IDENTITY (As used on Label and List)
Feldspar F-4, 170 & 200 mesh

SECTION I: PRODUCT AND COMPANY IDENTIFICATION
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 6, 1988

SECTION II: HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Components and Hazardous Components (Specific Chemical Identity; Common Name(s): Feldspar F-4, 170 & 200 mesh

OSHA PEL
ACGIH TLV
Other Limits
Recommended
% (optional)
Feldspar
-not established-
5mg/M³ (Resp.)
approx. 93-94%

Free Silica (Quartz)
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)."

\[
\text{Mppcf} \quad \text{Mg/M³} \\
\text{Crystalline Quartz (Respirable)} \quad \frac{250}{\% \text{ SiO}_2 + 5} \quad \frac{10 \text{ mg/M³}}{\% \text{ SiO}_2 + 2} \\
\text{Quartz (Total Dust)} \quad \frac{30 \text{ mg/M³}}{\% \text{ SiO}_2 + 2}
\]

ACGIH TLV: Crystalline Quartz
TLV-TWA = 0.1 mg/M³ (respirable dust)
See Threshold Limit Value and Biological Exposure Indices for 1987-1988 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 (50 ug/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.

SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point
4046°F
Specific Gravity (H₂O=1)
2.65

Vapor Pressure (mm Hg.
N/A
Melting Point
2930°F

Vapor Density (AIR=1)
N/A
Evaporation Rate
(Butyl Acetate=1)
N/A

Solubility in Water
Insoluble

Appearance and Odor
White Crystals--Odorless
### Section IV: Fire and Explosion Hazard Data

<table>
<thead>
<tr>
<th>Flash Point (Method Used)</th>
<th>N/A</th>
<th>Flammable Limits</th>
<th>N/A</th>
<th>LEL</th>
<th>N/A</th>
<th>UEL</th>
<th>N/A</th>
</tr>
</thead>
</table>

### Extinguishing Media

N/A

### Special Fire Fighting Procedures

N/A

### Unusual Fire and Explosion Hazards

N/A

---

### Section V: Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>Unstable</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conditions to Avoid</td>
<td>None</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Hazardous Polymerization</th>
<th>May Occur</th>
<th>Conditions to Avoid</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Will not Occur</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

---

### 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 respiratory disease, including silicosis, pneumoconiosis and 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? No

IARC Monographs? Yes

OSHA Regulated? No

Level 2A Grouping

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 pulmonary and/or 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 running water. Gross Inhalation—Remove to fresh air. Give oxygen with artificial respiration as needed. Seek medical attention for treatment, observation and support as needed.

---

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:
Take 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 considerations 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) and the Mine Safety and
Health Administration (MSHA) (30 CFR Part 56).

<table>
<thead>
<tr>
<th>Ventilation</th>
<th>Special:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Exhaust:</td>
<td>Other:</td>
</tr>
<tr>
<td>To meet PEL requirements</td>
<td>To meet other PEL requirements</td>
</tr>
<tr>
<td>Mechanical (General):</td>
<td>N/A</td>
</tr>
<tr>
<td>To meet PEL requirements</td>
<td></td>
</tr>
</tbody>
</table>

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.

THE DATA IN THIS MATERIAL SAFETY DATA SHEET RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED
HEREIN AND DOES NOT RELATE TO USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PROCESS.
THE INFORMATION SET FORTH HEREIN IS BASED ON TECHNICAL DATA THAT UNIMIN CORPORATION BELIEVES
RELIABLE. IT IS INTENDED FOR USE BY PERSONS HAVING TECHNICAL SKILL AND AT THEIR OWN
DISCRETION AND RISK. SINCE CONDITIONS OF USE ARE OUTSIDE OUR CONTROL, WE MAKE NO
WARRANTIES, EXPRESSED OR IMPLIED, AND ASSUME NO LIABILITY IN CONNECTION WITH ANY USE OF
THIS INFORMATION. NOTHING HEREIN IS TO BE TAKEN AS A LICENSE TO OPERATE UNDER OR A
RECOMMENDATION TO INFRINGE ANY PATENTS. ANY USE OF THESE DATA AND INFORMATION MUST BE
DETERMINED BY THE USER TO BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS AND
REGULATIONS.