment/Clothing: As appropriate for the work environment. Dusty clothing should be laundered before reuse.

9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: White powder or granules, odorless.

pH: Not applicable
Boiling Point: Not applicable
Melting Point: >2012°F/1100°C

Specific Gravity (water=1): 2.63
Vapor Pressure: Not applicable
Vapor Density: Not applicable
Solubility in Water: Negligible  Evaporation Rate: Not applicable
Percent Volatile: 0%

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable
Conditions to Avoid: None
Incompatibility: Powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, etc.

Hazardous Decomposition Products: Silica will dissolve in hydrofluoric acid producing a corrosive gas, silicon tetrafluoride.

Hazardous Polymerization: Will not occur.
Conditions to Avoid: None

SECTION 11: TOXICOLOGICAL INFORMATION

No acute toxicity data is available for product or components. Refer to Section 3 for health hazard information.

SECTION 12: ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not expected to present an environmental hazard.

SECTION 13: DISPOSAL

Waste Disposal Method: If uncontaminated, dispose as an inert, non-metallic mineral. If contaminated, dispose in accordance with all applicable local, state/provincial and federal regulations.

SECTION 14: TRANSPORTATION DATA

U.S. DOT HAZARD CLASSIFICATION
Proper Shipping Name: Not Regulated
Technical Name: N/A
UN Number: N/A
Hazard Class/Packing Group: N/A
Labels Required: None
DOT Packaging Requirements: N/A
Exceptions: N/A
SECTION 15: OTHER REGULATORY INFORMATION

SARA 311/312: Hazard Categories for SARA Section 311/312 Reporting:
Chronic Health

SARA 313 This Product Contains the Following Chemicals Subject to Annual Release
Reporting Requirements Under the SARA Section 313 (40 CFR 372):
None

CERCLA Section 103 Reportable Quantity: None

California Proposition 65: This Product contains the following substances known to
the State of California to cause cancer and/or reproductive harm: This product
contains crystalline silica (respirable).

Toxic Substances Control Act: All of the components of this product are listed on the
EPA TSCA Inventory or exempt from notification requirements.

European Inventory of Commercial Chemical Substances: All of the components of this
product are listed on the EINECS Inventory or exempt from notification
requirements. (The EINECS number for Quartz: 231-545-4)

Canadian Environmental Protection Act: All the components of this product are listed
on the Canadian Domestic Substances List or exempt from notification requirements.

Japan MITI: All of the components of this product are existing chemical substances as
defined in the Chemical Substance Control Law.

Australian Inventory of Chemical Substances: All of the components of this product
are listed on the AICS inventory or exempt from notification requirements.

Canadian WHMIS Classification: Class D, Division 2, Subdivision A (Very Toxic
Material causing other Toxic Effects)

16: OTHER INFORMATION

European Community Labeling Classification: Harmful (Xn)

European Community Risk and Safety Phrases: R40, R49, S22

NFPA Hazard Rating: Health: 1 Fire: 0 Reactivity: 0

HMIS Hazard Rating: Health: * Fire: 0 Reactivity: 0
* Warning - Chronic health effect possible - inhalation of silica dust may cause lung
injury/disease (silicosis). Take appropriate measures to avoid breathing dust. See
Section 3.

References:
Registry for Toxic Effects of Chemical Substances (RTECS), 1995
Patty's Industrial Hygiene and Toxicology
NTP Seventh Annual Report on Carcinogens, 1994
IARC Monograph Volume 42, Silica and some Silicates, 1987

Page 6 of 7 Pages
Revision Summary: Revise Cancer Status (Section 3).

CREATION DATE: October 23, 1995

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