

# SAFETY DATA SHEET

Issue No: 1.0	First print date: May 2024
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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	<b>Target MSMA 6 Plus</b>
Other means of identification:	<b>MSMA SL</b>
Recommended use:	Agricultural herbicide
Registration holder:	ICA International Chemicals (Pty) Ltd
Address:	28 Planken Street Plankenbrug Industrial STELLENBOSCH · 7600 · SOUTH AFRICA
Telephone No:	+27-21 886 9812
Fax No:	+27-21 886 8209
Emergency Tel No:	Griffon Poison Information Centre: +27-82 446 8946 Human Poison Helpline: +27-861 555 777

## 2. HAZARD IDENTIFICATION

GHS Classification of product	Acute Toxicity Oral – Category 5 Acute Toxicity Dermal – Category 5 Acute Inhalation – Category 4 Acute Aquatic Toxicity – Category 3 Chronic Aquatic Toxicity – Category 3
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### Label Elements

Classification and Labelling of Chemicals (GHS) Rev 10, 2023; Regulation EC No. 1272/2008 [EU-GHS/CLP]



### Signal word

**WARNING**

### Hazard Statements

H303 – May be harmful if swallowed  
H313 – May be harmful in contact with skin  
H332 – Harmful if inhaled  
H412 – Harmful to aquatic life with long lasting effects

### General Precautionary Statements

P101: If medical advice is needed, have product container or label at hand.  
P102: Keep out of reach of children.

### Prevention Precautionary Statements

P261: Avoid breathing mist.  
P264: Wash hands and exposed skin thoroughly after handling.  
P270: Do not eat, drink, or smoke when using this product.  
P271: Use only outdoors or in a well-ventilated area.  
P273: Avoid release to the environment.

### Response Precautionary Statements

P301 + P330 + P317: IF SWALLOWED: Rinse Mouth. Get medical help.  
P302 + P317: IF ON SKIN: Get medical help.  
P304 + P340 + P317: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.

### Disposal Precautionary Statements

P501: Dispose of contents and container in accordance with national regulations.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT(S)	CAS NO:	CONCENTRATION % (w/v)	CLASSIFICATION EC 1272/2008
MSMA, Monosodium methanearsonate	2163-80-6	72	Acute Oral Toxicity Category 3, H301; Acute Inhalation Toxicity Category 3, H331; Aquatic Acute Category 1, H400;

There are no additional ingredients present which, within the current knowledge of the provider of this SDS, and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. See section 16 for legend of additional H-phrases not in section 2.

#### 4. FIRST AID MEASURES

**Show this SAFETY DATA SHEET to a doctor.**

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|---|---|
| <b>INHALATION:</b>                                  | <ul style="list-style-type: none"> <li>• Remove the victim from immediate source of exposure. Move victim to fresh air, if it can be done safely, and keep comfortable.</li> <li>• If victim's breathing has stopped, perform artificial respiration.</li> <li>• Wash victims face and mouth before giving artificial respiration. Use a pocket mask equipped with a one-way valve or other proper respiratory medical device.</li> <li>• Administer oxygen if victim's breathing is difficult or irregular.</li> <li>• Get medical help.</li> </ul>  |
| <b>SKIN:</b>  | <ul style="list-style-type: none"> <li>• Remove and isolate contaminated clothing, shoes, and leather goods immediately and take a shower</li> <li>• Rinse affected areas (skin) immediately with non-abrasive soap or mild detergent and large amounts of running water for 15 – 20 minutes. Wash contaminated clothing before reuse.</li> <li>• Get medical help if irritation develops and persists.</li> </ul>  |
| <b>EYES:</b>  | <ul style="list-style-type: none"> <li>• Rinse eyes with clean running water for at least 15 – 20 minutes, while holding eyelids apart.</li> <li>• Remove contact lenses after 5 minutes if present and easy to do.</li> <li>• Continue rinsing while holding eyelids apart.</li> <li>• Seek medical help if irritation continues.</li> </ul>   |
| <b>INGESTION:</b>                                   | <ul style="list-style-type: none"> <li>• If swallowed, get medical help. DO NOT induce vomiting, unless instructed to do so by poison control center or doctor.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Never give anything by mouth to an unconscious person.</li> <li>• If vomiting does occur, keep on giving fluids.</li> </ul>  |
| <b>NOTE TO PHYSICIAN:</b>                           | <ul style="list-style-type: none"> <li>• There is no specific antidote. All treatment should be based on observed signs and symptoms of distress in the patient.</li> </ul>   |
| <b>POTENTIAL HEALTH EFFECTS, ACUTE AND DELAYED:</b> | <ul style="list-style-type: none"> <li>• If ingested, gastric lavage may be indicated. Literature recommendations for arsenic poisoning calls for chelation therapy with BAL or d-penicillamine. Persons with sensitivity to penicillins may suffer an allergic reaction. BAL is recommended for people allergic to penicillin. Effects associated with acute MSMA exposure:             <ul style="list-style-type: none"> <li>• Gastrointestinal (GI) adverse effects predominate, with vomiting, abdominal pain and rice-water or bloody diarrhea being the most common. Other GI effects include inflammation, vesicle formation and eventual sloughing of the mucosa in the mouth, pharynx and esophagus.</li> <li>• Symptoms related to the central nervous system may begin with headache, dizziness, drowsiness and confusion.</li> </ul> </li> </ul> |

#### 5. FIRE FIGHTING MEASURES

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|---|---|
| <b>SUITABLE EXTINGUISHING MEDIA:</b>            | <p><b>Small fires:</b> Dry chemical powder, carbon dioxide (CO<sub>2</sub>), do not use water or foam, as this may spread product.</p> <p><b>Large fires:</b> Dry chemical powder, carbon dioxide (CO<sub>2</sub>), do not use water or foam, as this may spread product.</p> |
| <b>FIRE INVOLVING TANKS:</b>                    | Cool containers with flooding quantities of water until well after fire is out. DO NOT get water inside containers. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire.          |
| <b>UNSUITABLE EXTINGUISHING MEDIA:</b>          | DO NOT use high volume water jet, due to contamination risk.  |
| <b>SPECIFIC EXTINGUISHING METHODS:</b>          | Fight fire from maximum distance. For massive fires, use unmanned hose holder or monitor nozzles. Collect contaminated extinguishing water separately; do not allow contaminated water to reach the sewage or effluent systems.   |
| <b>SPECIFIC HAZARDS ARISING FROM COMBUSTION</b> | In case of fire, the formation of arsine gas can occur expected.  |

**PRODUCTS:**

**PRECAUTIONS FOR FIRE FIGHTERS:**

Fire fighters should wear full protective gear including self-contained breathing apparatus (SCBA). Fight fire from a safe distance. Contact with the fumes and vapours should be avoided by staying upwind. Clean all clothing before reuse. Severely contaminated clothing cannot be adequately decontaminated and must be disposed of as a hazardous waste. Shower with soap and water after contact with chemical product.

**FURTHER INFORMATION:**

- If possible, safely move undamaged intact containers away from the area around the fire.
- Keep containers cool by spraying with water if exposed to fire.
- Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.
- In case of fire and/or explosion do not breathe fumes.

**6. ACCIDENTAL RELEASE MEASURES**

**SPILL OR LEAK:**

**PERSONAL PRECAUTIONS:**

Avoid contact with skin and eyes. Do not touch or walk through spilled material. Do not inhale spray or fumes.

**PROTECTIVE EQUIPMENT:**

Wear personal protective clothing and equipment (see section 8).

**EMERGENCY PROCEDURES:**

Keep people and animals away.

Avoid breathing mist. Ensure adequate ventilation.

**ENVIRONMENTAL PRECAUTIONS:**

PREVENT spilled material from entering waterway and sewer systems, basements, and confined areas. If the product contaminates rivers and lakes or waterways immediately inform respective authorities.

**METHODS AND MATERIALS FOR CONTAINMENT:**

Contain and absorb liquid spills with inert material, remove by scoop or vacuum. Use approved industrial vacuum cleaner for removal and place in clearly marked waste containers.

**METHODS AND MATERIALS FOR CLEANING UP:**

Stop leaks if possible. Contain spilled products with an inert diking material, such as sand. Cover the spill area with a 1:1 mixture of vermiculite and solid calcium oxide (the amount of the mixture should be at least double the size of the spill). Place reclaimed product in a closed and properly labeled waste drum. Store drum in separate area until proper disposal. Flush residue with water.

**SECONDARY DISASTER PREVENTION MEASURES:**

NA

**7. HANDLING AND STORAGE**

**PRECAUTIONS FOR SAFE HANDLING:**

- Suitable Technical Measures
- Suitable Precautions
- Prevention of contact

- Always store in their original containers, which include the label listing ingredients, directions for use, and first aid steps in case of accidental poisoning.
- Never transfer to soft drink bottles or other containers. Children or others may mistake them for something to drink.
- Wear suitable protective clothing which includes chemical-resistant overalls, footwear, socks, dust mask, eye shields and gloves.
- Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Wash hands, arms, and face after application. Wash gloves and contaminated protective clothing daily before reuse.

**CONDITIONS FOR SAFE STORAGE:**

- Suitable Technical Measures
- Separation measures from incompatible substances and mixtures

- Keep out of reach of unauthorized persons, children, and animals. Always store in their original containers, closed with original cap and the original label, in a cool, dry, and well-ventilated area out of direct sunlight.
- Segregate from foods and animal feeds.
- DO NOT reuse the container for any other purpose.
- Incompatibility: Heavy metal salts may cause precipitation. Mild corrosive to steel. May react with reducing agents such as aluminum, zinc, sodium borohydride, sulfur dioxide.

**8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**ARfD – Acute Reference Dose**

0,1 mg kg<sup>-1</sup> bw day<sup>-1</sup>

**AOEL – Accepted Operator Exposure Level**

Not available

**NATIONAL EXPOSURE STANDARDS:**

Not available

<b>BIOLOGICAL LIMIT VALUES:</b>	Not available
<b>ENGINEERING CONTROLS:</b>	Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. If airborne mist are generated use local exhaust ventilation controls. Facilities should be equipped with an eyewash station and a safety shower. Where necessary, seek additional occupational hygiene advice.
<b>PERSONAL PROTECTIVE EQUIPMENT:</b>	<p><b>Respiratory Protection:</b> Where exposure through inhalation may occur when handling and/or when preparing the spray mixture, wear a face mask. If the product is used in confined spaces a respirator suitable for protection from mists of is adequate.</p> <p><b>Hand Protection:</b> Wear chemical-resistant gloves made of any waterproof material such as nitrile rubber. Glove thickness: 0.5 mm</p> <p><b>Eye Protection:</b> The use of safety goggles (full-face shield) is recommended.</p> <p><b>Skin and Body Protection:</b> Wear suitable protective clothing which includes chemical-resistant overalls, footwear, socks, mask, eye shields and gloves. Remove and wash contaminated protective clothing daily.</p>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>PHYSICAL STATE:</b>	Clear liquid
<b>COLOUR:</b>	Colourless to yellow
<b>ODOUR:</b>	Odourless
<b>MELTING POINT / FREEZING POINT °C:</b>	-25 to -15°C
<b>BOILING POINT:</b>	Not available
<b>DECOMPOSITION TEMPERATURE (a.i):</b>	Not available
<b>FLAMMABILITY:</b>	Not flammable
<b>EXPLOSIVE LIMITS:</b>	Not explosive
<b>FLASH POINT:</b>	> 100 °C
<b>AUTO-IGNITION TEMPERATURE:</b>	Does not auto ignite
<b>pH (1% IN WATER):</b>	5 – 7
<b>KINEMATIC VISCOSITY:</b>	Kinematic viscosity = 16,3 – 21,3 mm <sup>2</sup> /s
$\text{Kinematic viscosity} = \frac{\text{Dynamic viscosity (mPa/s)}}{\text{Density (g/cm}^3\text{)}}$	
<b>VISCOSITY:</b>	27.7 mPa/s (MSMA 51%)
<b>DENSITY / RELATIVE DENSITY:</b>	1.3-1.7 g/mL
<b>SOLUBILITY - WATER (a.i):</b>	104 g/100 mL (MSMA 100%)
<b>N-OCTANOL / WATER PARTITION COEFFICIENT (a.i):</b>	Log P = -3.1
<b>VAPOUR PRESSURE (a.i):</b>	<1x10 <sup>-5</sup> Pa (MAA)
<b>RELATIVE VAPOUR DENSITY:</b>	Not available
<b>PARTICLE CHARACTERISTICS: (SOLIDS)</b>	Not applicable

## 10. STABILITY AND REACTIVITY

<b>REACTIVITY:</b>	Heavy metal salts may cause precipitation. Mildly corrosive to steel. May react with reducing agents such as aluminum, zinc, sodium borohydride, sulfur dioxide.
<b>CHEMICAL STABILITY:</b>	Stable under normal use and storage conditions for at least 2 years.
<b>HAZARDOUS REACTION:</b>	Hazardous polymerization is not expected to occur.
<b>CONDITIONS TO AVOID:</b> (e.g. – heat, pressure, static discharge, shock, or vibration)	Avoid storage in moist or hot conditions, near to heat s. Keep away from food, drink and open bodies of water
<b>INCOMPATIBLE MATERIALS:</b>	Reducing agents such as aluminum, zinc, sodium borohydride, sulfur dioxide.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Reducing agents may release arsine gas.

## 11. TOXICOLOGICAL INFORMATION

### ANIMAL ACUTE TOXICITY DATA ON PRODUCT

<b>ORAL:</b>	LD <sub>50</sub> (rat) = 2833 mg a.i. /kg bw	<b>Category 5</b>
<b>DERMAL:</b>	LD <sub>50</sub> (rabbit) > 2000 mg a.i. /kg bw	<b>Category 5</b>

<b>INHALATION:</b>	LC <sub>50</sub> (4h) rat = 2.2 mg a.i./ℓ	<b>Category 4</b>
<b>SKIN IRRITATION / CORROSION:</b>	Not a primary irritant	Not classified
<b>SERIOUS EYE IRRITATION / DAMAGE:</b>	Not a primary irritant	Not classified
<b>RESPIRATORY OR SKIN SENSITIZATION:</b>	Not a contact sensitizer	Not classified
<b>GERM CELL MUTAGENICITY:</b>	Not mutagenic	Not classified
<b>CARCINOGENICITY:</b>	Not a carcinogen	Not classified
<b>REPRODUCTIVE TOXICITY:</b>	Not available	Not classified
<b>SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:</b>	Not available	Not classified
<b>SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:</b>	Not available	Not classified
<b>ASPIRATION HAZARD:</b>	Not available	Not classified

## 12. ECOLOGICAL INFORMATION

### ECOTOXICITY: ACUTE TOXICITY DATA ON PRODUCT

Birds: LD <sub>50</sub> (oral)	<i>Colinus virginianus</i> (Bobwhite quail) Acute LD <sub>50</sub> 834 mg/kg bw/day LC <sub>50</sub> 3269 mg /kg diet (5d)
Fish: LC <sub>50</sub>	Bluegill sunfish Acute (96h) LC <sub>50</sub> > 93 mg/ℓ
Aquatic invertebrates	<i>Daphnia magna</i> (Water flea) Acute (48h) EC <sub>50</sub> = 82.85 mg/ℓ
Aquatic plants	<i>Lemna gibba</i> ErC <sub>50</sub> (14 days) = 145.9 mg/ℓ
Bees	<i>Apis mellifera</i> Acute contact 48-hour LD <sub>50</sub> = 68 µg bee <sup>-1</sup>

#### AQUATIC TOXICITY:

#### Summation Method

Aquatic Acute – **Category 3**

Aquatic Chronic – **Category 3**

#### PERSISTENCE, DEGRADABILITY AND MOBILITY:

Not readily biodegradable

DT<sub>50</sub> = 200 days (a.i.)

K<sub>oc</sub> = Not available

#### BIO-ACCUMULATIVE POTENTIAL:

Low risk

#### SOIL MICRO-ORGANISMS:

Carbon transformation

No significant adverse/long-term effect

Nitrogen transformation

No significant adverse/long-term effect

## 13. DISPOSAL CONSIDERATIONS

On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities.

**TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS:** Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler ([www.croplife.co.za](http://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.

## 14. TRANSPORT INFORMATION

<b>UN NUMBER:</b>	Not regulated for transport
<b>UN PROPER SHIPPING NAME:</b>	Not applicable
<b>TRANSPORT HAZARD CLASS(ES):</b>	Not applicable
<b>PACKING GROUP:</b>	Not applicable
<b>TRANSPORT PICTOGRAMS:</b>	Not applicable
<b>ENVIRONMENTAL HAZARD:</b>	Marine Pollutant: No
<b>TRANSPORT IN BULK:</b>	Not applicable

**SPECIAL PRECAUTIONS FOR USER:** Not applicable

## 15. REGULATORY INFORMATION

Conform to South African Regulation for Hazardous Chemical Agents, 2021.

Product: South African registration number L5978, Act 36 of 1947

SDS valid for five years from date of issue.

## 16. OTHER INFORMATION

**Legend:** Full text of H-Statements referred to under sections 3:

H319 – Causes serious eye irritation

H335 – May cause respiratory irritation

**Acute Tox. 3 H301 Acute Tox. 3 H331 Aquatic Acute 1 H410 Aquatic Chronic 1H410**

**Key literature references and sources of data:** Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 10, 2023. UN Model Regulations Rev. 22 (2023). EU REGULATION (EC) No. 1272/2008.

This Safety Data Sheet (SDS) summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this SDS and consider the information in the context of how to prevent accidents in the normal workplace including in conjunction with other products.

The information was obtained from sources which we believe are reliable. However, the information is provided in good faith. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and for these reasons we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used for this product only.

First Edition Date: 2 May 2024

END of SDS