MATERIAL SAFETY DATA SHEET

Elementis Pigments Inc.
2051 Lynch Avenue
East St. Louis, IL 62204

Product: UMBERS
MSDS No.: PIGMENT/EPI-025
Revision: Rev. 2
Date: September 2002

HAZARD MATERIAL IDENTIFICATION SYSTEM

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Flammability Hazard</th>
<th>Reactivity Hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1* - Slight</td>
<td>0 - Minimal</td>
<td>0 - Minimal</td>
<td>E - Glasses, Gloves, Dust Resp</td>
</tr>
</tbody>
</table>

SECTION I.

TRADE/MATERIAL NAME: UMBERS
DESCRIPTION: Raw Umbers, Burnt Umbers
OTHER DESIGNATIONS: RU-9546, BU-1561, BU-5250F, BU-5350F, BU-5452, BU-7052
CAS: 12713-03-0
CHEMICAL NAME: Fe₂O₃ + MnO₂ + SiO₂ + H₂O
MANUFACTURER: Elementis Pigments Inc.
2051 Lynch Avenue
East St. Louis, IL 62204

PHONE: 618-646-2201
E. St. Louis Plant

SECTION II.

INGREDIENTS AND HAZARDS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS NUMBER</th>
<th>PERCENT</th>
<th>EXPOSURE LIMITS(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron Oxide</td>
<td>1332-37-2</td>
<td>46-65</td>
<td>ACGIH TLV: 5 mg/M³ TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA STEL: 10 ppm (Iron Oxide Fume as Fe)</td>
</tr>
<tr>
<td>Silica - Quartz</td>
<td>14808-60-7</td>
<td>1-4</td>
<td>ACGIH TLV: 0.1 mg/M³ TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA STEL: 10 ppm (Respirable Dust)</td>
</tr>
<tr>
<td>Manganese Oxide</td>
<td>1313-13-9</td>
<td>5-15</td>
<td>ACGIH TLV: 5 mg/M³ TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Manganese Dust &amp; Compounds)</td>
</tr>
<tr>
<td>Aluminum Oxide</td>
<td>1344-28-1</td>
<td>2-12</td>
<td>ACGIH TLV: 10 mg/M³ TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Compound as AI)</td>
</tr>
</tbody>
</table>

(Ingredients and Hazards continued on next page)
SARA TITLE III: Section 313 Supplier Notification

This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of the 1986 and of 40 CFR 372:

Manganese Compound 5-15% CAS# 1313-13-9

This information must be included in all MSDSs that are copied and distributed for this material.

<table>
<thead>
<tr>
<th>SECTION III.</th>
<th>PHYSICAL/ CHEMICAL CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance and Odor:</td>
<td>Brown to Dark Brown Powder, No Odor</td>
</tr>
<tr>
<td>Solubility in Water (%):</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Specific Gravity (H₂O=1):</td>
<td>3.1-3.8</td>
</tr>
</tbody>
</table>

SECTION IV. FIRE AND EXPLOSION DATA

| Flash Point (method): | If exposed to open flame, umber will smolder. Limits: LEL%: N/A UEL%: N/A |
| Extinguishing Media: | As appropriate for surrounding combustibles. When exposed to an open flame, umber will support oxidation, generating heat. umber will not self-ignite. |
| Unusual Fire or Explosion Hazards: | None |
| Special Fire-fighting Procedures: | Firefighters should wear self-contained breathing apparatus. |

SECTION V. REACTIVITY DATA

Material is stable - Hazardous polymerization will not occur

Chemical incompatibilities: MnO₂ is a powerful oxidizer. It must not be heated or rubbed against easily oxidizable matter. Should not be combined with flammable materials.

Hazardous Decomposition Products: None.
SECTION VI. HEALTH HAZARD DATA

Summary of Health Risks and Symptoms of Exposure: Skin contact may cause mechanical irritation due to the abrasion. Eye contact will result in no specific effects other than general particulate irritation in the eye. Not absorbed by the body. Excessive exposure above the TLV can give mild pulmonary irritation.

Principal Routes of Entry: Inhalation, ingestion.

Acute Effects: Inhalation of the dust may cause mechanical irritation to the respiratory tract. Skin and eye contact may cause a mechanical abrasion irritation.

Chronic Health Effects(s): Long term overexposure to silica causes silicosis, a form of pulmonary fibrosis. Continued exposure to silica can lead to cardiopulmonary impairment.

Emergency and First Aid Procedures:

Eye Contact: Flush thoroughly with plenty of water for at least 15 minutes. Get medical help if irritation persists.

Skin Contact: Wash skin with mild soap and water.

Inhalation: Remove to fresh air. Get medical help for any breathing difficulty.

Ingestion: If conscious, give large quantities of water to induce vomiting. Get medical attention.

*Crystalline silica which may be present in quantities greater than 0.1% has been reviewed by IARC. IARC believes there is sufficient evidence to conclude that Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans.

SECTION VII. PRECAUTIONS FOR SAFE HANDLING, USE OR DISPOSAL

Spill / Leak procedures: Those involved in clean up of spills should use respiratory protection for airborne dust. Vacuum or scoop up spilled material for recovery or disposal, avoiding dusting conditions and using good ventilation. Wetting the spill with a water spray may help to keep the airborne dust levels down.

Waste management / disposal: Refer to any local, State or Federal regulations for specific disposal information. Pursuant to 40 CFR part 261 of the Resource Conservation & Recovery Act (RCRA) regulations currently in effect, discarded Umbers would not be classified as a hazardous waste.

Precautions to be taken in handling and storing: For transportation emergencies, call CHEMTREC, 24 hour information service, (800) 424-9300.

Manganese compounds are reportable under SARA Title III, Section 313.
SECTION VIII. SPECIAL PROTECTION INFORMATION

Personal protective equipment:

Goggles: Safety glasses with side shields or dust tight goggles.

Gloves: Leather or rubber gloves.

Respirator: If exposure limits are exceeded, an appropriate NIOSH approved dust respirator should be used.

Workplace Considerations:

Ventilation: Provide adequate exhaust ventilation to meet TLV requirements in the workplace. An exhaust filter system may be required to avoid environmental contamination.

Safety Stations: An eye wash station should be available to the area of use.

Other: Good industrial hygiene practice requires that employee exposure be maintained below the recommended TLV. This is preferably achieved through the provision of adequate ventilation where necessary. Where dust cannot be controlled in this way, personal respiratory protection should be employed.

SECTION IX. SPECIAL PRECAUTIONS

DOT Class: Not regulated

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