

SAFETY DATA SHEET

according to Regulation (EC) No.1907/2006



DYNAFOG - ULV SOLUTION

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name: DynaFog - ULV Solution
Registration Number: Reg.No L10275 of Act No. 36 of 1947
Product description: Pyrethroid solution with synergists
Other identifiers: Deltamethrin 10 g/L, Permethrin 6 g/L, Piperonyl Butoxide 50 g/L

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Pesticide for the control of pests and vectors of diseases.
Uses advised against: No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Manufacturer	Name:	Avima (Pty) Ltd
	Address:	18, Aschenberg Street - Chamdor, Krugersdorp - 1754, South Africa
	Telephone:	+ 27 (0) 11 769 1300
	E-mail:	marne@avima.co.za
Supplier	Name:	Sanichem
	Address:	110, Ravel Street - Theoville AH, Vanderbijlpark - 1911, South Africa
	Telephone:	+27 16 987 7777
	E-mail:	info@sanichemsa.co.za

Emergency telephone number

South Africa	Health Emergency:	+27 086 155 5777 (Poison Information Helpline: 24 h)
	Customer Service:	+27 016 987 8787 (Sanichem Sales and Technical Information: Monday - Friday, 08:00 - 17:00)

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Health Hazards

Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.

Environmental Hazards

Acute (short-term) aquatic hazard, Category 1:	H400: Very toxic to aquatic life.
Chronic (long-term) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

Label elements



Hazard pictograms:

Signal word: Warning

Hazard statements:

H317: May cause an allergic skin reaction.
H351: Suspected of causing cancer.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Prevention precautionary statements:

P203: Obtain, read and follow all safety instructions before use.
P261: Avoid breathing mist, vapours and spray.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.

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P280: Wear protective gloves, protective clothing, eye protection, face protection and respiratory protection.

Response precautionary statement:

P302 + P352 + P362 + P364: IF ON SKIN: Wash with plenty of water and neutral soap. Take off contaminated clothing and wash it before reuse. P318: IF exposed or concerned, get medical advice. P321: Specific treatment (see First-aid section on this label). P333 + P317: If skin irritation or rash occurs. Get medical help. P391: Collect spillage.

Storage precautionary:

P405: Store locked up.

Disposal precautionary statement:

P501: Dispose of contents and container in accordance with local regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixture

Description: A mixture containing 1.6 % (w/v) of pyrethroids and 5% synergist.

Dangerous components:

Name	CAS No.	Classification according to Reg. (EC) 1272/2008 (CLP)	Hazard statement	% (w/v)
Deltamethrin (ISO)	52918-63-5	Acute Tox. 3 (Oral) Acute Tox. 3 (Inhalation) Aquatic Acute 1 Aquatic Chronic 1	H301 H331 H400 H410; M = 1000000	1.0 %
Permethrin (ISO)	52645-53-1	Acute Tox. 4 (Oral) Acute Tox. 4 (Inhalation) Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H302 H332 H317 H400 H410; M = 1000	0.6 %
Piperonyl Butoxide (ISO)	51-03-6	Aquatic Acute 1 Aquatic Chronic 1	H400 H410; M = 1	5.0 %
Aromatic hydrocarbon solvent	64742-95-6	Flam. Liq. 3 Skin Corr. 3 STOT SE 3 Asp. Tox. 1 Aquatic Acute 2 Aquatic Chronic 2	H226 H316 H336 H304 H401 H411	< 10%
Diesel	68334-30-5	Carc. 2	H351	> 60 %

Additional information:

Values are not product specifications. Ingredients not identified are proprietary or do not contribute to the classification. For the full wording of abbreviations and hazard statements, refer to section 16.

4. FIRST-AID MEASURES

Description of first aid measures

General advice: If medical advice is needed, have the product container or label at hand. If symptoms develop or persist, get medical help.

First-aid responders: First-aid responders should pay attention to self-protection and use the recommended personal protective equipment when the potential for exposure exists (refer to section 8).

After inhalation: If vapours or mists have been inhaled, move the person to fresh air, away from the immediate source of exposure. Loosen any tight clothing, if worn. Keep the person warm, at rest and under observation. If the person is not breathing, call an ambulance, then give artificial respiration. If breathing is difficult or irregular, administer oxygen.

After skin contact: In case of contact with skin, remove and isolate contaminated clothing and shoes. Rinse affected areas gently and thoroughly with neutral, non-abrasive soap and large amounts of running water. Clean contaminated clothing and shoes before reuse. If skin irritation develops or persists, get medical help.

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After eye contact:	In case of contact with eyes, rinse with large amounts of running water for at least 20 minutes, while holding eyelids apart. Remove contact lenses, if presented and easy to do. Continue rinsing.
After ingestion:	If the product has been swallowed, rinse the mouth. Do not induce vomiting, unless directed to do so by the poison center or doctor. Do not leave the person unattended. If vomiting occurs, have the person lean forward. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

The effects of exposure (inhalation, skin contact or ingestion) to the substance may be delayed. Exposure can lead to irritation, burning, eye pain, conjunctivitis, swelling of the eye and swelling of the eyelid. Prolonged skin contact may cause severe irritation, burning, rash, itching and blistering. Prolonged exposure to vapours may cause headache, nausea and dizziness, as well central nervous system depression, confusion, altered mental status, seizures, cardiac arrhythmias. Permethrin may induce some cutaneous side effects such as skin sensations, paresthesia and erythema.

Indication of any immediate medical attention and special treatment needed

This product contains pyrethroids and petroleum distillates. There is no specific antidote available. Vomiting may cause chemical burns in the mouth and throat. Probable mucosal damage may contraindicate the use of gastric lavage. Treat symptomatically and supportively. For skin effects after exposure, the application of tocopherol acetate (Vitamin E) is recommended as a therapeutic treatment. If symptoms develop or overexposure is suspected, monitor respiratory and cardiac functions. An evaluation of the liver, kidney and pancreas function, including a careful history of past and present symptoms and exams, is also advisable.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media:	Carbon dioxide (CO ₂), alcohol-resistant foam and dry chemical powder.
Unsuitable extinguishing media:	Water jets.

Special hazards arising from the substance or mixture

May produce hydrogen chloride and acrid smoke, fumes or mists on combustion.

Advice for firefighters

Protective equipment:	Firefighters and other personnel who may be exposed should wear positive pressure self-contained breathing apparatus (SCBA) in combination with fire kits, firefighter gloves and firefighter footwear, especially when fighting a large fire.
Protective actions:	Do not breathe fumes or vapours. Evacuate the surrounding area and keep unnecessary and unprotected personnel away. Ventilate confined areas before entering. Contain the fire if properly trained and equipped. Use extinguishing measures that are appropriate to the type of fire, local circumstances and surrounding environment. Fight fire from a safe distance, from an upwind, uphill and/or upstream position. Water spray may be used to cool unopened containers exposed to heat but avoid water coming in contact with the product. Remove undamaged containers from the site if it is safe to do so. If a leak or spill has not ignited, use water spray to disperse vapours and to protect people stopping the leak. Contain fire control materials for later disposal and avoid their release to the aquatic environment, keeping them out of sewers, watercourses and drinking water supplies. If risk of water pollution occurs, notify appropriate authorities. Clean all contaminated clothing before re-use. If contaminated clothing cannot be adequately decontaminated, dispose of as hazardous waste.
Emergency Action Code (EAC):	2X

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

Personal precautions:	Avoid contact with skin and eyes. Avoid inhalation of vapours and mists. Do not touch contaminated surfaces or walk into spilt material.
Non-emergency personnel:	Do not attempt to act without training. Keep unnecessary and unprotected personnel away. Notify emergency responders and leave the area.
Emergency responders:	Keep unnecessary and unprotected personnel away. Remove all ignition sources. Provide adequate ventilation, especially in confined areas. Wear protective gloves,

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protective clothing, eye protection, face protection and respiratory protective equipment.
Suitable fabrics include impervious cotton, cotton blends and PVC.

Environmental precautions

Application:

Do not apply directly to water, or to areas where surface water is present. Drift and runoff from treated areas may be hazardous to aquatic organisms in water adjacent to treated areas. The use of this chemical in areas where soils are permeable, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Spillages:

Prevent spilled material from entering waterway and sewer systems. Collect and dispose of dyke materials (e.g. dry sand, containment oil, etc.) in with local regulations. Notify appropriate authorities immediately if large spillages have contaminated surface water, drains, watercourses, sewer systems, or groundwaters.

Methods and materials for containment and cleaning up

Containment:

For large spills, suppress vapours, or mists with a water spray jet. If it is safe to do so, prevent further leakage or spillage by stopping the flow of the product. To prevent the product from spreading over a wide area or into the environment, seal surrounding drains and contain the leakage or spillage using inert materials. If dyked material can be recovered, store it in a sealed waste container for subsequent disposal. Label containers containing hazardous waste and materials employed in the cleanup of releases. Remove containers from the area as soon as possible. Clean contaminated objects and floors thoroughly, observing environmental regulations. Local authorities should be advised if significant spillages cannot be contained.

Cleaning-up:

Soak up small spillages with inert absorbent material (e.g. cloth, fleece, dry sand, sawdust, etc.) immediately. Clean the surface thoroughly to remove residual contamination. Never reuse or return spills to original containers. Collect, store, and dispose of contaminated materials properly, as they may pose the same hazard as this chemical.

Reference to other sections

For information regarding safe handling, refer to section 7. For information regarding individual protection measures, refer to section 8. For information regarding waste disposal, refer to section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Recommendations:

Do not handle until all safety precautions have been put in place. Wear protective gloves, protective clothing, eye protection, face protection and respiratory protective equipment. Avoid contact with skin and eyes. Avoid inhalation of vapours and mists. Handle and open containers with care to avoid spills, waste, and release to the environment. Keep containers tightly closed when not in use. Do not reuse empty containers. Pesticide applicators and workers must refer to the directions of use on the product's label. For further advice, contact the registration holder.

Protection against fire:

Do not place containers close to heat, hot surfaces, sparks, open flames or other ignition sources. Do not smoke or use sparking tools whilst handling this product. Take precautionary measures against electrostatic discharges. Vapours may form an explosive mixture with air.

General hygienic measures:

Do not eat, drink or smoke whilst handling this product. Wash hands and face immediately after handling this product and before eating, drinking, smoking, or using the toilet. Remove clothing and personal protective clothing equipment before leaving the working area.

Conditions for safe storage, including any incompatibilities

Storage conditions:

Store in a cool, dry and well-ventilated place. Keep it in the original labelled container. Keep containers upright and tightly closed. Prevent containers from freezing and from physical damage. Keep out of reach of unauthorized persons, children, or animals. Store in such a manner as to prevent cross-contamination. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

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Conditions to avoid:	Do not store under direct sunlight or close to heat, hot surfaces, sparks, open flames or other ignition sources. Do not store close to incompatible materials, food, animal feeding stuff, fertilizers, pharmaceuticals, cosmetics, or water supplies.
Packaging materials:	High-density polyethylene (HDPE)
Incompatible substances:	Explosives, flammable gases, flammable liquids, flammable solids, pyrophoric liquids, pyrophoric solids, strong oxidizing liquids, strong oxidizing solids, self-reactive substances and mixtures, self-heating substances and mixtures, substances and mixtures which in contact with water emit flammable gases, organic peroxides and desensitised explosives.
Further information:	Refer to local regulations to comply with quantity limits of hazardous chemicals under storage.

Specific end uses(s)

General pest control:	American cockroaches (<i>Periplaneta americana</i>), brown house ants (<i>Pheidole megacephala</i>), cat fleas (<i>Ctenophthalmus felis</i>), confused flour beetles (<i>Tribolium confusum</i>), dog ticks (<i>Rhipicephalus sanguineus</i>), German cockroaches (<i>Blattella germanica</i>), hide and skin beetles and larvae (<i>Dermestes maculatus</i>), houseflies (<i>Musca domestica</i>), litter beetles (<i>Alphitobius diaperinus</i>), meal moths (<i>Sitotroga cerealella</i>), yellow fever mosquitoes (<i>Aedes aegypti</i>).
Macadamia:	Macadamia felted coccid (<i>Eriococcus ironsidei</i>)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions. Comply with occupational safety, environmental, fire and other applicable local regulations.

Control parameters

Legal basis	Components	CAS-No.	Control parameters
EFSA	Deltamethrin (ISO)	52918-63-5	ADI: 0.01 mg/kg bw/day
	Permethrin (ISO)	52645-53-1	ADI: 0.05 mg/kg bw/day
	Piperonyl butoxide (ISO)	51-03-6	ADI: 0.2 mg/kg bw/day
	Aromatic hydrocarbon solvent	64742-95-6	ADI: 0.76 mg/kg bw/day
	Diesel	68334-30-5	ADI: Not evaluated
REACH	Deltamethrin (ISO)	52918-63-5	Not established
	Permethrin (ISO)	52645-53-1	Not established
	Piperonyl butoxide (ISO)	51-03-6	DNEL (workers, inhalation) – systemic effects, long term: 1.6 mg/m ³ DNEL (workers, inhalation) – systemic effects, short term: 7.75 mg/m ³ DNEL (workers, inhalation) – local effects, long term: 3.875 mg/m ³ DNEL (workers, inhalation) – local effects, short term: 3.875 mg/m ³ DNEL (workers, dermal) – systemic effects, long term: 0.443 mg/kg bw/day DNEL (workers, dermal) – systemic effects, short term: 55.5 mg/kg bw/day DNEL (workers, dermal) – local effects, long term: 0.440 mg/cm ² DNEL (workers, dermal) – local effects, short term: 0.888 mg/cm ² DNEL (workers, eyes): No hazard identified DNEL (general population, inhalation) – systemic effects, long term: 0.388 mg/m ³ DNEL (general population, inhalation) – systemic effects, short term: 3.875 mg/m ³ DNEL (general population, inhalation) – local effects, long term: 1.94 mg/m ³ DNEL (general population, inhalation) – local effects, short term: 1.94 mg/m ³ DNEL (general population, dermal) – systemic effects, long term: 0.221 mg/kg bw/day

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			DNEL (general population, dermal) – systemic effects, short term: 27.8 mg/kg bw/day DNEL (general population, dermal) – local effects, long term: 0.220 mg/cm² DNEL (general population, dermal) – local effects, short term: 0.220 mg/cm² DNEL (general population, oral) – systemic effects, long term: 0.221 mg/kg bw/day DNEL (general population, oral) – systemic effects, short term: 2.3 mg/kg bw/day
	Aromatic hydrocarbon solvent	64742-95-6	DNEL (workers, inhalation) – systemic effects, long term: 1.9 mg/m³ DNEL (workers, inhalation) – systemic effects, short term: 1286.4 mg/m³ DNEL (workers, inhalation) – local effects, long term: 837.5 mg/m³ DNEL (workers, inhalation) – local effects, short term: 1066.7 mg/m³ DNEL (workers, dermal) – systemic effects, long and short term: High hazard (no threshold derived) DNEL (workers and general population, dermal) – local effects, long term: High hazard (no threshold derived) DNEL (workers and general population, dermal) – local effects, short term: Low hazard (no threshold derived) DNEL (workers and general population, eyes): No hazard identified DNEL (general population, inhalation) – systemic effects, long term: 410 µg/m³ DNEL (general population, inhalation) – systemic effects, short term: 1152 mg/m³ DNEL (general population, inhalation) – local effects, long term: 178.6 mg/m³ DNEL (general population, inhalation) – local effects, short term: 640 mg/m³ DNEL (general population, oral) – systemic effects, long and short term: No hazard identified
	Diesel	68334-30-5	DNEL (workers, inhalation) – systemic effects, long term: 68.3 mg/m³ DNEL (workers, inhalation) – systemic effects, short term: 102.7 ng/m³ DNEL (workers and general population, inhalation) – local effects, long and short term: No hazard identified DNEL (workers, dermal) – systemic effects, long term: 2.9 mg/kg bw/day DNEL (workers, dermal) – systemic effects, short term: 11.1 mg/kg bw/day DNEL (workers and general population, dermal) – local effects, long term: High hazard (no threshold derived) DNEL (workers and general population, dermal) – local effects, short term: Low hazard (no threshold derived) DNEL (workers and general population, eyes): No hazard identified DNEL (general population, inhalation) – systemic effects, long term: 20.2 mg/m³ DNEL (general population, inhalation) – systemic effects, short term: 2572 mg/m³ DNEL (general population, dermal) – systemic effects, long term: 1.3 mg/kg bw/day DNEL (general population, dermal) – systemic effects, short term: 5.6 mg/kg bw/day DNEL (general population, oral) – systemic effects, long term: 1.25 mg/kg bw/day DNEL (general population, oral) – systemic effects, short term: No hazard identified

Additional information: For the full wording of abbreviations, refer to section 16. Monitoring of the concentration of substances in the workplace may be required to confirm compliance with OEL and the adequacy of exposure controls.

Exposure controls

Appropriate engineering controls

Eyewash stations and safety showers should be available in the vicinity of use or handling. Provide adequate ventilation or other engineering controls to keep the airborne concentrations of vapours and mist below the applicable workplace exposure limits indicated above, especially in confined areas.

Individual protection measures

General hygienic measures: Do not eat, drink or smoke whilst handling this product. Wash hands and face immediately after handling this product. Use appropriate degowning techniques to remove potentially contaminated clothing. Wash contaminated clothing and personal protective equipment before reuse. Contaminated work clothing should not be allowed

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Eye/face protection:	out of the workplace. Dispose of clothing and other absorbent materials that have been drenched or heavily contaminated with this mixture in accordance with local regulations. Wear tight-fitting, chemical splash goggles, face shield or other full-face protection to prevent eye and face contact with vapours, mists or splashes.
Hand protection:	Wear chemical-resistant, impervious gloves with a minimum thickness of 5 mm. Nitrile rubber gloves may be used.
Respiratory protection:	Where exposure through inhalation may occur, wear a full-face mask, half mask or quarter mask respirators with replaceable filter cartridges. N95, R95, or P95 filters may be used.
Body protection:	Wear appropriate chemical-resistant overalls, footwear, and socks. Additional body garments should be used based on the task being performed, e.g. PVC rain suits for chemical loading, off-loading, or dilution.

Environmental exposure controls

Keep containers tightly closed when not in use. Avoid release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state:	Liquid
Aspect:	Homogeneous
Colour:	Yellow
Odour:	Aromatic odour
Melting point/freezing point:	Not available
Boiling point/boiling range:	Not available
Flammability:	Combustible
Ignition temperature:	Not available
Explosive properties:	Not applicable
Explosion limits:	Not applicable
Flash point:	84 °C
Auto-ignition temperature:	Not applicable
Decomposition temperature:	Not available
pH-value:	pH 6 at 20 °C
Viscosity:	Not available
Solubility in/miscibility with water:	Miscible with water
Segregation coefficient (n-octanol/water):	Refer to section 12 for information on the ingredients of the mixture
Vapor pressure:	Not available
Density:	0.86 g/mL at 22.5 °C
Vapour density:	Not available

10. STABILITY AND REACTIVITY

Reactivity:	Vapours may form an explosive mixture with air.
Chemical stability:	Chemically stable under standard use and storage conditions.
Possibility of hazardous reactions:	May react with pyrophoric liquids, pyrophoric solids, strong oxidizing liquids, strong oxidizing solids, self-reactive substances and mixtures, self-heating substances and mixtures, substances and mixtures which in contact with water emit flammable gases, organic peroxides and desensitised explosives.
Conditions to avoid:	Excessive heating.
Incompatible materials:	Explosives, flammable gases, flammable liquids, flammable solids, pyrophoric liquids, pyrophoric solids, strong oxidizing liquids, strong oxidizing solids, self-reactive substances and mixtures, self-heating substances and mixtures, substances and mixtures which in contact with water emit flammable gases, organic peroxides and desensitised explosives.
Hazardous decomposition products:	May produce hydrogen chloride and acrid smoke, fumes or mists on combustion.

11. TOXICOLOGICAL INFORMATION

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Information on toxicological effects

Aromatic hydrocarbon solvent

Acute oral:	LD50 - rat: > 5000 mg/kg bw
Acute dermal:	LD50 - rabbit: > 2000 mg/kg bw
Acute inhalation:	LC50 - rat: 5 mg/m ³ air
Skin corrosion/skin irritation:	Rabbit: Adverse effect observed (irritating)
Serious eye damage/eye irritation:	Rabbit: No adverse effect observed (not irritating)
Respiratory irritation/corrosion:	No data available
Skin sensitization:	Guinea pig: No adverse effect observed (not sensitizing)
Germ cell mutagenicity:	Mouse lymphoma L5178Y cells: No adverse effect observed (non-mutagenic)
Carcinogenicity:	NOAEC - rat: 9 869 mg/m ³
Reproductive toxicity:	NOAEL - rat: 500 mg kg/bw/day
STOT – single exposure:	No data available
STOT – repeated exposure:	NOAEC – rat: 1402 mg/L air
Aspiration hazard:	No data available

Deltamethrin

Acute oral:	LD50 - rat: > 50 mg/kg bw
Acute dermal:	LD50 - rat: 2000 mg/kg bw
Acute inhalation:	LC50 - rat: 3.1 mg/L air
Skin corrosion/skin irritation:	Rabbit: No adverse effect observed (not irritating)
Serious eye damage/eye irritation:	Rabbit: No adverse effect observed (not irritating)
Respiratory irritation/corrosion:	No data available
Skin sensitization:	Guinea pig: No adverse effect observed (not sensitizing)
Germ cell mutagenicity:	Salmonella typhimurium: No adverse effect observed (non-mutagenic)
Carcinogenicity:	NOEL - rat: 1 mg/kg/day
Reproductive toxicity:	NOEL - rat: 18.3 to 43.8 mg/kg bw/day
STOT – single exposure:	NOEL - rat: 1.0 mg/kg/day
STOT – repeated exposure:	NOAEL - rat: 1 mg/kg bw/day
Aspiration hazard:	No data available

Diesel

Acute oral:	LD50 - rat: > 5000 mg/kg bw
Acute dermal:	LD50 - rat: > 2000 mg/kg bw
Acute inhalation:	LC50 (4h) - rat: 5.4 mg/L air
Skin corrosion/skin irritation:	Rabbit: Adverse effect observed (irritating)
Serious eye damage/eye irritation:	Rabbit: No adverse effect observed (Not irritating)
Respiratory irritation/corrosion:	No data available
Skin sensitization:	Guinea pig: No adverse effect observed (not sensitizing)
Germ cell mutagenicity:	No adverse effect observed (non-mutagenic)
Carcinogenicity:	LOAEL - mouse: 25 mg/kg bw/day
Reproductive toxicity:	NOAEL - rat: 125 mg/kg bw/day
STOT – single exposure:	No data available
STOT – repeated exposure:	NOAEL - rat: 30 mg kg/bw/day
Aspiration hazard:	No data available

Permethrin

Acute oral:	LD50 - rat: > 480 mg/kg bw
Acute dermal:	LD50 - rat: > 2000 mg/kg bw
Acute inhalation:	LC50 - rat: 23.5 mg/L air
Skin corrosion/skin irritation:	Rabbit: No adverse effect observed (not irritating)
Serious eye damage/eye irritation:	Rabbit: No adverse effect observed (not irritating)
Respiratory irritation/corrosion:	No data available
Skin sensitization:	Guinea pig: Adverse effect observed (sensitizing)
Germ cell mutagenicity:	Salmonella typhimurium: No adverse effect observed (non-mutagenic)
Carcinogenicity:	Rat: No adverse effect observed (not carcinogenic)
Reproductive toxicity:	NOEL - rat: > 180 mg/kg bw
STOT – single exposure:	No data available
STOT – repeated exposure:	No data available
Aspiration hazard:	No data available

Piperonyl butoxide

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Acute oral:	LD50 - rat: > 2000 mg/kg bw
Acute dermal:	LD50 - rat: 2000 mg/kg bw
Acute inhalation:	LC50 - rat: 5.2 - 5.9 mg/L air
Skin corrosion/skin irritation:	Rabbit: No adverse effect observed (not irritating)
Serious eye damage/eye irritation:	Rabbit: No adverse effect observed (not irritating)
Respiratory irritation/corrosion:	No data available
Skin sensitization:	Guinea pig: No adverse effect observed (not sensitizing)
Germ cell mutagenicity:	Salmonella typhimurium: No adverse effect observed (non-mutagenic)
Carcinogenicity:	Based on available data, the classification criteria are not met
Reproductive toxicity:	NOAEL - rat: > 89 mg/kg bw
STOT – single exposure:	No data available
STOT – repeated exposure:	No data available
Aspiration hazard:	No data available

Information on other hazards

Endocrine-disrupting properties: Substances of the mixture are not identified as having endocrine-disrupting properties.

12. ECOLOGICAL INFORMATION

Toxicity

Aromatic hydrocarbon solvent

Fish:	LL50 (96h) - <i>Oncorhynchus mykiss</i> (rainbow trout): 10 mg/L
Aquatic invertebrates:	EL50 (48h) - <i>Daphnia magna</i> (water flea): 4.5 mg/L
Algae and cyanobacteria:	EL50 (72h) - <i>Pseudokirchnerella subcapitata</i> (microalgae): 3.1 mg/L
Earthworms:	No data available
Birds:	No data available
Bees:	No data available

Deltamethrin

Fish:	LC50 (96h) - <i>Oncorhynchus mykiss</i> (rainbow trout): 688 mg/L
Aquatic invertebrates:	EC50 (48h) - <i>Daphnia magna</i> (water flea): 75.3 mg/L
Algae and cyanobacteria:	EC50 (72h) - <i>Chlorella vulgaris</i> (green algae): 0.022 mg/L
Earthworms:	LC50 (14 days) - <i>Eisenia fetida</i> (manure worm): > 1290 mg/kg soil
Birds:	LD50 (14 days) - <i>Colinus virginianus</i> (bobwhite quail): > 2000 mg/kg bw
Bees:	LD50 (48h) - <i>Apis mellifera</i> (honeybee), contact: 49 mg/bee LD50 (48h) - <i>Apis mellifera</i> (honeybee), oral: 32 mg/bee

Diesel

Fish:	No data available
Aquatic invertebrates:	EL50 (48h) - <i>Daphnia magna</i> (water flea): 68 mg/L
Algae and cyanobacteria:	No data available
Earthworms:	No data available
Birds:	No data available
Bees:	No data available

Permethrin

Fish:	LC50 (96h) - <i>Oncorhynchus mykiss</i> (rainbow trout): 0.0051 mg/L
Aquatic invertebrates:	EC50 (48h) - <i>Daphnia magna</i> (water flea) = 0.0001874 mg/L
Algae and cyanobacteria:	EC50 (72h) - <i>Pseudokirchneriella subcapitata</i> (green algae): >1.13 mg/L
Earthworms:	NOEC (56 days) - <i>Lampito mauritii</i> (Indian earthworm) = 371 mg/kg soil
Birds:	LC50: > 4640 mg/kg bw
Bees:	LD50 (48h) - <i>Apis mellifera</i> (honeybee), contact: 23.5 mg/bee LD50 (48h) - <i>Apis mellifera</i> (honeybee), oral: 163 mg/bee

Piperonyl Butoxide

Fish:	LC50 (96h) - <i>Cyprinodon variegatus</i> (sheepshead minnow): 3.94 mg/L
Aquatic invertebrates:	EC50 (48h) - <i>Daphnia magna</i> (water flea): 0.510 mg/L
Algae and cyanobacteria:	EC50 (72h) - <i>Raphidocelis subcapitata</i> (green algae): 3.89 mg/L
Earthworms:	NOEC (56 days) - <i>Eisenia fetida</i> (manure worm): 65.8 mg/kg soil
Birds:	LD50 - <i>Colinus virginianus</i> (northern bobwhite quail): > 2250 mg/kg bw
Bees:	LC50 (48h) - <i>Apis mellifera</i> (honeybee), oral: > 0.025 mg/bee

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Persistence and degradability

Aromatic hydrocarbon solvent

Hydrolysis:	No data available
Biodegradation in water:	No data available
Biodegradation in water sediments:	No data available
Biodegradation in soil:	No data available
Adsorption/desorption:	No data available
Henry's law constant:	No data available

Deltamethrin

Hydrolysis:	Half-life: > 365 days at 25 ° C
Biodegradation in water:	Not readily biodegradable in freshwater
Biodegradation in water sediments:	No data available
Biodegradation in soil:	Half-life: 48 days at 12 °C
Adsorption/desorption:	Koc: 408250
Henry's law constant:	H: 0.1252 Pa m ³ /mol

Diesel

Hydrolysis:	No data available
Biodegradation in water:	Readily biodegradable in freshwater
Biodegradation in water sediments:	No data available
Biodegradation in soil:	No data available
Adsorption/desorption:	No data available
Henry's law constant:	No data available

Permethrin

Hydrolysis:	No data available
Biodegradation in water:	Not readily biodegradable
Biodegradation in water sediments:	No data available
Biodegradation in soil:	No data available
Adsorption/desorption:	Koc: 26930
Henry's law constant:	H: > 0.0046 Pa m ³ /mol

Piperonyl Butoxide

Hydrolysis:	Half-life: > 500 days at 25 °C, pH 7
Biodegradation in water:	Not readily biodegradable in freshwater
Biodegradation in water sediments:	Half-life: 109 days at 25 °C
Biodegradation in soil:	Half-life: 58.3 days at 25 °C
Adsorption/desorption:	Koc: 2506.5 at 20 °C
Henry's law constant:	No data available

Bioaccumulative potential

Aromatic hydrocarbon solvent

Segregation coefficient (n-octanol/water):	No data available
Bioconcentration factor:	No data available

Deltamethrin

Segregation coefficient (n-octanol/water):	Log Kow: 4.6 at 25 °C
Bioconcentration factor:	BCF – aquatic species: > 310

Diesel

Segregation coefficient (n-octanol/water):	No data available
Bioconcentration factor:	No data available

Nonylphenol polyethylene glycol

Segregation coefficient (n-octanol/water):	Log Kow: 5.669 at 25 °C
Bioconcentration factor:	BCF – aquatic species: 7.86

Permethrin

Segregation coefficient (n-octanol/water):	Log Kow: 4.67 at 25 °C
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Bioconcentration factor: BCF – aquatic species: > 500

Piperonyl Butoxide

Segregation coefficient (n-octanol/water): Log Kow: 4.8 at 20 °C
Bioconcentration factor: BCF – aquatic species: > 290

Mobility in soil

Acetone is mobile in soil and may be transported by soil water. Deltamethrin and Piperonyl butoxide have low mobility potential in soil. No mobility studies are available for Aromatic hydrocarbon solvent.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Residues disposal

Protective measures: The safety precautions applied to the handling of the product shall be considered when disposing of residues. For further details, refer to section 7.

Method: Do not burn residues. Do not dispose of residues with normal waste, or to sewer systems. Surplus product, spray mixture, rinse water or any residue which cannot be used according to label instructions shall be properly disposed of according to local regulations.

Recommendations: To reduce the problems associated with the disposal of hazardous chemicals, consider purchasing quantities limited to the amounts needed in each season. Prepare only as much product as needed at each application, following the instructions of use.

Container disposal

Protective measures: Care should be taken when handling empty containers that have not been thoroughly cleaned or rinsed out. Empty containers may retain vapours and product residues and hence be potentially hazardous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose containers that were not thoroughly rinsed or cleaned to heat, flame, sparks or other sources of ignition. They may explode and cause injury and/or death.

Method: Do not burn empty containers. Do not reuse empty containers for any other purpose. Do not dispose of contaminated containers in normal waste. Used containers shall be closely secured and stored until they can be safely disposed of. If possible, triple rinse or pressure rinse contaminated containers. If recycling facilities are available, deliver decontaminated containers to the designated collection point. If recycling facilities are not available, puncture, break or crush decontaminated containers to avoid reuse and provide appropriate disposal in accordance with local regulations.

Sewage disposal

Do not wash or dispose of untreated waste, spillages, residues or product surplus into sewers or water systems.

Other disposal recommendations

The generation of waste should be minimised or avoided wherever possible. If uncertain of local requirements, contact the proper environmental authorities for information on waste disposal in your area.

14. TRANSPORT INFORMATION



Transport pictogram:
UN Number or ID number: UN3352
UN proper shipping name: PYRETHROID PESTICIDE, LIQUID, TOXIC, packing groups II & III
Transport hazard class(es): 6.1 Poison
Packaging group: III Substances presenting low danger
Environmental hazards: Yes
Maritime transport in bulk: Not applicable

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15. REGULATORY INFORMATION

Safety, health, and environmental regulations/legislation specific for the substance or mixture

National regulations:	Registered under the Registrar (Act No 36 of 1947) for agricultural remedies as published by Proclamation No. 111 (Government Gazette No. 3977) on 20 October 2017. Reg. No: L10275 of Act No. 36 of 1947. In compliance with Occupational Health and Safety Act (85/1993): Regulations for Hazardous Chemical Agents, 2021, published by Government Notice No. 11263 (Government Gazette No. 44348) on 29 March 2021.
Other regulations:	In compliance with Regulation (EC) No.1907/2006 of the European Parliament and of the Council on 18 December 2006.
Reference documents:	Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 2021. Dangerous Goods Emergency Action Code List (TDG), 2021

Chemical safety assessment

For this product, a chemical safety assessment was not carried out.

16. OTHER INFORMATION

Revisions

Version	Date issued	Updates
1	01.07.2022	GHS classification and labelling of chemicals compliance.
2	01.02.2025	Registration holder transfer
3	01.05.2025	Section 7: Specific end uses (macadamia felted coccid)

Full text of H-Statements listed

H226	Flammable liquid and vapour
H301	Toxic if swallowed
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H316	Causes mild skin irritation
H317	May cause an allergic skin reaction
H331	Toxic if inhaled
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long-lasting effects
H411	Toxic to aquatic life with long-lasting effects

Full text of abbreviations of hazard categories listed

Acute Tox.	Acute (short-term) toxicity
Aquatic Acute	Acute (short-term) aquatic toxicity
Aquatic Chronic	Chronic (long-term) aquatic toxicity
Asp. Tox.	Aspiration toxicity
Carc.	Carcinogenicity
Flam. Liq.	Flammable liquid
Skin Corr.	Skin corrosive
Skin Sens.	Skin sensitization
STOT SE	Single target organ toxicity single exposure

Full text of abbreviations of control parameters listed

ADI	Acceptable Daily Intake
DNEL	Derived No-Effect Level
EFSA	European Food Safety Authority

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REACH Registration, Evaluation, Authorisation and Restriction of Chemicals

Full text of abbreviations of toxicity and ecotoxicity reference values listed

EC50	Effective concentration estimated to produce a specific effect in 50% of the test organisms.
EL50	Effective loading estimated to cause the death of 50% of the test organisms.
LC50	Lethal concentration estimated to cause the death of 50% of the test organisms.
LD50	Lethal dosage estimated to cause the death of 50% of the test organisms.
LL50	Lethal load estimated to cause the death of 50% of the test organisms.
NOAEL	No observed adverse effect level.
NOEC	No observed effect concentration.

Disclaimer

Each user should read this Safety Data Sheet (SDS) and consider the safety precaution recommended. This SDS summarises the present state of our knowledge about the health and safety hazard information and the safe handling and use of the product and is to be used for this product only. The information was obtained from sources which we believe are reliable and is provided in good faith, but do not purport to be all inclusive and shall be used only as a guide. It does not represent any guarantee of the properties of the product. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and for this reason, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.