The Clay Minerals Society  
The Source Clays Repository  
P.O. Box 4416, Boulder, Colorado  80306  

Phone Number: (303) 444-6405

Product Name: ISCz-1  
Generic Name: Illite – Smectite Mixed Layer (70/30)  
Source: Czechoslovakia

2. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>% Weight</th>
<th>Exposure Limits</th>
</tr>
</thead>
</table>
|Mixture of Illite and Smectite| 12173-60-3 | 90-98 | 5 mg/m3 (respirable) PEL-TWA  
| | 12199-37-0 | | 3 mg/m3 (respirable) TLV-TWA  
| | | | 10 mg/m3 (inhalable dust) TLV-TWA|
|Crystalline Silica - Quartz| 14808-60-7 | <5 | 10 mg/m3/% Si O₂ +2 PEL-TWA  
| | | | 0.05 mg/m³ TLV-TWA|

PEL - OSHA Permissible Exposure Limit; TLV - ACGIH Threshold Limit Value; TWA - Time Weighted Average

3. Hazards Identification

Emergency Overview:  
Buff or tan rock with yellow, black specks with no odor. This product is a naturally occurring mineral which contains a small amount of crystalline silica in the form of quartz. Prolonged or repeated inhalation of large amounts of crystalline silica over an extended period of time may result in lung damage and increases the risk of lung cancer.

Acute Health Effects:  
Eye Contact: Contact may cause mechanical irritation with redness, tearing and pain.

Skin Contact: May cause drying of the skin.

Inhalation: Inhalation of high concentrations of dust may cause mucous membrane and respiratory irritation.

Ingestion: Swallowing large amounts may cause gastrointestinal irritation.

Chronic Health Effects: This product contains a small amount of crystalline silica. Repeated inhalation of large amounts of silica dust over an extended period of time may result in a progressive, disabling disease, silicosis. Symptoms include shortness of breath, chest pain and reduced lung function.
3. Hazards Identification (continued)

Carcinogenicity: The International Agency for Research on Cancer has determined that respirable crystalline silica is a known human carcinogen (Group 1). The National Toxicology Program classifies respirable crystalline silica as a substance known to be a carcinogen.

Medical Conditions Aggravated by Exposure: Persons with pre-existing respiratory disorders may be at an increased risk from exposure.

4. First Aid Measures

Eye: Flush immediately with large amounts of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Avoid rubbing the eyes as this may increase irritation. If irritation persists get medical attention.

Skin: No first aid is normally needed. Wash exposed skin with soap and water after use. If irritation or rash develops get medical attention. Use skin lotion if dryness occurs.

Inhalation: No first aid normally needed. If irritation develops, remove person from source of exposure to fresh air. If symptoms persist get medical attention.

Ingestion: Clear material from mouth. No harmful effects are expected from a small ingestion. If large amounts are swallowed, get medical attention.

5. Firefighting Measures

Flashpoint: Not Applicable
Autoignition Temperature: Not Applicable

Lower Explosion Limit: Not Applicable
Upper Explosion Limit: Not Applicable

Extinguishing Media: This product is not combustible. Use any media that is appropriate for the surrounding fire.

Special Fire Fighting Procedures: Wear positive pressure, self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards: None known.

Combustion Products: None known.

6. Accidental Release Measures

Wear appropriate protective clothing and equipment. Sweep up or vacuum, avoiding the creation of airborne dust, and collect into a suitable container for disposal.

7. Handling and Storage

Handling: Avoid generating and breathing dust. Avoid eye contact. Use with adequate ventilation. If clothing becomes contaminated, remove and launder before re-use. Wash thoroughly after handling.

Storage: Store in a dry area.
8. Exposure Controls / Personal Protection

**Engineering Controls:** General ventilation should be adequate for normal use. For operations where the TLV may be exceeded, mechanical ventilation such as local exhaust may be needed to maintain exposure levels below applicable limits.

**Personal Protective Equipment (PPE)**

**Eye Protection:** None needed for normal use. For dusty conditions, safety glasses or goggles can be used.

**Skin Protection:** None needed for normal use.

**Respiratory Protection:** None needed under normal use conditions. For operations where the exposure limit may be exceeded, a NIOSH approved high efficiency particulate respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>% Solubility in Water</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Odor/Appearance</td>
<td>Buff or tan rock with yellow, black specks with no odor.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>2.2 (approximately)</td>
</tr>
<tr>
<td>% Volatile</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate=1)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Octanol/Water Partition Coefficient</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

**Stability:** Material is stable.

**Incompatibility:** Contact with hydrofluoric acid may generate heat.

**Hazardous Reactions - Decomposition Products:** None known.

**Hazardous Polymerization:** Will not occur.

11. Toxicological Information

This product is composed of natural clay minerals which are not acutely toxic by ingestion, inhalation or dermal contact, therefore, no toxicity values have been established.

12. Ecological Information

No ecotoxicity data is available at this time.

13. Disposal Considerations

Dispose in accordance with federal, state and local regulations.

14. Transport Information

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Department of Transportation (DOT)</td>
<td>Air - IATA/ICAO</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>ID Number</td>
<td>N/A</td>
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<tr>
<td>Hazard Class</td>
<td>N/A</td>
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<tr>
<td>Packing Group</td>
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<tr>
<td>Markings</td>
<td>N/A</td>
</tr>
<tr>
<td>Label</td>
<td>N/A</td>
</tr>
</tbody>
</table>

15. Regulatory Information
U.S. Regulations
Comprehensive Environmental Response and Liability Act of 1980 (CERCLA) Reportable Quantity:
This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent
release reporting requirements. Report spills as required under federal, state and local regulations.

Superfund Amendments and Reauthorization Act (SARA) Title III Information:
SARA Section 311/312 Hazard Categories: None
This product contains the following toxic chemical(s) subject to reporting requirements of SARA
Section 313: None

California Proposition 65: This product contains crystalline silica, as does most natural clay minerals.
Respirable crystalline silica is listed by California as a chemical known to cause cancer.

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

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

Canadian WHIMIS Classification: Class D, Division 2, Subdivision A (Carcinogen)

European Inventory of Commercial Chemical Substances: All of the components of this product are listed on
the EINECS Inventory or exempt from notification requirements. Smectite EINECS No. 235-374-6

EU Labeling Classification and R & S Phrases: Not Classified as Dangerous.

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

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

16. Other Information

| NFPA Ratings: | Health: 1 | Flammability: 0 | Reactivity: 0 |
| HMIS Ratings: | Health: 1* | Flammability: 0 | Reactivity: 0 |