IDENTITY (As used on Label and List)
F-1 and F-4: Feldspar "Various Grades"

SECTION I:

Manufacturer's Name
UNIMIN 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

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)."

Crystalline Quartz (Respirable) 0.1 mg/M³

ACGIH TLV: Crystalline Quartz
TLV-TWA = 0.1 mg/M³ (respirable dust)

FULL 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:

<table>
<thead>
<tr>
<th>Antimony</th>
<th>&lt; 9.8 PPB</th>
<th>Lead**</th>
<th>180.0 PPB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic**</td>
<td>&lt; 95.0 PPB</td>
<td>Mercury</td>
<td>10 PPB</td>
</tr>
<tr>
<td>Barium</td>
<td>1420 PPB</td>
<td>Selenium</td>
<td>160 PPB</td>
</tr>
<tr>
<td>Cadmium</td>
<td>&lt; 260 PPB</td>
<td>Silver</td>
<td>89 PPB</td>
</tr>
<tr>
<td>Chromium</td>
<td>&lt; 685 PPB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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
pneumoconiosis, 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:
NTF? 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. Cross 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 Z88.2), 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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