



**Agro-Organics (Pty) Ltd**  
 Postnet Suite # 82  
 Private Bag 15  
 Somerset West, 7129  
 South Africa

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## Material Safety Data Sheet (MSDS)

### 1. IDENTIFICATION OF THE SUBSTANCE

<b>Product name</b>	<b>Xterminator (Insecticide)</b>		
<b>UN Number</b>	UN 3352		
<b>Supplier</b>	Agro-Organics (Pty) Ltd		
<b>Telephone</b>	021 851 2403		
<b>Fax</b>	021 852 3508		
<b>Website</b>	<a href="http://www.agroorganics.co.za">www.agroorganics.co.za</a>		
<b>24 Hr Emergency Numbers RSA</b>	Red Cross Poison Information Centre	021 689 5227	
	Tygerberg Poison Information Centre	021 931 6127	

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

This product contains 55% water

<b>Active Ingredient (s)</b>	Naval oil			
<b>other Ingredients</b>	Potassium Fatty Acid Soap	Lecithin	Ascorbic acid	
<b>Chemical Name (IUPAC)</b>		L-alpha-Phosphatidyl choline	2-oxo-L-threo-hexono-1,4-lactone-2,3-enediol	
<b>CAS No.</b>	8028-48-6 or 5008-57-9	61790-44-1	8002-43-5	50-81-7
<b>Chemical Family</b>	Food grade flavourant	Biochemical	Biochemical	Pharmaceutical
<b>Chemical Formula</b>	Orange oil, Sweet	fatty acid salts and sulfonates	C <sub>40</sub> H <sub>80</sub> NO <sub>8</sub> P	C <sub>6</sub> H <sub>8</sub> O <sub>6</sub>
<b>other Ingredients</b>	Pyrethrum	Piperonyl butoxide		
<b>Common name</b>		PBO		
<b>Chemical Name (IUPAC)</b>	Compound includes: cinerin I, cinerin II, jasmolin I, jasmolin II, pyrethrin I, pyrethrin II			
<b>CAS No.</b>	8003-34-7	51-03-6		
<b>Chemical Family</b>	Biochemical	Biochemical		
<b>Chemical Formula</b>	C <sub>19</sub> H <sub>26</sub> O <sub>3</sub>	C <sub>19</sub> H <sub>30</sub> O <sub>5</sub>		
<b>Use</b>	Insecticide			
<b>Formulation</b>	Dilute with water as per label indication			

### 3. HAZARD IDENTIFICATION

<b>Toxicity class</b>	WHO III, EPA III
<b>Likely routes of exposure</b>	Inhalation, eye, skin, ingestion

### 4. FIRST AID MEASURES AND PRECAUTIONS

Reactions are not likely to occur unless the absorbed dose is extraordinary.

Exposure	Symptoms	First Aid
Inhalation	Coughing, sneezing, and shortness of breath may occur	If any symptoms occur, remove to fresh air. Any breathing difficulties - get medical attention
Mild irritant		
Skin contact	May cause skin rash in sensitive individuals	Immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Contaminated clothing / shoes must be removed and cleaned before re-use. Get medical attention.
Mild irritant		
Eye contact	May cause itching to burning sensation.	Check for and remove contact lenses. Flush eyes with fresh running water for 15 minutes. Get medical attention.
Severe irritant		
Ingestion	Nausea, vomiting	Induce vomiting only as directed by medical personnel. Get medical attention. Do not give anything to drink or induce vomiting to an unconscious person.
Irritant		

### 5. FIRE FIGHTING MEASURES

<b>WARNING</b>	<b>Evaporation fumes are flammable. Handle as an oil fire.</b>
<b>Fire hazard and explosion hazard</b>	Flammable liquid in presence of heat together with open flame or spark.
<b>Extinguishing agents</b>	Water, dry chemical powder, CO <sub>2</sub> or Halon.
<b>Fire fighting</b>	Cool containers in order to prevent pressure build-up.
<b>Personal protective equipment</b>	Wear full protective clothing.

### 6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

<b>Personal precautions</b>	See Section 8
<b>Environmental precautions</b>	Harmful to fish, prevent from contaminating waterways and dams.
<b>Occupational spill</b>	Ventilate area, sweep into container, dilute as per label and spray over lawn or flower beds.
<b>Spill disposal</b>	Sweep into container and dispose within regional regulations. Product is sensitive to light and rapidly degrades.

### 7. HANDLING AND STORAGE REQUIREMENTS

<b>Handling</b>	Use in adequate ventilated environment. Wash hands after use and before eating, drinking and smoking.
<b>Storage</b>	Comply with local regulations. Keep out of reach of unauthorized persons, children and animals. Store in its original labeled container in dry, dark and cool area. Not to be stored next to foodstuffs, fodder and water supplies.

8. EXPOSURE CONTROL/PERSONAL PROTECTION			
<b>Exposure control</b>	COMPLY WITH OCCUPATIONAL SAFETY, ENVIRONMENTAL, FIRE, and other APPLICABLE REGULATIONS. (Appropriate means within these regulations)		
<b>Clothing</b>	Appropriate protective clothing		
<b>Gloves</b>	Appropriate chemical resistant protective gloves		
<b>Respiratory protection</b>	Appropriate mask		
<b>Eye protection</b>	Appropriate protective safety goggles		
9. PHYSICAL AND CHEMICAL PROPERTIES			
	Layer forming product, no synthetically agent added to create homogenised product.		
<b>Appearance</b>	Orange liquid	<b>pH</b>	3.4 - 3.7
<b>Odour</b>	Characteristic. Strong	<b>Bulk density</b>	Naval oil < water
<b>Flash point</b>	(CLOSED CUP) 46 C (Naval oil 90%)	<b>Melting point</b>	~ water
<b>Explosive properties</b>	Limited flash due to vapour released by naval oil.	<b>Vapourising Temperature</b>	64-83 deg C (Naval oil)
<b>Oxidizing properties</b>	Oxidises rubber	<b>Vapour Pressure</b>	
<b>Solubility in water</b>	partly	<b>Storage stability</b>	stable
<b>Persistent foaming</b>		<b>Suspensibility</b>	partly
<b>Solubility in organic solvents</b>	partly	<b>Partition-coefficient in n-octanol / water</b>	
10. STABILITY AND REACTIVITY			
<b>Stability</b>	stable, sensitive to prolonged exposure of direct sunlight and temperatures exceeding 30 C.		
<b>Incompatibility</b>	avoid heat, avoid contact with strong acids and oxidizing agents		
<b>Thermal decomposition</b>	smoke, fumes, and oxides of carbon when taken to dryness and ignited.		
11. TOXICOLOGICAL INFORMATION			
<b>Acute oral LD<sub>50</sub></b>	> 5 g/kg (rat)	<b>Dermal sensitization</b>	sensitizer
<b>Acute dermal LD<sub>50</sub></b>	> 5 g/kg (rat)	<b>Carcinogenicity</b>	Not listed
<b>Acute inhalation LC<sub>50</sub></b>	> 4.93 mg/L (4-hour)	<b>Teratogenicity</b>	Not listed
<b>Acute skin and eye irritation</b>	slightly irritating	<b>Mutagenicity</b>	Not listed
12. ECOLOGICAL INFORMATION			
<b>Degradability</b>	Complete biodegradable		
<b>Mobility</b>	Not likely		
<b>Accumulation</b>	Unlikely		
	<b>Ecotoxicology</b>		
	<b>Birds</b> No	<b>Bees</b>	TOXIC when wetted
	<b>Fish</b> Slightly toxic	<b>Earthworms</b>	No
	<b>Daphnia magna</b> No	<b>Soil micro-organisms</b>	Hazardous when in direct contact.
13. DISPOSAL CONSIDERATION			
<b>Pesticide disposal</b>	Dilute with plenty of water and apply to wide surface area covered with lawn, shrubb or trees.		
<b>Package product wastes</b>	Emptied containers are to be handled according to safeguards as appear on the label. Containers should be punctured and transported to a facility for recycling or disposal in approved landfill site.		
14. TRANSPORT INFORMATION			
<b>UN NUMBER</b>	UN 3352		
<b>ADR/IRD</b>	Substance ID NR <b>3352</b>	<b>AIR/IATA</b>	Class <b>9</b>
	Hazard ID NR		Subsidiary Risk -
	Label <b>9 + III</b>		Hazard Label <b>slightly hazardous</b>
<b>IMG/IMO</b>	Packaging group <b>III</b>		Packaging group <b>III</b>
	Label of class <b>9</b>		Passenger aircraft
	Subsidiary Risk -		Cargo aircraft
	Shipping Name <b>Pyrethroid pesticide, liquid, toxic</b>		
15. REGULATORY INFORMATION			
<b>Symbol</b>	<b>X<sub>n</sub></b>	<b>Risk phrases</b>	R20/21/22 R52 R57
<b>Indication of danger</b>	Harmfull to fish	<b>Safety phrases</b>	S1/2 S13
16. PACKING AND LABELING			
	5 L, 20 L plastic containers labeled according to South African regulations.		
17. OTHER INFORMATION			

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Agro-Organics (Pty) Ltd nor its employees be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Agro-Organics (Pty) Ltd nor its employees has been advised of the possibility of such damages.

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Abbreviations: TWL-TWA = Value-time Weighted Average