



|                     |   |
|---------------------|---|
| Health              | 2 |
| Fire                | 0 |
| Reactivity          | 1 |
| Personal Protection | E |

## Material Safety Data Sheet

### Doxorubicin HCL

#### 1: Chemical Product and Company Identification

**Product Name:** Doxorubicin HCL

**Catalog Code:** 40410004-1

**CAS#:** 25316-40-9

**RTECS:** QI9295900

**TSCA:** TSCA 8(b) inventory : No products were found.

**CI#:** Not available.

**Synonym:** ADM hydrochloride; Adriacin; Adriamycin, hydrochloride; Adriblastina; Adriblastina RD; Doxorubicin hydrochloride; Hydroxydaunorubicin hydrochloride

**Chemical Name:** Doxorubicin hydrochloride

**Chemical Formula:**  $C_{27}H_{29}NO_{11} \cdot HCl$

#### Contact information:

**bioWORLD**

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Suite 228, Dublin, OH 43017, USA

For information, call: 614-792-8680

Fax Number: 614-792-8685

Order Online: [www.bio-world.com](http://www.bio-world.com)

E-mail : [save@bio-world.com](mailto:save@bio-world.com)

**In case of a chemical emergency, contact local hospital.**

**For non-emergency assistance, call: 1-800-860-9729**

#### 2: Composition and Information on Ingredients

##### Composition:

| Name            | CAS#       | % by Weight |
|-----------------|------------|-------------|
| Doxorubicin HCL | 25316-40-9 | -           |

##### Toxicological Data on Ingredients:

LD<sub>50</sub> (Oral, Mouse): 698 mg/kg

#### 3: Hazards Identification

**Potential Acute Health Effects:** Toxic. May cause cancer. Harmful if swallowed. Irritating to eyes, respiratory system and skin. Vesicant.

Target organ(s): Heart. Bone marrow.

##### Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Equivocal tumorigenic agent by RTECS criteria.

MUTAGENIC EFFECTS: Laboratory experiments have shown mutagenic effects.

TERATOGENIC EFFECTS: Laboratory experiments have shown teratogenic effects.

DEVELOPMENTAL TOXICITY: Paternal effects.

#### 4: First Aid Measures

**Eye Contact:** In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

**Skin Contact:** In case of contact, immediately wash skin with soap and copious amounts of water.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Inhalation:** If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

**Serious Inhalation:** Not available.

**Ingestion:** If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Serious Ingestion:** Not available.

#### 5: Fire and Explosion Data

**Flammability of the Product:** May be combustible at high temperature.

**Auto-Ignition Temperature:** Not available.

**Flash Points:** Not available.

**Flammable Limits:** Not available.

**Product of Combustion:** Carbon monoxide, Carbon dioxide, Hydrogen chloride gas, Nitrogen oxides.

**Fire Hazards in Presence of Various Substances:** Not available.

**Explosion Hazards in Presence of Various Substances:**  
Not available.

**Fire Fighting Media and Instructions:**

SMALL FIRE: Dry chemical powder.

LARGE FIRE: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

#### 6: Accidental Release Measures

**Small Spill:** Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**Large Spill:** Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

#### 7: Handling and Storage

**Precautions:** Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

**Storage:** Keep tightly closed. Store at 2-8°C.

#### 8: Exposure Controls/Personal Protection

**Engineering Controls:** Use only in a chemical fume hood. Safety shower and eye bath.

**Personal Protection:** Respiratory: Government approved respirator in nonventilated areas and/or for exposure above the TLV or PEL.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Boots. Dust respirator. Gloves.

**Exposure Limits:** Not available.

#### 9: Physical and Chemical Properties

**Physical State and Appearance:** Solid (Powder).

**Odor:** Not available.

**Taste:** Not available.

**Molecular Weight:** 579.98 g/mole

**Color:** Red.

**pH(1% soln/water):** Not available.

**Boiling Point:** Not available.

**Melting Point:** Not available.

**Critical Temperature:** Not available.

**Specific Gravity:** Not available.

**Vapour Pressure:** Not available.

**Vapor Density:** Not available.

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** Not available.

**Solubility:** Soluble in water.

#### 10: Stability and Reactivity Data

**Stability:** Stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Sensitive to moisture. Sensitive to light.

**Incompatibility with various substances:** Strong oxidizing agents.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:** Not available.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## 11: Toxicological Information

**Routes of Entry:** Skin contact. Eye contact. Ingestion. Inhalation.

### Toxicity to Animals:

LD<sub>Lo</sub> (Intravenous, Man): 2571 ug/kg

LD<sub>50</sub> (Intraperitoneal, Rat): 16030 ug/kg

LD<sub>50</sub> (Subcutaneous, Rat): 21840 ug/kg

LD<sub>50</sub> (Intravenous, Rat): 12510 ug/kg

LD<sub>50</sub> (Intramuscular, Rat): 16 mg/kg

LD<sub>50</sub> (Oral, Mouse): 698 mg/kg

LD<sub>50</sub> (Intraperitoneal, Mouse): 11160 ug/kg

LD<sub>50</sub> (Subcutaneous, Mouse): 7678 ug/kg

LD<sub>50</sub> (Intravenous, Mouse): 1245 ug/kg

LD<sub>50</sub> (Intramuscular, Mouse): 13700 ug/kg

LD<sub>50</sub> (Intravenous, Rabbit): 5980 ug/kg

**Chronic Effects on Humans:** Carcinogen : Tumorigenic; Equivocal tumorigenic agent by RTECS criteria.

Teratogen : Laboratory experiments have shown teratogenic effects.

Mutagen: Laboratory experiments have shown mutagenic effects.

Reproductive Hazard: Paternal effects (Spermatogenesis (including genetic material, sperm morphology, motility, and count)).

**Other Toxic Effects on Humans:** Skin Contact: Causes blisters on contact with skin. Vesicant. Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed. Ingestion can cause immediate burning pain in the mouth, throat, abdomen; severe swelling of the larynx and skeletal paralysis affecting the ability to breathe, circulatory shock and convulsions.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:** Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Product of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are more toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

### 13: Disposal Considerations

**Waste Disposal:** Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

### 14: Transport Information

**DOT Classification:** Not a DOT controlled material.

**Identification:** Not available.

**Special Provisions for Transport:** Not available.

### 15: Other Regulatory Information

**Federal and State Regulations:** TSCA 8(b) inventory : No products were found.

**Other Regulations:** EU ADDITIONAL CLASSIFICATION

Symbol of Danger: T

Indication of Danger: Toxic.

R: 45 22

Risk Statements: May cause cancer. Also harmful if swallowed.

S: 53 45

Safety Statements: Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**Other Classifications:**

**WHMIS(Canada):** Not available.

**DSCL(EEC):** Not available.

**HMIS(U.S.A):**

**Health Hazard:** 2

**Fire Hazard:** 0

**Reactivity:** 1

**Personal Protection:** E

**National Fire Protection Association (U.S.A):**

**Health:** 2

**Flammability:** 0

**Reactivity:** 1

**Specific hazard:**

**Protective Equipment:** Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety goggles.

#### 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

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