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according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 2015/830 and US OSHA HCS 2015

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Code: 15725
Product Name: Bufalin

Synonyms: (3.beta.,5.beta.)3,14-dihydroxy-bufa-20,22-dienolide; NSC 89595;

1.2 Relevant identified uses of the substance or mixture and uses advised against:

**Relevant identified uses:** For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet:

Company Name: Cayman Chemical Company

1180 E. Ellsworth Rd. Ann Arbor, MI 48108

Web site address: www.caymanchem.com

Information: Cayman Chemical Company +1 (734)971-3335

1.4 Emergency telephone number:

Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300

CHEMTREC Outside USA and Canada: +1 (703)527-3887

#### Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:

Acute Toxicity: Oral, Category 2

2.2 Label Elements:



GHS Signal Word: Danger

GHS Hazard Phrases: H300: Fatal if swallowed.

**GHS Precautionary Phrases:** 

P264: Wash {hands} thoroughly after handling.

**GHS Response Phrases:** 

P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P330: Rinse mouth.

**GHS Storage and Disposal Phrases:** 

Please refer to Section 7 for Storage and Section 13 for Disposal information.

UFI:

2.3 Adverse Human Health Fatal if swallowed.

**Effects and Symptoms:** Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation or skin absorption. May cause eye, skin, or respiratory system irritation.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.



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Section 3. Composition/Information on Ingredients								
CAS#/ RTECS#	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification				
465-21-4 EI2962500	Bufa-20,22-dienolide, 3,14-dihydroxy-, (3b,5b)-	100.0 %	621-198-0 NA	Acute Tox.(O) 2: H300				

#### Section 4. First Aid Measures

4.1 **Description of First Aid** 

Measures:

In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel.

Get immediate medical attention.

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated

clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined

and tested by medical personnel.

In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an

unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by

medical personnel.

### Section 5. Fire Fighting Measures

Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. 5.1 Suitable Extinguishing

Use water spray to cool fire-exposed containers. Media:

Unsuitable Extinguishing A solid water stream may be inefficient.

Media:

5.2 Flammable Properties and No data available.

Hazards:

No data available.

No data. Flash Pt:

LEL: No data. UEL: No data. **Explosive Limits:** 

**Autoignition Pt:** No data.

Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or 5.3

equivalent), and full protective gear to prevent contact with skin and eyes.

#### Section 6. Accidental Release Measures

6.1 **Protective Precautions,** Avoid raising and breathing dust, and provide adequate ventilation.

Protective Equipment and As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,

and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves). **Emergency Procedures:** 

6.2 **Environmental** Take steps to avoid release into the environment, if safe to do so.

**Precautions:** 

6.3 Methods and Material For Contain spill and collect, as appropriate.

Containment and Cleaning Transfer to a chemical waste container for disposal in accordance with local regulations.

Up:

### Section 7. Handling and Storage

Precautions To Be Taken Avoid breathing dust/fume/gas/mist/vapours/spray. 7.1

Avoid prolonged or repeated exposure. in Handling:

7.2 Precautions To Be Taken Keep container tightly closed.

> Store in accordance with information listed on the product insert. in Storing:



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# Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

8.2 Exposure Controls:

8.2.1 Engineering Controls Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne

(Ventilation etc.): levels below recommended exposure limits.

8.2.2 Personal protection equipment:

Eye Protection: Safety glasses

Protective Gloves: Compatible chemical-resistant gloves

Other Protective Clothing: Lab coat

**Respiratory Equipment** NIOSH approved respirator, as conditions warrant.

(Specify Type):

Work/Hygienic/Maintenan Do not take internally.

ce Practices: Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.

Wash thoroughly after handling.

No data available.

## Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas [ ] Liquid [ X ] Solid

Appearance and Odor: A crystalline solid

pH: No data.
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.

Flammability (solid, gas): No data available.

Explosive Limits: LEL: No data. UEL: No data.

Vapor Pressure (vs. Air or mm No data.

Hg):

Vapor Density (vs. Air = 1): No data.

Specific Gravity (Water = 1): No data.

Solubility in Water: No data.

Solubility Notes: ~0.3 mg/ml in a 1:2 solution of EtOH:PBS (pH 7.2); ~15 mg/ml in EtOH; ~5 mg/ml in

DMSO; ~25 & DMF;

Octanol/Water Partition No data.

Coefficient:

Autoignition Pt:No data.Decomposition Temperature:No data.Viscosity:No data.



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9.2 Other Information

Percent Volatile: No data.

Molecular Formula & Weight: C24H34O4 386.5

Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.

**10.2 Stability:** Unstable [ ] Stable [ X ]

**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.

Polymerization: Will occur [ ] Will not occur [ X ]

**10.4 Conditions To Avoid:** No data available.

10.5 Incompatibility - Materials strong oxidizing agents

To Avoid:

**10.6 Hazardous** carbon dioxide

**Decomposition or** 

carbon monoxide

**Byproducts:** 

Section 11. Toxicological Information

11.1 Information on The toxicological effects of this product have not been thoroughly studied.

**Toxicological Effects:** Bufalin - Toxicity Data: Intraperitoneal TDLO (mouse): 7 mg/kg/7D (intermittent);

**Chronic Toxicological** Bufalin - Investigated as a drug and natural product.

Effects: Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.

See actual entry in RTECS for complete information.

Bufalin RTECS Number: El2962500

CAS#	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
465-21-4	Bufa-20,22-dienolide, 3,14-dihydroxy-, (3b,5b)-	n.a.	n.a.	n.a.	n.a.

### Section 12. Ecological Information

**12.1 Toxicity:** Avoid release into the environment.

Runoff from fire control or dilution water may cause pollution.

**12.2 Persistence and** No data available.

Degradability:

**12.3** Bioaccumulative No data available.

Potential:

**12.4 Mobility in Soil:** No data available.

**12.5** Results of PBT and vPvB No data available.

assessment:

12.6 Other adverse effects: No data available.

## Section 13. Disposal Considerations

**13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.



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## Section 14. Transport Information

#### 14.1 LAND TRANSPORT (US DOT):

**DOT Proper Shipping Name:** Toxin, extracted from living sources, solid, n.o.s.

((3.beta.,5.beta.)3,14-dihydroxy-bufa-20,22-dienolide)

**DOT Hazard Class:** 6.1 POISON

UN/NA Number: UN3462 Packing Group: II



#### 14.1 LAND TRANSPORT (European ADR/RID):

**ADR/RID Shipping Name:** Toxin, extracted from living sources, solid, n.o.s.

((3.beta.,5.beta.)3,14-dihydroxy-bufa-20,22-dienolide)

UN Number: 3462 Packing Group: II

Hazard Class: 6.1 - POISON

#### 14.3 AIR TRANSPORT (ICAO/IATA):

**ICAO/IATA Shipping Name:** Toxin, extracted from living sources, solid, n.o.s.

((3.beta.,5.beta.)3,14-dihydroxy-bufa-20,22-dienolide)

UN Number: 3462 Packing Group: || Hazard Class: 6.1 - POISON IATA Classification: 6.1

Additional Transport Transport in accordance with local, state, and federal regulations.

Information: When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of

E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

## Section 15. Regulatory Information

#### EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS#	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)	
465-21-4	Bufa-20,22-dienolide, 3,14-dihydroxy-, (3b,5b)-	No	No	No	
CAS#	Hazardous Components (Chemical Name)	Other US EPA or State Lists			
465-21-4	Bufa-20,22-dienolide, 3,14-dihydroxy-, (3b,5b)-	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No			

Regulatory Information This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC)

**Statement:** No.1272/2008.

#### Section 16. Other Information

**Revision Date:** 02/23/2020

Additional Information About No data available.

This Product:

Company Policy or Disclaimer: DISCLAIMER: This information is believed to be accurate and represents the best information

currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for

their particular purposes.