

VILLA MSMA 720 SL

MATERIAL SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: MSMA 720 SL
Herbicide

UN No.: 2994

Supplier: Villa Crop Protection (Pty) Ltd.
PO Box 801
Kempton Park, 1620, South Africa

Telephone: (011) 396 2233

Fax: (011) 396 4666

Website: www.villacrop.co.za

Emergency telephone numbers:

24 Hr Transport / Spill emergency no:

Envirosure. +27 31 205 4918

(Hazcall24) +27 86 044 4411

(Client: Villa Crop Protection)

Griffon Poison Information Centre +27 82 446 8946

(Client: Villa Crop Protection)

Poisoning Emergency telephone numbers:

Griffon Poison Information Centre +27 82 446 8946

Poisons Information Centre +27 861 555 777

Villa Crop Protection Emergency number:

National Safety, Health and Environmental Manager:

+27 63 698 0668

2. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: MSMA

Chemical Name: Sodium hydrogen methylarsonate (IUPAC)

CAS No.: 2163-80-6

Chemical Family: Organoarsenic (Pentavalent)

Chemical Formula: CH₄AsNaO₃ (Mol. wt: 162.0)

Use: Selective pre-emergence contact herbicide, with some systemic properties.

Formulation: MSMA: 720 g/l
Soluble concentrate

Active Ingredient: MSMA

Symbols: X_n, X_i

Indication of danger: Harmful and irritating substance.

Risk-Phrases: R 22, R36/38

3. HAZARD IDENTIFICATION

Toxicity class: WHO III; EPA III. A moderately toxic herbicide.

Main hazard: Harmful. The pentavalent arsenicals are relatively water soluble and absorbable across mucous membranes.

Eye contact: May cause eye irritation.

Skin contact: Minimally toxic. May cause mild skin irritation.

Ingestion: Toxic by ingestion.

Inhalation: Minimally toxic.

4. FIRST AID MEASURES AND PRECAUTIONS

Symptoms of acute poisoning may appear within one hour of ingestion, but may delay for several hours. Identification for this toxicant in the severely poisoned is the familiar **garlic odour** of the breath and faeces.

Gastrointestinal effects: inflammation of the mouth, pharynx, oesophagus, burning abdominal pain, thirst, vomiting and rice-water or bloody diarrhoea.

Renal injury: proteinuria, hematuria, glycosuria, oliguria, casts in the urine, and in severe cases, acute tubular necrosis.

Central nervous system effects: headache, dizziness, muscle weakness and spasms, hypothermia, lethargy, delirium, coma and convulsions.

Cardiovascular effects: shock, cyanosis and cardiac arrhythmias due to direct toxic action and electrolyte disturbances.

Inhalation: Remove source of contamination or move victim to fresh air. If breathing has stopped, perform artificial respiration and administer oxygen. Keep person warm and at rest. Treat symptomatically and supportively as and when required. **Obtain medical advice if necessary.**

Skin contact: Remove contaminated clothing, shoes and leather goods. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. **Seek medical attention if necessary.** The product is not considered to be a dermal sensitizer, but persons who become sensitised may require specialised medical management with anti-inflammatory agents.

Eye contact: Immediately flush the contaminated eyes with gently flowing lukewarm water or saline solution for 20 minutes, holding the eyelid(s) open. **Seek medical attention if necessary.**

Ingestion: Have victim rinse mouth thoroughly with water. **Do not induce vomiting.** Administration of gastric lavage or oxygen should be performed by qualified medical personnel. **Seek medical advice.**

Advice to physician:

- If ingested, empty the stomach by intubation, aspiration and lavage, using a slurry of activated charcoal in isotonic saline, taking all precautions to protect the respiratory tract from aspiration or vomitus. If patient is unconscious, insert a cuffed endotracheal tube prior to gastric intubation. Keep victim's head below level of stomach during gastric intubation and lavage. Aspirate pharynx as regularly as possible.

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- Leave activated charcoal in stomach as indicated, with a repeated administration of charcoal at half or more the original dose very 2 to 4 hours.
- It is not appropriate to administer a cathartic, because arsenic poisoning always results in profuse diarrhoea.
- Intravenous fluids should be administered to restore adequate hydration and electrolyte imbalances.

Dimercaprol (BAL) is recommended as an **antidote** for arsenic poisoning. (Side effects with BAL: nausea, headache, burning and tingling sensations, sweating, tremor, restlessness, tachycardia, hypertension and fever. Acute symptoms usually disappear within 30 to 90 minutes. For relief of these symptoms give antihistamines or an oral dose of 25 to 30 mg of ephedrine sulphate.) Treat symptomatically and supportively as and when required.

5. FIRE FIGHTING MEASURES

Fire and explosion hazard: No fire or explosion hazard.

Extinguishing agents: Extinguish small fires with carbon dioxide, dry powder, halon or alcohol-resistant foam. Water spray or fog can be used for larger fires or cooling of unaffected stock, but avoid the accumulation of polluted run-off from the site.

Firefighting: Remove container from fire area if possible. Contain fire control water for later disposal. Use a recommended extinguishing agent for the type of surrounding fire.

Avoid inhaling hazardous vapours. Keep material away from water sources and sewers. Do not touch material and avoid breathing fumes. Keep upwind.

Personal protective equipment: Fire may produce irritating or poisonous vapours (arsenic oxides and oxides of sodium), mists or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions: Avoid contact with skin and eyes. Do not inhale fumes. For personal protection see Section 8. In view of the toxicity induced in experimental animals on repeated exposure, proper care should be taken during occupational use to avoid ingestion of spray particles, and to prevent accidental contamination of food products and water.

Environmental precautions: Do not allow entering drains or water sources. When the product contaminates public waters, inform appropriate authorities in accordance with local regulations.

Occupational spill: For small liquid spills, soak up with sand or other suitable non-combustible absorbent material and place into containers for subsequent disposal. For

large spills, contain liquid far ahead of spill. Contain spillage and contaminated water for subsequent disposal. Do not flush spilled material into drains. Keep spectators away.

7. HANDLING AND STORAGE REQUIREMENTS

Handling: Harmful if swallowed. Avoid contact with eyes, prolonged contact with skin, and inhalation of fumes. Use 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 using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage: Store in its original labelled container in a shaded, well ventilated area, away from heat, sparks and other sources of ignition. Not to be stored next to foodstuffs and water supplies. Keep out of reach of children and animals. Local regulations should be complied with.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

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 PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

Respirator: An approved respirator suitable for protection from dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

Clothing: Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

Gloves: Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye protection: The use of safety goggles is recommended.

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.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear light green to slightly brown liquid.
Odour: Slight sweetish odour.
Explosive properties: Non explosive.
Flammability: Non-flammable. The product contains water
Suspensibility: Not applicable.
Solubility in water: Readily soluble in water.
Solubility: Moderately soluble in methanol. Insoluble in most organic solvents.
Flash point: None.
Specific gravity: 1.50 g/cm³

10. STABILITY AND REACTIVITY

Stability: The product is stable to hydrolysis, but is decomposed by strong oxidising and reducing agents.
Incompatibility: Spray solutions containing this product should be mixed stored or applied using aluminium, fibreglass or plastic-lined containers and equipment. The product is corrosive to mild steel. The product is compatible with many herbicides when used at normal rates. However, a compatibility test is required before using with other products. Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first.
Storage stability: Stable for up to 2 years under normal warehouse storage conditions. The product is stable after 14 days at 54 °C (accelerated storage test), and after 3 months at both 25 °C and -3 °C.
Thermal decomposition: Toxic fumes of arsenic oxides and toxic oxides of sodium are released when the product decomposes on heating.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀: 1824 mg/kg in male rats.
Acute dermal LD₅₀: >2856 mg/kg in rats.
Acute skin irritation: The product may cause mild skin irritation (rabbits).
Acute eye irritation: The product may cause mild eye irritation (rabbits).
Dermal sensitisation: Not determined due to induced toxicity of the product
Carcinogenicity: Inadequate data available on organo-arsenic products to determine product carcinogenicity. No human information available.
Teratogenicity: Animal studies did not detect teratogenic effects. No human information available.
Mutagenicity: Animal studies did not detect mutagenic activity. No human information available.

12. ECOLOGICAL INFORMATION

MSMA can be highly toxic to grazing stock and wildlife. It must only be used with the utmost caution and under supervision. The user is therefore warned that stock (or wildlife) must not be allowed to graze treated areas until at least one months has passed after treatment of jointed and other cacti and two months after treatment of prickly pear. Do not treat prickly pear during dry periods when no other source of fresh food is available (usually June to September in South Africa).

ECOTOXICOLOGY:

Birds:		
LD ₅₀ :	quail:	425.2 g/kg
Fish:		
LC ₅₀ (96 hours):	bluegill sunfish:	> 51 mg/l
	trout:	> 176 mg/l
Bees:		
LD ₅₀ :		68 µg/bee
Daphnia:		
LC ₅₀ (48 hours):		77.5 mg/l
Other aquatic organisms:		
EC ₅₀ (14 days):	<i>Lemna gibba</i> :	145.9 mg/l

13. DISPOSAL CONSIDERATION

Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of a third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.
 Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dumpsite. Prevent contamination of food, feedstuffs, drinking water and eating utensils.
 Comply with local legislation applying to waste disposal.

14. TRANSPORT INFORMATION

UN NUMBER:	2994
ADR/IRD:	6.1
IMDG/IMO:	6.1
ICAO/IATA:	6.1
PACKING GROUP:	III
ROAD/RAIL:	Arcenical Pesticide, Liquid, Toxic. (methylarsonic acid).
AIR/IATA:	619, Y619

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SEA: Arcenical Pesticide, Liquid, Toxic.
 (methylarsonic acid).
 Arcenical Pesticide, Liquid, Toxic.
 (methylarsonic acid).
 Considered as a marine pollutant.

- *Pestline*; Material Safety Data Sheets for Pesticides and Related Chemicals; Volume II; Occupational Health Services Inc., 1991.
- *Agriculture and Public Health*; Guide to the Treatment of Poisoning by Chemicals, 1993.

15. REGULATORY INFORMATION

Symbol: X_n, X_i
Indication of danger: Harmful and irritating substance.
Risk phrases:
R 22 Harmful if swallowed.
R 36/38 Irritating to eyes and skin.
Safety phrases:
S 2 Keep out of reach children.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 46 If swallowed, seek medical advice immediately and show this container and label.

END OF DOCUMENT

Compiled: December 2013
Reviewed: March 2019
Revision no.: (2)
Next revision date: March 2024

For detailed information on revisions, contact the Registration holder.

16. PACKING AND LABELLING

Packed in 20, 25, 200 l drums (Farming; industrial) and 1, 5, 10, 20 litres bottles and cans (Industrial, home and garden) containers and labelled according to South African regulations and guidelines.

17. OTHER INFORMATION

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.

It is the responsibility of persons in receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations(s) containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.

18. REFERENCES

- Applicable own physical and chemical, toxicity and ecotoxicity research studies.
- *The Pesticide Manual*; Eleventh Edition; Editor Clive Tomlin; Crop Protection Publications, 1997.