METHANEARSONIC ACID, SODIUM SALT

MSA

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Disodium methane arsonate
Disodium methyl arsonate
DSMA
Monosodium methane arsonate
Monosodium methyl arsonate
MSMA

Solid — Colorless solid; solution may be red or green — Odorless

Solid may float or sink in water; solid and solution mix with water.

Avoid contact with solid and solution.
Notify local health and pollution control agencies.

Fire

Not flammable.
POISONOUS GASES ARE PRODUCED WHEN HEATED.
Wear goggles and self-contained breathing apparatus.

Exposure

CALL FOR MEDICAL AID.

SOLID OR SOLUTION
Irritating to skin and eyes.
If swallowed, will cause nausea, vomiting, or loss of consciousness.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting.
IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.

Water Pollution

Dangerous to aquatic life in high concentrations.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Collection Systems: Dredge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: $CH_3AsO(OH)(ONa)$
$CH_3AsO(ONa)_2 \cdot 6H_2O$
2.3 IMO/UN Designation: 6.1/1557
2.4 DOT ID No.: 1557
2.5 CAS Registry No.: 2163-80-6
2.6 NAERG Guide No.: 152
2.7 Standard Industrial Trade Classification: 51550

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Protective clothing to prevent contact with skin; chemical goggles.
3.2 Symptoms Following Exposure: Subacute poisoning by arsenicals causes salty taste, burning in throat and stomach, and intestinal pain. Acute toxicity indicated by headache, vomiting, stupor, convulsions, paralysis. About 1 ounce to 1 pound must be taken to cause these symptoms.
3.3 Treatment of Exposure: INGESTION: cause vomiting; give water and repeat; give a saline cathartic such as sodium sulfate. SKIN: wash with soap and water. EYES: wash with water; consult physician if irritation remains.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; LD_{50} = 0.5-5 g/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: None
3.11 Liquid or Solid Characteristics: Repeated contact may cause skin sensitivity.
3.12 Odor Threshold: Odorless
3.13 IDLH Value: Not listed.
3.14 OSHA PEL-TWA: Not listed.
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: Not flammable
4.2 Flammable Limits in Air: Not flammable
4.3 Fire Extinguishing Agents: Not pertinent
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
4.5 Special Hazards of Combustion Products: Toxic gases may be generated in fires.
4.6 Behavior in Fire: Not pertinent
4.7 Auto Ignition Temperature: Not flammable
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: Not flammable
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: Not pertinent.
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: None
5.2 Reactivity with Common Materials: None
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: >1000 ppm/48 hr/bluegill sunfish/LC_{50}/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): Currently not available
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

7.1 Grades of Purity: The solid disodium salt (DSMA) contains water crystallization Salts are often shipped as solutions in water with concentrations up to about 50% solids.
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open
7.5 IMO Pollution Category: Currently not available
7.6 Ship Type: Currently not available
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Keep Away From Food
8.2 49 CFR Class: 6.1
8.3 49 CFR Package Group: III
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification: Not listed
8.6 EPA Reportable Quantity: Not listed.
8.7 EPA Pollution Category: Not listed.
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Solid or water solution
9.2 Molecular Weight: 162 (MSMA); 292 (DSMA hexahydrate)
9.3 Boiling Point at 1 atm: Decomposes
9.4 Freezing Point: (MSMA) 243°F = 117°C = 390°K (DSMA) 137°F = 58°C = 332°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: (DSMA) 1.0 at 20°C (solid) (MSMA solutions) 1.4-1.6 at 20°C (liquid)
9.8 Liquid Surface Tension: Not pertinent
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
9.12 Latent Heat of Vaporization: Not pertinent
9.13 Heat of Combustion: Not pertinent
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	NOT PERTINENT		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	DSMA:36 LB/100 WATER AT 2		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		NOT PERTINENT