

# NICKEL BROMIDE

NBR

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Nickel bromide trihydrate	Solid Yellowish-green Odorless
Sinks and mixes with water.	
<p>Keep people away. Avoid contact with solid and dust. Avoid inhalation. Notify local health and pollution control agencies. Protect water intakes.</p>	
<b>Fire</b>	Not flammable. Irritating gases may be produced when heated.
<b>Exposure</b>	<p>CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. If inhaled will cause coughing and difficult breathing. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>SOLID Irritating to skin and eyes. If swallowed will cause nausea and vomiting. 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. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

<b>1. CORRECTIVE RESPONSE ACTIONS</b> Dilute and disperse Stop discharge	<b>2. CHEMICAL DESIGNATIONS</b> 2.1 CG Compatibility Group: Not listed. 2.2 Formula: NiBr <sub>2</sub> ·3H <sub>2</sub> O 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: Currently not available 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 52329
<b>3. HEALTH HAZARDS</b>	
<p>3.1 Personal Protective Equipment: Bu. Mines approved respirator; rubber gloves; face shield or safety goggles; protective clothing.</p> <p>3.2 Symptoms Following Exposure: Inhalation of dust causes irritation of nose and throat. Ingestion causes vomiting; if large amount is swallowed and not thrown up, it can cause drowsiness and other symptoms of bromide poisoning. Dust irritates eyes and may cause dermatitis in contact with skin.</p> <p>3.3 Treatment of Exposure: INHALATION: move to fresh air; get medical attention if exposure has been severe. INGESTION: give large amounts of water. EYES: flush with water for at least 15 min. SKIN: wash with soap and water.</p> <p>3.4 TLV-TWA: Notice of intended change: 1.5 mg Ni/m<sup>3</sup></p> <p>3.5 TLV-STEL: Not listed.</p> <p>3.6 TLV-Ceiling: Not listed.</p> <p>3.7 Toxicity by Ingestion: Grade 2; LD<sub>50</sub> = 0.5-5 g/kg</p> <p>3.8 Toxicity by Inhalation: Currently not available.</p> <p>3.9 Chronic Toxicity: Possible lung cancer</p> <p>3.10 Vapor (Gas) Irritant Characteristics: Currently not available</p> <p>3.11 Liquid or Solid Characteristics: Currently not available</p> <p>3.12 Odor Threshold: Currently not available</p> <p>3.13 IDLH Value: 10 mg Ni/m<sup>3</sup></p> <p>3.14 OSHA PEL-TWA: 1 mg/m<sup>3</sup> as nickel</p> <p>3.15 OSHA PEL-STEL: Not listed.</p> <p>3.16 OSHA PEL-Ceiling: Not listed.</p> <p>3.17 EPA AEGL: Not listed</p>	

## 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: Irritating hydrogen bromide vapors may form in fire.
- 4.6 Behavior in Fire: Currently not available
- 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: Currently not available
- 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: None
- 6.5 GESAMP Hazard Profile: Not listed

## 7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Reagent; Technical
- 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: Not listed
- 8.2 49 CFR Class: Not pertinent
- 8.3 49 CFR Package Group: Not listed.
- 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: 272.6
- 9.3 Boiling Point at 1 atm: Not pertinent (decomposes)
- 9.4 Freezing Point: Not pertinent
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: (est.) 4 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: 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
	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	200.299		N O T		N O T		N O T
36	201.699		P E R T I N E N T		P E R T I N E N T		P E R T I N E N T
38	203.000						
40	204.299						
42	205.699						
44	207.000						
46	208.299						
48	209.699						
50	211.000						
52	212.299						
54	213.699						
56	215.000						
58	216.299						
60	217.699						
62	219.000						
64	220.299						
66	221.699						
68	223.000						
70	224.299						
72	225.699						
74	227.000						
76	228.299						
78	229.699						
80	231.000						
82	232.299						
84	233.699						