SAFETY DATA SHEET

ACCORDING TO THE SOUTH AFRICAN REGULATIONS FOR HAZARDOUS CHEMICAL AGENTS - 2021

MOER-TU®

Identification of the product/preparation

SECTION 1: Product and Company Identification

Product Name:	MOER-TU®
Trade Name/Synonyms:	MOER-TU®
Registration Number:	L7989
Product Description and Type:	A blue pellet insecticide.

Active Ingredient

Formula:	Methiocarb 5g/kg
CAS Number:	2032-65-7

Supplier

Company Name**:** Rolfes Agri (Pty) Ltd
Address: 288 Mundt Street
Waltloo
Pretoria
South Africa
Phone Number: +27(0)12 803 0145
E-mail Address: info@rolfesagri.co.za
Fax: +27(0)12 803 8418

Emergency Phone Numbers

Nature of Emergency	Emergency Operator	Telephone Number
24 Hour Poisoning Emergency Helpline – National Advisory Body	Griffon Poison Information Centre	+27(0)82 446 8946
Spill Response and Transport Incidents	Spill Tech, Oil, and chemical pollution control	086 100 0366 083 2536618 www.spilltech.co.za

Relevant identified uses of the product and uses advised against
For use in Agriculture and use as per the product label.

SECTION 2: Hazards Identification

Classification of the substance or mixture
This product is classified as hazardous according to the criteria in South Africa - GHS classification and labelling of chemicals and the Regulations for Hazardous Chemical Agents - 2021.

Classification:

Hazard class	Category	Hazard Statement Number
Reproductive Toxicity	2	H361
Hazardous to Aquatic Environment, Acute Hazards	1	H400
Hazardous to Aquatic Environment, Chronic Hazards	1	H410

Label Elements
South Africa. GHS classification and labelling of chemicals and the Regulations for Hazardous Chemical Agents - 2021.

Pictograms:

Signal Word:
WARNING

Hazard Statements:

Statement Number	Hazard Statement
H361	Suspected of damaging to fertility or the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements:
General -

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

Prevention –

Statement Number	Precautionary Statement
P203	Obtain, read and follow all safety instructions before use.
P280	Wear protective gloves, protective clothing and eye protection when handling this product.
P273	Avoid release to the environment.

Response -

Statement Number	Precautionary Statement
P318	IF exposed or concerned, get medical help.

P391	Collect spillage.

Storage -

Statement Number	Precautionary Statement
P405	Store locked-up.

Disposal -

Statement Number	Precautionary Statement
P501	Empty all pesticides from the container by placing it upside down over the spray tank and holding it there for at least 30 seconds. Puncture the rinsed container to render it useless and send to a recycler. Do not use empty containers for any other purpose.

Other Hazards
None

SECTION 3: Composition/Information on Ingredients

Mixture

Common Name:	MOER-TU®
IUPAC/Chemical Name:	(3,5-dimethyl-4-methylsulfanylphenyl) *N*-methylcarbamate
Chemical Family:	
Formulation:	Methiocarb 5g/kg

Ingredients with Hazard Concerns (GHS)
According to UN GHS criteria.

Hazardous Component	CAS Number	Weight	GHS Classification
Metaldehyde (96%)	108-62-3	10 g/kg	Reproductive Toxicity Category 2
Methiocarb (95%)	2032-65-7	5 g/kg	Aquatic Acute 1 Aquatic Chronic 1 M=100

NOTE: There are no other ingredients present according to the current knowledge of the supplier (condisering their concentrations present in the product) that are classified as hazardous to health or the environment and that cause/contribute to the correct GHS classification of this product. These ingredients are therefore, in terms of the South African Hazardous Chemical Agent Regulations 2021; Regulation 14(b), not listed.

SECTION 4: First-Aid Measures

Description of First-aid Measures

General Advice	The symptoms resulting from direct exposure to the product could appear a while after exposure. If there is persistent discomfort, seek medical attention. Provide this SDS to medical personnel for treatment. Immediately remove contaminated clothing and remove the affected person from the contamination area. Keep the person warm, calm, and

	covered up. First Aid personnel should pay attention to their own safety.
Eye Contact	Flush eyes with water as a precaution.
Skin Contact	Remove all contaminated clothing and shoes. Wash contaminated clothing before re-use. Rinse the skin immediately with plenty of water.
Inhalation	Remove the affected victim from exposure to an area with fresh air as a precaution. If not breathing, administer artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain immediate medical attention.
Ingestion	If exposed or concerned, get medical advice.

Most important symptoms/effects, acute and delayed
Symptoms of exposure to the product include increased salivation, profuse sweating, lacrimation (tearing), spontaneous defecation, and spontaneous urination. Pinpoint pupils, blurred vision, headache, tremors, muscle twitching, slight paralysis, and loss of muscle coordination may occur. Malaise, mental confusion, convulsions, unconsciousness, and coma may also be noted.

Indication of any immediate medical attention and special treatment needed
Notes to physician: None
Specific treatments: Treat symptomatically and supportively.

SECTION 5: Firefighting Measures

Suitable (and unsuitable) extinguishing media	Use carbon dioxide, dry chemical, alcohol resistant foam, or water spray. Do not use water jets.
Specific hazards arising from the chemical including thermal decomposition products	Fires involving the product may produce irritating or poisonous vapours, mists, or other products of combustion.
Special protective equipment and precautions for fire-fighters	Firefighters must wear emergency equipment including positive pressure self-contained breathing apparatus with a full-face mask. Remove unaffected containers from fire area if possible
Additional provisions	Act in accordance with the site's Internal Emergency Plan and the Workplace Specific Procedures for actions to be taken after an accident or other emergencies.

SECTION 6: Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures
Ventilate the area of the spill or leak, especially when in confined areas.
Do not touch or walk-through spilled material as slippery when spilt.
Contain spills if it can be done without risk and clean-up immediately.
Wear appropriate protective clothing recommended in Section 8 of the SDS.

Environmental Precautions
Prevent spillage or further leakage if safe to do so.
Do not allow the spilt product to enter water courses and drains and avoid contact with soil.

Do not allow the spilt product to spread to other areas - keep the spilt material contained and isolated.
Report spills and releases as required to appropriate authorities if the spilt product has caused environmental pollution (sewers, water ways, soil, or air).

Methods for cleaning up
For small spills, Sweep up with damp absorbent material. Place into a labelled waste container subsequent reclamation or disposal. Keep the wash water out of drains, sewers and waterways.
For large spills, Sweep up with absorbent material. Avoid creating dusty conditions and prevent wind dispersal and place the residues into a suitable container for proper disposal. Keep the wash water out of drains, sewers and waterways.

Reference to other sections
See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and Storage

Precautions for safe handling
Always provide good ventilation in the work area. Prevent contact with eyes, skin and clothing. Do not breathe in dust/vapours/spray mists. Wear protective clothing and equipment during handling as described in Section 8 of the SDS.
Do not eat or drink during use. Wash the hands and face thoroughly with soap after handling. Keep containers closed when not in use. Do not permit smoking in use or storage areas.
Locate emergency showers and eye-rinsing facility near the work/handling area. Maintain good normal industrial hygiene and housekeeping practices in areas where the product is used/handled.

Conditions for safe storage, including any incompatibilities
Always store locked up and keep containers tightly closed when not in use. Store in a cool, dry and well-ventilated place, out of direct sunlight. Check storage containers regularly for leaks and protect containers from physical damage. Store in the original container, avoid cross contamination with other agricultural products. Keep out of reach of children, uninformed persons, and animals. Do not contaminate water, food, or feed by storage or disposal.

It is recommended to have appropriate spill control kits equipped with absorbent material in close proximity to storage areas (see Section 6).

Specific end use(s)
Use as directed. Use original container.

SECTION 8: Exposure Controls and Personal Protection

National occupational exposure limits- Restricted limits for hazardous chemical agents.

Component	Type	Control Parameter	Update	Basis
Not applicable	OEL-eight hour TWA	N/A	2021	South African RELs*

	OEL-STEL/C	N/A	2021	South African RELs*

*REL: Recommended Exposure Limit.
OEL-eight hour TWA: Occupational Exposure Limit- Time Weighted Average. Calculated over an eight-hour working day, for a five-day working week.
OEL-STEL/C: Occupational Exposure Limit – short Term Exposure Limit /Ceiling Limit. Peak airborne concentration determined over the shortest analytically practicable period of time, which does not exceed 15 minutes.

National Biological Exposure Indices for (BEIs) for hazardous chemical agents.

Component	Sample Matrix	Sample Time	Value
Not applicable	N/A	N/A	N/A

Appropriate engineering controls
Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal Protective Equipment

Respiratory Protection:	Respiratory protection selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted and well-maintained particulate filter respirator, complying with an approved standard. Respirator selection and use should be based on contaminant type, form and concentration. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.
Skin and Hand Protection:	Select skin and hand protection based on the task being performed and the risks involved with the task. The gloves should be replaced immediately in case of damage or signs of wear. The personal protective clothing must be properly fitted and well maintained.
Eye/Face Protection:	Select safety eye/face protection based on the task being performed and the risks involved with the task. Wear tightly fitted and well-maintained safety eyewear compliant with an approved standard.
Hygiene Measures:	Wash the hands and/or face before breaks, eating, smoking, or using the lavatory and at the end of the shift/working period. Eye wash fountains and safety showers should be available and easily accessible. Wash contaminated clothing before reuse.

Environmental exposure controls
In accordance with the local legislation for the protection of the environment it is recommended to avoid environmental spillage or releases of both the product and its container.

SECTION 9: Physical and Chemical Properties

Data applicable to mixture

Appearance	Appearance/physical state	Bait Pellet

	Odour characteristics	Characteristic odour
	Colour	Blue
Volatility	Boiling point (°C)	Not applicable - granule
	Vapour pressure (Pa)	Not applicable - granule
	Evapouration Rate at 20 ºC	Not applicable - granule
Product Description	Relative density (kg/m^3, relative density of water =1)	Not measured
	Solubility in water (g/100mL)	Dispersible in water
	Decomposition temperature (°C)	Not measured
	Melting point/freezing point (°C)	Not measured
	pH	Not applicable- not water soluble
	Density/relative density (g/cm$^{3)}$	Not measured
	Particle characteristics	Granule 3-5 mm long
Flammability	Flammable (Y/N)	Not measured
	Flash point (°C)	Not applicable- granule
	Flammable limits-LEL	Not applicable- granule
	Auto-ignition Temperature (°C)	Not measured

*Not relevant due to the nature of the product, not providing information property of its hazards.

Other Hazard Information
None

SECTION 10: STABILITY AND REACTIVITY

Reactivity
The product is stable under normal conditions of temperature and pressure.

Chemical Stability
Stable under normal ambient conditions of use, storage, and transport.

Possibility of Hazardous Reactions
Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

Conditions to Avoid
Avoid prolonged periods in direct sunlight

Incompatible Materials
Incompatable with: Not Applicable.

Hazardous Decomposition Products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological Information

Information on likely routes of exposure
Toxicokinetics, metabolism and distribution:
Non-human toxicological data: No Information available.
Method: No Information available.

Dosage: No Information available.
Routes of administration: No Information available.
Results: No Information available.
Absorption: No Information available.
Distribution: No Information available.
Metabolism: No Information available.
Excretion: No Information available.

Information on toxicological effects
Acute toxicity:
Acute oral toxicity: No Information available
Acute dermal toxicity: No Information available.
Acute inhalation toxicity: No Information available.
Skin corrosion/irritation: No information avaiable.
Serious eye damage/irritation: No Information available.
Respiratory or skin sensitization: No Information available.
Germ cell mutagenicity: No Information available.
Carcinogenicity: No Information available.
Reproductive toxicity: Methaldehyde (96%) Reproductivity Category 2.
STOT-single exposure: No Information available.
STOT-repeated exposure: No Information available.
Aspiration hazard: No Information available.

Symptoms related to the physical, chemical, and toxicological characteristics
Symptoms of exposure to the product include increased salivation, profuse sweating, lacrimation (tearing), spontaneous defecation, and spontaneous urination. Pinpoint pupils, blurred vision, headache, tremors, muscle twitching, slight paralysis, and loss of muscle coordination may occur. Malaise, mental confusion, convulsions, unconsciousness, and coma may also be noted.

SECTION 12: Ecological Information

Ecotoxicity

Short-term (Acute) hazard Aquatic: Methiocarb (95%)
Danger! According to the harmonised classification and labelling (CLP00) approved by the European Union, this substance is very toxic to aquatic life and is very toxic to aquatic life with long lasting effects.
Classified for Category 1
19.0 PPB
Crustacea Water flea Daphnia magna
700 PPB
Fishes Rainbow trout Oncorhynchus mykiss
81 PPB
Aquatic Plant Freshwater green algae Scenedesmus subspicatus

Long-term (Chronic) hazard Aquatic: Methiocarb (95%)
Danger! According to the harmonised classification and labelling (CLP00) approved by the European Union, this substance is very toxic to aquatic life and is very toxic to aquatic life with long lasting effects.
Classified for Category 1
0.17 PPB
Crustacea Water flea Daphnia magna

15.0 PPM
Fishes Sheepshead minnow Cyprinodon variegatus for 33 Days
2.98 PPM
Aquatic Plant Duckweed Lemna gibba for 7 Days

Biodegradability in the aquatic environment: No information available.
Toxicity to other species.
Birds: No information availble.
Bees: No information availble.

Other Environmental and Adverse Effects:
Persistence and Degradability:
Rapidly degaded in the soil.

Bioaccumulative Potential: No information availble
No information available.

Mobility in Soil:
No information availble.

Other Adverse Effects:
None Known

SECTION 13: Disposal Considerations

Waste handling and disposal
Dispose product related waste in accordance with all local regulations and prevent the contamination of water, food, or feed by storage or disposal of the waste.

General container handling
Empty all pesticides from the container by placing it upside down over the spray tank and holding it there for at least 30 seconds. Puncture the rinsed container to render it useless and send to a recycler. Do not use empty containers for any other purpose.

SECTION 14: Transport Information

	Land Transport (ADR/RID)	**Inland Waterways (AND/ADNR)**	**See Transport (IMDG)**	**Air Transport (ICAO-TI/IATA-DGR)**
UN Number	2757	2757	2757	2757
UN Proper Shipping Name	Carbamate pesticide, solid, toxic.	Carbamate pesticide, solid, toxic.	Carbamate pesticide, solid, toxic.	Carbamate pesticide, solid, toxic.
Transport Hazard Class	6.1	6.1	6.1	6.1
Transport Hazard Class Pictogram				
Transport Subsidary Class	No information.	No information.	No information.	No information.

Packaging Group	III	III	III	III
Environmental Hazard				

SECTION 15: Regulatory Information

Safety, health, and environmental regulations/legislation for the mixture.

South Africa
Regulations for Hazardous Chemical Agents – 2021 – SA Occupational Health and Safety Act. - Handling, labelling and Safety Data Sheets for hazardous and GHS classified substances and mixtures. Occupational Exposure Limits.
Hazardous Substances Act**,** 1973 (Act No.15 of 1973) - Requirements on the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of hazardous substances**.**
Occupational Health and Safety Act No. 85 of 1993.- Occupational Health and Safety Standards for employers and users working with and around hazardous chemical substances.
National Road Traffic Act, 1996 (ACT NO. 93 of 1996). - The identification and classification of dangerous goods for transport by road and rail modes.

Botswana
Pesticides and Toxic Substances Regulations. 1994 (2006) - Control and management of pesticides and other toxic substances.
Environmental and Pollution Control Act. 1990 - Hazardous waste disposal, hazardous substances, pesticides and effluent wastewater/discharge.

Namibia
Labour Act 11 of 2007 - Hazardous substances classification, labelling, Chemical Safety Data Sheets and Occupational Exposure Limits. Notification of the use of carcinogens and other controlled substances.
Regulations relating to the Health and Safety of Employees at Work Government Notice 156 of 1997. Labour Act 11 of 2007 schedule, item 2(2). - Occupational Health and Safety Standards for employers and users working with and around hazardous chemical substances.

SECTION 16: Other Information

Indication of changes
Alignment to the GHS.

Relevant classification and H-Statements:
Hazardous to AquaticEnvironment, Long-term Hazards Chronic- Category 1.
H410: Very toxic to aquatic life with long lasting effects.
Hazardous to Aquatic Environment, Acute Hazards- Category 1.
H400: Very toxic to aquatic life.
Reproductive Toxicity– Category 2.
H361: Suspected of damaging to fertility or the unborn child.

Key to Abbreviations

AND	European Provisions concerning the International Carraige od Dangerous Goods by inland Waterways
ADR	The European Agreement concerning the International Carraige of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
COD	Chemical Oxygen Demand
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IMDG	International Maritime Dangerous Goods
Log_{Pow}	Logarithm of the octanol/water partition coefficient
LD50	Lethal Dose 50
LC50	Lethal Concentration 50
RID	The Regulations concerning the International Carraige of Dangerous Goods by Rail
SDS	Safety Data Sheet
UN	United Nations

Notice to Reader

The information contained in this Safety Data Sheet relate only to the specific product and do not relate to the use of the product in combination with any other product or process. Information in the SDS is supplied to the best of ROLFES AGRI (PTY) LTD's knowledge and are believed to be current and correct as of the date on this SDS. All reasonable efforts were exercised to compile this SDS in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

The SDS only provides information applicable to the health, safety and environmental hazards of MOER-TU at the date of issue in order to facilitate the safe use, handling, storage and transport of this product and does not replace any product information or product specifications.

It is not possible for ROLFES AGRI (PTY) LTD to anticipate or control all conditions under which this product, MOER-TU may be used, handled, stored or transported. The obligation of the user, receiver, handler or transporter remains to review the content of the SDS prior to potentially exposing persons/employees to the product and to consider any risks that may associated with the hazards of the product during use, handlings, storage or transportation. Appropriate health, safety and environmental protection risk mitigating measures must be in place and such information must be communicated to all persons that might be involved with and exposed to this product.

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This document is intended only as a guide to the appropriate precautionary handling and use of the product by a properly trained person. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose. When this product is sold, risk passes to the

purchaser in accordance with the specific terms and conditions of sale. Accordingly, Rolfes Agri Proprietary Limited will not be responsible for damages resulting from use or reliance upon this information.

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