

## Material Safety Data Sheet

### 2-Bromo-2-nitro-1,3-propanediol

#### Section 1 - Identification

**Product Name:** 2-Bromo-2-nitro-1,3-propanediol

**Synonyms:** Bronopol; 2-Bromo-2-nitro-1,3-propanediol.

**Recommended use of the chemical and restrictions on use:**

Biocide, mild antiseptic. It is widely used in industrial circulating water, paper pulp, paint, plastic, timber, cooling water and other industries. In addition, it can be used to prevent daily-used cosmetic products from mold and corrosion.

**Supplier's details:**

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#### Section 2 – Hazards Identification

**Classification of the substance or mixture**

Acute toxicity(oral) Category 4

Acute toxicity(skin) Category 4

Skin corrosion Category 2

Eye Irritation Category 1

Specific target organ toxicity - a single contact Category 3 (respiratory stimulation) Harm aquatic environment (acute) category 1



**Signal word:** Danger

**Hazard statement(s):** Harmful if swallowed. May be harmful if absorbed through the skin. Cause skin irritation. Eye contact may result in permanent eye damage. Causes respiratory tract irritation. Very toxic to aquatic life.

**Precautionary statement(s):**

**Prevention:** Wash hand thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/mist. Can only be used outdoors or well ventilated place. Avoid release to the environment.

**Response:** IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER or doctor/physician. IF ON SKIN: Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. IF CAUSE SKIN IRRITATION :See a doctor.

Take off contaminated clothes, wash contaminated clothing before reuse. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Collect spill. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

**Storage:** Stored in a well-ventilated place. Keep container closed. Store locked up.

**Disposal:** Dispose of contents/container to local regulations.

**Other hazards which do not result in classification: No test data.**

### Section 3 – Composition/Information on Ingredients

Chemical Name	CAS No.	EC No.	Concentration
2-Bromo-2-nitro-1,3-propanediol	52-51-7	200-143-0	>99%

### Section 4 – First Aid Measures

#### Description of necessary first aid measures:

**In case of inhalation:** Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. If breathing has ceased apply artificial respiration. Get medical aid immediately.

**In case of skin contact:** Removing contaminated clothing, washing the contaminated skin with running water.

**In case of eyes contact:** Immediately lift the upper and lower eyelids with plenty of water flushed at least 15 minutes. Get medical aid immediately.

**In case of ingestion:** Rinse mouth. Get medical aid immediately.

**Most important symptoms and effects, both acute and delayed:** The possibility of cause mucosal damage may not allow enema .Because of the irritating, may result in the mouth and swallowing the stomach or lower digestive tract burns or ulcer, then Narrows, inhale vomit may cause lung damage.. If for gastric lavage, suggest to control the protective trachea/esophagus.

**Indication of immediate medical attention and special treatment needed: No test data.**

### Section 5 – Fire Fighting Measures

**Suitable extinguishing media:** Powder, alcohol-resistant foam, water spray, carbon dioxide.

**Special hazards arising from the chemical:** In case of fire, combustible high fever, releasing toxic fumes.

**Special protective actions for fire-fighters:** Firefighters should wear fire suits, fire protective boots, and positive pressure self-contained breathing apparatus. If the material is melted do not rinse with water directly, with a fine spray of water or foam. Small fire can be used hand-held dry powder, carbon dioxide fire extinguisher. Forced to use fire extinguishing agents may cause dust explosion hazard. In the absence of dangerous situations as move containers from fire area.

### Section 6 – Accidental Release Measures

#### Personal precautions, protective equipment and emergency procedures:

Recommend emergency personnel wearing protective masks, wearing fire overalls.

Do not direct contact with the spilled materials

**Environmental precautions:** Isolation leak contaminated areas, restricting access.

**Methods and materials for containment and cleaning up:**

Small Spill:

Avoid dust, use cleaning shovel collection in a dry, clean, covered containers Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

Large spill:

Covered with plastic sheeting, canvas and reduce dispersion. Then collected, transported or shipped back to the waste disposal sites.

## Section 7 – Handling and Storage

**Precautions for safe handling:**

Closed operation, local exhaust ventilation. Operator must go through specialized training, strict adherence to rules. Proposed operators wear protective masks, wearing protective chemical safety glasses, wear protective overalls on infiltration, wearing latex gloves. Handle with care disposal to prevent the packaging is damaged. Equipped with spill response equipment. Empty containers may be harmful residues.

**Conditions for safe storage, including any incompatibilities:**

Store in a cool, dry and well ventilated place. : Keep away from heat, sparks, and flame. Prevent direct sunlight. Packaging must be sealed, do not damp. With oxidants, easy (to) fuel was stored separately, avoid mixing reservoir. Districts with suitable material spill.

## Section 8 – Exposure Controls, Personal Protection

**Control parameters:**

**Appropriate engineering controls:** Strongly confined, to provide adequate local exhaust

**Personal protective equipment:**

**Eye/face protection:** Wear appropriate protective eyeglasses or chemical safety goggles.

**Skin protection:** Wearing the clothes type tape gas-protection clothing.

**Respiratory protection:** Emergency rescue or evacuation, air breathing apparatus should be worn.

**Burn hazard:** No test data.

## Section 9 - Physical and Chemical Properties

**Physical State:** Crystals

**Appearance:** white or almost white

**Odor:** No test data.

**Odor threshold:** No test data.

**pH:** 5-7

**Freezing/Melting Point:**> 120 deg C

**Boiling point/range:** 120-122°C

**Flash point:** No test data.

**Evaporation Rate:** No test data.

**Flammability(solid,gas):** No test data

**Upper/lower flammability or explosive limits:** No test data.

**Vapor pressure:** No test data.

**Vapor density:** No test data.

**Relative density:** 1.22

**Solubility:** 0.028g/100ml (22-25°C)

**Partitioncoefficient:noctanol/water:** 0.18

**Autoignition temperature:** No test data.

**Decomposition tmperature:** No test data.

**Viscosity:** No test data.

#### Section 10 - Stability and Reactivity

**Reactivity:**

**Chemical Stability:** Stable under normal temperature.

**Possibility of hazardous reactions:**

the substance generated toxic and corrosive fog which including hydrogen bromide, nitrogen oxide when heating and burning. The substance can react with some metal, amine and alkali compound.

**Conditions to Avoid:** fire, static and high temperature

**Incompatibilities materials:** Strong oxidizing agents, bases, strong acid, moisture, some metal.

**Hazardous decomposition products:** carbon monoxide, carbon dioxide, hydrogen bromide, nitric oxide, nitrogen dioxide

#### Section 11 - Toxicological Information

**Exposure Pathways:** inhalation, ingestion, skin absorption and eye contact **Acute health effects:** inhalation can lead to cough and throat irritation. Skin contact can lead to flushing skin and skin irritation. Eye contact can lead to flushing eyes and sore eyes. Ingestion can lead to cough, nausea, headache, sore throat, stomachache and diarrhea etc.

**Chronic health effects:** Long-term contact may lead to weasand disease, include difficulty breathing and related body tissue disease.

**Numerical measure of toxicity(such as acute toxicity estimates):**

Acute oral toxicity of rat (LD50): 193-211mg/kg

Acute skin toxicity of rat(LD50): > 2000mg/kg

#### Section 12 - Ecological Information

**Toxicity:** Very toxic to aquatic life

**Persistence and degradability:** No test data.

**Bioaccumulative potential:** No test data.

**Mobility in soil:** No test data.

**Other adverse effects:** No test data.

#### Section 13 - Disposal Considerations

**DISPOSAL METHODS:**

Observe all federal, state, and local environmental regulation. Contact a licensed professional waste disposal service to dispose of this material.

## Section 14 - Transport Information

	<b>Land transport (ADR/RID)</b>	<b>Sea transport (IMDG)</b>	<b>Air transport (ICAO/IATA)</b>
<b>UN proper shipping name</b>	2-Bromo-2-nitro-1,3-propanediol	2-Bromo-2-nitro-1,3-propanediol	2-Bromo-2-nitro-1,3-propanediol
<b>Transport hazard class</b>	4.1	4.1	4.1
<b>UN number</b>	UN3241	UN3241	UN3241
<b>Packaging group</b>	III	III	III
<b>Environmental hazards</b>	No	No	No

## Section 15 - Regulatory Information

**Regulations:**

2-Bromo-2-nitro-1,3-propanediol is found on the following regulatory lists: “China Inventory of Existing Chemical Substance”, “China Dangerous Chemicals Names List”. This safety data sheet is in compliance with the following national standard: GB 16483-2008、GB 13690-2009、GB 6944-2012、GB/T 15098-2008、GB 18218-2009、GB 15258-2009、GB 190-2009、GB 191-2009、GB 12268-2008、GA 571993、GBZ 2-2007 as well as the following national regulations: Dangerous Goods Transport Administrative Regulation, Dangerous Chemicals Safety Administrative Regulation, United Nations Regulations on the Transport of Dangerous Goods(UN RTDG)

## Section 16 -Other Information

Reference “Model regulations on the Transport of Dangerous Goods”  
“The Globally Harmonized System of Classification and Labeling of Chemicals”