MATERIAL SAFETY DATA SHEET
AVI – SIPERMETRIN EC

1. COMPANY DETAILS:
Name: Avima (Pty) Ltd
Address: No. 18 Aschenberg Street
        Chamdor
        Krugersdorp
Tel. Nr.: (011) 769 1300
Fax Nr.: (011) 762 5712
Emergency Tel Nr.: 083 326 3581 / 082 823 4473 OR 082-446-8946

2. PRODUCT IDENTIFICATION:
Trade Name: Avi – Sipermetrin EC (200 g /ℓ)
Chemical Family: Pyrethroid
Chemical Name: (RS)-α-cyano-3-phenoxybenzyl (1RS, 3RS; 1RS,3SR)-3-(2,2-dichlorovinyl)-
2,2-dimethylcyclopropanecarboxylate
Molecular Formula: (C₂₂H₁₉Br₂NO₃)
UN Nr.: 3351
C.A.S. Nr.: 52315-07-8

3. COMPOSITION / INFORMATION ON INGREDIENTS:
Hazardous Components: Cypermethrin Technical 20.00 %
Aromatic solvent and emulsifiers 80.00 %
SYMBOLS: Xn, Xi
RISK PHRASES: R20/22, R36/37/38, R41, R43, R50, R57

4. HAZARD IDENTIFICATION:
Skin: Prolonged repeated skin contact may de-fat the skin, resulting in possible irritation and dermatitis. Redness. Burning skin sensation. Itching. A stuffy runny nose and scratchy throat. Sudden headache, nausea, bronchospasm, swelling of oral and laryngeal mucous membranes and shock (anaphylaxis). Nervous irritability, tremors and ataxia. Cough, fever and chest pain (Hydrocarbon pneumonitis).
Eyes: Redness. Pain.
Ingestion: Abdominal pain, vomiting, burning sensation, coughs, dizziness, headache, and nausea. A stuffy runny nose and scratchy throat. Sudden headache, nausea, bronchospasm, swelling of oral and laryngeal mucous membranes and shock (anaphylaxis). Nervous irritability, tremors and ataxia. Cough, fever and chest pain (Hydrocarbon pneumonitis).
5. FIRST AID MEASURES:

Inhalation: Remove patient from further exposure to fresh air. If respiratory irritation, dizziness, nausea or unconsciousness occurs or persist, seek medical attention. If breathing has stopped, apply artificial respiration.

Skin: Remove contaminated clothing and shoes. Wash contaminated skin with plenty of soap and water. Launder contaminated clothing before re-use.

Eyes: First, rinse with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: If large amounts have been ingested, the stomach and intestine must be evacuated.

SEEK MEDICAL ASSISTANCE.

NOTE TO PHYSICIAN:
* For life-threatening allergic reaction (severe asthma or anaphylaxis), give 0.1 to 0.5 m\textsuperscript{g} of 1:1000 adrenaline intramuscularly or slowly intravenously. Repeat if necessary to relieve respiratory distress and maintain blood pressure. Intravenous Aminophylline (10 m\textsuperscript{g}, slowly) may be indicated. Give hydrocortisone (50 –100 mg), or equivalent steroid intravenously.

Less severe allergic reaction (rhinitis) can be managed with antihistamines and decongestants, given orally.

* If victim is alert and respiration is not depressed, give Syrup of Ipecac, followed by 1 –2 glasses of water, to induce vomiting (adults and children 12 years and older: 30 ml; children under 12 years: 15 ml).

Caution: Observe victim closely after administering Ipecac. If consciousness level declines or vomiting has not occurred in 15 minutes, intubate stomach immediately.

Following emesis, have victim drink a suspension of 30 –50 g activated charcoal in 90 –120 ml water to limit absorption of toxicant, remaining in the gut.

* Diazepam (Valium), 5 –10 mg in adults, 0.1 mg /kg in children, given orally or slowly iv., should control nervousness and tremors in rare cases having these symptoms after extraordinary exposure to product.

* Material, if aspirated into lungs may cause chemical pneumonitis. Treat appropriately.

6. FIRE FIGHTING MEASURES:

Flammability: Flammable
Auto ignition Temperature: Not available
Decomposition Temperature: Not available
Acute Hazards: Formulation contains organic solvents
Special fire fighting procedures: Use water to keep fire exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop leak. Water spray may be used to flush spills away from exposures. Prevent run-off from fire control or dilution from entering streams, sewers, or drinking water supply.
Special protective equipment: Do not breathe fumes. For fires in enclosed areas, fire fighters must use self-contained breathing apparatus, as well as full protective gear.

Hazardous decomposition products: Toxic fumes including Hydrogen cyanide, Hydrogen bromide, Carbon monoxide.

7. ACCIDENTAL RELEASE MEASURES:
Notification procedures:
Report spills as required to appropriate authorities.

Procedures if material is released or spilled:
Absorb on fire retardant treated sawdust, diatomaceous earth, sand, peat sorb, etc. Shovel in and dispose of at an appropriate waste disposal facility, in accordance with current applicable laws and regulations, and product characteristics at time of disposal.

Environmental Precautions:
Prevent spills from entering storm sewers or drains and contact with soil.

8. HANDLING AND STORAGE:
Suitable Material: 200 Litre Steel drums, Plastic drums and bottles.
Handling /storage precaution:
Avoid prolonged repeated skin contact. Do not contaminate water, food or feed by storage or disposal. Store in a secure, dry, well-ventilated separate room, building or covered area. Not for use or storage on or around home. Keep away from sources of ignition and protect from exposure to fire and heat separate from incompatible materials. Do not allow entering public sewers and water sources. If contamination of drainage systems or water sources, is unavoidable, inform the appropriate authorities immediately.

9. EXPOSURE CONTROL / PERSONAL PROTECTION
Effects of overexposure: Respiratory irritation, dizziness, nausea, loss of consciousness.

Inhalation: Avoid inhalation of spray mist. Use only in well-ventilated areas, in case of insufficient ventilation, wear suitable respiratory equipment. Approved respiratory equipment must be used when vapour or mists concentrations exceed applicable standards.

Skin: Wear protective clothing, as well as protective gloves. Launder contaminated clothing before re-use. Avoid skin contact. Keep working clothes separately and do not take home.

Good personal hygiene practices should always be followed.

Eyes: Avoid contact with eyes. Wear eye/face protection. When handling this product, wear goggles giving completely eye protection. Normal industrial eye protection practices should be employed.

Ingestion: Keep away from food and feedstuffs. Do not eat, drink or smoke whilst handling this product. Wash hands and face before eating and drinking.
10. PHYSICAL AND CHEMICAL CHARACTERISTICS:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state / formulation type</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Homogeneous light yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>Mild petroleum like odour</td>
</tr>
<tr>
<td>Storage stability</td>
<td>Stable</td>
</tr>
<tr>
<td>Shelf life</td>
<td>2 years</td>
</tr>
<tr>
<td>Density</td>
<td>0.8867 g/ml</td>
</tr>
<tr>
<td>Bulk density</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammability</td>
<td>Flammable</td>
</tr>
<tr>
<td>Flash Point</td>
<td>27 C</td>
</tr>
</tbody>
</table>

Compatibility with other pesticides: Do not mix with other chemicals
pH: N/A
Ph of 1 % aqueous dilution: 6.63
Corrosiveness: Not corrosive
Solubility in water: Soluble
Emulsion stability: Stable

11. STABILITY AND REACTIVITY:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Heat, sparks, flame and build up of static electricity, spillage onto roadways, etc.</td>
</tr>
</tbody>
</table>

Incompatibility: Strong oxidizers
Hazardous decomposition products: Carbon monoxide, Hydrogen cyanide, Hydrogen bromide.

12. TOXICOLOGICAL INFORMATION:

Poisonous if swallowed and moderately toxic by skin contact. Toxic to fish and bees and moderately toxic to wild life. Keep out of reach of children, uninformed persons and animals.. Store away from food and feedstuffs. Flammable – keep away from fire or sparks.

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral</td>
<td>3590</td>
</tr>
<tr>
<td>Acute Dermal</td>
<td>2460</td>
</tr>
<tr>
<td>Acute Inhalation</td>
<td>1.25</td>
</tr>
</tbody>
</table>

13. ECOLOGICAL INFORMATION:

EHC review concludes that biological degradation is rapid, and consequently levels of cypermethrin and its degradation products in soil and surface waters are very low. Animals For studies of the biotransformation of cypermethrin in animal tissues, see Pestic. Sci., 1987, 21, 1; ibid., 1990, 30, 159.

Soil/Environment: Soil photolysis DT50 (light) 31 d; DT50 (dark) 193 d; formation of metabolites 3-phenoxybenzoic acid (17% at day 30), phenoxybenzoic alcohol (2.7% at day 30), bound residue (13.3% at day 30), mineralisation (6.2% at day 30); soil degradation, median DT50 35 d (EU Rev. Rep.). Koc 26 492–144 652; Kf 821–1042; not pH-dependent. In river water, rapid degradation occurs, DT50 c. 5 d. DT50 for photochemical oxidative degradation in air 3.47 h.
14. DISPOSAL CONSIDERATION:

Waste disposal: Rinse empty container 3 times and destroy by perforation or flattening, and do not use for any other purpose. Product should be utilized completely to avoid disposal. If not possible, dispose of at an appropriate waste disposal facility, in accordance with current applicable laws and regulations.

15. TRANSPORTATION DATA:

<table>
<thead>
<tr>
<th>UN NUMBER:</th>
<th>3351</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR/IRD:</td>
<td>6.1</td>
</tr>
<tr>
<td>IMDG/IMO:</td>
<td>6.1</td>
</tr>
<tr>
<td>ICAO/IATA:</td>
<td>6.1</td>
</tr>
<tr>
<td>PACKING GROUP:</td>
<td>III</td>
</tr>
<tr>
<td>ROAD/RAIL:</td>
<td>pyrethroid pesticide, liquid, toxic, flammable, flash point#&gt;=23C cc</td>
</tr>
<tr>
<td>AIR/IATA:</td>
<td>611 Y611</td>
</tr>
<tr>
<td>SEA:</td>
<td>pyrethroid pesticide, liquid, toxic, flammable, flash point#&gt;=23C cc</td>
</tr>
<tr>
<td>CONSIDERED A MARINE POLLUTANT.</td>
<td></td>
</tr>
</tbody>
</table>

16. REGULATORY INFORMATION:

Symbol: Xn, Xi
Indication of danger: Harmful; Irritant.
Risk phrase(s):
R 20/22 Harmful by inhalation and if swallowed.
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 41 Risk of serious damage to eyes.
R 43 May cause sensitization by skin contact.
R 50 Very toxic to aquatic organisms.
R 57 Toxic to bees.
Safety phrases:
S 2 Keep out of reach children.
S 23 Do not breathe vapour/spray.
S 24/25 Avoid contact with skin and eyes.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.