

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Bromadiolone

1.2 Other means of identification

Product number CCPD100137
Other names -

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.
Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.
Address 3/F, Building B, No. 179 BASIGO, Guangpu Rd East, Huangpu Dist, Guangzhou
Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175
Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 1, Oral
Acute toxicity - Category 1, Dermal
Acute toxicity - Category 1, Inhalation
Specific target organ toxicity – repeated exposure, Category 1
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1
Reproductive toxicity, Category 1B

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H300 Fatal if swallowed
H310 Fatal in contact with skin
H330 Fatal if inhaled
H372 Causes damage to organs through prolonged or repeated exposure
H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P284 [In case of inadequate ventilation] wear respiratory protection.
P273 Avoid release to the environment.
P203 Obtain, read and follow all safety instructions before use.

Response	P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P316 Get emergency medical help immediately. P361+P364 Take off immediately all contaminated clothing and wash it before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P320 Specific treatment is urgent (see ... on this label). P319 Get medical help if you feel unwell. P391 Collect spillage. P318 IF exposed or concerned, get medical advice.
Storage	P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Bromadiolone	3-[3-(4'-bromo[1,1'-biphenyl]-4-yl)-3-hydroxy-1-phenylpropyl]-4-hydroxy-2-benzopyrone	28772-56-7	249-205-9	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms/effects, acute and delayed

The compound is toxic by oral exposure. (EPA, 1998)

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

VETERINARY: Injured capillaries cannot be mended, but other measures may save the animal. Restraint & handling should be minimized. A sedative or tranquilizer may be of assistance in restraint, calming ... and reducing locomotion, thus decr tissue oxygen demand. Oxygen may be given, but manual pumping of chest is not advisable. Dyspnea may be relieved by thoracentesis. Clotting factors should be provided in form of blood transfusion (20 mL/kg, 1/2 injected quickly). Warfarin should be antagonized with slow iv injection of vitamin K1. Dogs and cats are given 5 mg/kg. This dose is repeated for 2 more days, using im route. Larger animals are given 0.5 to 1 mg/kg, and oral vitamin K1 should be admin daily for 4-6 days. The vitamin will not evoke a sudden dramatic cure; but bleeding tendency will gradually abate as clotting factors begin to be synthesized ... Menadione (vitamin K3) is not as effective as vitamin K1 ... Residual defects such as lameness or CNS signs from localized hemorrhages may disappear with gradual resorption of extravasated blood. Liver damage may be compensated by regeneration of hepatic cells. Warfarin

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

Non-Specific -- Coumarin Derivative Pesticide, Solid, n.o.s.) Fire may produce irritating or poisonous gases. Runoff from fire control water may give off poisonous gases. Runoff from fire control or dilution water may cause pollution. When heated to decomposition, it emits toxic fumes of bromine containing compounds. (EPA, 1998)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Yellowish powder. Used as an anticoagulant rodenticide. (EPA, 1998)
Colour	White to off-white powder
Odour	Odorless
Melting point/freezing point	200-210°C
Boiling point or initial boiling point and boiling range	687°C at 760 mmHg
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	369.3°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available

Solubility	In water, >1.14X10 ⁴ at pH 5, 2.48X10 ⁻³ at pH 7, 0.180 at pH 9 (all in g/L at 20 deg C)
Partition coefficient n-octanol/water	log Kow > 5 (pH 4-5, 20-25 deg C); log Kow = 3.8-4.1 (pH 6-7, 20-25 deg C); log Kow = 2.5-3.2 (pH 9-10, 20-25 deg C); log Kow = 4.3 (in purified water at 23 deg C, pH not stated)
Vapour pressure	0mmHg at 25°C
Density and/or relative density	1.454 g/cm ³
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No rapid reaction with air. No rapid reaction with water.

10.2 Chemical stability

Thermally stable below 200 deg C. technical, 97% pure

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

When heated to decomposition it emits toxic fumes of Br-.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 0.56-0.84 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: *Lepomis macrochirus* (Bluegill); Conditions: freshwater, static; Concentration: 3000 ug/L for 96 hr (95% confidence interval: 2400-3700 ug/L)
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: *Daphnia magna* (Water Flea) age <24 hr; Conditions: freshwater, flow through; Concentration: 2000 ug/L for 48 hr (95% confidence interval: 1800-2600 ug/L); Effect: intoxication, immobilization

- /98.75% purity
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Using OECD 301B (CO₂ evolution method), bromadiolone showed 0% degradation after the 28-day incubation period which classified the compound as not readily biodegradable(1). Bromadiolone was also found to be not readily biodegradable using OECD 301D (closed bottle method) where maximum degradation reached only 31%(1). Using OECD 302D (CO₂ production measured as inorganic carbon in mixed micro-organism populations), bromadiolone degradation reached a maximum of only 2% which classified the compound as not inherently biodegradable(1).

12.3 Bioaccumulative potential

Using bluegill sunfish (*Lepomis macrochirus*) and the OECD 305E method, bromadiolone was found to have a maximum BCF of 460 for whole fish(1). In a second study using channel catfish (*Ictalurus punctatus*), the whole fish BCF was 74 after 14 days(1). In both of these studies the BCF reliability was considered low due, in part, to high mortality in the exposed group of fish(1). A fish bioconcentration study with rainbow trout (*Oncorhynchus mykiss*) was performed, but it failed due to high mortalities of the fish(1). An estimated BCF range of 125 to >513 was calculated in fish for bromadiolone(SRC), using measured log K_{ow} values of >5.0 at pH 4-5 and 4.07 at pH 7(1) and a regression-derived equation(2). According to a classification scheme(3), the estimated BCF values and whole fish BCF value in Bluegill sunfish suggest the potential for bioconcentration in aquatic organisms is high(SRC).

12.4 Mobility in soil

In one laboratory soil adsorption study, bromadiolone was found to have K_{oc} values ranging from 1563-1709 (mean of 1632)(1). In another sorption study using five different soil types, bromadiolone had K_{oc} values ranging from 3530-41600 with three of the five values above 4000(1). According to a classification scheme(2), these K_{oc} values suggest that bromadiolone adsorption is expected to range from low mobility in soil to being immobile in soil. Results of laboratory soil column leaching and aged leaching studies indicate that bromadiolone and any potential degradation products, even if released indirectly to soil in small quantities, are not likely to move through the soil profile(1).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.2 UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.) IMDG: I (For reference only, please check.) IATA: I (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
3-[3-(4'-bromo[1,1'-biphenyl]-4-yl)-3-hydroxy-1-phenylpropyl]-4-hydroxy-2-benzopyrone	3-[3-(4'-bromo[1,1'-biphenyl]-4-yl)-3-hydroxy-1-phenylpropyl]-4-hydroxy-2-benzopyrone	28772-56-7	249-205-9
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
Revision Date August 08, 2025

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.