# MATERIAL SAFETY DATA SHEET

# BIOCIDE 9

## 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| **PRODUCT NAME** | BIOCIDE 9 |
| **CHEMICAL NAME** | 1 -Bromo-3-chloro-5, 5-dimethylhydantoin |
| **PRODUCT NO.** | BWA71017 |
| **PRODUCT USE** | Industrial Water Treatment |
| **SUPPLIER** | ZEE COMPANY, INC.<br>4146 South Creek Road<br>Chattanooga, TN 37 406<br>TEL 423-698-1401<br>CUSTOMER SERVICE |
| **EMERGENCY TELEPHONE** | CHEMTREC Phone: 800-424-9300 |
| **IDENTIFICATION No.** | UN 1479 |

## 2 HAZARDS IDENTIFICATION

### POTENTIAL HEALTH EFFECTS

**INHALATION:** May cause irritation to the respiratory system.
**INGESTION:** Harmful if swallowed.
**SKIN CONTACT:** Causes burns.
**EYE CONTACT:** Causes burns.
**HEALTH WARNINGS:** This substance is corrosive.
**ROUTE OF ENTRY:** Skin and/or eye contact. Inhalation. Ingestion.
**Other Health Effects:** This substance has no evidence of carcinogenic properties.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Name | EC No. | CAS-No. | Weight |
|---|---|---|---|
| 1 -Bromo-3-chloro-5,5-dimethylhydantoin | 240-230-0 | 16079-88-2 | 60-100% |

**EC No.** 240-230-0
**CAS-No.** 16079-88-2
**COMPOSITION COMMENTS**
1 -bromo-3-chloro-5, 5-dimethylhydantoin

## 4 FIRST-AID MEASURES

**INHALATION**

Provide fresh air, warmth and rest, preferably in a comfortable upright sitting position. Get medical attention.

**INGESTION**

DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Get medical attention immediately!

**SKIN CONTACT**

Remove contaminated clothing. Rinse the skin immediately with lots of water. Get medical attention if irritation persists after washing.

**EYE CONTACT**

Remove victim immediately from source of exposure. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention promptly if symptoms occur after washing.

## 5 FIRE-FIGHTING MEASURES

**EXTINGUISHING MEDIA**

Use: Water spray, fog or mist. Alcohol resistant foam. DO NOT use $CO_2$ or dry chemicals.

**SPECIAL FIRE FIGHTING PROCEDURES**

Move container from fire area if it can be done without risk. Keep run-off water out of sewers and water sources. Dike for water control.

**UNUSUAL FIRE & EXPLOSION HAZARDS**

Fire causes formation of toxic gases.

**SPECIFIC HAZARDS**

Toxic gases/vapors/fumes of Bromine. Chlorine. Oxides of: Carbon. Nitrogen.

**PROTECTIVE MEASURES IN FIRE**

Use self-contained breathing apparatus

## 6 ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS**

Follow precautions for safe handling described in this safety data sheet. For personal protection, see section 8.

**ENVIRONMENTAL PRECAUTIONS**

Avoid release to the environment.

**SPILL CLEAN UP METHODS**

Provide ventilation and confine spill. Do not allow runoff to sewer. Collect and reclaim or dispose in sealed containers in licensed waste. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Wash thoroughly after dealing with a spillage. Avoid generation and spreading of dust. Avoid contact with water.

## 7 HANDLING AND STORAGE

**HANDLING**

Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Do not use in confined spaces without adequate ventilation and/or respirator. Avoid spilling, skin and eye contact. Avoid acids, moisture, and combustible materials. Avoid handling which leads to dust formation.

**STORAGE**

Store in tightly closed original container in a cool, dry well-ventilated place. Keep containers tightly closed. Protect from light, including direct sunrays. Keep away from heat, sparks and open flame.

**STORAGE CLASS**

Oxidizer storage.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**INGREDIENT COMMENTS**

No exposure limits noted for ingredient(s).

**PROCESS CONDITIONS**

Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station.

**PROTECTIVE EQUIPMENT**

**ENGINEERING MEASURES**

All handling to take place in well-ventilated area.

**RESPIRATORY EQUIPMENT**

Use specified dust masks.

**HAND PROTECTION**

It has been found that gloves made from rubber, neoprene or PVC provide short-term splash protection. Gloves should be replaced immediately if signs of degradation are observed.

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**EYE PROTECTION**

Use approved safety goggles or face shield.

**OTHER PROTECTION**

Wear appropriate clothing to prevent any possibility of skin contact. Wear dust masks in dusty areas.

**HYGIENE MEASURES**

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Isolate contaminated clothing and wash before reuse.

**SKIN PROTECTION**

Wear apron or protective clothing in case of contact.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **APPEARANCE** | **Tablets** |
| **COLOR** | White / off-white |
| **ODOR** | Slight odor Halogen |
| **SOLUBILITY** | Slightly soluble in water. |
| **MELTING POINT (°C)** | 145 - 160 |
| **RELATIVE DENSITY** | 0.96 |
| **BULK DENSITY** | 0 . 9 k g / l |
| **pH-VALUE, DILUTED SOLUTION** | 3.5 @ 0.15 % |
| **PARTITION COEFFICIENT (N-Octanol/Water)** | 0.35 |
| **SOLUBILITY VALUE (g/1 00g H2O@20°C)** | 0.15 |

## 10 STABILITY AND REACTIVITY

**STABILITY**

Stable under normal temperature conditions. Avoid: Moisture.

**CONDITIONS TO AVOID**

Avoid contact with oxidizers or reducing agents. Avoid contact with acids and alkalies. Avoid heat, flames and other sources of ignition.

**HAZARDOUS POLYMERISATION**

Will not polymerize.

**MATERIALS TO AVOID**

Strong acids. Strong alkalies. Strong oxides. Strong reducing agents.

**HAZARDOUS DECOMPOSITION PRODUCTS**

Toxic gases/vapors/fumes of: Hydrogen bromide (HBr). Bromine. Hydrogen chloride (HCl). Chlorine. Oxides of: Carbon. Nitrogen.

## 11 TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **TOXIC DOSE 1 - LD 50** | 578 mg/kg (oral rat) |
| **TOXIC DOSE 2 - LD 50** | >2000 mg/kg (skin-rabbit) |

**TOXICOLOGICAL INFORMATION**

Ames Test negative

**INHALATION**

May cause irritation to the respiratory system.

**INGESTION**

Harmful if swallowed.

**SKIN CONTACT**

Causes burns.

**EYE CONTACT**

Causes burns.

**HEALTH WARNINGS**

This substance is corrosive.

**Other Health Effects**

This substance has no evidence of carcinogenic properties.

## 12 ECOLOGICAL INFORMATION

| | |
|---|---|
| **LC 50, 96 hrs, Fish mg/l** | 0.87 |

**EC 50, 48 hrs, Daphnia, mg/l** 0.46

**BIOACCUMULATION**

Low bioaccumulation potential

**Chemical Oxygen Demand, COD** 1.005 g/g

**Acute Toxicity. LC50 96 hours, mg/l** >640 American Oyster

## 13 DISPOSAL CONSIDERATIONS

**WASTE MANAGEMENT**

When handling waste, consideration should be made to the safety precautions applying to handling of the product.

**DISPOSAL METHODS**

Dispose of waste and residues in accordance with local authority requirements. Absorb in vermiculite or dry sand, dispose in licensed hazardous waste. Liquid material should be incinerated. Material absorbed onto sand or earth should be disposed of as solid waste in accordance with local regulations. Empty packaging may contain product residues and due consideration should be given prior to disposal.

## 14 TRANSPORT INFORMATION

| | |
|---|---|
| **TDG SHIPPING NAME** | OXIDIZING SOLID, CORROSIVE, N.O.S., (contains Bromo-chloro-dimethylhydantoin) |
| **TDG SHIPPING NAME** | OXIDIZING SOLID, CORROSIVE, N.O.S., (contains Bromo-chloro-dimethylhydantoin) |
| **IDENTIFICATION No.** | UN 1479 |
| **DOT HAZARD CLASS** | 5.1 |
| **TDG PACKING GROUP** | II |
| **U.S DOT HAZARD LABEL** | Oxidizer |
| **UN NO. SEA** | 1479 |
| **IMDG CLASS** | 5.1 |
| **IMDG PACK GR.** | II |
| **EMS** | F-A, S-Q |
| **UN NO. AIR** | 1479 |
| **AIR CLASS** | 5.1 |
| **AIR PACK GR.** | II |
| **TDG CLASS** | 5.1 |
| **TDG PACKING GROUP** | II |

## 15 REGULATORY INFORMATION

**INVENTORIES**

| COMPONENT | CAN | US | EU | AUS | JAP | KOR | CHN | PHLP |
|---|---|---|---|---|---|---|---|---|
| 1 -Bromo-3-chloro-5,5-dimethylhydantoin | DSL | Yes | EINECS | | | | | |

| COMPONENT | TSCA 12(b) Export Notification |
|---|---|
| 1 -Bromo-3-chloro-5,5-dimethylhydantoin | Yes |

| COMPONENT | CAS | CA | FL | MA | MN | NJ | PA | RI |
|---|---|---|---|---|---|---|---|---|
| 1-Bromo-3-chloro-5,5-dimethylhydantoin | 16079-88-2 | No | No No | | No | No | No | No |

# BIOCIDE 9

**REGULATORY STATUS (US)**

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372. PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity and for which warnings are now required. TSCA: The ingredients of this product are on the TSCA Inventory. TSCA Export Notification Section 12b.

**REGULATORY REFERENCES**

29 CFR 1910.1010 Federal Regulations (OSHA Standard).

**ENVIRONMENTAL LISTING**

EPA REGISTRATION NUMBER:83451-3

**WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM -WHIMIS**

**LABEL(S) FOR SUPPLY**

Oxidizing Corros ive
Material. M aterial.

**CONTROLLED PRODUCT CLASSIFICATION**

Canadian WHMIS Classification C E

## 16 OTHER INFORMATION

**HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS)**

| | |
|---|---|
| HEALTH | 3 |
| FLAMABILITY | 1 |
| REACTIVITY | 1 |
| PERSONAL PROTECTION | B |

**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)**

**REVISION COMMENTS**

New company name & new format

**ISSUED BY**

G.B.

**REVISION DATE** 29th October 2007

**VERSION No.** 2

**SAFETY DATA SHEET STATUS**

Approved.

DISCLAIMER

For safety reasons it is IMPERATIVE that customers:-

1. Ensure that all those within their control who use the products are supplied with all relevant information contained within the Safety Data Sheet and Technical Bulletin concerning the applications for which the product is designed and any instructions and warnings contained therein.

2. Consult ZEE COMPANY, INC. before using or supplying the product for any other applications. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.