

BARIUM PERMANGANATE

BPM

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid Dark purple to black Odorless Sinks and mixes with water.
<p>Restrict access. Shut off ignition sources and call fire department. AVOID CONTACT WITH SOLID AND DUST. Wear rubber overclothing (including gloves). Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	Not flammable. May cause fire on contact with combustibles. Containers may explode in fire. Combat fires from safe distance or protected location. Flood discharge area with water. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. DUST POISONOUS IF INHALED. Irritating to eyes, nose and throat. Move victim to fresh air. If in eyes, hold eyelids open and flush with plenty of water. If breathing is difficult, give oxygen. SOLID POISONOUS IF SWALLOWED. Irritating to skin and eyes. 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	HARMFUL TO AQUATIC LIFE IN VERY LOW 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

Dilute and disperse
Stop discharge
Collection Systems: Dredge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: Ba(MnO₄)₂
2.3 IMO/UN Designation: 5.1/1448
2.4 DOT ID No.: 1448
2.5 CAS Registry No.: 7787-36-2
2.6 NAERG Guide No.: 141
2.7 Standard Industrial Trade Classification: 52499

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Goggles or face shield; dust respirator; rubber gloves and shoes.
3.2 **Symptoms Following Exposure:** Inhalation or contact with eyes or skin causes irritation. Ingestion causes abdominal pain, nausea, vomiting, pallor, shortness of breath.
3.3 **Treatment of Exposure:** Get medical attention. Alert doctor to possibility of barium poisoning, particularly if compound was swallowed. INHALATION: remove to fresh air. EYES: flush with copious amounts of water for 15 min. SKIN: wash with copious amounts of water. INGESTION: induce vomiting; give a 10% water solution of Epsom salt.
3.4 **TLV-TWA:** 0.5 mg/m³ as barium.
3.5 **TLV-STEL:** Not listed.
3.6 **TLV-Ceiling:** Not listed.
3.7 **Toxicity by Ingestion:** Currently not available
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** Barium poisoning
3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available
3.11 **Liquid or Solid Characteristics:** Currently not available
3.12 **Odor Threshold:** Odorless
3.13 **IDLH Value:** 50 mg/m³ as barium.
3.14 **OSHA PEL-TWA:** 0.5 mg/m³ as barium.
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:** Not pertinent
4.6 **Behavior in Fire:** Can increase the intensity of fire.
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 **Stoichiometric 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:** No reaction
5.2 **Reactivity with Common Materials:**
When mixed with combustible material, can ignite by friction or acids; may be spontaneously combustible.
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:**
2.2 to 4.1 mg/l of Mn/8 to 18 hr/fish/killed*
*Type of water not specified.
6.2 **Waterfowl Toxicity:** Currently not available
6.3 **Biological Oxygen Demand (BOD):** None
6.4 **Food Chain Concentration Potential:** None
6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 2
Human Contact hazard: 1
Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Commercial
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:** Oxidizer
8.2 **49 CFR Class:** 5.1
8.3 **49 CFR Package Group:** II
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
9.2 **Molecular Weight:** 375
9.3 **Boiling Point at 1 atm:** Decomposes
9.4 **Freezing Point:** Not pertinent
9.5 **Critical Temperature:** Not pertinent
9.6 **Critical Pressure:** Not pertinent
9.7 **Specific Gravity:** 3.77 at 20°C (solid)
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:** Currently not available
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

BARIUM PERMANGANATE

BPM

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
	N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T

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
34	55.490		N		N		N
36	56.280		O		O		O
38	57.060		T		T		T
40	57.850		P		P		P
42	58.640		E		E		E
44	59.430		R		R		R
46	60.220		T		T		T
48	61.010		I		I		I
50	61.800		N		N		N
52	62.590		E		E		E
54	63.380		N		N		N
56	64.160		T		T		T
58	64.950		E		E		E
60	65.740		N		N		N
62	66.530		T		T		T
64	67.320						
66	68.110						
68	68.900						
70	69.690						
72	70.480						
74	71.259						
76	72.049						
78	72.839						
80	73.629						
82	74.419						
84	75.209						