MATERIAL SAFETY DATA SHEET

AZADIRACHTIN TECHNICAL

SECTION I

MANUFACTURER INFORMATION

E.I.D PARRY (INDIA) LIMITED
Bio Products Division
234, N.S.C. Bose Road
Chennai - 600 001, India.
Date Prepared:

SECTION II

HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>%</th>
<th>CAS No.</th>
<th>OSHA/PEL</th>
<th>ACGIH/TLV</th>
<th>OTHER LIMITS RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azadirachtin A</td>
<td>40-45%</td>
<td>11141-17-6</td>
<td>None</td>
<td>None</td>
<td>None known</td>
</tr>
<tr>
<td>Azadirachtin B</td>
<td>95507-03-2</td>
<td></td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>Other neem Compounds</td>
<td>55-60%</td>
<td>118855-02-0</td>
<td></td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>Azadirachtin F</td>
<td></td>
<td>134788-15-1</td>
<td>Not</td>
<td>Not</td>
<td>Not known</td>
</tr>
<tr>
<td>Azadirachtin H</td>
<td></td>
<td>134788-16-2</td>
<td>unknown</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td>Azadirachtin I</td>
<td></td>
<td>992-20-1</td>
<td>Not</td>
<td>Not</td>
<td>Not known</td>
</tr>
<tr>
<td>Salannin</td>
<td></td>
<td>5945-86-8</td>
<td>Not</td>
<td>Not</td>
<td>Not known</td>
</tr>
<tr>
<td>Nimbin and fatty acids etc.</td>
<td></td>
<td>992-20-1</td>
<td>Not</td>
<td>Not</td>
<td>Not known</td>
</tr>
<tr>
<td>Other compounds of Neem origin in the extract</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td>Not known</td>
<td></td>
</tr>
</tbody>
</table>

SECTION III

PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance : Brown yellow free flowing powder
Odour : Characteristic neem odour
Solubility in water : 0.26 gm/l
Specific tap density : 0.71 g/ml
Molecular Weight : 720 (Azadirachtin A)
                  : 662 (Azadirachtin B)
Empirical Formula : C35 H44 O16 (Azadirachtin A)
                  : C33 H42 O14 (Azadirachtin B)
Acidity : < 0.24%
pH : 7 ± 0.02
Viscosity: Powder
Corrosion Characteristics: Non corrosive to HDPE containers
Storage: 20-25°C

SECTION IV

FIRE AND EXPLOSION DATA

Flash Point: > 100 deg C - No Fire Hazard
Flammable Limits: Not known
Extinguishing Media: Polymer foam or carbon dioxide
Special Fire Fighting Procedures: Wear protective clothing and face shields
Unusual fire and explosion hazards: No hazard

SECTION V

REACTIVITY DATA

Stability: Stable at ordinary conditions of use and storage
Conditions to avoid: High temperature or sunlight or light quickly degrade the material
Materials to Avoid: Acids, alkali or oxidizing agents.
Hazardous Decomposition: No hazardous materials are produced
Hazardous polymerization: Not occur

SECTION VI

HEALTH HAZARD DATA

Mode of Entry: Inhalation - yes
Skin - yes
Ingestion- yes

Health Hazards:

Acute Toxicity: Acute oral Rat LD 50>5 g/kg
: Acute Dermal Rat LD50>2g/kg
: Acute Inhalation Rat LC 50>0.72 mg/L
: Skin Irritation - Rabbit > No Irritation
: Skin Sensitization-Guinea Pig-Sensitisation
: Eye Irritation-Rabbit-Positive

Chronic Toxicity: Developmental toxicity-NOAEL-50 mg/kg
: Subchronic feeding>3200 mg/kg
: Bacterial Mutation Assay - Non mutagenic
SIGN AND SYMPTOMS OF EXPOSURE

**Inhalation**: May be irritating to mucous membrane and eyes

**Ingestion**: May cause drowsiness

**Skin Contact**: No irritation will occur

**Eye Contact**: May cause irritation

**Chronic Exposure**: Continuous exposure may cause implications

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EMERGENCY AND FIRST AID PROCEDURE

**Inhalation**: Remove to fresh air

**Ingestion**: Induce vomiting by gastric lavage, call physician immediately

**Skin Contact**: Wash skin with soap

**Eye Contact**: Wash eyes with excessive water.

**Chronic Exposure**: Continuous exposure may cause implications

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SECTION VII

ECOLOGICAL SAFETY

Ready to use Formulations (1% level) prepared from Azadirachtins Technical has exhibited high degree ecosafety as indicated below:

1. **Effect on Honey Bees** - Harmless
2. **Effect on Earthworm (LC₅₀)** - > 1000 mg/kg - safe
3. **Effect on predators** - Harmless
4. **Hazard to soil Microflora** - Non Hazardous
5. **Acute Daphnia Immobilisation Test (EC₅₀)** - > 1000 mg/lt - safe
   NOEL - 197.5 mg/lt
6. **Acute toxicity to fish-Rainbow Trout (LC₅₀)** - 440 mg/lt (24 hrs)
   - 150 mg/lt (96 hrs)
   - 50 mg/lt
   NOEC
7. **Algal Inhibition Test** - Non inhibitory/Non stimulant
8. **Metabolism in soil** - Rapid Decomposition in soil
9. **Degradability in water** - Readily Biodegradable in water

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SECTION VIII

PRECAUTIONS FOR SAFE HANDLING AND USE
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Flush the area with water. Do not allow water to contaminate surrounding area. Personnel in operation may wear protective clothing.

WASTE DISPOSAL METHOD

Do not contaminate water, food, or feed by storage or disposal. Disposal of containers in an approved disposal facility. Ensure compliance with local, state and federal regulations.

PRECAUTIONS FOR HANDLING AND STORAGE

Keep in a cool and dry place. Avoid direct sunlight. Open dumping is prohibited. Dispose containers in an approved waste facility.

OTHER PRECAUTIONS

Shipping Name : Neem Extract Concentrate
Shipping Containers Markings : Neem Extract Concentrate
Shipping Container Labels : Neem Extract Concentrate
Special Instructions : No special instruction on handling required
Flammability : Non flammable
Transport by Air : Safe for Air Transport

SECTION IX

CONTROL MEASURES

Respiratory Protection : Use spraying clothings to avoid spray mist
Protective Gloves : Wear protective gloves
Eye protection : Wear safety goggles
Work Practices : Observe good personnel hygiene. Wash hands after usage of the product

SECTION X

Regulatory Information

Designation : TSAC (Toxic substance control Act) Not regulated
CERCLA (Comprehensive Emergency Response Compensation and Liability Act) Not listed
SARA TITLE III (Superfund Amendments and Reauthorisation Act) Not listed
311/312 Hazard Categories: Not regulated
313 Reportable Ingredients: None listed
: Eco-friendly Neem Based Pesticide of Plant Origin
: Non Hazardous Material

SECTION XI
E.I.D Parry (India) Limited.
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