

# SAFETY DATA SHEETS

## Bromoxynil 97% TC

No.: 121017  
Version: 4  
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### SECTION 1: IDENTIFICATION


Product identifier	Bromoxynil 97% TC
Other means of identification	N/A
Recommended use	Herbicide
Supplier's details	Jiangsu Heben Biochemical Co., Ltd
Address	No 20, Second Haibin Road, Yangkou Chemical Area, Rudong, Jiangsu, P.R.China
Telephone No	+86-577-88797730; +86-577-88797721
Fax No.	+86-577-88797739
E-mail	hb-p@hb-p.com
Emergency phone number	+86-513-68508048

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 GHS classification of the substance or mixture (Ninth Revised Edition, 2021)

Physical hazards	None	None
Health hazards	Acute toxicity, Oral, Category 3	H301
	Acute toxicity, Inhalation, Category 2	H330
	Skin sensitization, Category 1	H317
	Reproductive toxicity, Category 2	H361
Environmental hazards	Acute aquatic toxicity, Category 1	H400
	Chronic aquatic toxicity, Category 1	H410

#### 2.2 GHS label elements, including precautionary statements

Hazard pictograms	
Signal word	Danger
Hazard statement (s)	
H301	Toxic if swallowed
H317	May cause an allergic skin reaction

H330	Fatal if inhaled
H361	Suspected of damaging the unborn child
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

#### **Prevention statements**

P203	Obtain, read and follow all safety instructions before use
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing mist.
P264	Wash hands and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear eye protection/face protection.
P284	Wear respiratory protection.

#### **Response statements**

P301+P316	If SWALLOWED: Get emergency medical help immediately.
P302+P352	IF ON SKIN: Wash with plenty of water/...
P304+P340	If INHALED: Remove person to fresh air and keep comfortable for breathing.
P320	Specific treatment is urgent (see ... on this label)
P321	Specific treatment (see ... on this label)
P333+P317	If skin irritation or rash occurs: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P302+P361+P354	IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
P391	Collect spillage.

#### **Storage statements**

P403 + P233	Store in the well-ventilated place, keep container tightly closed.
P405	Store locked up.

#### **Disposal statements**

P501	Dispose of contents/container in accordance with local regulations.
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### **2.3 Other hazards which do not result in classification**

No other hazards known.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Common name, synonyms	Chemical identity	CAS number and other unique identifiers	The concentrations of the ingredients
Bromoxynil	3,5-dibromo-4-hydroxybenzoxynil; 3,5-dibromo-4-hydroxyphenyl cyanide (IUPAC)	CAS No.: 1689-84-5]; EEC No.: 216-882-7	97%
Other non-hazardous ingredients			< 3%

### SECTION 4: FIRST-AID MEASURES

#### 4.1 Description of necessary first-aid measures

**Skin:** Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.

**Eyes:** For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport.

**Inhalation:** Move affected person to fresh air and keep at rest until recovered. If not breathing, give artificial respiration and get to a doctor.

**Ingestion:** Do not induce vomiting if the person is conscious. Give glass of water. Get to a doctor.

#### 4.2 Most important symptoms/effects, acute and delayed

No such information is reported.

#### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

No antidote, no special treatment, please treat it symptomatically.

### SECTION 5: FIRE-FIGHTING MEASURES

#### 5.1 Suitable extinguishing media

Use dry chemical, carbon dioxide, water spray, and foam.

#### 5.2 Specific hazards arising from the chemical

May produce toxic fumes of nitrogen oxides, bromides, carbon dioxide and carbon monoxide if burn.

#### 5.3 Special protective equipment for firefighters

Should wear full-protective clothing, and self-contained breathing apparatus. Fight fire from safe distance and protected location. Avoid (reject) fire-fighting water to enter environment.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Wear full protective clothing and self-contained breathing apparatus. Control the spill at its source. Dike area and absorb small spills with materials such as sand, sawdust, Zorb all, or dirt and place in suitable containers for recovery or disposal. Remove all contaminated clothing promptly and wash

exposed body areas thoroughly with soap and water immediately after handling. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

### **6.2 Environmental precautions**

Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems of any body of water. Keep spills and cleaning run-off out of municipal sewers and open bodies of water.

### **6.3 Methods and materials for containment and cleaning up**

If there is contamination of crops or waterways, advise emergency services or state department of agriculture.

## **SECTION 7: HANDLING AND STORAGE**

### **7.1 Precautions for safe handling**

Avoid direct or prolonged contact with skin and eyes. Do not breathe mist. Do not ingest. It is recommended that wear full protective clothing including face mask, face shield and gauntlets, all skin areas should be covered, when handling this product.

Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. And take a bath or wash hands completely with soap after use. Remove contaminated clothing and protective equipment before entering eating areas.

Prevents handling of incompatible substances or mixtures when use this product. Minimize the release of this product to the environment when handling this product.

### **7.2 Conditions for safe storage, including any incompatibilities**

Store the material in a well-ventilated, dry, cool, out of light and secure area, out of reach of children and domestic animals, and in sealed original containers. Do not store food, beverages or tobacco products in the storage area. Store this product away from the incompatible materials, explosive atmospheres, corrosive conditions, fire and heat, etc.

## **SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

### **8.1 Control parameters**

Contain no substances with occupational exposure limit values.

### **8.2 Appropriate engineering controls**

Use only in an enclosed system. Use local exhaust ventilation. Safety shower. Use explosive dust handling controls.

### **8.3 Individual protection measures**

**Industrial hygiene:** Remove and wash contaminated clothing promptly. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

#### **Personal protective equipment**

##### **Respiratory protection:**

Wear respirator with a particle filter mask (protection factor 20) conforming to European Norm EN149FFP3 or EN140P3 or equivalent.

Respiratory protection should only be used to control residual risk of short duration activities, when

all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

**Protective gloves:** Nitrile rubber gloves;

**Eye protection:** Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state	Solid
Color	White
Odor	Odorless
Melting point / freezing point	Melting point: 194-195°C
Boiling point or initial boiling point and boiling range	318.7°C
Flammability	Not flammable
Lower and upper explosion limit/flammability limit	Not applicable for solids
Flash point	Not applicable for solids
Auto-ignition temperature	Not expected to self ignite
Decomposition temperature	No decomposition
pH value	3-7
Kinematic viscosity	Not applicable for solids
Solubility	In water 89 mg/l (25 °C). In dimethylformamide 610, tetrahydrofuran 410, acetone, cyclohexanone 170, methanol 90, ethanol 70, mineral oils <20, benzene 10 (all in g/l, 25 °C).
Partition coefficient n-octanol/water (log value)	$K_{ow} \log P = 2.8$ (unionised)
Vapour pressure	$1.7 \times 10^{-4}$ mPa (20 °C)
Density and/or relative density	Relative gravity: 1.632g/ml
Relative vapor density	Not applicable for solids
Particle characteristics	No data available

### 9.2 Other information

Further safety related physical-chemical data are not known.

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

No reactivity under normal conditions.

### 10.2 Chemical stability

This product is stable under normal ambient and anticipated storage and handling conditions of

temperature and pressure.

### 10.3 Possibility of hazardous reactions

This product does not react or polymerize, releasing excess pressure or heat, or creating other hazardous conditions.

### 10.4 Conditions to avoid

Avoid fire, feed, food and beds of water.

### 10.5 Incompatible materials

Not compatible with strong oxidizing agents, alkalis and acids.

### 10.6 Hazardous decomposition products

When involves in a fire, maybe release oxides of carbon and nitrogen and bromides and other toxic nitrogen compounds on combustion.

## SECTION 11: TOXICOLOGICAL INFORMATION

<b>Acute toxicity</b>	Acute oral LDB <sub>50B</sub> for rats 81 mg/kg ( <i>Data from EC Bromoxynil Review report February 2004</i> ) Acute dermal LDB <sub>50B</sub> for rats >2000 mg/kg ( <i>Data from EC Bromoxynil Review report February 2004</i> ) Acute inhalation LCB <sub>50B</sub> for rats 0.15mg/L ( <i>Data from EC Bromoxynil Review report February 2004</i> )
<b>Skin corrosion/irritation</b>	Not irritant to skin of rabbits ( <i>Data from EC Bromoxynil Review report February 2004</i> )
<b>Serious eye damage/irritation</b>	Not irritant to eyes of rabbits ( <i>Data from EC Bromoxynil Review report February 2004</i> )
<b>Respiratory or skin sensitization</b>	Skin sensitizer (M&K) ( <i>Data from EC Bromoxynil Review report February 2004</i> )
<b>Germ cell mutagenicity</b>	Negative ( <i>Data From EPA738-R-98-013</i> )
<b>Carcinogenicity</b>	NOEL (2 y) for rats 20 ppm. ( <i>Data from EC Bromoxynil Review report February 2004</i> )
<b>Reproductive toxicity</b>	Retardation of development (body weight gain and eye opening) at parental toxic dose level ( <i>Data from EC Bromoxynil Review report February 2004</i> )
<b>STOT-single exposure</b>	No available data.

**STOT-repeated exposure** No available data.

**Aspiration hazard** No available data.

**Further information** No available data.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Eco-toxicity

**Birds** Acute oral LD<sub>50</sub> for bobwhite quail 217 mg/kg. Sub-acute oral dietary LC<sub>50</sub> (5 d) for bobwhite quail 2080, mallard duck 1380 ppm.

**Fish** LC<sub>50</sub> (96 h) for bluegill sunfish 29.2 mg/l.

**Daphnia** LC<sub>50</sub> (48 h) 12.5 mg/l.

**Algae** EC<sub>50</sub> (96 h) for *Scenedesmus subspicatus* 44, *Selenastrum capricornutum* 0.65 mg/l; EC<sub>50</sub> (72 h) for *Navicula pelliculosa* 0.12 mg/l.

**Bees** LD<sub>50</sub> for honeybees (48 h, contact) 150µg/bee; (48 h, oral) 5µg/bee.

**Worms** EC<sub>50</sub> (14 d) 45 mg/kg.

All of above data is from *BCPC, e-The Pesticide Manual, Thirteenth Edition*

### 12.2 Persistence and degradability

In lab. soil, DT<sub>50</sub> <1 d. Degraded by hydrolysis and debromination to less toxic substances such as hydroxybenzoic acid. Bromoxynil was reported to degrade with a half-life of 3.7 days in a sandy loam sediment under anaerobic conditions. (*Data From Pubchem*)

### 12.3 Bio-accumulative potential

A BCF of 230 (whole fish) was reported in bluegill sunfish when continuously exposed to <sup>14</sup>C radiolabeled Bromoxynil at 1.3-4.6 ug/L. This BCF suggests the potential for bioconcentration in aquatic organisms is high, provided the compound is not metabolized by the organism. (*Data From Pubchem*)

### 12.4 Mobility in soil

If released to soil, Bromoxynil is expected to have no mobility based upon an estimated Koc of 21,000. In an aged soil leaching study, Bromoxynil residues were found to not be mobile in four soils and aquatic sediment. A Kd of 7 mL/g (Koc = 1,003) was reported in soils with 1.2% organic matter. (*Data From Pubchem*)

## 12.5 Other adverse effects

None

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Product

The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

### 13.2 Contaminated packaging

Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO:

UN number: 2588

UN proper shipping name: PESTICIDE, SOLID, TOXIC, N.O.S (containing Bromoxynil)

Transport hazard class: 6.1

Packing group: III

Environmental hazards: Marine pollutant

Special precautions for user: None.

Transport in bulk according to IMO instruments: Not applicable

## SECTION 15: REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the product in question

WHO-classification: II (Moderately hazardous)

This product is not subject to any prohibitions or restrictions in China.

## SECTION 16: OTHER INFORMATION

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information



from this MSDS to their own MSDS.

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