MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTITY:

Product Name: ECCALITE

Common Name: ZEOLITE / CLINOPTILOLITE

Chemical Name: MICROPOROUS ALUMINIUM SILICATE

Manufacturer’s Name: ECCA HOLDINGS (PTY) LTD.
CAPE BENTONITE

Manufacturer’s Address: PO BOX 8118
CENTURION 0046
SOUTH AFRICA

Emergency Telephone Number: (+27) 12 643 5880

SECTION 2: HAZARDOUS INGREDIENTS:

Zeolite is a natural material that consists of variable proportions of various minerals, including Clinoptilolite and quartz. Cape Bentonite products consist primarily of Montmorillonite (Bentonite), Clinoptilolite (Zeolite) and other minor natural minerals.

<table>
<thead>
<tr>
<th>Hazardous Ingredient</th>
<th>Approximate Weight %</th>
<th>CAS no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinoptilolite</td>
<td>&gt;90%</td>
<td>1318-93-0</td>
</tr>
<tr>
<td>Quartz</td>
<td>&lt;10%</td>
<td>14808-60-7</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION AND CAUTIONS:

Zeolite is of low acute toxicity. Long-term exposure to any respiritible mineral dust could cause slight effects on the respiratory system. Wet Zeolite spillage constitutes a minor slipping hazard.
Primary hazards: This product does not present any primary hazards.

Specific hazards: Respiratory effect: possible slight irritation from dust. May aggravate pre-existing difficult respiratory conditions.

Cautions: Inhalation of dust may cause slight irritation. Material is slightly slippery when wet.

OES (Occupational Exposure Standard) for respirable Zeolite dust: 5mg/m³ in an 8 hours time weighted average reference period

HMIS Hazard Classification: Health: 1 (possible chronic health effects) (See Section 11) Flammable: 0 Reactivity: 0

SECTION 4: FIRST AID MEASURES:

Eye Contact: Flush with copious amount of fresh water. Eyelids may become sticky. Avoid rubbing eyes. If irritation develops, seek medical attention.

Skin Contact: Wash with soap and water. Bentonite is a desiccant and may cause dry skin. Repeated contact may also cause slight irritation. If irritation develops, seek medical attention.

Inhalation: Move to dust free fresh air. If respiratory distress develops, seek medical attention.

Ingestion: No adverse effect expected. Rinse mouth out with water. Seek medical attention if significant quantities have been ingested

SECTION 5: FIRE FIGHTING MEASURES:

Explosion Data: Not explosive.

Extinguishing Media: Product will not burn.

Flammability: Not flammable or combustible.

Flash Point: Not applicable.

Auto Ignition: Not applicable.

SECTION 6: ACCIDENTAL RELEASE MEASURES:

Collect spillage by vacuum cleaning or other means whereby dust creation is minimised. If dust levels should exceed the occupational exposure standard, then personal protective equipment is required.

Personal precautions: Wear dust mask, safety gloves and goggles.

Environmental precautions: Do not allow the entering into drains, rivers, or lakes.

Method of cleaning: Use a vacuum or any other means minimising dust creation (flushing with water must be avoided by all means).
SECTION 7: HANDLING AND STORAGE:

Handling: Bentonite is safe to handle. Material is very slippery when wet. Use appropriate controls and ventilation to avoid creating accumulation dust. Avoid inhalation and repeated contacts with eyes or skin.

Storage: Store in a dry covered area

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION:

Ventilation: Use exhaust ventilation to keep airborne dust concentration below exposure limits. Additionally, local exhaust ventilation is recommended where dusts may be released.

Respiratory Protection: Use appropriate engineering controls to avoid dust oration or accumulation. Ensure all occupational exposure limits are maintained (5 mg/m³ on TWA 8 hours for alveolar dust, and 10mg/m³ on TWA 8 hours for total inhalator dust). Wear approved respirator or dust mask in the event of dust creation.

Skin Protection: Use gloves to avoid skin irritation.

Eye Protection: Eyewash should be available, but eye protection is not required unless physical working conditions demand it.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES:

<table>
<thead>
<tr>
<th>Physical State:</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour and Appearance:</td>
<td>Light colour (grey to white) granules or Powder. Odourless</td>
</tr>
<tr>
<td>pH:</td>
<td>8.1 to 10.5</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>2.0 – 2.4 g/cc</td>
</tr>
<tr>
<td>Bulk density</td>
<td>1.18 g/cc</td>
</tr>
<tr>
<td>% Soluble in water:</td>
<td>Nil</td>
</tr>
<tr>
<td>Melting Point</td>
<td>980°C (1800 F)</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing Point:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour density:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>Not applicable / non-flammable product.</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY:

| Chemically stability:     | Stable.          |
| Compatibility with other substances: | Compatible with all substances. |
| Hazardous decomposition / By product: | No hazardous decomposition or by products expected. |
| Conditions to avoid:      | None.            |

SECTION 11: TOXICOLOGICAL INFORMATION:

Zeolite has no determined acute toxic affects. Long-term exposure to moderate or high concentrations of Zeolite dust may affect nose and respiratory tract and chest health. No toxicological effects are expected if respiratable dust concentrations are maintained below the occupational exposure standards.
Repeated contact with skin may cause dry skin and irritations. Repeated eye contact may generate irritations. No toxicological effects are expected if personal protective equipment is worn. No adverse effects are expected when ingested.

**Acute Health Hazards:**

Eye contact may cause mechanical irritations if exposed to excessive amount of Zeolite. Skin contact may aggravate existing dermatitis. Inhalation from prolonged and continuous exposure may aggravate existing asthmatic or respiratory conditions.

**Chronic Health Hazards:**

Prolonged inhalation of excessive levels of Zeolite dust may cause a simple pneumoconiosis condition, not normally associated with a decrement in lung function. In cases of long-term exposure to externally high levels of dust, complicated pneumoconiosis with lung function impairment may occur.

**Carcinogenicity:** none known
**Mutagenicity:** none known
**Ieratogenicity:** none known
**Reproductive effect:** none known

Zeolite contains 10 to 15% crystalline silica according to testing. The International Agency for Research on Cancer (IARC) has classified crystalline silica as a possible carcinogen, which means there is limited evidence for human carcinogenicity of crystalline silica. For vermiculite products containing less than 1% total crystalline silica under standard conditions and assuming that regulatory protective measures are in place, the Maximum Exposure Limit (0.3 mg/m³ in a TWA of 8 hours) for respiratory crystalline silica should not be exceeded.

Zeolite does not contain dioxin and can be used in animal feed.

**SECTION 12: ECOLOGICAL INFORMATION**

**Environmental Statement:** Zeolite has a low impact on environment. Zeolite is persistent and non-biodegradable but it is unlikely to have any long-term adverse effect on the environment.

**Mobility:** Solid, non volitile, insoluble in water
**Degradability:** Non-biodegradable. Persistent.
**Accumulation:** No bioaccumulation or bio-magnification identified.
**Ecotoxicity:** Non-toxic to aquatic living organisms and animals. Non-toxic to aquatic plants. Non-toxic to soil organism. Non-toxic to aerobic and anaerobic plants. Non-toxic to aerobic and anaerobic living organisms and animals.
SECTION 13: DISPOSAL CONSIDERATIONS:

Zeolite and waste from residue can be disposed as non-toxic and inactive materials in approved landfill sites in accordance with local regulations. Contaminated packaging can be disposed in approved landfill sites in accordance with local regulations.

SECTION 14: TRANSPORT INFORMATION:

Bentonite is not classified as dangerous for transportation. Zeolite may be transported in accordance with the standard local authority regulations.

SECTION 15: REGULATORY INFORMATION:

Zeolite is not classified as dangerous for supply under EEC regulations. Zeolite does not require labelling for safety information or risk information.

Zeolite is 5mg/m³ respirable dust in a TWA 8 hour’s reference period.

Refer to all applicable local, national and international regulations and provisions to ensure that all the above are the relevant applicable measures.

SECTION 16: OTHER INFORMATION:

The information contained in the Material Safety Data Sheet does not constitute and assurance of workplace risks.

Workers should be trained to handle powder products without generating airborne dust.

The information and recommendation contained above are based on data and measures believed to be correct. However, they do not carry any guarantee or warranty of any kind.

Date: January 2008 Quality Manager