MATERIAL SAFETY DATA SHEET  
MSDS: 018

Identity (As used on Label and List)  
F-1 and F-4 Feldspar, Various Grades

SECTION I:  

Manufacturer’s Name: UNMIN CORPORATION  
Address: Number, Street, City, State and ZIP Code  
258 Elm Street  
New Canaan, CT 06840  
Emergency Telephone Number: (203) 966-8880  
Telephone Number for Information: (203) 966-8880  
Date Prepared: May 20, 1992

SECTION II: HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Components and Hazardous Components [Specific Chemical Identity; Common Name(s)]:  
Feldspar KAlSi₃O₈, (Na, Ca)(Al, Si)₃AlSi₃O₈

OSHA PEL  |  ACGIH TLV  |  CAS #  |  % (optional)
---|---|---|---
Feldspar -none established-  |  5mg/M³ (Resp.)  |  68476-25-5  |  approx. 93-94%

Hazardous Component:  
Free Silica (Quartz) SiO₂  |  14808-60-7  |  approx. 6-7%

OSHA PEL: Exposure to airborne crystalline silica shall not exceed an 8-hour time-weighted average limit as stated in 29 CFR § 1910.1000 Table Z-3 for Mineral Dusts, specifically "Silica: Crystalline: Quartz (respirable)."

ACGIH TLV: Crystalline Quartz  
TLV-TWA = 0.1 mg/M³ (respirable dust)  
See Threshold Limit Value and Biological Exposure Indices, current edition American Conference of Governmental Industrial Hygienists.

NIOSH has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter of air (.05 mg/M³) averaged over a work shift of up to 10 hours per day, 40 hours per week. The NIOSH Criteria Document for Crystalline Silica should be consulted for more detailed information.

Naturally Occurring Contaminants:
- Antimony < 9.8 PPB  
- Arsenic** < 95.0 PPB  
- Barium 1420 PPB  
- Cadmium < 260 PPB  
- Chromium < 685 PPB  
- Lead** 180.0 PPB  
- Mercury 10 PPB  
- Selenium 160 PPB  
- Silver 89 PPB

SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: Not Applicable  
Specific Gravity (H₂O=1): 2.63

Vapor Pressure (mm Hg): Not Applicable  
Melting Point: Exceeds 1100°C/2012°F

** Contains naturally occurring trace amounts of metal listed in California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) in concentrations listed above.
Vapor Density (AIR=1): Not Applicable
Evaporation Rate (Butyl Acetate=1): Not Applicable
Solubility in Water: Negligible
Appearance and Odor: F-1 grade - Odorless White Granules
F-4 grades - Odorless White Powder

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): Fully oxidized, will not burn.
Flammable Limits: Fully oxidized, will not burn.
LEL: Fully oxidized will not explode.
UEL: Fully oxidized, will not explode.
Extinguishing Media: Fully oxidized, will not burn.
Special Fire Fighting Procedures: None
Unusual Fire and Explosion Hazards: None

SECTION V: REACTIVITY DATA

Stability: Stable
Conditions to Avoid: None
Incompatibility (Materials to Avoid): Silica will dissolve in hydrofluoric acid and produce a corrosive gas—silicon tetrafluoride. Contact with powerful oxidizing agents fluorine, chlorine, trifluoride, manganese trioxide and oxygen difluoride may cause fires.
Hazardous Decomposition or Byproducts: None
Hazardous Polymerization: Will not occur
Conditions to Avoid: None

SECTION VI: HEALTH HAZARD DATA

Route(s) of Entry: Inhalation? Yes  Skin? No  Ingestion? No
Health Hazards (Acute and Chronic): Excessive inhalation of dust may result in pneumonoconiosis, silicosis, pulmonary fibrosis. The International Agency for Research on Cancer (IARC) has evaluated in Volume 42, Monographs on the Evaluation of the Carcinogenicity Risk of Chemicals to Humans, Silica and Some Silicates (1987), that there is "sufficient evidence for the carcinogenicity of crystalline silica to experimental animals" and "limited evidence" with respect to humans.
Carcinogenicity:
NTP? Yes (Respirable Crystalline Silica)
IARC Monographs? Yes Level 2A Grouping (Crystalline Silica)
OSHA Regulated? No
Signs and Symptoms of Exposure: Symptoms of excessive exposure include shortness of breath and reduced pulmonary function. This inert material gives no potential acute toxic hazard.
Medical Conditions Generally Aggravated by Exposure: Individuals with respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation should be precluded from exposure.
Emergency and First Aid Procedures: Eyes—Flush with water. Gross Inhalation—Remove to fresh air. Give oxygen with artificial respiration as needed. Seek medical attention for treatment, observation and support as needed.
SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material Is Released or Spilled: If uncontaminated—collect, using dustless method (water or vacuum). If contaminated—use appropriate method in light of nature of contamination. Use appropriate container.

Waste Disposal Method: If uncontaminated, dispose as an inert, non-metallic mineral. If contaminated—use appropriate method in light of contamination in accordance with federal, state, and local laws.

Precautions to Be Taken in Handling and Storing: Normal precautions against bag breakage or spills of bulk material. Avoid creation of respirable dust.

Other Precautions: Use adequate ventilation and dust collection. Do not permit dust to accumulate in work area. Maintain and use proper and clean respiratory equipment.

Clean clothing which has become dusty. See Section VIII. WARN and TRAIN your EMPLOYEES and WARN your CUSTOMERS (in the event of resale) in accordance with all applicable federal and state "Right to Know" laws and regulations.

SECTION VIII: CONTROL MEASURES

Respiratory Protection (Specify Type): Use conventional particulate respiratory protection based on consideration of airborne concentrations and duration of exposure. See most recent standards of the American National Standard Institute (ANSI Z.88.2), the Occupational Safety and Health Administration (OSHA) (29 CFR Part 1910.134), the Mine Safety and Health Administration (MSHA) (30 CFR Part 56) and the National Institute for Occupational Safety and Health (NIOSH) (NIOSH Pocket Guide to Chemical Hazards).

Ventilation:

- Local Exhaust: To meet PEL requirements
- Special: Not Applicable
- Mechanical (General): To meet PEL requirements
- Other: To meet other PEL requirements

Protective Gloves: Recommended

Eye Protection: Recommended

Other Protective Clothing or Equipment: As appropriate in light of specific application.

Work/Hygienic Practices: Avoid creating and breathing dust.

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