SAFETY DATA SHEET

S-MOC 915

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Name: S-MOC 915
Other identifier: S-metolachlor 915 g/l EC
Pesticide Classification: Herbicide
Restrictions on use: Agriculture

Supplier
Enviro Bio-Chem (Pty) Ltd
Co. Reg. No.: 2013/194774/07
44 Kerk Street, Lichtenburg
North West, South Africa 2740

Registration Holder
Enviro Bio-Chem (Pty) Ltd
Co. Reg. No.: 2013/194774/07
44 Kerk Street, Lichtenburg
North West, South Africa 2740

Telephone: +27 12 006 0063
Fax: 086 541 7948
Website: www.envirobiochem.co.za

24 Hr Emergency Number: Spillage: 0861 000 366

In case of Poisoning:
Griffon Poison Information Centre: +27 82 446 8946
Tygerberg Hospital: (+27 21) 931 6129
Poison Emergency Enquiries: (+27 21) 689 5227

2. HAZARD IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008		
Hazard classes	**Hazard categories**	**Hazard statements**
Acute toxicity (Inhalation)	Category 4	H332
Acute toxicity (oral, dermal)	Category 5	H303+H313
Skin corrosion/irritation	Category 2	H315
Serious eye damage/eye irritation	Category 1	H318
Skin sensitisation	Category 1	H317
Hazardous to the aquatic environment — Acute Hazard	Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard	Category 1	H410

The most important adverse effects:
The most important adverse physiochemical effects: None Known.
The most important adverse human health effects: Causes serious eye damage. May cause an allergic skin reaction

Label elements:

Signal word: Danger

Hazard statements:
H303: May be harmful if swallowed or in contact with skin.
H332: Harmful if inhaled.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:
P102: Keep out of reach of children.
P103: Read label before use.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release into the environment.
P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
P302/P352: IF ON SKIN: Wash with plenty of water and non-abrasive soap.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305/P351/P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312: Call a POISON CENTRE or doctor if you feel unwell.
P333/P313: If skin irritation or rash occurs: Get medical advice.
P362+P364: Take off contaminated clothing and wash it before reuse.
P391: Collect spillage.
P405: Store locked up.
P501: Dispose of content/container to suitable landfill in accordance with local regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances/ Mixture: Mixture

Composition:

Chemical Name	CAS	Conc. (m/m%)	Classification EC 1272/2008
S-metolachlor	87392-12-9	84.91 %	Acute Tox. 5 (Dermal), H313 Acute Tox. 4(oral), H303 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Light aromatic solvent	64742-95-6	2.5 – 10	Acute Tox. 5 (Oral), H303 Acute Tox. 4 (Dermal), H312 Skin irrit. 3, H316 Eye irrit. 2B, H320 STOT 3, H335
Phenyl sulphonate salt	99734-09-5	<5	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin irrit. 2, H315 Eye Dam 1, H318 Aquatic Chronic 3, H412
Benoxacor	98730-04-2	2.5 - 10	Acute Tox. 5 (Dermal), H313 Acute Tox. 4(oral), H303 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Sens. 1, H317 Aquatic Chronic 1 M=1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure and consult a doctor / poison control centre.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation persists / person feels unwell. Seek medical attention if you feel unwell after inhalation.

Skin: In case of contact, Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists.

Eyes: Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. Seek medical attention immediately.

Ingestion: Wash out mouth with water if the patient is alert and conscious. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to avoid aspiration. Keep patient at rest and transport to nearest medical facility for further treatment. attention. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt, or waistband.

Anticipated acute effects: May be harmful if swallowed or in contact with skin. Harmful if inhaled. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage.

Anticipated delayed effects: None known.

Most important symptoms/effects: May cause an allergic skin reaction. Symptoms/effects after inhalation. Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause an allergic skin reaction. Symptoms/effects after eye contact. Causes serious eye damage.

Advice to physician: Treat symptomatically and supportively. No specific antidote known.

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5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use carbon dioxide, dry powder, or alcohol-resistant foam for small fires and water spray can be used for larger fires or cooling of unaffected stock but avoid the accumulation of polluted run-off from the site.

Unsuitable Extinguishing Media: High volume water jet. Use a water jet only to cool heated containers.

Specific hazards: No information available.

Special Fire Fighting Procedures: Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Keep upwind. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal. Avoid pollution of waterways by run-off from the site.

Personal protective equipment: Wear NIOSH/MSHA approved self-contained breathing apparatus and full protective gear.

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6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with eyes and skin. Do not breathe in spray mist or dust. Ventilate area of spill, especially in contained areas.

Protective equipment: Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

Emergency procedures: Alert firefighting personnel, evacuate unprotected personnel and animals. Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA and full turnout gear. Use an approved/certified respirator or equivalent Avoid contact with eyes and skin. Do not breathe in fumes. Refer to section 8 for recommended personal protective equipment. Evacuate unnecessary personnel

Environmental Precautions: Prevent spilled product from entering sewers, waterways or ground water. This product is classified as very toxic to aquatic organisms with long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into watercourses should be reported immediately to the police and the Department of Water/Environmental Affairs.

Methods and Materials for Containment: Contain spilled product by diking area with sand or earth. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Methods and Materials for Clean-up: Contain spilled product by picking up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal. Do not create a powder cloud by using a brush or compressed air. Label containers with the contents and dispose of according to local regulations. Do not place spilled material back in original container. Do not re-use spilled material. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. Collect washings and add to the drums already collected. Do not flush spilled material or washings into drains or waterways. See section 13 for disposal considerations.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: May be harmful if swallowed or in contact with eyes and skin Ensure adequate ventilation during handling and use. Do not handle broken packages without protective equipment. Immediately clean up spills that occur during handling. Keep containers closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.

General occupational hygiene: Handle in accordance with good industrial hygiene and safety practice. Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Wash all clothing before it is re-used.

Storage:

Conditions for safe storage: Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original, labelled container, tightly closed, in an isolated, dry, cool and well- ventilated area. Avoid excess heat. Not to be stored next to foodstuffs, feed and water supplies. Avoid cross contamination with other pesticides and fertilisers.

Incompatible substances and mixtures: Refer to product label.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters:

S-MOC 915 EC **DNEL/ DMEL (Workers)**	
Acute - local effects, dermal	> 2000 mg/kg bw/day
Acute - local effects, inhalation	3.06 mg/m³
Long-term - systemic effects, dermal	> 2000 mg/kg bodyweight/day

Exposure control: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. A Risk Assessment should be conducted before handling is to commence to determine specific exposure control.

Engineering Controls: It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

Hygiene measures: Wash hands, forearms, and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to

remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment:

Respiratory Protection: For most well-ventilated conditions, no respiratory protection should be needed. If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved air-purifying respirator.

Hand Protection: The use of chemically protective gloves is recommended to prevent against skin contact. Examples of preferred glove barrier materials include Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, Polyvinyl alcohol, Polyvinyl chloride.

Eye Protection: The use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.

Skin and Body Protection: Employee must wear appropriate protective clothing; boots, hat and equipment to prevent repeated or prolonged skin contact with this substance.

Emergency eyewash: 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.

Environmental exposure controls: Prevent product from entry into sewers and water courses.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Colour	Golden brown
Odour	Low odour
Odour threshold	No data available
pH	No data available
Relative evaporation rate (butylacetate=1)	No data available
Melting point / freezing point (° C)	No data available
Freezing point	No data available
Boiling point (° C)	No data available
Flash point (° C)	93.3°C
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Evaporation rate	No data available
Flammability	Slightly
Upper /lower flammability limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	≈ 1.083 g/ml
Water solubility (g/l) at 20°C	No data available
Partition coefficient: n-octanol/water partition coefficient	No data available
Auto-ignition temperature (° C)	No data available
Decomposition temperature (° C)	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic (mPa s)	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

10. STABILITY AND REACTIVITY

Chemical Stability: The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50 °Preferably below 30 °C, and not for prolonged periods in direct sunlight.

Reactivity: None known.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures.

Incompatible Materials: Strong acids. Strong bases.

Hazardous Decomposition Products: Fume. Carbon monoxide. Carbon dioxide.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Calculated according to GHS:

Acute Oral LD_{50} (rat): 2124.8 mg/kg

Acute Dermal LD_{50} (rat): 2062.50 mg/kg

Acute Inhalation LC_{50} (rat, 4 hr): 3.20 mg/ℓ air.

Skin Irritation: Causes skin irritation.

Eye Damage/Irritation: Causes serious eye damage.

Skin Sensitization: May cause an allergic skin reaction.

Respiratory Sensitization: Not classified.

Reproductive cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive toxicity: Not classified.

Specific target organ toxicity – single exposure: Not classified.

Specific target organ toxicity – repeated exposure: Not classified.

Aspiration hazard: Not classified.

Chronic Effects (other targets e.g. developmental): Not classified

12. ECOLOGICAL INFORMATION

The product is classified as a marine pollutant.

ECOTOXICITY DATA:

S-MOC 915 EC
LC50 fish calculated: 1.30 mg/l
LC50 daphnia calculated: 7.87 mg/l
LC50 algae calculated: 0.06 mg/l

Active ingredient: S-metolachlor CAS No. 87392-12-9

Fish	
LC_{50} (96 hr)	1.23 mg/ℓ (rainbow trout); 3.16 mg/ℓ (bluegill sunfish).

Daphnia

LC_{50} (48 hr)	11.24 mg/l

Algae

Static test EC_{50} (96h)	0.056 mg/l (*Pseudokirchneriella subcapitata*)

Birds

Acute oral LD_{50}	>2510 mg/kg (bobwhite quail and mallard ducks)
Dietary LC_{50} 8 days	>5620 mg/kg diet (bobwhite quail and mallard ducks)

Bees

Toxicity to bees LD_{50} (oral)	>85 µg/bee.
Toxicity to bees LD_{50} (contact)	>200 µg/bee.

Worms

LC_{50} (14d)	>570 mg/kg soil (Earthworms)

Biodegradability: In aerobic soils, S-metolachlor dissipates rapidly due to microbial activity, mainly through degradation into two major metabolites (oxanilic and sulfonic acids), the formation of non-extractable residues (44–93.5%), and mineralisation to CO_2 (3–30%). Laboratory studies in aerobic soils (9198 soils) show a geomean DT_{50} of 21.2 days (range 7–96 days). In the field, geomean DT_{50} is 30 days (range 6–49 days, 12 soils), with DT_{90} values of 36–165 days. In water–sediment systems, dissipation occurs with a whole-system DT_{50} of 42–53 days.

Bioaccumulation: No data available.

Mobility: Adsorption studies across 15 soils (pH 3.4–8, organic carbon 0.2–19.8%) indicate low to moderate mobility, with mean K_{foc} of 189 L/kg (range 61–369 L/kg) and K_f of 6.4 L/kg (range 0.3–44.8 L/kg).

Additional information: Avoid release to the environment.

13. DISPOSAL CONSIDERATION

Pesticide Disposal: Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or re-processed. Never pour untreated waste or surplus product 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. Comply with local legislation applying to waste disposal. The product may be taken to a registered waste disposal site or incineration plant.

Package Product Wastes: Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is cleaned, reconditioned or destroyed. Thereafter, rinse the container three times with a volume of water equal to a minimum of one third of that of the container. Puncture the triple rinsed container and dispose of via an approved collector or recycler (www.croplife.co.za). Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages.

Ecology - waste materials: Avoid release to the environment.

14. TRANSPORT INFORMATION

UN Number	3082
Road Transport ADR/IRD:	
Class:	9
Packaging group:	III
UN proper Shipping Name:	Environmentally Hazardous Substance; Liquid; N.O.S. (S-metolachlor 915 g/l)
Maritime Transport IMDG/IMO:	
Class:	9
Packaging group:	III
UN proper Shipping Name:	Environmentally Hazardous Substance; Liquid; N.O.S. (S-metolachlor 915 g/l)
Marine Pollutant (Y/N):	Yes

Air Transport IATA/ICAO:

Class:	9
Packaging group:	III
UN proper Shipping Name:	Environmentally Hazardous Substance; Liquid; N.O.S. (S-metolachlor 915 g/l)

15. REGULATORY INFORMATION

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

Relevant information regarding authorization: Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. UN Recommendations on the Transport of Dangerous Goods Model Regulations Rev. 21 (2019), Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 8, 2019.

Relevant information regarding restrictions: None.

EU regulation: Regulation EC1272/2008 (EU-GHS/CLP)

Other national regulations: National Road Traffic Act, 1996 (ACT NO. 93 of 1996). SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes. National Environmental Management Waste Act 59 of 2008.Act 36 of 1947 of the Republic of South Africa. This product is registered under it is a violation of South African law to use this product in any manner inconsistent with its approved labelling. Read and follow all label directions

Chemical Safety Assessment carried out? No

16. OTHER INFORMATION

Note: Read and understand all the information on the product label before using the product.

Other hazard statements, abbreviations and explanations:
H303: May be harmful if swallowed or in contact with skin.
H332: Harmful if inhaled.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

IATA: International Air Transport Association.
IBC: International Bulk Chemical.
ICAO: International Civil Aviation Organization.
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization.
LD50 value: The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.
OEL/RL: Occupational exposure limit-recommended limit.
TWA: Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.
ST/STEL: Short-term exposure limits.

Disclaimer: The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product, nor where instructions or recommendations are not followed.
All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

END OF DOCUMENT

Compiled: /
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For detailed information on revisions, contact the registration holder.