



SAFETY DATA SHEET – SDS.

BCB Fluid for Bubble Columns.

Date revised 31/07/2014.

Page 1/5.

IMPORTANT – This information relates to the concentrated solution as provided.

1. Product Identification:

Chemical nature

Name: 2-bromo-2-nitro-1,3 propanediol
2-bromo-2-nitropropane-1.3-diol

Synonyms: Bronopol, BNPD.

Molecular formula: C₃H₆BrNO₄

UN number 3241

CAs-No.: 52-51-7

EINECS- No.: 200-143-0

BCB Fluid is prepared as a 10% w/w solution of Bronopol as the key active ingredient, and provided in a 500ml dispenser bottle for the prevention of bacteriological growth in bubble columns.

2. Composition:

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|--------------------------|-----|
| 2-Bromo-2-nitro-1,3 diol | 9% |
| Water | 90% |
| Citric Acid | 1% |

3. Hazard Identification:

HARMFULL IF SWALLOWED.

IRRITANT TO SKIN, EYES.

AVOID CONTACT WITH SKIN.EYES AND CLOTHING.

4. First-aid Measures:

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| Eyes – | Rinse in clean water until discomfort subsides, seek medical attention. |
| If Swallowed – | Rinse mouth with clean water, <u>DO NOT</u> induce vomiting, seek medical attention. |
| Clothes Contamination – | Remove contaminated clothing immediately. |
| Skin Contamination – | Wash areas effected with soap and clean water |
| Spillage - | Mop up with clean water, sawdust may be used to soak up small amounts. |

5. Fire-fighting measures:

Flash point: N/A Water Based Solution – No data available.

BCB solution is non-flammable; however in a situation where total evaporation of the product occurs, the active ingredient can release toxic fumes. The degree of risk is governed by fire conditions.

6. Accidental Release Measures:

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| Personal precautions – | use gloves and appropriate protective clothing |
| Environmental precautions – | do not discharge into drains/surface waters/groundwater. |
| Cleanup – | mop up with large amounts of clean water to dilute before disposal to drain; sawdust, sand or cat litter may be used to soak up spills. |

7. Handling and Storage:

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| Handling – | no special measures necessary providing product is used correctly. |
| Storage - | Store in a safe location away from children or adults that may be of risk, and always ensure safety caps are fully tightened after use. <u>Never leave bottles of BCB where Bubble Columns are operated.</u> |

8. Exposure Controls and Personal Protection:

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| Hand Protection – | Rubber or similar non absorbent gloves should be used if hand contamination is unavoidable. |
| Eye Protection – | Safety glasses should be worn when adding BCB concentrate to bubble column. |
| General Safety and Hygiene Measures – | Avoid contact with skin and eyes. Keep away from food and drink. Handle in accordance with good industrial health and safety practice. |

9. Physical and Chemical Properties:

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|--------------------------|--------------------------|
| Form – | Liquid. |
| Odour – | None. |
| Colour – | Colourless. |
| pH value – | 7 |
| Freezing point – | approx. 0°C. |
| Boiling point – | approx 100°C. |
| Density – | 1.06 g/cm ³ . |
| Miscibility with water – | completely. |
| Solubility – | Soluble. |

10. Stability and Reactivity:

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|--------------------------|---|
| Conditions to avoid – | temperatures above 90 degrees Celsius |
| Substances to avoid – | oxidising agents, sodium hydroxide, aluminium, iron and Steel. |
| Hazardous Reactions – | the product is chemically stable. |
| Decomposition Products – | hydrogen bromide, nitrogen oxides, formaldehyde and bromine. |
| Thermal Decomposition – | stable at ambient temperatures. |
| Above 140° C – | may decompose violently, risk of nitrogen oxide and hydrogen bromide formation. |

11. Toxicological Information:

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| Oral – | LD50/rat 254 mg/kg. |
| Dermal – | LD50/rat 1,600 mg/kg. |
| Carcinogenicity – | In the majority of short-term assays bronopol caused no effects. |
| Reproductive Toxicity – | No indication of impairment of fertility. |
| Other Information – | The toxicology data refers to the active ingredient 9% w/w. |

12. Ecological Information – Environmental fate and transport:

Biodegradation:

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|------------------------|---|
| Test method: | OECD 302B; ISO 9888; 88/302, Part C. |
| Method of analysis: | DOC reduction. |
| Degree of elimination: | 50% (45d). |
| Evaluation: | Moderately/partially eliminated from water. Bronopol can be degraded abiotically by chemical and/ or photolytic processes. |

Chemical oxygen demand (COD): Approx. 600 mg/g.

Adsorbable organically-bound halogen (AOX): Bronopol contains organically-bound halogen, and can increase the AOX-value in water purification plant overflows and in receiving surface waters.

Environmental toxicology:

In The EU Member States Bronopol is classified as dangerous to the environment (R50). However under normal use conditions bronopol is not expected to cause adverse effects on either effluent treatment plants or to the environment following discharge into wastewater

| | |
|--|--------------------------------------|
| Acute and prolonged toxicity to fish: | Rainbow trout/LC50 (96h): 41.2 mg/l. |
| Acute toxicity to aquatic invertebrates: | EC50 (48h): 1.4 mg/l. |
| Toxicity to aquatic plants: | EC50 (72h): 0.4-2.8 mg/l. |
| Toxicity to microorganisms: | Greater than 50 mg/l. |

Other information – The ecological data given are those of the active ingredient (BCB, Bronopol).

13. Disposal Considerations:

Dispose of in compliance with all local and national regulations.

Water: BCB-treated water from Bubble Columns can be safely disposed of to normal drains.

Container: Ensure container is empty before disposing in domestic refuse.
Do not use container for any other storage or use.

14. Transport Information:

Land transport:

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE LIQUID N.O.S. (contains 2-Bromo-2-nitropropane-1,3-diol). Corrosive [metals].
Hazard class: 9
ID number: UN3082
Packing: III

Sea transport:

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE LIQUID N.O.S. (contains 2-Bromo-2-nitropropane-1,3-diol). Corrosive [metals].
Hazard class: 9
ID number: UN3082
Packing: III

Marine pollutant NO.

Air transport:

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE LIQUID N.O.S. (contains 2-Bromo-2-nitropropane-1,3-diol). Corrosive [metals].
Hazard class: 9
ID number: UN3082
Packing: III

15. Regulatory information: Safety, health and environmental regulations/legislation specific for the substance or mixture.

Product name: **BCB Fluid** (Water Treatment for Bubble Columns).

Symbol(s): Xn Harmful.

R-phrases: R21/22 Harmful in contact with skin and if swallowed.
R41 Risk of serious damage to eyes.
R50 Very toxic to aquatic organisms.

S-phrases: S37/39 Wear suitable gloves and eye/face protection.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Hazard determinant component(s) for labelling:

2-Bromo-2-nitropropane-1.3-diol/Bronopol.

REGULATIONS:

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No.1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

16. Other Information.

Information for intended use:

This product is for use only as a bubble column biocide for control of contamination/infection risks associated with bubble columns. When added to the Bubble Column at the correct rate of 20 ml per metre of column, the active dose is 80 – 120 ppm and presents no significant hazard to users.

Any other applications should be discussed with the manufacturer.

NOTE:

This Safety Data sheet was compiled using external data from our supplier's and independent laboratories, and the information is given in good faith and to the best of our knowledge is correct.

This document in its own right does NOT constitute the users own assessment of workplace risk as required by Health & Safety legislation.

No liability is accepted for any loss or damage arising directly from the use of the Company's product or from the use of the information given in this Safety Data Sheet; in particular, financial or economical loss - unless required by law.

Revisions:

30/01/2011 – New ownership, Lynd Products.

28/06/2014 – Type Error Corrected

31/07/2014 – Transport Classifications