

# Safety Data Sheet

Revision Date: 5/2/2024

## Section 1: Chemical Identification

### 1.1 Chemical Identification

**Product Name:** Doxorubicin HCl  
**Alternative Name:** Doxorubicin Hydrochloride  
**Catalog Number:** D-490

### 1.2 Relevant Uses and Uses Advised Against

**Recommended use:** This product is not for use in humans. It is for research purposes only.

### 1.3 Supplier Contact Information

**Distributed by:** Gold Biotechnology, Inc.  
1328 Ashby Rd.  
St. Louis, MO 63132  
**Phone:** (314) 890-8778  
**Fax:** (314) 890-0503  
**Email:** [contactgoldbio86@goldbio.com](mailto:contactgoldbio86@goldbio.com)

### 1.4 Emergency Contact Information

**Emergency Phone:** (800)248-7609 (Monday-Friday, 9:00 a.m. – 5:00 p.m. CST)

## Section 2: Hazardous Information

### 2.1 GHS Classification

Acute Toxicity, Oral (Category 4)  
Germ Cell Mutagenicity (Category 1B)  
Carcinogenicity (Category 1B)  
Reproductive Toxicity (Category 1B)

### 2.2 GHS Label Elements, Including Precautionary statements



**DANGER!**

### 2.3 Hazard Statements

**H302:** Harmful if swallowed  
**H340:** May cause genetic defects  
**H350:** May cause cancer  
**H360:** May damage fertility or the unborn child

### 2.4 Precautionary Statements

**Gold Biotechnology**  
St. Louis, MO  
**Ph:** (314)890-8778  
**Web:** [www.goldbio.com](http://www.goldbio.com)  
**Email:** [contactgoldbio86@goldbio.com](mailto:contactgoldbio86@goldbio.com)

- P201: Obtain special instructions before use
- P202: Do not handle until all safety precautions have been read and understood
- P264: Wash skin thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- P330: Rinse mouth
- P308+313: IF exposed or concerned: Get medical advice/attention
- P405: Store locked up
- P501: Dispose of contents/container to an approved waste disposal plant

## **Section 3: Composition/Information on Ingredients**

### **3.1 Composition**

<b>Identity:</b>	Doxorubicin HCl
<b>IUPAC:</b>	(7S,9S)-7-[(2R,4S,5S,6S)-4-amino-5-hydroxy-6-methyloxan-2-yl]oxy-6,9,11-trihydroxy-9-(2-hydroxyacetyl)-4-methoxy-8,10-dihydro-7H-tetracene-5,12-dione;hydrochloride
<b>Synonyms:</b>	Doxorubicin Hydrochloride
<b>CAS Number:</b>	25316-40-9
<b>Molecular Formula:</b>	C <sub>27</sub> H <sub>29</sub> NO <sub>11</sub> · HCl
<b>Molecular Weight:</b>	579.98 g/mol

## **Section 4: First Aid Measures**

### **4.1 Detailed First Aid Measures**

<b>Inhalation:</b>	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<b>Skin:</b>	Immediately wash skin copiously with soap and water. Take victim immediately to hospital. Consult a physician.
<b>Eye:</b>	Immediately rinse out with water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Consult a physician.
<b>Ingestion:</b>	Wash out mouth with water. Drink plenty of water. Consult a physician. Never give anything by mouth to an unconscious person.
<b>Notes to Physician:</b>	Treat symptomatically and supportively.

### **4.2 Most Important Symptoms And Effects, Either Acute Or Delayed**

The most important known symptoms and effects are described in the labeling (see section 2). And /or in section 11.

### **4.3 Indication of immediate medical attention and special treatment needed**

Not available

## **Section 5: Fire Fighting Measures**

### **5.1 Conditions of flammability:**

Not flammable or combustible.

### **5.2 Suitable extinguishing media:**

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

### **5.3 Specific hazards arising from the chemical**

During a fire, highly toxic gases may be generated by thermal decomposition or combustion – Carbon Oxides, Nitrogen Oxides (NO<sub>x</sub>), Hydrogen Chloride Gas.

### **5.4 Specific protective actions for fire-fighters:**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## **Section 6: Accidental Release Measures**

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

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

### **6.2 Environmental precautions:**

Do not let product enter drains.

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

Soak up with absorbent material, discard.

## **Section 7: Handling and Storage**

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

Always wear personal protective equipment (PPE, see section 8).

### **7.2 Conditions for safe storage, including and incompatibilities:**

Keep container tightly closed.

Store desiccated at 4°C. Protect from light.

## **Section 8: Exposure Controls / Personal Protection**

### **8.1 Control Parameters:**

Contains no substances with occupational exposure limit values.

### **8.2: Appropriate engineering controls:**

Contains no substances with occupational exposure limit values.

### **8.3 Personal Protective Equipment (PPE):**

**Eye/Face Protection:** Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin Protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique - without touching outer surface of glove - to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory Protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Other Protective Clothing or Equipment:** Wear appropriate protective clothing to prevent exposure.

## Section 9: Physical and Chemical Properties

### 9.1 General chemical and physical properties

<b>Appearance:</b>	Powder
<b>Odor:</b>	Not Available
<b>Odor Threshold:</b>	Not Available
<b>pH:</b>	Not Available
<b>Melting Point:</b>	216°C
<b>Freezing Point:</b>	Not Available
<b>Boiling Point/Range:</b>	Not Available
<b>Flash Point:</b>	Not Available
<b>Evaporation Rate:</b>	Not Available
<b>Lower Explosion Limit:</b>	Not Available
<b>Upper Explosion Limit:</b>	Not Available
<b>Vapor Pressure:</b>	Not Available
<b>Vapor Density:</b>	Not Available
<b>Relative Density:</b>	Not Available
<b>Solubility:</b>	Water: soluble to 50 mM
<b>Partition Coefficient n-octanol/water:</b>	Not Available
<b>Auto-Ignition Temperature:</b>	Not Available
<b>Decomposition Temperature:</b>	Not Available

**Viscosity:** Not Available

## **Section 10: Stability and Reactivity Data**

### **10.1 Reactivity:**

Not available

### **10.2 Chemical Stability:**

Stable under recommended storage conditions.

### **10.3 Possibility of hazardous reactions:**

Not available.

### **10.4 Conditions to avoid:**

Incompatible materials.

### **10.5 Incompatible materials:**

Strong oxidizing agents.

### **10.6 Hazardous decomposition products:**

Hazardous decomposition products formed under fire conditions. - Carbon Oxides, Nitrogen Oxides (NOx), Hydrogen Chloride Gas.

## **Section 11: Toxicological Information**

### **11.1 Toxicological effects**

#### **Acute toxicity:**

Doxorubicin HCl Oral: LD<sub>50</sub> (Mouse) - 570 mg/kg

#### **Skin corrosion/irritation:**

Not available.

#### **Respiratory or skin sensitization:**

Not available.

#### **Germ cell mutagenicity:**

May cause genetic defects. Ames test (*Salmonella typhimurium*) Result: positive / Ames test (*Escherichia coli*) Result: negative / Sister chromatid exchange assay (Human lymphocytes) Result: positive / Mouse lymphoma test Result: positive / Mutagenicity (mammal cell test): chromosome aberration. Chinese hamster ovary cells Result: positive / Rat-male and female-Bone marrow Result: positive / Mouse - male - Red blood cells (erythrocytes) Result: Positive results were obtained in some in vivo tests. / Mouse Result: positive

#### **Carcinogenicity:**

**IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**ACGIH:** No component of this product present at levels greater than or equal

to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.

**NTP:** Reasonably anticipated to be a human carcinogen (Doxorubicin hydrochloride).

**OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:**

Not available.

**STOT-single exposure:**

Not available.

**STOT-repeated exposure:**

Not available.

**Aspiration hazard:**

Not available.

**Likely routes of exposure:**

Respiratory organs, mouth, skin, and eyes.

**Symptoms of exposure:**

Liver - Irregularities - Based on Human Evidence

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

**Additional Information:**

RTECS: Q19295900

Presumed to have carcinogenic potential for humans

After absorption: We have no description of any toxic symptoms. Under given conditions, contact with nitrites or nitric acid can be carcinogenic in animal experiments. Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

## **Section 12: Ecological Information**

**12.1 Toxicity:**

Not available.

**12.2 Persistence and degradability:**

Not available.

**12.3 Bioaccumulative potential:**

Not available.

**12.4 Mobility in soil:**

Not available.

**12.5 Other adverse effects:**

None.

## **Section 13 Disposal Considerations**

Dispose of product in accordance with local rules and regulations.

## **Section 14: Transport Information**

### **14.1 US Department of Transportation (DOT)**

This material is considered to be non-hazardous for transport.

### **14.2 International Maritime Dangerous Goods (IMDG):**

This material is considered to be non-hazardous for transport.

### **14.2 International Air Transportation Association (IATA)**

This material is considered to be non-hazardous for transport.

## **Section 15: Regulatory Information**

### **SARA 302 Components:**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### **SARA 313 Components:**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### **SARA 311/312 Hazards:**

Acute Health Hazard, Chronic Health Hazard

### **Massachusetts Right To Know Components:**

Doxorubicin HCl

CAS - No.

25316-40-9

### **Pennsylvania Right To Know Components:**

Doxorubicin HCl

CAS - No.

25316-40-9

### **New Jersey Right To Know Components:**

Doxorubicin HCl

CAS - No.

25316-40-9

### **California Prop. 65 Components:**

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. - Doxorubicin Hydrochloride (CAS-No: 25316-40-9)

## **Section 16: Other Information**

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without limitation, liability for injury to the user or third-party persons.

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