

# Safety Data Sheet

## SAFETY DATA SHEET - LC LABORATORIES REVISION DATE: JULY 1, 2019

### SECTION 1. IDENTIFICATION:

Trade name: Doxorubicin, Hydrochloride Salt

Product Number: [D-4000](#)

Manufacturer/Supplier:

LC Laboratories

165 New Boston Street

Woburn, MA 01801 USA

1-781-937-0777 Fax: 1-781-938-5420

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### SECTION 2. HAZARD(S) IDENTIFICATION:

Hazard Description: Toxic

RTECS Substance category: Tumorigen; Drug; Mutagen; Natural Product; Human Data; Reproductive Effector

May be harmful or fatal if inhaled, swallowed, or absorbed through skin

Exposure may result in damage to the heart, skin, eyes, respiratory system, digestive system, endocrine system, and urinary system

Ingestion may cause complete alopecia (hair loss), onycholysis (separation of nail from nail bed), nail bed hyperpigmentation, rash, itching, urticaria (hives), photosensitivity, acute nausea, vomiting, mucositis (inflammation and ulceration of the mucous membranes lining the digestive tract), anorexia, abdominal pain, dehydration, diarrhea, fever, chills, seizure and coma

Exposure may cause tumors and adversely affect fertility and newborn and breastfed infants

Signal Word: Danger

#### GHS Hazard Statements:

H302+312+332 - Harmful if swallowed, in contact with skin or if inhaled

#### GHS Precautionary Statements:

P2562 - Do not get in eyes, on skin or on clothing

WARNING: For Laboratory Research Use Only



### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS:

Chemical Name: (7S,9S)-7-(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

Synonyms: Adriacin, Adriamycin, Adriblastin, Adriblastina, Caelyx, Dox, Doxil, Farmiblastina, FI-106, 14-Hydroxydaunomycin, Lipodox, Myocet, Rubex

Hazardous Ingredient: Doxorubicin, Hydrochloride Salt

CAS Registry Number: 25316-40-9

Molecular Weight: 579.98

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

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#### **SECTION 4. FIRST-AID MEASURES:**

After Inhalation: If inhaled, remove to fresh air; if breathing is difficult, give oxygen; if breathing stops, give artificial respiration

After skin contact: flush with copious amounts of water; remove contaminated clothing and shoes; call a physician

After eye contact: check for and remove contact lenses; flush with copious amounts of water; assure adequate flushing by separating the eyelids with fingers; call a physician

After swallowing: if swallowed, wash out mouth with copious amounts of water; call a physician

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#### **SECTION 5. FIRE-FIGHTING MEASURES:**

Suitable extinguishing agents: water spray, carbon dioxide, dry chemical powder or foam

Protective equipment: wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes

Unusual fire hazard: may emit toxic fumes under fire conditions such as carbon monoxide, etc.

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#### **SECTION 6. ACCIDENTAL RELEASE MEASURES:**

Person-related safety precautions: cordon off area of spill; wear self-contained breathing apparatus, protective clothing and heavy rubber gloves

Measures for cleaning/collecting: absorb solutions with finely- powdered liquid-binding material (diatomite, universal binders); decontaminate surfaces and equipment by scrubbing with a 10% solution of aqueous sodium hydroxide; dispose of contaminated material according to Section 13

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

Information for safe handling: avoid contact with skin, eyes and clothing; material may be an irritant

Storage: store solid and solutions at -20 °C

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

Personal protective equipment as follows:

Breathing equipment: NIOSH/MSHA-approved respirator

Protection of hands: handle with Nitrile rubber gloves with minimum thickness of 0.11 mm (4.3 mil). This recommendation should not be interpreted as offering an approval for any specific use conditions. Please review this recommendation with a safety officer to evaluate if it is appropriate for the anticipated use.

Eye protection: chemical safety goggles

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES:**

Form: crystalline solid; granular or powder

Color: orange

Odor: none

Melting point/Melting range: not determined

Danger of explosion: none

Solubility in / Miscibility with water: soluble in water at 10 mg/mL with slight warming; buffers, serum, or other additives may increase or decrease the aqueous solubility

Solvent content:

Organic solvents: soluble in DMSO at 100 mg/mL; very poorly soluble in ethanol

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**SECTION 10. STABILITY AND REACTIVITY:**

Stability: avoid acids and bases

Thermal decomposition / conditions to be avoided: protect from light and heat

Dangerous products of decomposition: thermal decomposition may produce toxic gases such as carbon monoxide and carbon dioxide, and nitrogen oxides

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**SECTION 11. TOXICOLOGICAL INFORMATION:**

RTECS #: QI9295900

Acute toxicity: intravenous toxicity (TDLo): 12mg/kg (human); intraperitoneal toxicity (LD50): 16030µg/kg (rat); subcutaneous toxicity (LD50): 21840µg/kg (rat); intravenous toxicity (LD50): 12510µg/kg (rat); intramuscular toxicity (LD50): 16mg/kg (rat); oral toxicity (LD50): 698mg/kg (mouse); intraperitoneal toxicity (LD50): 11160µg/kg (mouse); subcutaneous toxicity (LD50): 7678µg/kg (mouse); intramuscular toxicity (LD50): 13700µg/kg (mouse); intravenous toxicity (LD50): 5980µg/kg (rabbit)

Primary irritant effect:

On the skin: irritant; harmful if absorbed through the skin

On the eye: irritant; harmful in contact with eyes

Inhalation: irritant; harmful if inhaled

Ingestion: harmful if swallowed

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**SECTION 12. ECOLOGICAL INFORMATION:**

General notes: no data available

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**SECTION 13. DISPOSAL CONSIDERATIONS:**

Dispose of in accordance with prevailing country, federal, state and local regulations

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**SECTION 14. TRANSPORT INFORMATION:**

DOT:

Proper shipping name: none

Non-Hazardous for transport: this substance is considered to be non-hazardous for transport

IATA class:

Proper shipping name: none

Non-Hazardous for transport: this substance is considered to be non-hazardous for transport

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**SECTION 15. REGULATORY INFORMATION:**

Code letter and hazard designation of product:

T: Toxic

EU Risk And Safety phrases:

S22: Do not breathe dust

S24/25: Avoid contact with skin and eyes

S28: After contact with skin, wash immediately with plenty of water

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

S53: Avoid exposure - obtain special instructions before use

R22: Harmful if swallowed

R37/38: Irritating to respiratory system and skin

R41: Risk of serious damage to eyes

R45: May cause cancer

R46: May cause heritable genetic damage

R62: Possible risk of impaired fertility

R63: Possible risk of harm to the unborn child

R68: Possible risk of irreversible effects

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**SECTION 16. OTHER INFORMATION:**

The above information is believed to be correct based on our present knowledge but does not purport to be complete. For research use only by trained personnel. The burden of safe use of this material rests entirely with the user. LC Laboratories disclaims all liability

Reviewed: July 1, 2019