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## School Materials Safety Manual:

No. 319 Sodium Bromide  
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### ♦ SECTION 1 INTRODUCTION

**Material** Sodium Bromide, ca 100%

**Synonyms** bromide salt of sodium, Sedoneural, trisodium tribromide

**Chemical Formula** NaBr

**CAS Number** 7647-15-6

**DOT Classification** *Not* listed as a Hazardous Material for Transportation (49 CFR 172.101)

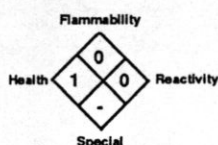
**EPA Classification** *Not* listed as a RCRA Hazardous Waste (40 CFR 261.33), a CERCLA Hazardous Substance (40 CFR 302.4), a SARA Extremely Hazardous Substance (40 CFR 355), or a SARA Toxic Chemical (40 CFR 372.65)

**OSHA Classification** *Not* listed as an Air Contaminant (29 CFR 1910.1000, Subpart Z)

**NFPA Hazard Rating** Not found

**Genium Hazard Rating**

4 = Extreme  
3 = High  
2 = Moderate  
1 = Slight  
0 = Minimum



**HMIS**

H 1  
F 0  
R 0

**Description** White crystals, granules, or powder that absorb moisture from air becoming hard. Occurs naturally in some salt deposits. Prepared commercially by adding excess bromine to a sodium hydroxide solution forming a mixture of bromide and bromate and then evaporating to dryness and treating with carbon to reduce the bromate to bromide. Used in photography, preparing bromides, and as a lab reagent.

**Overview** Sodium bromide is most commonly used as a lab reagent in the chemistry laboratory. Presents few hazards if used with care and reasonable precautions are taken. Wear gloves and safety glasses or chemical goggles when handling sodium bromide. Do *not* ingest sodium bromide! Wash hands after using sodium bromide.

**Manufacturer** Always request an up-to-date MSDS from your chemical supplier. That sheet should include the manufacturer and their emergency phone numbers. This *Manual's* Resources/Manufacturers Index lists some larger manufacturers and available emergency phone numbers.

### ♦ SECTION 2 USE AND STORAGE DATA

**Preliminary Planning Considerations** *Plan and provide for safe disposal of all school-generated chemical waste.* Check applicable regulations prior to use. Whenever possible, substitute less hazardous materials. Investigate the feasibility of microscale chemistry experiments to reduce the quantity required and disposal concerns. Contact lens use when handling chemical materials is controversial. In some cases, soft lenses can actually protect eyes from chemicals. In other cases, chemical entrapment is presumed a possible hazard. Particles adhering to contact lens surfaces can cause corneal damage. For safety, wear safety glasses or goggles and appropriate protective clothing (e.g., gloves, lab coats) to work with sodium bromide. Employees and students should know the location of eyewash and shower facilities near chemical use areas. Check and document that eyewash stations and safety showers are working properly.

**Usage Precautions and Procedure** Before using, read this

*material's container label* and follow all precautions. Do not smoke in usage or storage areas. Practice good housekeeping to avoid unintentionally mixing incompatibles. Do not allow chemical residue or dust buildup in lab or work areas. Keep sodium bromide away from notebooks, textbooks, and personal belongings to avoid transporting chemical residues from the lab/work area. After working with chemical materials, and before eating, drinking, or smoking, always wash hands and face. Remove and launder contaminated clothing before reusing.

**Additional Data** Sodium bromide is stable at room temperature under normal handling and storage conditions. It does not polymerize. Its incompatibilities include acids, alkaloidal and heavy metal salts (lead, silver, manganese, antimony, and mercurous salts), and strong oxidizers (liberates bromine).

**Preferred Storage Location and Methods** Sodium bromide absorbs moisture from air; from water of room temperature, sodium bromide crystallizes with 2H<sub>2</sub>O in the form of colorless crystals. Store in tightly closed and properly labeled containers in a cool, well-ventilated area out of direct sunlight and away from incompatibles. To separate incompatible chemicals, store by chemical family, not by alphabetical name. Protect all chemical containers from physical damage. Prohibit smoking in chemical storage areas. Purchase amounts sufficient for one year's use or less.

### ♦ SECTION 3 SPILL/DISPOSAL PROCEDURES

**If Spilled** Ventilate spill area. Promptly and thoroughly clean up spilled material. Cleanup personnel should protect against dust inhalation and skin or eye contact. For liquid (solution) spills, cover with an inert solid absorbent (vermiculite, dry sand, etc.) and scoop into appropriate containers (with secure lid) for disposal in accordance with existing regulations. As needed, dike spill area with inert absorbent material to contain spill. For dry spills, carefully collect spilled material and scoop into secure disposal or reclamation containers. Avoid creating airborne dust conditions. Vacuum (with appropriate filter) or wet mop to minimize dust dispersion.

**Disposal of Small Quantities** *Handle emptied containers carefully since residues may remain.* Always check regulations before disposal. Investigate recycling or reclamation rather than landfill disposal. If these methods are not practical, feasible, or in accord with existing regulations, contact your supplier or a licensed disposal contractor for specific treatment/disposal procedures.

**Disposal of Larger Amounts** Contact your supplier or a licensed disposal company.

*Follow all applicable local, state, and Federal regulations for all waste disposal.*

### ♦ SECTION 4 HEALTH HAZARDS

Sodium bromide is moderately toxic by inhalation and ingestion. Although acute oral poisoning is rare because single doses are usually promptly rejected by vomiting, 1 oz

has been swallowed and absorbed sufficiently to cause death. Readily absorbed through the lower part of the small intestine, small amounts of bromide salts accumulate in the body causing systemic effects including central nervous system disturbances and skin rashes.

**1991 OSHA PEL** 8-hr TWA: None established

**1992-93 ACGIH TLV** 8-hr TWA: None established

**1990 NIOSH REL** 10-hr TWA: None established

**1985-6 Toxicity Data** Human, probable oral lethal dose: 0.5-5 g/kg. Rat, oral, LD<sub>50</sub>: 3500 mg/kg; toxic effects not yet reviewed.

**Carcinogenicity** Not listed by the IARC, NTP, or OSHA

**Acute Effects** When large amounts of sodium bromide are ingested, acute toxicity may occur. Symptoms include listlessness, dizziness, unsteady gait, impaired reflex movements, and profound stupor or coma.

**Chronic Effects** Chronic effects include incoordination, skin rashes, and psychiatric disturbances such as depression and psychosis.

**Solubility in Water** Soluble: 1 g in 1.1 mL of water

**Other Solubilities** Moderately soluble in alcohol: 1 g in 16 mL of water; methanol: 1 g in 6 mL

**pH of Aqueous Solution** 6.5 to 8.0: practically neutral (neither acidic or basic)

**Molecular Weight** 102.90

**Density** 3.21

## ◆ SECTION 5 FIRST AID PROCEDURES

**Eye Contact** Promptly flush eyes with plenty of running water for at least 15 min, including under eyelids. Get prompt medical attention.

**Skin Contact** After flushing with large amounts of water, wash exposed areas with soap and water. For reddened or blistered skin, get prompt medical attention.

**Inhalation** Remove victim from exposure to fresh air and support breathing as necessary.

**Ingestion** Contact a poison control center.\* Never give anything by mouth to an unconscious or convulsing person. Unless otherwise advised, have that conscious and alert person drink 1 to 2 glasses of water, then induce vomiting. Get prompt medical attention.

**Get proper in-school, paramedic, or community medical attention and support.**

\* See listings on pages 2-8 of *Resources/Manufacturers Index*.

## ◆ SECTION 6 FIRE PROCEDURES AND DATA

**Fire Hazards** For major fires, or for fires involving large quantities, firefighters should wear appropriate protective clothing and respirators. Because fire may produce toxic thermal decomposition products, a self-contained breathing apparatus (SCBA) is recommended.

**Flash Point and Method** None reported

**Autoignition Temperature** None reported

**Flammability Limits in Air (vol. %)** None reported

**Hazardous Decomposition Products** Thermal oxidative decomposition of sodium bromide can produce toxic fumes of sodium oxide (Na<sub>2</sub>O) and bromide (Br<sup>-</sup>).

**Extinguishing Media** Because sodium bromide is noncombustible, use extinguishing media appropriate to the surrounding fire.

## ◆ SECTION 7 PHYSICAL DATA

**Boiling Point** 2534 °F (1390 °C)

**Melting Point** 1395.9 °F (757.7 °C); volatilizes at somewhat higher temperature

**References** 101, 124, 127, 132, 133, 136, 159, 530;

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