MATERIAL SAFETY DATA SHEET

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

Section I  MANUFACTURER'S INFORMATION

Manufacturer’s Name and Address: American Colloid Company
One North Arlington
1500 West Shure Drive
Arlington Heights, Illinois 60004

Date Prepared: April 28, 2005
Telephone: 847-392-4600 / Fax: 847-577-5560

EMERGENCY CONTACT: CHEMTREC 800-424-9300
E-mail: www.colloid.com

Section II  HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

PRODUCT IDENTIFICATION:

Chemical Name: Leonardite, naturally occurring carbonaceous mineral
Chemical Family: North Dakota Crude Humic Acids
CAS No: 1415-93-6 (Humic Acid is on the TSCA inventory)
NFPA/HMIS: Health – 1*, Fire - 1, Reactivity - 0, Specific Hazard - See Section VI.
DOT Class: Not Regulated

HAZARDOUS COMPONENTS:

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>OSHA PEL (TWA)</th>
<th>ACGIH TLV (TWA)</th>
<th>NIOSH REL (TWA)</th>
<th>% (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz: CAS# 14808-60-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(naturally occurring constituent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.1 mg/m³</td>
<td>50 µg/m³</td>
<td>50 µg/m³</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Respirable Coal Dust:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4 mg/m³</td>
<td>0.9 mg/m³</td>
<td>1.0 mg/m³</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

WARNING: Chronic health effect possible - this product contains a small amount of respirable quartz (silica). A single exposure may not result in serious adverse effects but excessive occupational, uncontrolled inhalation of dust may cause lung injury/disease, silicosis, with symptoms of shortness of breath and reduced pulmonary function.

OSHA PEL - OSHA Permissible Exposure Limit, 8 hour Time-Weighted Average
ACGIH TLV - American Conference of Governmental Industrial Hygienists Threshold Limit Value, 8 hr. TWA, 40 hr. week
NIOSH REL - National Institute for Occupational Safety and Health, Recommended Exposure Limit, 10 hr. TWA, 40 hr. week

Section III  PHYSICAL/CHEMICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg.)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor Density (Air = 1.0)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>pH (2 g/100 ml H₂O)</td>
<td>3.5 – 5.0</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Dark brown to black powder, almost odorless</td>
</tr>
<tr>
<td>Specific Gravity (Water = 1.0)</td>
<td>1.5</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1.0)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Slight</td>
</tr>
</tbody>
</table>
PRODUCT NAME: SUPER-LIG (LIGNITE)

Section IV  FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used) - > 400° F Cleveland Cup Method
Extinguishing Media - water, fog, foam, rock dust
Flammable Limits - Not Available LEL - Not Available UEL - Not Available
Special Fire Fighting Procedure - Do not stir up dust with hose streams
Unusual Fire/Explosion Hazards - May explode if dust is suspended in air and ignition source is present

Section V  REACTIVITY DATA

Stability: Stable Conditions to Avoid - None Known
Incompatibility (Materials to Avoid): None Known
Hazardous Decomposition or By-products: When burned: CO, CO₂, SO₂, hydrocarbons (including coal tar pitch and unknowns) may be detected.
Hazardous Polymerization: Will Not Occur Conditions to Avoid: None Known

Section VI  HEALTH HAZARD DATA

Route(s) of Entry: Inhalation? Yes Skin? No Ingestion? No
Health Hazards (Acute and Chronic): May cause delayed respiratory disease if dust inhaled over a prolonged period of time.
Inhalation: Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may cause irritation of the nose, throat and respiratory passages. 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 crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1 - carcinogenic to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibers (published in June 1997) in conjunction with the use of these materials.

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

Medical Conditions Generally 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 crystalline silica dust.
Section VI  HEALTH HAZARD DATA (continued)

Emergency and First Aid Procedures:

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

**Gross Inhalation** – Remove 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.

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

Section VII  PRECAUTIONS FOR SAFE HANDLING AND USE

**Steps to be Taken in Case Material is Released or Spilled:** Vacuum if possible to avoid generating airborne dust. Avoid breathing dust. Wear an approved respirator. Avoid adding water; product will become slippery when wet. Waste Disposal Method – Follow federal, state and local regulations for solid waste.

**Handling and Storing Precautions:** Do not breathe dust. 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 areas. Use adequate ventilation and dust collection. Maintain and use proper, clean respiratory equipment. Launder clothing that has become dusty. Empty containers (bags, bulk containers, storage tanks, etc.) retain silica residue and must be handled in accordance with provisions of this Material Safety Data Sheet. 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 VIII  CONTROL MEASURES

**Respiratory Protection:** Use appropriate respiratory protection for respirable particulate based on consideration of airborne workplace concentration and duration of exposure arising from intended end use. 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.

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

Section VIII  CONTROL MEASURES (continued)

**Protective Gloves:** Recommended.  
**Eye Protection:** Safety glasses or goggles recommended.  
**Other Protective Clothing or Equipment:** As appropriate for work environment. Dusty clothing should be laundered before reuse.  

**Transportation Data / U.S. DOT Hazard Classification**

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class/Packing Group:</td>
<td>N/A</td>
</tr>
<tr>
<td>DOT Packaging Requirements:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exceptions:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

| Technical Name: | N/A |
| UN Number: | N/A |
| Labels Required: | None |
Section IX  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: crystalline silica (respirable).

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

European Inventory of Commercial Chemical Substances: All the components of this product are listed on the EINECS Inventory or exempt from notification requirements. (The EINECS number for Quartz: 231-545-5)

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

Canadian WHMIS Classification: This product contains crystalline silica (respirable), classified as a Class D, Division 2, Subdivision A substance.

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

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

Canadian WHMIS Classification: This product contains crystalline silica (respirable), classified as a Class D, Division 2, Subdivision A substance.

REFERENCES:
Registry for Toxic Effects of Chemical Substances (RTECS), 1995.
Patty’s Industrial Hygiene and Toxicology.

The information herein has been compiled from sources believed to be reliable and is accurate to the best of our knowledge. However, American Colloid Company cannot give guarantees regarding information from other sources, and expressly does not make any warranties, nor assumes any liability, for its use.