



LUXEMBOURG

SAFETY DATA SHEET

Issue date: 21/09/2015

1. Identification of the substance or mixture and of the supplier

Product: MSMA 480 g/L SL
Product names: TARGET 4, TARGET
Recommended use: Herbicide
Supplier: Luxembourg Industries Ltd.
Emergency phone number: 27 Hamered St., Tel Aviv, 6812509, ISRAEL
+972 3 796 4300

2. Hazards identification

Classification of the product

According to the Global Harmonized System of Classification and Labelling of Chemicals (GHS)

Hazard classification: Acute toxicity-Oral Category 5
Acute toxicity-Dermal Category 5
Acute-Inhalation Category 4
Hazardous to the aquatic environment
Acute hazard Category 3
Long term hazard Category 3

Label elements: Pictogram:  Signal word: Warning

Hazard statement(s): 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.

Precautionary statement(s):

Prevention: P261 Avoid breathing mist.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.

Response: P312 Call a POISON CENTER/doctor/physician if you feel unwell.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Storage: No storage statements.

Disposal: P501 Dispose of contents/container in accordance with national/international regulations.

MSMA SDS

Page 1 of 6

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Other hazards: Not known

3. Information on ingredients contributing to hazard

Common name: MSMA, Monosodium methanearsonate
Chemical family: Organo-arsenic compounds
Chemical formula: CH₃AsO₃Na
Structural formula:

$$\begin{array}{c} \text{O} \\ || \\ \text{CH}_3\text{-As-OH} \\ | \\ \text{O-Na}^+ \end{array}$$

CAS No.: 2163-80-6
Content: 480 g/L (36.1%)

4. First-aid measures

Call a physician immediately in all cases of suspected poisoning.

- Ingestion:** Call a poison control center or doctor immediately for treatment advice.
Have person sip a glass of water if able to swallow.
Do not induce vomiting unless told to do so by a poison control center or doctor.
Do not give anything by mouth to an unconscious person.
- Inhalation:** Move person to fresh air.
If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
Call a poison control center or doctor for further treatment advice.
- Eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes.
Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
Call a poison control center or doctor for treatment advice.
- Skin:** Take off contaminated clothing.
Rinse skin immediately with plenty of water for 15-20 minutes.
Call a poison control center or doctor for treatment advice.

Most important symptoms and effects, both acute and delayed:

Although the organic (methylated) pentavalent compounds (arsonates) incur the least hazard of the arsenicals, it is prudent to manage cases of arsenical pesticide ingestion as though all are highly toxic.

Effects associated with acute MSMA exposure:

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.

Symptoms related to the central nervous system may begin with headache, dizziness, drowsiness and confusion.

Effects associated with chronic exposure to MSMA:

Chronic exposure to MSMA is unlikely when handling according to label directions



Indication of any immediate medical attention and special treatment needed.

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 persons allergic to penicillin.

5. Fire-fighting measures

Suitable extinguishing media:	Dry chemical or carbon dioxide (CO ₂), do not use water or foam, as this may spread product.
Specific hazards arising from the chemical:	Reducing agents may release arsine gas.
Special protective equipment and precautions for fire-fighters:	Wear chemical protective clothing and self-contained breathing apparatus (SCBA) with positive pressure.

6. Accidental release measures

Personal precautions, protective equipment:	Use personal protective equipment. Avoid breathing mist. Ensure adequate ventilation.
Environmental precautions:	Do not apply directly to water. Do not discharge into drains/surface waters/groundwater. Do not contaminate water by cleaning of equipment or disposal waste. Do not contaminate waters used for domestic purposes, or by wildlife, including aquatic life, or for irrigation.
Methods and materials for containment and cleaning up:	Stop leak if possible. Contain spilled product 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.

7. Handling and storage

Precautions for safe handling:	Wear suitable protective clothing. Avoid contact with skin and eyes. Do not breathe mist. Avoid formation of aerosols. Provide appropriate exhaust ventilation. Wash hands and exposed skin thoroughly after handling.
Conditions for safe storage, including any incompatibilities:	Store in a cool place. Keep container tightly closed in a dry and well ventilated place. Damaged or leaking containers



which cannot be used immediately should be transferred to suitable sound containers and properly marked.
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 / personal protection

Occupational exposure limits:	Exposure limits for organic arsenic compounds OSHA PEL-TWA, (as As): 0.5 mg/m ³ OSHA California/PEL-TWA, (as As): 0.2 mg/m ³ ACGIH (2015) TLV-TWA: Not established
Appropriate engineering controls:	Provide exhaust ventilation or other engineering controls. Wash hands before breaks and at the end of the workday.
Personal protective equipment:	Long sleeve shirt, long pants, boots, chemical resistant gloves, dust or mist respirator, and protective eyewear.

9. Physical and chemical properties

Appearance:	Clear liquid
Colour:	Colourless to yellow
Odour:	Odourless
pH:	5-7
Freezing point:	-25 to -15°C
Boiling point:	Not available
Evaporation rate:	Not available
Flash point:	> 100°C
Flammability:	Not flammable
Vapour pressure (25°C):	<1x10 ⁻⁵ Pa (MAA)
Vapour density:	Not available
Bulk density (20°C):	1.3-1.5 g/mL
Solubility in water (25°C):	104 g/100 mL (MSMA 100%)
Partition coefficient n-octanol/water (23°C):	Not relevant
Ignition temperature:	Not relevant
Decomposition temperature:	Not available
Viscosity (25°C):	27.7 cps (MSMA 51%)

10. Stability and reactivity

Reactivity:	Heavy metal salts may cause precipitation. Mildly corrosive to steel. May react with reducing agents such as aluminum, zinc, sodium borohydride, sulfur dioxide.
Chemical stability:	Stable under normal temperatures and pressure.
Possibility of hazardous reactions:	Not available.
Conditions to avoid:	Not available.
Incompatible materials:	Reducing agents such as aluminum, zinc, sodium borohydride, sulfur dioxide.
Hazardous decomposition products:	Reducing agents may release arsine gas.

11. Toxicological information

Acute toxicity (MSMA 51%)

Oral LD ₅₀ (rat):	2833 mg/kg
Dermal LD ₅₀ (rabbit):	>2000 mg/kg
Inhalation LC ₅₀ (1h, rat):	10.8 mg/L
Inhalation LC ₅₀ (4h, rat):	2.2 mg/L

Skin corrosion/irritation

Skin irritation (rabbit):	Not a primary irritant
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Serious eye damage/irritation

Eye irritation (rabbit):	Not a primary irritant
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Respiratory or skin sensitization

Dermal sensitization (guinea pig):	Not a contact sensitizer
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Germ cell mutagenicity:	Not mutagenic
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Carcinogenicity:	MSMA is not a carcinogen. It did not cause tumors in any of the carcinogenicity studies that were conducted.
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Reproductive toxicity:	Not available
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STOT* single exposure:	Not available
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STOT repeated exposure:	Not available
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Aspiration hazard:	Not available
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*Specific Target Organ Toxicity

12. Ecological information

Ecotoxicity (MSMA 51%)

Birds:

Northern bobwhite LD ₅₀ :	834 mg/kg
Northern bobwhite LC ₅₀ (5d):	3269 mg/L
Mallard LC ₅₀ (5d):	>5620 mg/L

Fish:

Bluegill sunfish LC ₅₀ (96 h):	> 93 mg/L
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Crustacea:

Daphnia pulex LC₅₀ (48 h): 82.85 mg/L

Aquatic plants:

Lemna gibba E_rC₅₀ (14 days): 145.9 mg /L

Bees:

Apis mellifera LD₅₀ (48hr, contact): 68 µg/bee

Persistence and degradability: Not readily biodegradable

Bioaccumulative potential: No bio-accumulative potential (the product is hydrophilic, BCF less than 1X)

Mobility in soil: Not available

Other adverse effects: Not available

13. Disposal considerations

Dispose of in accordance with local regulations.

14. Transport information

Not regulated for transportation.

15. Regulatory information

This data sheet complies with the requirements of the Global Harmonized System of Classification and Labelling of chemicals (GHS).

16. Other information

The information contained herein is applicable solely to the indicated product, and does not relate to any other use of this product as described. Its use is intended by persons having technical skill and at their own discretion and risk. The information has been developed from sources reliable. This information is furnished without warranty, expressed or implied, including the warranties of merchantability and fitness for a particular purpose is made with respect to the information contained herein.

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