

MATERIAL SAFETY DATA SHEET

Product name **Biobrom C - 100G**
Product id 8341G-US
Revision date 14/02/2012
Supersedes 28/10/2010

Revision: 7

1. Identification of the substance & the company

Chemical name 2,2-Dibromo-3-nitrilopropionamide
Synonym(s) Dibromocyano acetic acid amide DBNPA
Chemical formula $C_3H_2ON_2Br_2$
Chemical family Halogenated cyanoacetamide
Molecular weight 241.84
Type of product and use A microbiocidal bactericide, fungicide, algicide and slimicide, in treating industrial cooling water systems and pulp & paper mills.
Supplier Clearon Corp.
95 MacCorkle Ave. SW,
South Charleston, WV 25303,
USA
Tel: (304) 746-3000
Emergency Telephone Chemtrec (800)424-9300

2. Hazards identification

Emergency overview *White to off-white granules*
Corrosive
Causes irreversible eye damage
May be fatal if swallowed
Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals

Potential Health Effects:

- Eye Contact Corrosive
- Skin contact Irritant
May cause skin sensitization
- Inhalation Irritant to upper respiratory tract. In severe cases pulmonary oedema may be developed

MATERIAL SAFETY DATA SHEET

Product name **Biobrom C - 100G**
Product id 8341G-US
Revision date 14/02/2012
Supersedes 28/10/2010

Revision: 7

2. Hazards identification

- Ingestion Corrosive by ingestion
 Abdominal pain, nausea, vomiting and diarrhea

NFPA Ratings (Scale 0-4) Health = 3, Fire = 0, Reactivity = 1.

HMIS Ratings (Scale 0-4) Health = 3, Fire = 0, Reactivity = 0

3. Composition / information on ingredients

Components	CAS No.	Weight %
2,2-Dibromo-3-nitrilopropion amide	10222-01-2	98

4. First-aid measures

Eye contact Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lens, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin contact Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use.
 Get medical attention immediately.

Inhalation Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Ingestion Call poison control center, or doctor immediately for treatment advise.
 Have person sip a glass of water if able to swallow.
 Do not induce vomiting unless told to do so by the poison control center or doctor.
 Do not give anything by mouth to an unconscious person.

MATERIAL SAFETY DATA SHEET

Product name **Biobrom C - 100G**
Product id 8341G-US
Revision date 14/02/2012
Supersedes 28/10/2010

Revision: 7

Note to physician Probable mucosal damage may contraindicate the use of gastric lavage. Treat symptomatically and supportively. In case of ingestion DO NOT induce vomiting. No specific antidote.

5. Fire - fighting measures

Suitable extinguishing media Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.
Fire fighting procedure Cool containers with water spray. Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) in positive pressure mode.
Unusual fire and explosion hazards When heated to decomposition, may release poisonous and corrosive fumes.

6. Accidental release measures

Personal precautions Wear self-contained breathing apparatus, full PVC clothing, PVC gloves and boots.
Methods for cleaning up Sweep up, place in a bag and hold for waste disposal or possible re-use. Ventilate area and wash spill site after material pickup is complete.

7. Handling and storage

Handling Keep containers tightly closed. Avoid producing or diffusing dust into the air.
Storage Store in a dry, cool, well-ventilated and shaded area, away from heat sources away from incompatible materials (see "materials to avoid").

8. Exposure controls / personal protection

Exposure Limits :

Components	ACGIH-TLV Data	OSHA (PEL) Data
2,2-Dibromo-3-nitrilopropionamide 10222-01-2	Not determined	Not determined

MATERIAL SAFETY DATA SHEET

Product name	Biobrom C - 100G	
Product id	8341G-US	
Revision date	14/02/2012	Revision: 7
Supersedes	28/10/2010	

Note The product was tested for "Particle size distribution". Results showed that it is non-inhalable.

Manufacturer's TLV-TWA Recommendation 0.25 mg/m³

Ventilation requirements Ventilation must be sufficient to maintain atmospheric concentration below recommended exposure limit.

Personal protective equipment:

- **Respiratory protection** Approved respirator
- **Hand protection** Protective gloves
- **Eye protection** Chemical safety goggles
- **Skin and body protection** Body covering clothes and boots

Hygiene measures Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Safety shower and eye bath should be provided.

9. Physical and chemical properties

Appearance	White to off-white granules
Boiling point/range	Not applicable (decomposes)
Melting point/range	123 - 125°C
Flash point	None
Auto-ignition temperature	Not applicable
Vapour pressure	8.25x10(-4) mmHg (25°C)
Evaporation rate (ether=1)	Not applicable under standard conditions
Vapor density	Not applicable under standard conditions
Viscosity	Not applicable
Solubility:	
- Solubility in water	17±0.05 g/l at 25.7°C
- Solubility in other solvents	acetone - 35 g/100g ethanol - 25 g/100g dimethyl formamide - 120 g/100g polyethylene glycol (MW 200) - 120 g/100g
Specific gravity	2.375 (21°C)
pH	Not determined
Decomposition temperature	190°C
Partition coefficient (n-octanol/water)	Log Kow - 6.3
Explosive properties	Not explosive
Oxidising properties	Not oxidising
Particle size	Proportion of test material having an inhalable particle size less than 100µm is 1.65%

MATERIAL SAFETY DATA SHEET

Product name	Biobrom C - 100G	
Product id	8341G-US	
Revision date	14/02/2012	Revision: 7
Supersedes	28/10/2010	

10. Stability and reactivity

Stability	Stable under normal conditions
Materials to avoid	Oxidizing agents, reducing agents
Conditions to avoid	Keep away from light and heat Heating above decomposition temperature
Hazardous decomposition products	Br ₂ , HBr, CNBr, NO _x , C ₂ H ₅ Br, CH ₃ Br
Hazardous polymerization	Will not occur

11. Toxicological information

Acute toxicity:	
- Rat oral LD ₅₀	308 mg/kg
- Rat dermal LD ₅₀	>2000 mg/kg
- Rat inhalation LC ₅₀	0.32 mg/l/4 hour (powder)
- Eye irritation (rabbit)	Corrosive
- Dermal irritation (rabbit)	Moderate irritant
Skin corrosion/irritation	Moderate irritant
Dermal sensitization	Sensitizer.
Sub-chronic toxicity:	Sub-chronic toxicity:
- NOEL	5 mg/kg/day (13 weeks oral, rat)
Chronic toxicity	Not available
Mutagenicity	Not mutagenic by the Ames Test
Genotoxicity	Not clastogenic in chromosome aberration test with Chinese hamster cells. Not clastogenic in chromosome aberration test with Human lymphocytes. Did not induce DNA repair synthesis in the hepatocytes of male rats in vitro.
Carcinogenicity	Not classified by IARC Not included in NTP 12th Report on Carcinogens
Reproductive toxicity	In a 2-generation study in rats, the NOEL for reproduction parameters was ≥30 mg/kg/day.

MATERIAL SAFETY DATA SHEET

Product name **Biobrom C - 100G**
Product id 8341G-US
Revision date 14/02/2012
Supersedes 28/10/2010

Revision: 7

Teratogenicity Not teratogenic. The NOAEL (for fetal toxicity in rabbits) = 10 mg/kg/day.

12. Ecological information

Aquatic toxicity :

- 96 Hour-LC50, Fish 2.3 mg/l (Rainbow trout)
3.4 mg/l (Sheepshead minnow)
2.3 mg/l (Bluegill sunfish)

- 48 Hour-EC50, Daphnia magna 0.86 mg/l

- 72 Hour-EC50, Freshwater algae 0.28 mg/l

- **Marine Invertebrate** 0.72 mg/l (Mysid shrimp, 96h)
0.37 mg/l (Eastern oyster, 96h)

Avian toxicity:

- Oral LD50, Bobwhite quail 354 mg/kg
- Dietary LC50, Mallard duck > 5620 ppm
- Dietary LC50, Bobwhite quail > 5620 ppm

Bioaccumulative potential Not expected to bioaccumulate

Germany, water endangering classes (WGK) 3

13. Disposal considerations

Waste disposal

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state and local environmental regulations when disposing of this material.

14. Transportation information

UN No. 3077

MATERIAL SAFETY DATA SHEET

Product name	Biobrom C - 100G	
Product id	8341G-US	
Revision date	14/02/2012	Revision: 7
Supersedes	28/10/2010	

DOT Proper shipping name: Environmentally hazardous substance, solid, n.o.s (2,2-dibromo-3-nitrilopropionamide)
 Class: 9 - Miscellaneous Hazardous Material
 Label: 9
 Packing Group: III
 Marking: Marine Pollutant

IMO Proper shipping name: Environmentally hazardous substance, solid, n.o.s (2,2-dibromo-3-nitrilopropionamide)
 Class: 9 - Miscellaneous Dangerous Substances and Articles
 Label: 9
 Packing Group: III
 Marking: Marine Pollutant

ICAO/IATA Proper shipping name: Environmentally hazardous substance, solid, n.o.s (2,2-dibromo-3-nitrilopropionamide)
 Class: 9
 Hazard label(s): Miscellaneous
 Packing group: III
 Marking: Environmentally hazardous substance

15. Regulatory information

USA
 - **SARA 313** This product is registered under FIFRA. Reported in the EPA TSCA Inventory (Acetamide, 2,2-dibromo-2-cyano-) On October 27, 1995, EPA published an administrative stay of the EPCRA section 313 reporting requirements for this chemical. Therefore, no Toxics Release Inventory reports are required for 2,2-dibromo-3-nitrilopropionamide until the stay is removed.

- **SARA (311, 312)** This product is categorized as an immediate and delayed health hazard.

- **Workplace Classification** This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

Canada Listed in NDSL

- **Cepa** Listed
EU Reported in EINECS

EC No. 233-539-7

MATERIAL SAFETY DATA SHEET

Product name **Biobrom C - 100G**
Product id 8341G-US
Revision date 14/02/2012
Supersedes 28/10/2010

Revision: 7

Japan ENCS No. 2-2795
 ISHL No. 2-2795

Australia Listed in AICS

New Zealand Inventory Listed in NZIoC

China inventory Listed in IECSC

Korea Listed in the Korea Existing Chemicals Inventory (KECI), number KE-09944

Philippines Listed in PICCS

16. Other information

GHS

Labelling in accordance with the CLP Regulation EC (No) 1272/2008



Signal word Danger

Hazard statements
 H302 - Harmful if swallowed
 H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H400 - Very toxic to aquatic life

Precautionary statements
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor/physician

This data sheet contains changes from the previous version in section(s)
 1, 2 (REACH format), 12, 14, 16 (ANSI)

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The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product.
This information has been prepared for the guidance of plant engineering, operations and management and for persons working with or handling this product.
Additionally, if this Material Safety Data Sheet is more than three years old, you should contact Clearon at the phone number listed below to make certain that this sheet is current.

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In an event of discrepancy between the contents of this MSDS and the English version of it, the English version shall prevail.

End of safety data sheet