



PYRETHRUM BOARD OF KENYA

General Mathenge Road, Nakuru Industrial Area.
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MATERIAL SAFETY DATA SHEET

1.0 IDENTIFICATION OF SUBSTANCE

TRADE NAME: PYAGRO™ 4 EC
MANUFACTURER: Pyrethrum Board of Kenya
P.O. Box 420-20100, Nakuru, KENYA
Tel. 254-51-2211567/72
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2.0 HAZARDOUS CONSTITUENTS

	Constituent	Composition
i.	Pyrethrins	4.0% w/v
ii.	Inert Ingredients	
	Plant extracts esp. fatty acids	8.5 w/v
	Plant sterols and carotenoids	0.95%
	Anti-Oxidant/stabilizers	16.45% w/v
	Alkanes present in food grade solvent used	63.10% w/v
	Surfactants in food grade	7.00% w/v

3.0 FORMULATED PRODUCT USE

Horticultural insecticide/miticide spray

4.0 OCCUPATIONAL EXPOSURE LEVEL

Sources

ACGIH/TLV	5mg/m ³	
HSE/OEL-UK	Long-term exposure limited	Short-term exposure Limit
	8hrs TWA reference period	10 minutes reference period
	5mg/m ³	10mg/m ³

5.0 BIOLOGICAL EXPOSURE LEVEL

Not relevant

6.0 PHYSICAL AND CHEMICAL PROPERTIES

- i. Pyrethrins naturally occur as a mixture of six related esters of two acids (chrysanthemic acid and pyrethric acid) and three alcohols (pyrethrolone, cinerolone, and jasmololone).

Acid	Alcohol		
	Pyrethrolone	Cinerolone	Jasmololone
Chrysanthemic acid	Pyrethrin 1 (m.wt= 328.4)	Cinerin 1 (m.wt.=316.4)	Jasmoline 1 (m.wt=330.4)
Pyrethric acid	Pyrethrin 2 (m.wt= 372.4)	Cinerin 2 (m.wt.=360.4)	Jasmoline 2 (m.wt=374.4)

- ii. Other Physical properties

Physical state	Dark brown liquid
Melting point	N/A
Boiling point	180°C
Odour	Mild characteristic vegetable smell
Flash point	Minimum 66°C (By Abel Closed Cap method)

pH/acid	N/A
Specific gravity	0.90 at 20°C
Solubility	Soluble in organic solvent and water
Vapour pressure	3.4 mmHg at 20°C
Self-ignition	338°C (solvent)
Partition coefficient	Pyrethrin I - 5:34. Pyrethrin II - 3:79 (in Octanol/Water system)

7.0 FIRE AND EXPLOSION HAZARDS

Non-explosive thus hazards not applicable.

8.0 REACTIVITY AND STABILITY

- ◆ Non- reactive and non-corrosive, flammable but not volatile
- ◆ Quite stable in air but rapidly breaks down in the presence of sunlight.
- ◆ Degrades at high temperatures (i.e. above 70°C) as well as in contact with alkaline medium or alkaline materials such as ammonia, sodium carbonate, lime, etc. Similarly degradation may also occur following contact with metals such as brass, lead, copper, zinc, or iron including their respective water-soluble salts.

9.0 TOXICOLOGICAL INFORMATION

Acute oral LD ₅₀ (rat)	-	2140mg/kg
Acute Dermal LD ₅₀ (rabbit)	-	Over 2000mg/kg
Acute Inhalation LD ₅₀ (rat)	-	3.4mg/L

Toxic to fish and other aquatic organisms

Various studies have shown that pyrethrum has no sensitization potential, is not carcinogenic and does not impair heredity and reproduction.

ii. HEALTH HAZARDS

WHO CLASSIFICATION	:	Moderately hazardous
ADI WHO/FAO	:	0.04mg/kg body weight
MRL/CODEX	:	0.04mg/kg body weight
RQ/SP	:	S2, S13, S36, S46 i.e. S2 - Keep out of reach of children S13 - Keep away from food, drink and animal feeding stuff.

10.0 PREVENTIVE MEASURES

Transport and Storage:

Should be transported and stored in a cool dry place. Store in-doors in tightly closed container in an upright position in a ventilated room away from sources of ignition. If container is damaged, check for any leaks, and in case of leakage, transfer the contents into another suitable container. Avoid contamination with other chemicals and contact with skin. Spillage should be washed off with a 5% sodium hydroxide then rinsed with water. Disposed of the rinsate in a manner that is approved by the authority.

Valuable transport information:

11.0 FIRST AID

If **ingested**: Do not give an emetic. A glass of water or any other suitable diluent may be given. Seek medical advice.

If **inhaled**: Remove the victim to an area with fresh air.

If **on skin**: Remove contaminated clothing immediately. Wash affected area with soap and water. Seek medical attention if irritation persists.

If **on eyes**: Wash with plenty of water. Seek medical attention if irritation persists.

12.0 DISPOSAL

Disposal of pesticide or spray mixture should be done in accordance with the applicable Federal, State Province or Local Authority regulations. Avoid contaminating water, food or feed by storage or disposal.

Pesticide containers should be offered for recycling, reconditioning or punctured and disposed off in a sanitary land-filler by other procedures approved by Federal State, Province or Local Authority.

13.0 ECOLOGICAL INFORMATION

Persistence: Non-persistent in the environment.

Biodegradation: Highly biodegradable. Rapidly degraded in sunlight or alkaline medium

Bio-accumulation: None

14.0 DATE PREPARED

January, 2002

15.0 CONTACT PERSON (S)

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July, 2007
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