METHYL IODIDE

MIO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Iodomethane Monoiodomethane	Liquid	Colorless to brown	Odorless to sweet odor
	Sinks and decomposes in water. Poisonous vapor cloud is formed.		

Keep people away. AVOID CONTACT WITH LIQUID AND VAPOR.
Wear goggles, self-contained breathing apparatus, and protective impervious overclothing (including gloves.)
Call fire department.
Evacuate area in case of large leaks.
Stay upwind and use water spray to ``knock down'' vapor.
Notify local health and pollution control agencies.

Fire

Combustible.
POISONOUS AND IRRITATING GASES ARE PRODUCED IN FIRE.
Wear goggles, self-contained breathing apparatus, and protective overclothing (including gloves).
EXTINGUISH WITH WATER, FOAM, OR CARBON DIOXIDE.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
POISONOUS IF INHALED.
Irritating to eyes.
Move to fresh air.
If breathing has stopped, give artificial respiration (but NOT mouth-to-mouth).
If breathing is difficult, give oxygen.

LIQUID
Will burn skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
DO NOT RUB AFFECTED AREAS.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Not harmful to aquatic life
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

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: CH_3I
2.3 IMO/UN Designation: 6.1/2644
2.4 DOT ID No.: 2644
2.5 CAS Registry No.: 74-88-4
2.6 NAERG Guide No.: 151
2.7 Standard Industrial Trade Classification: 51139

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Self-contained breathing apparatus; goggles.
3.2 Symptoms Following Exposure: Inhalation of vapor causes lung congestion and pulmonary edema. Higher concentrations causes rapid narcosis and death. Contact with liquid irritates eyes and burns skin.
3.3 Treatment of Exposure: INHALATION: Remove victim to fresh air; give artificial respiration if needed. SKIN OR EYES: Flush with water of at least 15 min.
3.4 TLV-TWA: 2 ppm (skin)
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 3; LD_{50} = 51 mg/kg (guinea pig)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Vapor is moderately irritating such that personnel will not usually tolerate moderate or high vapor concentrations.
3.11 Liquid or Solid Characteristics: Fairly severe skin irritant; may cause pain and second-degree burns after a few minutes' contact.
3.12 Odor Threshold: Odorless
3.13 IDLH Value: 100 ppm
3.14 OSHA PEL-TWA: 5 ppm
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: Practically not flammable.
4.2 Flammable Limits in Air: 10% - 15%
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 and irritating gases are generated when exposed to fire or heat.
4.6 Behavior in Fire: Containers may explode
4.7 Auto Ignition Temperature: Not pertinent
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: Not pertinent
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: Decomposes
5.2 Reactivity with Common Materials: No reaction
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: Currently not available
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: Commercial: not less than 99.5%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Safety relief
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: Poison
8.2 49 CFR Class: 6.1
8.3 49 CFR Package Group: I
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	0
Instability (Yellow).....	0

8.6 EPA Reportable Quantity: 100 pounds
8.7 EPA Pollution Category: B
8.8 RCRA Waste Number: U138
8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Liquid
9.2 Molecular Weight: 141.94
9.3 Boiling Point at 1 atm: 108.3°F = 42.4°C = 315.6°K
9.4 Freezing Point: –87.6°F = –66.5°C = 206.8°K
9.5 Critical Temperature: 490.6°F = 254.8°C = 528°K
9.6 Critical Pressure: 1068 psia = 72.7 atm = 7.37 MN/m^2
9.7 Specific Gravity: 2.279 at 20°C (liquid)
9.8 Liquid Surface Tension: 25.8 dynes/cm = .026 N/m at 43°C
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: 4.89
9.11 Ratio of Specific Heats of Vapor (Gas): Currently not available
9.12 Latent Heat of Vaporization: 82.6 Btu/lb = 45.9 cal/g = 1.9 x 10^5 J/kg
9.13 Heat of Combustion: -4793 Btu/lb = -2663 cal/g = -111 x 10^5 J/kg
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: 12.8 psia

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
68	142.270		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE	35	0.592
						40	0.577
						45	0.562
						50	0.548
						55	0.534
						60	0.520
						65	0.507
						70	0.494
						75	0.481
						80	0.469
						85	0.457
						90	0.445
						95	0.433
						100	0.422
						105	0.411
						110	0.401
						115	0.390
						120	0.380
						125	0.371
						130	0.361

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
59	1.800	-50	0.240		CURRENTLY NOT AVAILABLE	0	0.070
		-40	0.314			25	0.072
		-30	0.412			50	0.073
		-20	0.539			75	0.075
		-10	0.706			100	0.076
		0	0.924			125	0.078
		10	1.210			150	0.079
		20	1.584			175	0.081
		30	2.075			200	0.083
		40	2.717			225	0.084
		50	3.557			250	0.086
		60	4.658			275	0.087
		70	6.100			300	0.089
		80	7.988			325	0.091
		90	10.460			350	0.092
		100	13.697			375	0.094
						400	0.095
						425	0.097
						450	0.098
						475	0.100
						500	0.102
						525	0.103
						550	0.105
						575	0.106
						600	0.108