

SAFETY DATA SHEET

According to GHS Rev07 and
SANS 11014:2010 / SANS 10234:2019.

Product: GRAINFOG
Revision date: 24 August 2023
SDS Revision: SDS_GF_06
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National Fumigants

Section 1: Identification

GHS Product identifier:

Active Ingredient: PYRETHRINS
Trade name: **GRAINFOG**

Other means of identification:

UN Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Pyrethrum, Piperonyl Butoxide MIXTURE), 9, III, Marine Pollutant
UN number: 3082
CAS number: 8003-34-7 (Active: Pyrethrum); 51-03-6 (Synergist: Piperonyl Butoxide)

Recommended use of the chemical and restrictions on use:

A ready for use non-residual contact insecticide mixture for the control of insects in mills, oilseeds, grain and tobacco warehouses. For insecticide resistance management, Grainfog is a group 3A Insecticide.

Supplier's details:

NATIONAL FUMIGANTS (PTY) LTD
Unit 2, Shakashead Industrial Park, Shakashead,
KZN 4390, Republic of South Africa
Telephone: +27 (0) 32 061 0044 E-mail: info@natfum.co.za

Emergency phone number:

Poisons Information 24-hour Helpline: **0861 555 777**
Griffon Poison Information Centre: **+27 82 446 8946**

Section 2: Hazards Identification

Hazardous Nature:

This product is classified according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Revision 07, SANS11014:2010 and SANS10234:2019.

GHS Classification:

Physical Hazards: Not classified
Health Hazards: Acute toxicity (Oral, Dermal, Inhalation) – Category 4
Aspiration hazard – Category 1
Environmental Hazards: Hazardous to aquatic environment, short-term – Acute 1
Hazardous to aquatic environment, long-term – Chronic 1

Pictograms:



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Signal Word: DANGER

Hazard Statements:

H304 May be fatal if swallowed and enters airways
H302 Harmful if swallowed
H312 Harmful if in contact with skin
H332 Harmful if inhaled
H400 Very toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects

Precautionary Statements:

General:

P101: If medical advice is needed, have product container or label at hand
P102: Keep out of reach of children
P103: Read container label carefully and follow all instructions

Prevention:

P273 Avoid release to the environment
P261 Avoid breathing mist/vapours/spray
P264 Wash thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P391 Collect spillage.
P301 + P310 IF SWALLOWED immediately call a POISON CENTRE / doctor.
P331 Do not induce vomiting.
P330 Rinse mouth
P302 + P352 IF ON SKIN: Wash with plenty of water
P312 Call a POISON CENTER if you feel unwell
P362 + P364 Take off contaminated clothing and wash it before reuse
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTRE or doctor if you feel unwell.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with local /regional/ national/ international regulations.

Section 3: Composition/information on ingredients

Chemical Characterisation: Mixture

Description: Ultra-low volume (ULV) liquid spray of Pyrethrins / Piperonyl Butoxide 5:50 g/l.

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<u>Substance</u>	<u>CAS number</u>	<u>Conc. (%w/w)</u>	<u>Substance classification</u>
Process Oil	64742-54-7	30 - 60%	Asp. Tox. 1, H304
Paraffinic Oil	112-40-3, 629-50-5	30 - 60%	Asp. Tox. 1, H304
Piperonyl Butoxide	51-03-6	6.3%	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Pyrethrins	8003-34-7	0.6%	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332, Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Additional Information:

PYRETHRINS: (Z)-(S)-2-methyl-4-oxo-3-(penta-2,4-dienyl)cyclopent-2-enyl(1R)-trans-2,2-dimethyl-3-(2-methylprop-1-enyl)cyclopropane carboxylate. (Pyrethrin I) Pyrethrin I: $C_{21}H_{28}O_3$; Cinerin I: $C_{20}H_{28}O_3$; Jasmolin I: $C_{21}H_{30}O_3$ (Technical)
PIPERONYL BUTOXIDE: S-[2-(2-butoxyethoxy)ethoxymethyl]-6-propyl-1,3-benzodioxole $C_{19}H_{30}O_5$ (Technical)

Section 4: First-Aid Measures

Description of necessary first-aid measures:

Contact a physician or the Poisons Information 24-hour Helpline, 0861 555 777. This SDS should be at hand when calling.

Protection of first aiders:

Routes of exposure:

After Inhalation:

Remove from exposure to fresh air, call physician, and administer oxygen if breathing is labored.

After Ingestion:

Immediately call a PHYSICIAN or POISONS INFORMATION 24-hour Helpline. Do not induce vomiting unless told to by a Poisons Information Helpline or doctor. Rinse mouth with water. Have victim drink 240 –300 mℓ water. If vomiting occurs, have victim lean forward to reduce risk of aspiration.

After Skin contact:

Remove contaminated clothing and dispose of safely. In a well-ventilated area, dry wipe exposed skin and wash skin gently and thoroughly with water (use non-abrasive soap if necessary). Call a physician if you feel unwell.

After Eye contact:

Flush the contaminated eye(s) with gently flowing water for 15 minutes, while holding the eyelid(s) open. Take special care if the exposed person is wearing contact lenses. Get medical attention immediately.

Most important symptoms caused by exposure, acute and delayed:

Aspiration hazard.

Causes skin irritation. May cause an allergic skin reaction with individuals with a sensitivity to Piperonyl Butoxide. Repeated or prolonged skin contact may lead to irritant contact dermatitis.

May cause dizziness and/or drowsiness, nausea, irritation to mucous membranes and respiratory tract if inhaled. May cause vomiting and diarrhea, dizziness, narcosis and lung damage if ingested.

Emergency phone number: 0861 555 777 (Poisons Information 24-hour Helpline)

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Section 5: Fire Fighting Measures

Suitable extinguishing media:

Carbon dioxide or dry chemical or foam.

Unsuitable extinguishing media:

DO NOT use water jets.

Specific Hazards arising from the chemical:

Combustible liquid. Avoid all ignition sources.

Hazardous decomposition product Carbon monoxide.

Special protective equipment and precautions for fire-fighters:

Do not breathe fumes/gas/vapour/spray. For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

Remove product containers from fire-area, if possible to do so without risk.

Do not allow run-off from firefighting or dilution to enter drains, water courses, streams or drinking water supply. Dike fire-control run-off for later disposal.

Additional Information:

Apply cold water to cool containers exposed to danger. Water or foam may cause frothing. Water spray may be used to flush spills away from exposure.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Protective clothing (overall) should be worn.

Use leather gloves as they provide heat insulation and do not absorb oil.

Environmental precautions:

Prevent spillage from entering drains or water courses, basements or confined areas.

Spillage or uncontrolled discharges into water sources must be alerted to the Department of Water Affairs and other appropriate regulatory bodies.

Methods and materials for containment and cleaning up:

Isolate spill area and stop leaks if possible.

Small Spills:

Avoid inhalation of vapours. Collect and seal in properly labeled drums for disposal.

Large Spills:

Contain, prevent run off into drains, and waterways. Absorb on fire retardant treated sawdust, diatomaceous earth, sand, peat sorb, etc. Shovel up and dispose of at an appropriate waste disposal facility, in accordance with current applicable laws and regulations, and product characteristics at time of disposal. Flush residue with large quantity of water. Use flameproof equipment.

Reference to other sections:

See section 8 for information on personal protection equipment

See section 13 for information on disposal

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Section 7: Handling and Storage

Handling:

Normal hygiene practices. Do not breathe gas, fumes, vapour or spray. Wear suitable respiratory equipment. Avoid contact with skin and eyes. Keep away from incompatibles.

Storage:

Store in a secure, dry, well-ventilated separate room, building or covered area. Do not store in open or un-labelled containers. DO NOT STORE WITH strong oxidizing agents or combustible material. Keep containers closed. Store at ambient temperatures.

Reference to other sections:

See section 2 for information on hazard precautions.

See section 8 for information on personal protection equipment.

See section 10 for information on stability and reactivity.

Section 8: Exposure Controls and Personal Protection

Permissible concentration:

Exposure Limits (ACGIH/HCIS)	CAS No	TLV-TWA	TLV-STEL
Pyrethrum (OSHA)	8003-34-7	5 mg/m ³	

TWA (Time Weighted Average) is the average airborne concentration of a particular substance when calculated over a normal 8-hour working day for a 5-day working week.

STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL

Engineering controls:

Comply with occupational safety, environmental, fire and other applicable regulations.

Individual Protection Measures such as Personal protective equipment (PPE):

Respiratory protection:

Adequate ventilation; Organic Vapour canister.

See standards AS/NZS1715 and AS/NZS1716 or DIN EN140 or SANS 50140:1998.

Hand protection:

Wear heavy rubber gloves.

See standards AS2161 or EN374-2 and EN374-3 or SANS416:2012 or ISO18889:2019.

Eye protection:

PVC Face shields should be worn to protect eyes and face against splashes.

See standards AS/NZS 1336 and AS/NZS 1337 or EN166:2001 or SANS50166:2018.

Skin and body protection:

Wear protective clothing such as leather safety boots and impervious cotton or cotton blend overalls.

PVC bib /rain suite should be worn when loading /of loading of product.

See standards AS/NZS 4501 and AS/NZS 2210

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Section 9: Physical and Chemical Properties

Appearance:

Physical state: Liquid
Form: Not applicable
Colour: Clear, yellowish

Odour: Perceptible

Odour threshold: Not available

Melting Point: Not applicable

Initial boiling point & boiling range: 200-240 degrees C (refers to solvent)

Flammability: Flammable,

Lower explosion limit: Not available

Upper explosion limit: Not available

Flashpoint: ca. 85 deg C (refers to solvent)

Evaporation rate: Not available

Auto-ignition temperature: 230 degrees C (refers to solvent)

Decomposition temperature: Not available

pH value: Neutral

Viscosity: 1.8 mm²/s @ 40 degrees C

Specific heat value: Not available

Saturated vapour concentration: Not available

Release of invisible flammable

Vapours and gasses:

Solubility: Not applicable

Vapour pressure: Not available

Vapour density: Not applicable

Density: 0.82 kg/L @ 20 degrees C

Biodurability or biopersistence:

Surface coating or chemistry: Not available

Section 10: Stability and Reactivity

Reactivity: -

Chemical stability:

Product is stable at ambient temperature and under normal conditions of use.

Possibility of hazardous reactions: -

Conditions to avoid:

Keep away from naked flame.

Avoid extreme heat. The material is volatile. Prolonged storage at elevated temperatures may interfere with quality.

Sensitive to light and air.

Incompatible materials:

Keep away from oxidizing agents.

Decomposes under alkaline conditions.

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Hazardous decomposition products:
carbon monoxide

Section 11: Toxicological information

Acute Toxicity:

Mixture is classified as Acute Toxicity Oral, Dermal, Inhalation (Category 4).

Technical ingredient, Pyrethrins, is classified for Acute Toxicity Oral, Dermal, Inhalation (Category 4).

The values below are for the technical ingredients of the mixture which are classified Acute Toxicity:

CAS No	Chemical name	Exposure Route	Dose
8003-34-7	Pyrethrins	Oral	LD50 (rat) 1030-2370 mg/kg
		Dermal	LD50 (Rabbit) >2000 mg/kg
		Inhalation	LC50 (rat) >3.4 mg/L air (4h)

Information on likely routes of exposure:

The main routes of exposure are dermal and inhalation.

Ingestion (oral):

May be fatal if swallowed.

Inhalation:

May be fatal if enters the airways. This product is classified as an aspiration hazard, category 1, due to the hazardous component, paraffins.

Dermal:

The product is slightly irritating to skin and eyes and may cause dermatitis.

Delayed and immediate effects and also chronic effects from short and long-term exposure:

For immediate symptoms of exposure see section 2.

Respiratory or skin Sensitisation: Pyrethrum is classified as mildly irritating to skin, eyes, nose and throat (OSHA). Piperonyl butoxide is classified as mildly irritating to skin, eyes, nose and throat (OSHA)

Germ cell Mutagenicity: Not classified – data lacking (OSHA)

Carcinogenicity: Pyrethrum is not classifiable as a human carcinogen. (NCBI). Piperonyl butoxide is not classifiable as a human carcinogen. (IARC)

Reproductive toxicity: Pyrethrum not classifiable.

Specific organ toxicity (STOT) – Single exposure: Pyrethrum classified STOT-SE 3: Narcotic effects. (OSHA)

Specific organ toxicity (STOT) – Repeated exposure: Classification criteria not met. (OSHA)

Chronic health effects: Pyrethrum classified as long-term organ toxicity other than nervous, respiratory, hematologic or reproductive (OSHA)

Reference to other sections:

See section 2 on hazards identification.

See section 4 on first aid.

Section 12: Ecological Information

Toxicity:

This product is toxic to aquatic organisms, including fish and invertebrates.

Keep away from waterways, sewers, drains, basements and confined spaces.

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Pyrethrins	<u>Birds:</u> (NCBI) Mallard ducks Starlings <u>Fish:</u> Highly toxic Bluegill sunfish Rainbow trout Sheepshead minnow <u>Daphnia:</u> <u>Bees:</u> Toxic to bees, but exhibits a repellent effect.	LD ₅₀ : LD ₅₀ : LC ₅₀ : LC ₅₀ : (96h) LC ₅₀ : (96h) EC ₅₀ : LD ₅₀ : (oral) LD ₅₀ : (contact)	>10 000 mg /kg (Acute oral) > 100 mg /kg (Acute oral) 10 µg /ℓ (Supplier) 5.2 µg /ℓ (Supplier) 16 µg /ℓ (Supplier) 12 µg /ℓ (Supplier) 22 ng /bee 130-290 ng /bee
Piperonyl Butoxide	<u>Fish:</u> Highly toxic <u>Daphnia:</u>	LC ₅₀ : (96 h) EC ₅₀ : (48h)	6.12 mg /ℓ (Supplier) 0.51 mg /ℓ (Supplier)
Distillates (petroleum)	<u>Fish:</u> Rainbow trout product	LC ₅₀ : (96h)	2.9 mg /ℓ from similar

Persistence and degradability:

Pyrethrins have low persistence in the environment due to rapid breakdown in presence of UV light.
Process oil is not readily biodegradable.

Bio-accumulative potential:

No data available.

Mobility in soil:

Pyrethrins are relatively immobile in soil.

Other information:

When piperonyl butoxide is combined with pyrethrins, the insecticidal activity of the latter drug is increased 2-12 times. (NCBI)

Section 13: Disposal Considerations

Advice on disposal:

Please refer to label.

Dispose of waste according to national and local regulations for hazardous materials.

Recommended disposal of waste from residues/ unused product:

Product should be utilized completely to avoid disposal. If not possible, dispose of at supervised waste incineration plant, in accordance with current applicable laws and regulations.

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Reference to other sections:

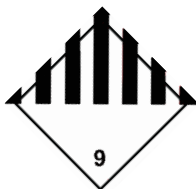
See section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

Section 14: Transport Information

Land Transport (ADR/RID):

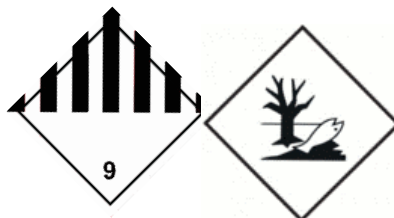
UN Number: UN 3082,
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Pyrethrum, Piperonyl Butoxide MIXTURE)
UN Classification: M6 "Pollutant to the aquatic environment, liquid"
Transport hazard class: 9 Miscellaneous



Hazard label:
Packing group: 3
Special precautions for user: Limited quantity (5 L); Exempted quantity (E1)
Packing instruction (P001)
Hazchem Code: 4Z

Marine Transport (IMDG Code):

UN Number: UN 3082,
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Pyrethrum, Piperonyl Butoxide MIXTURE)
IMDG Code: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Pyrethrum, Piperonyl Butoxide MIXTURE), 9, III, Marine Pollutant
UN Classification: M6 "Pollutant to the aquatic environment, liquid"
Transport hazard class: 9 Miscellaneous



Hazard label:
Packing group: 3
Environmental Hazards: MARINE POLLUTANT

Air Transport (ICAO): Contact manufacturer.

Environmentally Hazardous: Yes

Special precautions: Keep away from food, drink and animal feeding stuffs. Petroleum Hydrocarbons.

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Section 15: Regulatory Information

National Registrations: L3096

Useful laws relating to the product: Hazardous Substances Act (Act No 15 of 1973)
(South Africa) Occupational Health and Safety Act (No 85 of 1993)
National Road Traffic Act (1996)
Agricultural Remedies Act (Act No 36 of 1947)
National Environmental Management Waste Act (Act No 59 of 2008)

Section 16: Other Information

Date of preparation or review of SDS document:

Date of preparation/issue of this SDS document: 24 August 2023

Revision: SDS_GF_06

Prepared by: National Fumigants (Pty) Ltd.

Last Revision superseded by this revision: 16 March 2023 (SDS_GF_05)

First issued: 2001

Abbreviations:

ADR/RID	European agreements concerning international carriage of dangerous goods by road and rail.
CAS Number	Chemical Abstracts Number
GHS	Globally Harmonised System of classification and labelling of chemicals
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighter.
ICAO	International Civil Aviation Organisation
IARC	International Agency Research on Cancer
IRAC	Insecticide Resistance Action Committee.
IMDG Code	International Maritime Dangerous Goods Code
NCBI	National Centre for Biotechnology Information
OSHA	Occupational Safety and Health Administration
TLV-TWA	Threshold Limit Value – Time Weighted Average
TLV-STEL	Threshold Limit Value – Short Term Exposure Limit
UN Number	United Nations Number

Please read all labels carefully before using this product.

This SDS is prepared in accord with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Revision 07 and SANS 11014:2010 and SANS 10234:2019. This SDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. It is believed to be accurate at date of issuance. National Fumigants (Pty) Ltd makes no representation of the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability for any loss or damage related to the supply or use of the information in the safety data sheet. The user should read the SDS before use and consider the suitability of the information in the context of how the product will be handled and used in the workplace, including using the product in conjunction with other products.

END OF SDS

Emergency phone number: 0861 555 777 (Poisons Information 24-hour Helpline)