



Novagen Innovations (Pty) Ltd. t/a Agri Novagenix
Company registration number: 2020/891524/07 ; VAT: 4150295469
PO Box 1224, Isando, 1600, South Africa

SAFETY DATA SHEET GRAPPLER

Reg. No. /Nr L11922, Act/Wet No. /Nr 36 Of Van 1947

Section 1. Identification of the material and the supplier

Product: **GRAPPLER**
Product Use: Herbicide
Restriction of Use: Refer to Section 15

Supplier: **Novagen Innovations (Pty) Ltd t/a Agri Novagenix**
PO Box 1224
Isando, 1600
South Africa
www.novagenag.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: 5 February 2025

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 Irritation Category 3; H316
Serious Eye Damage Category 1; H318
Skin Sensitisation Category 1; H317
Aspiration Toxicity Category 1; H304
Short-term (Acute) Aquatic hazard Category 1; H400
Long-term (Chronic) Aquatic hazard Category 2; H411

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: **DANGER**

Hazard statement(s)

H316: Causes mild skin irritation.

H318: Causes serious eye damage.

H317: May cause an allergic skin reaction.

H304: May be fatal if swallowed and enters airways.

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 instructions.

Prevention:

P264 + P265 - Wash hands thoroughly after handling. Do not touch eyes.

P261 - Avoid breathing fume/mist/vapours/spray.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P273 - Avoid release to the environment.

P280 - Wear protective gloves/ protective clothing/ eye protection/face protection.

Response:

P301 + P316 - IF SWALLOWED: Get emergency medical help immediately.

P317 - Get medical help.

P302 + P352 - IF ON SKIN: Wash with plenty of water and soap.

P305 + P354 + P338 - IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P317 - Get medical help.

P321 - Specific treatment (see FIRST AID on this label)

P331 - Do NOT induce vomiting.

P333 + P317 - If skin irritation or rash occurs: Get medical help.

P362 + P364 - Take off contaminated clothing and wash it before reuse.

P391 - Collect spillage.

Storage:

P405 - Store locked up.

Disposal:

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

Supplemental Hazard Statements: none

2.3 Other

Other hazards

No other hazards known

Section 3. Composition / Information on Hazardous Ingredients

Mixture
Emulsifiable Concentrate
Prosulfocarb 800 g/L

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

Ingredients	Concentration of hazardous ingredient	Classification
Prosulfocarb	80%	Acute Tox. Oral Cat. 4; H302 Skin Sens. Cat. 1; H317 Aquatic Acute Cat. 1; H400 Aquatic Chronic Cat 2; H411
Calcium dodecylbenzenesulphonate	>1-<10%	Acute Tox. Oral Cat. 4; H302 Skin Irrit. Cat. 2; H315 Eye Damage Cat. 1; H318 Aquatic Chronic Cat. 4; H413
Solvent naphtha (petroleum), heavy aromatic	>1-<15%	Aspiration Tox. Cat. 1; H304

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

Section 4. First Aid Measures

Provide medical personnel with the container label, product name or safety data sheet (SDS) when seeking medical attention.

Routes of Exposure:

If in Eyes	Flush eyes immediately with plenty of clean, room temperature water for at least 15 minutes holding eyelids open. Remove contact lenses if present, after the first 5 minutes, then continue rinsing eyes. Seek medical attention.
If on Skin	Immediately remove contaminated clothing and flush body and clothes with large amounts of water. Wash thoroughly with soap and water (including hair, skin, and fingernails) Wash contaminated clothing before re-use. Persons providing first aid must wear gloves to avoid self-contamination. Seek medical attention.
If Swallowed	Wash out the patient's mouth if the patient is alert and able. Do NOT induce vomiting. Seek medical attention.
If Inhaled	Remove victim to fresh air. Keep patient calm. Monitor for respiratory distress. If breathing is irregular or stopped, apply artificial respiration. If mouth to mouth resuscitation is given use rescuer protection (pocket mask etc.). Keep the patient warm and at rest. Seek medical attention.

Most important symptoms and effects, both acute and delayed

Aspiration may cause pulmonary oedema and pneumonitis. Irritating to skin. Skin dryness or cracking. Drowsiness and dizziness.

Treatment:

No specific antidote known. Treat symptomatically and supportively. This product contains an aromatic solvent.

Section 5. Fire Fighting Measures

Hazards from products	As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.
Suitable Extinguishing media	Suitable extinguishing media: Fine water spray, foam, carbon dioxide, dry chemical powder. Unsuitable extinguishing media: Do not use a water jet due to contamination/spreading fog.
Recommended protective clothing & Precautions for firefighters	Firefighting: Wear SCBA and chemical-protective clothing which includes fire-fighting helmet, coat, trousers, boots, and gloves. Self-contained breathing apparatus is required. During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Remove spectators from surrounding area and isolate the fire area. 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 and away from low areas where the fumes can accumulate. Eliminate ignition sources. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. Do not scatter the material. Dispose of extinguishing agent and spillage in a safe way at a later stage. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers. 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. Personal protective equipment: Wear appropriate safety clothing and eye/face protection. Do not inhale vapour or spray. Avoid contact with spilled product or contaminated surfaces. Avoid contact with skin, eyes, and clothing. Avoid inhalation of the spray or fumes.

	For personal protection see Section 8.
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Section 6.	Accidental Release Measures
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Personal precautions:

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Ventilate area of spill or leak, especially in contained areas. Wear appropriate safety clothing and eye/face protection. Do not inhale vapour or spray. Avoid contact with spilled product or contaminated surfaces. Avoid contact with skin, eyes, and clothing. Avoid inhalation of the spray or fumes.

For personal protection see Section 8.

Environmental precautions:

Prevent further leakage or spillage if it is safe to do so. 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. Do not discharge into the subsoil/soil. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

Spill and Disposal procedures:**Cleaning procedure:**

In accordance with local and national regulations. Prevent further leakage or spillage if it is safe to do so. Do not contaminate water, food, or feed by disposal. Prevent further leakage or spillage if safe to do so.

Do not flush into surface water or sanitary sewer system.

If the product contaminates rivers and lakes or drains inform respective authorities. Contain spillage. Soak up with a suitable inert absorbent material (such as sand, silica gel, acid binder, universal binder, saw dust) Keep in suitable, closed containers for disposal.

Clean contaminated surface thoroughly.

Clean with detergents.

Retain and dispose of contaminated wash water.

Waste Disposal: In accordance with local and national regulations. Do not contaminate water, food, or feed by disposal. Prevent further leakage or spillage if safe to do so.

Do not flush into surface water or sanitary sewer system.

If the product contaminates rivers and lakes or drains inform respective authorities. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Clean contaminated surface thoroughly.

Clean with detergents. Avoid solvents.

Retain and dispose of contaminated wash water.

Container Disposal: Refer to the product label for instructions.

Containers and packages must be completely emptied before disposal. Rinse empty container three times with a volume of water equal to a minimum of 30% of that of the container. Add the rinsings to the contents of the spray tank before destroying the empty container. Destroy the empty container by perforation and flattening and do not use for any other purpose. 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.

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:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid formation of respirable particles. Do not breathe vapours/mist. Do not smoke. Handle in accordance with good industrial hygiene and safety practice. Avoid exposure - obtain special instructions before use. Smoking, eating and drinking should be prohibited in the application area. Do not get on skin or clothing. Avoid inhalation of vapour or mist. Avoid contact with skin and eyes. Keep container tightly closed. Take care to prevent spills, waste and minimize release to the environment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Use with local exhaust ventilation.

Precautions for Storage:

Store in a closed container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Store in a place accessible by authorized persons only. Keep containers tightly closed in a dry, cool and well-ventilated place away from food, drink and animal feeding stuffs. Keep out of reach of children. Protect from freezing. Keep away from direct sunlight.

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
Prosulfocarb	Time Weighted Average	4 mg/m ³
Calcium dodecylbenzenesulphonate	Time Weighted Average	10 mg/m ³ ; 4 mg/m ³

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	Tightly fitting safety goggles. Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.
Hands	Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take

	into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Material: Nitrile rubber Break through time: >480 min. Glove length: 0.5 mm
Skin	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Remove and wash contaminated clothing before re-use. Wear as appropriate: Impervious clothing
Respiratory	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Suitable respiratory equipment: Respirator with a half face mask The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self- contained breathing apparatus must be used.
General	Keep away from food, drink and animal feedstuffs. No eating, drinking or smoking during use. Wash hands and face before breaks and after work. Suitable or appropriate respiratory and eye protection should also be worn. Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating. When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice.

Section 9 Physical and Chemical Properties

Appearance	Liquid
Colour	Light yellow
Odour	Musty odour
Odour Threshold	No data available
pH	6-9
Boiling/Melting Point	Prosulfocarb: Boiling Point: 341 °C / Melting Point: <20 °C
Freezing Point	No data available
Flash Point	No data available
Flammability	Not classified
Upper and Lower Explosive Limits	No data available
Vapour Pressure	No data available
Relative Vapour Density	No data available
Density	1.00 – 1.2
Water Solubility	Emulsifiable in water

Partition Coefficient:	Formulated product: No data available Prosulfocarb: Log P: 4.48
Ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	Dynamic viscosity: No data available Kinematic 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 conditions. Stable for 24 months. Avoid exposure elevated temperatures. Thermally stable at recommended temperatures and pressures. No decomposition if stored and applied as directed. Store below 50°C, preferably below 30°C.
Possibility of hazardous reactions	None known.
Conditions to Avoid	Excessive heat, freezing, and direct sunlight.
Incompatible Materials	Store only in the original container.
Hazardous Decomposition Products	No decomposition products expected under normal conditions of use.

Section 11 Toxicological Information

Acute Effects:

Oral	GHS: Not classified.
Dermal	GHS: Not classified.
Inhalation	GHS: Not classified.
Eye	GHS: Ser. Eye Dam. Cat. 1
Skin	GHS: Skin Irrit. Cat. 3, Skin Sens. Cat. 1

Chronic Effects:

Carcinogenicity	GHS: Not classified.
Reproductive Toxicity	GHS: Not classified.
Germ Cell Mutagenicity	GHS: Not classified.
Aspiration	GHS: Cat. 1
STOT/SE	GHS: Not classified.
STOT/RE	GHS: Not classified.

Section 12. Ecotoxicological Information

Ecological effects information	Fish: Prosulfocarb Rainbow trout: <i>Oncorhynchus mykiss</i> : 96 hr: LC ₅₀ : 0.84 mg/L. Rainbow trout: <i>Oncorhynchus mykiss</i> : Chronic 21 day NOEC (mg l ⁻¹): 0.31 Daphnia magna: Prosulfocarb Acute 48 hour EC ₅₀ (mg l ⁻¹): 0.51
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	Algae: Prosulfocarb <i>Pseudokirchneriella subcapitata</i> ErC₅₀: 0.049 mg/L Formulated product: GHS: Aquatic Acute 1 GHS: Aquatic Chronic 2 Birds: Prosulfocarb Bobwhite quail: Oral: LD₅₀: > 2250 mg/kg body weight/day Mallard duck: LC₅₀ / LD₅₀: > 1506 mg/kg/bw/day Bees: Prosulfocarb >80 µg/bee (contact), 103 µg/bee (contact) Worms: Prosulfocarb 71.8 mg/kg body weight.
Persistence and degradability	Prosulfocarb: Biodegradability: Photolysis: Half-life of 25.5 days at pH 7 and 25 °C (tech). Stable. Stability in Water (1/2-life) No significant hydrolysis degradation at pH 5, 7, and 9 and 25 °C and 40°C (tech). Stable
Bioaccumulation	Partition coefficient: n-octanol/water(log Pow): Log P: 4.48 Bioconcentration factor (BCF): A BCF of 700 on whole fish. Threshold for concern.
Mobility in Soil	kf range 11.7-32.8, K_{loc} range 1367-2339 mL g⁻¹, 1/n range 0.896-1.023, Soils=3. Slightly mobile
Other adverse effects	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). This substance / mixture contains no ingredients that are on the Montreal Protocol list of substances that deplete the ozone layer.
Precautions:	Do not allow to enter waterways.

Section 13. Disposal Considerations

Disposal Method:

In accordance with local and national regulations.

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility

of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

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. If containers cannot be recycled, they should be disposed of together with the waste chemical

Do not reuse empty containers. Empty containers retain product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Consult provincial environment department for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used for transport. 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, LIQUID, N.O.S. (prosulfocarb)
UN number	3082
Class	9
Packing group	III
Environm. Haz. Mark	Yes

Sea (IMDG code):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (prosulfocarb)
UN number	3082
Class	9

Packing group	III
Marine pollutant	Yes
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC code	Consult IMO regulations before transporting ocean bulk.

Air (ICAO/IATA):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (prosulfocarb)
UN number	3082
Class	9
Packing group	III
Environm. Haz. Mark	Yes

Section 15	Regulatory Information
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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.

Chemical Safety Assessment

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

Section 16	Other Information
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Full text of H-Statements referred to under sections 2 and 3.

H302: Harmful if swallowed
H317: May cause an allergic skin reaction
H315: Causes skin irritation
H318: Causes serious eye damage
H317: May cause allergic skin reaction
H304: May be fatal if swallowed and enters airways
H400: Very toxic to aquatic life
H411: Toxic to aquatic life with long lasting effects

Abbreviations and acronyms

ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS-Nr. Chemical Abstracts Service number
CLP Classification, Labelling and Packaging
ECHA – European Chemicals Agency
EC-No. European community number
ECx Effective concentration to x %
EU European Union
ErC50 Concentration of the test substance which results in a 50 percent reduction in growth rate.
GHS Globally Harmonized System
IATA International Air Transport Association
IBC International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods
LCx Lethal concentration to x %
LDx Lethal dose to x %

MARPOL: International Convention for the prevention of marine pollution from ships
PBT Persistence, Bioaccumulation and Toxic
vPvB Very persistent and very bioaccumulative
RID Regulations concerning the International Carriage of Dangerous Goods by Rail
STOT SE Specific target organ toxicity single exposure.
STOT RE Specific target organ toxicity repeated exposure.
UN United Nations

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: 5 February 2025 Review Date: 5 February 2030