



SAFETY DATA SHEET

RANGEFINDER GG

Reg. No. /Nr L 9736, Act/Wet No. /Nr 36 Of Van 1947
N-AR 1656

Section 1. Identification of the material and the supplier

Product: **RANGEFINDER GG**
Product Use: Herbicide
Restriction of Use: Refer to Section 15

Supplier: **Agriotech Bioscience (Pty) Ltd. t/a Carabiner**
Address: PO Box 1224
Isando, 1600
South Africa
TEL: 071 546 5077
www.carabiner.co.za

Emergency No: POISON CENTRE (UNITAS HOSPITAL) 012 664 1100
TYGERBERG 021 931 6129
RED CROSS 021 689 5227
RAPID SPILL RESPONSE 0800 775 3305
GRIFFON POISON CENTRE 082 446 8946

Date of SDS Preparation: 18 April 2023

Section 2. Hazards Identification

Classification of the substance or mixture

Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP]

Skin irrit. Cat. 2
Eye Irrit. Cat. 2
Aquatic Acute Cat. 1
Aquatic Chronic Cat. 2

For the full text of the H-Statements mentioned in this Section, see Section 16.

Label elements

Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP]



Pictograms

Signal Word: **WARNING**

Hazard statement(s)

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary statement(s)

General:

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 instruction.

Prevention:

P264 + P265 - Wash hands thoroughly after handling. Do not touch eyes.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P302+352 - IF ON SKIN - Wash with plenty of water and soap.
P305+351+338 - IF IN EYES - Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P321 - Specific treatment (see first aid on this label).
P332+317 - If skin irritation or a rash occurs - Get medical help.
P337+317 - If eye irritation persists get medical help."
P362+364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.

Storage:

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Disposal:

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

Supplemental Hazard Statements: none

2.3 Other

Other hazards

No other hazards known

Section 3. Composition / Information on Hazardous Ingredients

Granule
Tebuthiuron 100 g/kg
Bromacil 100 g/kg

Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP]

Ingredients	Concentration of hazardous ingredient in composition	CAS NUMBER.	Globally Harmonised System, EU (GHS) and according to regulation EC No 1272/2008 [CLP]
Tebuthiuron	≥ 10%	34014-18-1	251-793-7
Bromacil	≥ 10%	314-40-9	206-245-1
Other non-hazardous ingredients	To balance	-	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section 4. First Aid Measures

Remove patient from exposed area. Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

Routes of Exposure:

If in Eyes Flush eyes with plenty of clean, room temperature water for at least 15 minutes holding eyelids open. Remove contact lenses. Call a doctor for treatment advice. Obtain medical attention immediately if irritation persists. If irritation, pain, swelling, lacrimation, or photophobia persists after 15 minutes of irrigation, an ophthalmologic examination must be performed.

If on Skin Immediately remove contaminated clothing and flush body and clothes with large amounts of water. Wash thoroughly with soap and clean running water (including hair, skin and fingernails) for at least 15 minutes. Wash contaminated clothing before re-use. Seek medical assistance if irritation persists. Persons providing first aid must wear gloves to avoid self-contamination.

If Swallowed **Seek medical attention.** Never give anything by mouth to a victim who is unconscious or is having convulsions. Emesis (vomiting) may be indicated in substantial recent ingestions if advised to do so from a medical practitioner. Contraindications include **Signs of oral, pharyngeal, or esophageal irritation; a depressed gag reflex; or central nervous system excitation or depression. If these symptoms are present or are likely, DO NOT INDUCE EMESIS.** Emesis is most effective if it is initiated within 30 minutes of ingestion.

If Inhaled Remove victim to fresh air. Keep patient calm. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for respiratory tract irritation, bronchitis, or pneumonitis. Apply oxygen or artificial respiration if necessary. Keep the patient warm and at rest. Treat symptomatically. Consult a physician after significant exposure.

Most important symptoms and effects, both acute and delayed

No available data.

Treatment:

Carefully observe patients with inhalation exposure for the development of any signs or symptoms and administer symptomatic treatment as needed. There is no specific antidote known. Administer 100% humidified supplemental oxygen with assisted ventilation as needed. Exposed eyes and skin should copiously be flushed with clean water. There are no specific antidotes for poisoning by these herbicides. Particularly in the case of suicidal ingestions, the possibility must always be kept in mind that multiple toxic substances may have been ingested. If large amounts of this herbicide have been ingested, and if the patient is fully alert, induce emesis with Syrup of Ipecac, followed by several glasses of water. For adults and for children over 12 years: 30 mL. For children under 12 years: 15 mL. When the vomiting has stopped, administer activated charcoal. Add sorbitol to the charcoal slurry unless diarrhoea has already commenced. If the patient is not fully alert, place a cuffed endotracheal tube to protect the airway, then aspirate and lavage the stomach with an activated charcoal slurry. Leave a quantity of charcoal, with sorbitol, in the stomach before withdrawing the stomach tube. Repeated administration of the activated charcoal at half or more of the initial dosage every 2-4 hours may be beneficial. If a small amount of this herbicide has been ingested, if effective emesis has already occurred, or if treatment is delayed: administer the activated charcoal and sorbitol by mouth. If serious dehydration and electrolyte depletion has occurred as a result of vomiting and diarrhoea, monitor the blood electrolytes and fluid balance and administer intravenous infusions of glucose, normal saline, Ringer’s solution, or Ringer’s-lactate in order to restore the extracellular fluid and electrolytes. Follow-up with oral nutrients as soon as fluids can be retained. Fluids lend support in the excretion of the toxicants. Supportive measures are normally sufficient for successive management of excessive exposures to tebuthiuron. If the patient’s condition deteriorates despite good supportive care, then the operation of an alternative or additional toxicant should be suspected.

Section 5. Fire Fighting Measures

Hazards from products	There is no fire or explosion hazard
Suitable Extinguishing media	<p>Small fires: Carbon dioxide, dry powder, halon or alcohol resistant foam.</p> <p>Large fires: Water spray or fog can be used to cool unaffected stock. Avoid the accumulation of polluted run-off from the site. Remove the container from the fire if possible and without risk.</p>

<p>Recommended protective clothing & Precautions for firefighters</p>	<p>Water spray can be used to cool unaffected stock, avoid the accumulation of polluted runoff from the site. Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Keep upwind. Remove containers from the fire if possible and without risk. Avoid inhalation of hazardous vapours. Keep the material away from water sources and sewers. Do not touch the material and avoid breathing dusts and fumes. Do not scatter the material. Fire may generate poisonous and irritating vapours (oxides of carbon and nitrogen), mists and other products of combustion.</p> <p>Eliminate all ignition sources in the immediate area.</p> <p>Additional provisions: Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. In the event of a fire, wear full protective clothing and self-contained breathing apparatus with full-face piece operated in the pressure demand or other positive pressure mode.</p> <p>Personal protective equipment: Full protective clothing and self-contained breathing apparatus and turnout gear. For personal protection see Section 8.</p>
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Section 6. Accidental Release Measures

Personal precautions:

Avoid contact with skin and eyes. Do not breathe in dusts, spray mists or fumes. For personal protection see Section 8.

Environmental precautions:

Do not contaminate waterways, drains and groundwater. If contamination of waterways, drains, rivers or lakes is unavoidable, warn the local authorities (Police and Department of Water/Environmental affairs) immediately.

Spill and Disposal procedures:

Cleaning procedure:

Do not eat, drink, or smoke during the clean-up process. Clear area of unprotected personnel. Wear protective gear: goggles. Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. For small dry spillages: Sweep up the material and place the material into a clean, dry, correctly labelled hermetically sealed containers and dispose of according to local regulations. Flush the spilled area with water but do not flush the spilled product into drains or any water system. For large spillages: Contain the spilled material for later disposal. Collect waste into suitable containers, which can be labelled and sealed. Clean contaminated floors and objects thoroughly with water and a detergent, while observing environmental regulations.

Do not flush any spilled material into drains. Keep spectators away. Ensure that the contaminant does not come into contact with any desirable vegetation. If the spill area is on any ground near valuable plants or trees, remove the top 50 mm of soil after the initial clean-up. Used absorbent material and washings should be stored in labelled, sealable containers until these can be disposed of according to local regulations. Open burning or dumping of this material is prohibited.

Waste Disposal: Used absorbent material and washings should be stored in labelled, sealable containers until these can be disposed of according to local regulations. Open burning or dumping of this material is prohibited

Container Disposal: Refer to the product label for instructions. DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Do not transport if this container is damaged or leaking.

Reference to other sections

Information regarding safe handling, see section 7.

Information regarding personal protective equipment, see section 8.

Information regarding waste disposal, see section 13.

Section 7. Handling and Storage

Precautions for Handling:

KEEP OUT OF REACH OF CHILDREN and animals. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. After work, rinse gloves and remove protective equipment. Wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. The operator should not be alone during handling and application of the product. Remove all sources of naked flames. Toxic if swallowed and by skin contact and harmful if inhaled. Avoid contact with the skin, eyes, and inhalation of fumes. Avoid exposure to the spray. Use this product with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet.

Remove clothing immediately if the herbicide gets inside, then wash skin thoroughly with a non-abrasive soap. Put on clean clothing. Operators should change and wash their clothing daily. Do not apply directly to areas where any surface water is present, or to intertidal areas below the mean high-water mark. The water used to clean the equipment must be disposed of correctly in order to avoid contamination or injury to desired vegetation.

Wash thoroughly (preferably shower) after the work shift.

Precautions for Storage:

Store in compliance with local regulations. Store in original container only in an isolated, well-ventilated, cool, dry, secure, shaded area away from foods, animal feeds and water supplies. Protect from heat, open flames, other sources of ignition, moisture and direct sunlight. Avoid cross contamination with other pesticides and fertilisers. Keep under lock and key out of reach of children, animals and unauthorised persons. Store away from incompatible substances. Store at a temperature not exceeding 32 °C. Do not leave the product in the applicators for extended periods of time.

Specific end use(s): Use only according to the label.

Section 8 Exposure Controls / Personal Protection

Occupational exposure limits:

Component	Value type (Form of exposure)	Control parameters / permissible concentration	Basis
Calcium Lignosulphonate	TLV	5mg/m ³	Lignotech South Africa
Calcium carbonate	TWA	10 mg/m ³	ACGIH. Particulate matter containing no asbestos and <1% crystalline silica
Calcium carbonate	TWA	10 mg/m ³	NIOSH. Total dust
Calcium carbonate	TWA	5 mg/m ³	NIOSH. Respirable fraction
Calcium carbonate	TWA	15 mg/m ³	OSHA. Total dust
Calcium carbonate	TWA	5 mg/m ³	OSHA. Respirable fraction
Kaolin Dry	TWA (Respirable dust)	5 mg/m ³	ZA REL
Kaolin Dry	TWA (Total dust)	10 mg/m ³	ZA REL

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Engineering Controls / Industrial Hygiene

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

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

Personal Protection Equipment

Eyes	Chemically resistant safety goggles with side shields, or face shield.
Hands	Appropriate synthetic protective (impermeable) gloves. Wash the outside of the gloves before removing them.
Skin	Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance. Respiratory protection: Respirator with filter for organic vapour.
Respiratory	An approved respirator suitable for protection from dusts and mists of pesticides is adequate. The limitations of the respirator as

	specified by the approving agency and the manufacturer must be observed.
General	<p>Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.</p> <p>Females of childbearing age should not come into contact with the product. Keep away from food, drink, and animal feedstuffs. No eating, drinking, or smoking during use. Wash hands and face before breaks and after work. Potentially fatal if inhaled. When handling wear full protective clothing such as gloves, hat, coat, and trousers (worn outside rubber boots). Suitable or appropriate respiratory and eye protection should also be worn. The use of a skin barrier cream is useful to give additional skin protection.</p>

Section 9 Physical and Chemical Properties

Appearance	Granule
Colour	Off-white to light brown granule
Odour	Characteristic
Odour Threshold	No data available
pH	6.5-8.5
Boiling/Melting Point	No data available
Freezing Point	No data available
Flash Point	No data available
Flammability	Not flammable
Upper and Lower Explosive Limits	No data available
Vapour Pressure	No data available
Vapour Density	No data available
Density	NA
Water Solubility	Disperses in water
Partition Coefficient:	No data available
Ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Particle Characteristics	No data available
Surface tension	No data available

Section 10. Stability and Reactivity

Stability of Substance	Stable under normal use and standard conditions. Stable for 24 months.
Possibility of hazardous reactions	No decomposition if stored and handled as indicated. Thermal decomposition may release toxic oxides of carbon, nitrogen, and sulphur.
Conditions to Avoid	Protect from extreme temperatures, direct sunlight, open flames and sources of ignition.

Incompatible Materials	Always store in original container.
Hazardous Decomposition Products	No decomposition if stored and handled as indicated. Thermal decomposition may release toxic oxides of carbon, nitrogen and sulphur.

Section 11 Toxicological Information

Acute Effects:

Oral	GHS: Not classified
Dermal	GHS: Not classified
Inhalation	GHS: Not classified
Eye	GHS: Eye Irrit. Cat. 2
Skin	GHS: Skin irrit. Cat. 2

Chronic Effects:

Carcinogenicity	GHS: Not classified
Reproductive Toxicity	GHS: Not classified
Germ Cell Mutagenicity	GHS: Not classified
Aspiration	GHS: Not classified
STOT/SE	GHS: Not classified
STOT/RE	GHS: Not classified

Section 12. Ecotoxicological Information

Ecological effects information	<p>Aquatic acute toxicity:</p> <p>Formulated product: Based on available data of components. GHS: Aquatic Acute Cat. 1. GHS: Aquatic Chronic Cat. 2</p> <p>Birds: Bromacil: Acute oral LD₅₀ for bobwhite quail 2250 mg/kg. Dietary LC₅₀ (8 d) for mallard ducks and bobwhite quail >10000 mg/kg diet.</p> <p>Tebuthiuron: Acute oral LD₅₀ for chickens, bobwhite quail and mallard ducks >500 mg/kg.</p> <p>No data available for the formulated product</p> <p>Earthworms: Bromacil: No data available Tebuthiuron: No data available No data available for the formulated product</p> <p>Bees: LD₅₀ µg/bee Bromacil: >193 (contact). Not toxic to bees</p>
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	<p>Tebuthiuron: >100 (contact). Not toxic to bees.</p> <p>No data available for the formulated product</p>
<p>Persistence and degradability</p>	<p>Information based on Tebuthiuron active: Animals The major metabolites in mammals were formed by N-demethylation of the substituted urea sidechain (D. M. Morton & D. G. Hoffman, J. Toxicol. Environ. Health, 1976, 1, 757-768). Plants In plants, the principal metabolic pathways involve N-demethylation and hydroxylation of the tert-butyl sidechain. Soil/Environment Some microbial breakdown occurs in soil, but this is not the predominant mode of degradation. Loss due to photodecomposition and volatilisation is negligible. Half-life in soil is considerably greater in soils with low moisture content, and in high organic soils. Adsorption Kf values range from 0.11 in sand (pH 7.7, o.m. 0.5%) to 1.82 in clay loam (pH 6.9, o.m. 2.0%).</p> <p>Tebuthiuron is highly persistent in soil. Reported field half-lives are from 12 to 15 months in areas with over 40 inches annual rainfall, with longer half-lives expected in drier areas or in soils with high organic matter content. Material can potentially penetrate soil and reach ground water. No appreciable volatilization from water to air is expected.</p> <p>Biodegradability: No data available.</p> <p>Information based on Bromacil active: Plants and animals: Duration of residual activity in soil is c. 5 months. The principal metabolite is 5-bromo-3-sec-butyl-6- hydroxymethyluracil. The major mode for the disappearance of bromacil from most treated soils is microbial degradation. Soil diptheroids, <i>Pseudomonas</i> and <i>Penicillium</i> species are among the organisms involved. Tests show that at increased temperatures and long exposures to sunlight, there is very little loss of the herbicide from dry soil. It does not readily volatilize, change into gas, nor does it photo decompose or break down in sunlight. Laboratory studies show that 5-30 % of bromacil is lost six to nine weeks after application to the soil, as carbon dioxide, an odourless, colourless gas.</p> <p>Biodegradability: No data available.</p>
<p>Bioaccumulation</p>	<p>Tebuthiuron: Bioaccumulation: No data available. Bioaccumulation is unlikely.</p> <p>Bromacil: Bioaccumulation: Log POW = 1.87 (pH 5 / pH 7). Bioaccumulation is unlikely.</p>

<p>Mobility in Soil</p>	<p>Tebuthiuron is highly persistent in soil. Reported field half-lives are from 12 to 15 months in areas with over 40 inches annual rainfall, with longer half-lives expected in drier areas or in soils with high organic matter content. Material can potentially penetrate soil and reach ground water. No appreciable volatilization from water to air is expected.</p> <p>Bromacil: Highly mobile. Bromacil binds, or absorbs, only lightly to soil particles (Koc = 32 g/ml), is soluble in water and has a relatively lengthy soil half-life (60 days). For these reasons, bromacil is expected to move (leach) quite readily through the soil and it contaminate groundwater.</p>
<p>Other adverse effects</p>	<p>This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.</p> <p>Tebuthiuron is highly persistent in soil.</p>
<p>Precautions:</p>	<p>Do not allow to enter waterways.</p>

Section 13. Disposal Considerations

Disposal Method:

In accordance with local and national regulations. This product and its container must be disposed of by a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations.

Do not dispose into, or allow contact with, municipal sewerage systems or open water bodies. Do not bury.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible. Triple or pressure rinse containers before disposal. If recycling, close container and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and take to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal.

Special precautions during disposal:

Waste resulting from the use of this product cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and take to a waste treatment facility authorised to destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal.

If on-site container disposal is necessary, triple rinse empty container with water, add rinsate to the spray tank. Puncture top, sides and bottom, crush and store appropriately until it can be taken to a waste treatment facility authorised to destroy waste in terms of

the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations for disposal.
Empty containers and product should not be burnt.

Section 14 Transport Information

Rail/road (RID/ADR):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Bromacil 10% + Tebuthiuron 10%)
UN number	3077
Class	9
Packing group	III
Environm. Haz. Mark	Environmentally hazardous

Sea (IMDG code):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Bromacil 10% + Tebuthiuron 10%)
UN number	3077
Class	9
Packing group	III
Marine pollutant	Yes

Air (ICAO/IATA):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Bromacil 10% + Tebuthiuron 10%)
UN number	3077
Class	9
Packing group	III
Environm. Haz. Mark	Environmentally hazardous

Section 15 Regulatory Information

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

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not available.

Chemical Safety Assessment

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

Section 16 Other Information

Full text of H-Statements referred to under sections 2 and 3.

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

For proper and safe use of this product, please refer to the approval conditions laid down on the product label. The data contained in this safety data sheet is based on our current knowledge and describes the product only with regard to safety requirements. The data does not describe the products properties. Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any existing laws and legislation are observed.

The information herein is given in good faith, but no warranty, express or implied is made.

Issue Date: 18 April 2023 Review Date: 18 April 2028