MATERIAL SAFETY DATA SHEET

PYRETHRA (Pyrethrum 2% EC (Extract))

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND SUPPLIER

PRODUCT NAME	:	**PYRETHRA**
CHEMICAL GROUP	:	Synthetic Pyrethroid
RECOMMENDED USE	:	Insecticide for household use
FORMULATION	:	Emulsion Concentrates
CORPORATE ADDRESS	:	**Arbuda Agrochemicals Limited** 1104, Ruby Crescent Business Boulevard,Ashok Chakravarti Road, Kandivali-East, Mumbai-400101, Maharashtra, India Customer Care No-+91 9076907642 Email - info@arbudaagrochemicals.com
MANUFACTURER ADDRESS	:	**Arbuda Agrochemicals Limited** Plot No. 279-283, GIDC, Taluka Talod , District- Sabarkantha, Gujarat –383215.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Sr.No.	Component	Content (%w/w)
1	Pyrethrum	2%
2	Other ingredients (Petroleum distillate)	Q.S.
	Total	**100 % w/w**

3. HAZARDOUS INFORMATION

Label elements

Globally Harmonized System (GHS)

Hazard pictograms	**:**	
Signal word	**:**	Danger

Hazard statements	**:**	H222 Extremely flammable aerosol. H229 Pressurized container: May burst if heated. H303 May be harmful if swallowed. H304 May be fatal if swallowed and enters airways. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statements	**:**	P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P103 Read carefully and follow all instructions. Precautionary Statements (Prevention): P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211 Do not spray on an open flame or other ignition source. P251 Do not pierce or burn, even after use. P260 Do not breathe spray. P262 Do not get in eyes, on skin, or on clothing. Precautionary Statements (Response): P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or physician. P391 Collect spillage. P331 Do NOT induce vomiting. Precautionary Statements (Storage): P410 + P412 Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122°F. P405 Store locked up. Precautionary Statements (Disposal): P501 Dispose of contents and container to hazardous or special waste collection point. Labeling of special preparations (GHS): May cause paraesthesia. Contains: Pyrethrins and Pyrethroids Repeated exposure may cause skin dryness or cracking.

<u>According to UN GHS criteria</u>

Hazard determining component(s) for labelling: Distillates (petroleum), hydrotreated light, Pyrethrins and Pyrethroids

Other hazards

According to UN GHS criteria

See section 12 - Results of PBT and vPvB assessment.

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

4. FIRST AID MEASURES	
Description of first aid measures	First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.
If inhaled :	Keep patient calm, remove to fresh air, seek medical attention.
In case of skin contact :	Immediately wash thoroughly with soap and water, seek medical attention.
In case of eye contact :	Wash affected eyes for at least 15 minutes under running water with eyelids held open.
On ingestion:	Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention. Do not induce vomiting due to aspiration hazard.
Most important symptoms and effects, both acute and delayed	Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labelling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far Hazards: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11. (Further) symptoms and / or effects are not known so far.
Indication of any immediate medical attention and special treatment needed	Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.
Notes to physician	Initial treatment: symptomatic. Monitor: respiratory and cardiac functions. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Keep respiratory tract clear. Oxygen or artificial respiration if needed. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. If not effective, phenobarbital may be used. Contraindication: derivatives of adrenaline. Contraindication: atropine. There is no specific antidote available. Recovery is spontaneous and without sequelae. In case of skin irritation, application of oils or lotions containing vitamin E may be considered.

5. FIRE-FIGHTING MEASURES	
Suitable extinguishing media	**water spray, dry powder, foam, carbon dioxide**
Unsuitable extinguishing	None known.

media	
Special hazards arising from the substance or mixture	Carbon monoxide, Carbon dioxide, nitrogen oxides The substances/groups of substances mentioned can be released in case of fire. Aerosol container contains flammable gas under pressure.
Further information:	Keep containers cool by spraying with water if exposed to fire. In case of fire and/or explosion do not breathe fumes. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.
Special protective equipment for firefighters	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.
Environmental precautions	Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.
Methods and material for containment and cleaning up	For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). For large amounts: Dike spillage. Pump off product. Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labelled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling	No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. Protection against fire and explosion: Vapours may form ignitable mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.
Conditions for safe storage, including any incompatibilities	Segregate from foods and animal feeds. Further information on storage conditions: Keep away from heat. Protect from direct sunlight. Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Storage stability: Storage duration: 24 Months Protect from temperatures above: 50 °C The packed product must be protected against exceeding the indicated temperature.
Specific end use(s)	For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Components with occupational exposure limits

74-98-6: Propane

106-97-8: butane

8003-34-7: Pyrethrins and Pyrethroids

64742-47-8: Distillates (petroleum), hydrotreated light

Exposure controls	Personal protective equipment Respiratory protection: Respiratory protection not required.
Hand protection	Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.
Eye protection	Safety glasses with side-shields (frame goggles) (e.g. EN 166)
Body protection	Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).
General safety and hygiene measures	The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

Remarks	Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Eye protection	Wear the following personal protective equipment: Safety glasses
Skin and body protection	Skin should be washed after contact.
Hygiene measures	If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form	Aerosol	
Colour	yellow, clear	
Odour	characteristic, faint odour	
Odour threshold	Not determined due to potential health hazard by inhalation.	
pH value	approx. 5,5 - 7,5 (approx. 25 °C)	
Melting point	approx. -30 °C Information applies to the solvent.	
Boiling range	approx. 193 - 245 °C Information applies to the solvent.	
Flash point	approx. < -6 °C	(Tag closed cup)
Evaporation rate	not applicable	
Flammability	Extremely flammable.	
Lower explosion limit	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Upper explosion limit	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Ignition temperature	approx. 236 °C Information applies to the solvent.	
Vapour pressure	approx. 0,3 hPa (20 °C) Information applies to the solvent.	
Density	approx. 0,88 g/cm3 (20 °C)	
Relative vapour density (air)	not applicable	
Solubility in water	Immiscible	
Partitioning coefficient n-octanol/water (log Kow)	not applicable	
Viscosity, dynamic	approx. 1,82 mPa.s (approx. 25 °C)	

Explosion hazard Based on the chemical structure there is no indication of explosive properties
Fire promoting properties Based on its structural properties the product is not classified as oxidizing.

Other Information: If necessary, information on other physical and chemical parameters is indicated in this section.

10. STABILITY AND REACTIVITY

Reactivity	No hazardous reactions if stored and handled as prescribed/indicated.
Chemical stability	The product is stable if stored and handled as prescribed/indicated
Possibility of hazardous reactions	No hazardous reactions if stored and handled as prescribed/indicated.
Conditions to avoid	See SDS section 7 - Handling and storage
Incompatible materials	Substances to avoid: strong acids, strong bases, strong oxidizing agents
Hazardous decomposition products	Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:	Of low toxicity after single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact
Experimental/calculated data	LD50 rat(oral): 3.920 mg/kg LC50 rat(by inhalation): > 5,63 mg/l An aerosol was tested. LD50 rabbit (dermal): > 2.000 mg/kg No mortality was observed.
Irritation	Assessment of irritating effects: Not irritating to eyes and skin. Experimental/calculated data: Skin corrosion/irritation rabbit: non-irritant Serious eye damage/irritation rabbit: non-irritant
Respiratory/Skin sensitization	Assessment of sensitization: No sensitizing effect. Experimental/calculated data: guinea pig: Non-sensitizing.
Germ cell mutagenicity	Assessment of mutagenicity: Mutagenicity tests revealed no genotoxic potential. The product has not been

	tested. The statement has been derived from the properties of the individual components.
Carcinogenicity	Assessment of carcinogenicity: The results of various animal studies gave no indication of a carcinogenic effect. The product has not been tested. The statement has been derived from the properties of the individual components
Reproductive toxicity	Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from the properties of the individual components
Developmental toxicity	Assessment of teratogenicity Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals. The product has not been tested. The statement has been derived from the properties of the individual components.
Specific target organ toxicity (single exposure)	Assessment of STOT single: Based on the available information there is no specific target organ toxicity to be expected after a single exposure. Remarks: The product has not been tested. The statement has been derived from the properties of the individual components
Repeated dose toxicity and Specific target organ toxicity (repeated exposure)	Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. Information on: 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether Assessment of repeated dose toxicity: The substance may cause damage to the liver after repeated ingestion of high doses, as shown in animal studies. The substance may cause damage to the liver after repeated inhalation of high doses. Repeated dermal uptake of the substance did not cause substance-related effects. Information on: 2,6-di-tert-Butyl-p-cresol Assessment of repeated dose toxicity: The substance may cause damage to the liver after repeated ingestion of high doses, as shown in animal studies
Aspiration hazard	May also damage the lung at swallowing (aspiration hazard). The product has not been tested. The statement has been derived from the properties of the individual components
Other relevant toxicity information	Misuse can be harmful to health. Has a degreasing effect on skin.

12. ECOLOGICAL INFORMATION

Toxicity

Assessment of aquatic toxicity	Very toxic to aquatic life with long lasting effects. The product has not been tested. The statement has been derived from the properties of the individual components.
Information on: 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	
Toxicity to fish:	LC50 1,9 mg/l, Oncorhynchus mykiss
Information on: Pyrethrins and Pyrethroids	
Toxicity to fish:	LC50 (96 h) 0,0052 mg/l, Oncorhynchus mykiss
Information on: 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	
Aquatic invertebrates	EC50 0,49 mg/l, Mysidopsis bahia
Information on: Pyrethrins and Pyrethroids	
Aquatic invertebrates	EC50 (96 h) 0,0014 mg/l, Mysidopsis bahia
Information on: 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	
Aquatic plants	EC50 14,9 mg/l, Chlorella fusca
Information on: Pyrethrins and Pyrethroids	
Chronic toxicity to fish	No observed effect concentration 0,0019 mg/l, Pimephales promelas
Information on: 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	
Chronic toxicity to aquatic invertebrates	No observed effect concentration 0,03 mg/l, Daphnia magna
Information on: Pyrethrins and Pyrethroids	
Chronic toxicity to aquatic invertebrates	No observed effect concentration (28 d) 0,00086 mg/l, Daphnia magna
Persistence and degradability	
Assessment biodegradation and elimination (H2O):	The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	
Assessment biodegradation and elimination (H2O):	Not readily biodegradable (by OECD criteria).
Information on: Pyrethrins and Pyrethroids	
Assessment biodegradation and elimination (H2O):	Not readily biodegradable (by OECD criteria).
Bioaccumulative potential	
Assessment bioaccumulation potential	The product has not been tested. The statement has been derived from the properties of the individual components.
Information on: 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	
Assessment bioaccumulation potential	Accumulation in organisms is not to be expected
Information on: Pyrethrins and Pyrethroids	
Bioaccumulation potential	
Bioconcentration factor: 407	Accumulation in organisms is not to be expected.
Mobility in soil	
Assessment transport between environmental compartments	
Adsorption in soil	The product has not been tested. The statement has been derived from the properties of the individual components
Information on: 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	
Assessment transport between environmental compartments	
Adsorption in soil	Adsorption to solid soil phase is not expected
Information on: Pyrethrins and Pyrethroids	
Assessment transport between environmental compartments	
Adsorption in soil	Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected

Results of PBT and vPvB assessmen

The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

Other adverse effects

The product does not contain substances that are listed in the Montreal Protocol on substances that deplete the ozone layer

Additional information

Other ecotoxicological advice:
Do not discharge product into the environment without control

13. DISPOSAL CONSIDERATION

Disposal methods

Waste treatment methods : It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Do not dispose of waste into sewer.

Contaminated packaging : Follow advice on product label and/or leaflet. Empty containers retain residue and can be dangerous. Do not re-use empty containers. Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product. Emptied gas pressure vessels must not be opened

14. TRANSPORT INFORMATION

International Regulations

Land transport	
ADR	
UN number or ID number	UN 1950
Proper shipping name	AEROSOLS
Transport hazard class(es):	2.1, EHSM
Packing group	Not applicable
Environmentally hazardous	Yes
Special precautions for user	Tunnel code: D
RID	
UN number or ID number	UN 1950
Proper shipping name	AEROSOLS
Transport hazard class(es):	2.1, EHSM
Packing group	Not applicable
Environmentally hazardous	Yes
Special precautions for user	Not Known
Inland waterway transport	
ADN	
UN number or ID number	UN 1950
Proper shipping name	AEROSOLS

Transport hazard class(es):	2.1, EHSM
Packing group	Not applicable
Environmentally hazardous	Yes
Special precautions for user	Not Known
Transport in inland waterway vessel	
Not evaluated	
Sea transport	
UN number or ID number	UN 1950
Proper shipping name	AEROSOLS
Transport hazard class(es):	2.1, EHSM
Packing group	Not applicable
Environmentally hazardous	Yes (Marine pollutant: YES)
Special precautions for user	EmS: F-D; S-U
Air transport	
IATA/ICAO	
UN number or ID number	UN 1950
Proper shipping name	AEROSOLS
Transport hazard class(es):	2.1
Packing group	Not applicable
Environmentally hazardous	No Mark as dangerous for the environment is needed
Special precautions for user	Not Known

Maritime transport in bulk according to IMO instruments
Maritime transport in bulk is not intended.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
To avoid risks to man and the environment, comply with the instructions for use.

16. OTHER INFORMATION

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Asp. Tox.	Aspiration hazard
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Aerosol	Aerosols
Eye Dam./Irrit.	Serious eye damage/eye irritation
STOT SE	Specific target organ toxicity — single exposure
Flam. Liq.	Flammable liquids
Flam. Gas	Flammable gases
Press. Gas	Gases under pressure

Skin Corr./Irrit.	Skin corrosion/irritation
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H227	Combustible liquid.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled.
H280	Contains gas under pressure; may explode if heated.
H220	Extremely flammable gas.
H315	Causes skin irritation.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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