

Doxorubicin (Adriamycin) Hydrochloride SDS | MSDS

1.PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- **Product Name:** Doxorubicin (Adriamycin) Hydrochloride
- **Catalog Number:** S1208
- **CAS Number:** 25316-40-9
- **IUPAC Name:** (8S,10S)-10-((2R,4S,5S,6S)-4-amino-5-hydroxy-6-methyl-tetrahydro-2H-pyran-2-yloxy)-6,8,11-trihydroxy-8-(2-hydroxyacetyl)-1-methoxy-7,8,9,10-tetrahydrotetracene-5,12-dione hydrochloride

Relevant identified uses and uses advised against

- **Identified uses:** For research and development use only; laboratory chemicals; manufacture of substances.
- **Uses advised against:** Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- **Company :** Selleck Chemicals
- **TollFree :** +1 877 796-6397
- **Tel :** +1 832 582-8158
- **Fax :** +1 832 582-8590

Emergency telephone number

- **Emergency phone #:** +1 832 582-8158

2. HAZARDS IDENTIFICATION

The substance is classified as hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Pictogram:



Signal word: Danger

Hazard statements:

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

Precautionary statements:

- **Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear protective gloves, protective clothing, eye protection, and face protection.
- **Response:** IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. IF exposed or concerned: Get medical advice/attention.
- **Storage:** Store locked up.
- **Disposal:** Dispose of contents and container to an approved waste disposal plant.

Other hazards: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product is a pure substance.

- **Chemical Name:** (8S,10S)-10-((2R,4S,5S,6S)-4-amino-5-hydroxy-6-methyl-tetrahydro-2H-pyran-2-yloxy)-6,8,11-trihydroxy-8-(2-hydroxyacetyl)-1-methoxy-7,8,9,10-tetrahydrotetracene-5,12-dione hydrochloride
- **CAS-No.:** 25316-40-9
- **Concentration:** >= 90 - <= 100%

Actual concentration is withheld as a trade secret.

4. FIRST AID MEASURES

- **General advice:** Consult a physician and show this safety data sheet to the attending doctor.
- **If inhaled:** Move person to fresh air. If breathing is difficult, seek medical attention.
- **In case of skin contact:** Immediately remove contaminated clothing and rinse skin with plenty of water or shower. Consult a physician.
- **In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes, removing contact lenses if present. Consult an ophthalmologist.
- **If swallowed:** Do not induce vomiting. Rinse mouth and drink a maximum of two glasses of water. Consult a physician immediately.
- **Most important symptoms/effects:** The most important known symptoms and effects are described in the hazard identification (Section 2) and toxicological information (Section 11).
- **Protection of first-aiders:** Refer to Section 8 for personal protective equipment.
- **Notes to physician:** N/A.

5. FIREFIGHTING MEASURES

- **Suitable extinguishing media:** Water, foam, carbon dioxide (CO₂), or dry powder.
- **Unsuitable extinguishing media:** No limitations are specified for this substance.
- **Specific hazards:** The material is combustible. Hazardous combustion gases including carbon oxides, nitrogen oxides (NO_x), and hydrogen chloride gas may be released during a fire.
- **Extinguishing methods:** Use water spray to suppress gases, vapors, or mists. Prevent firefighting water from entering surface or ground water systems.

- **Special protective equipment:** Firefighters should wear self-contained breathing apparatus and full protective clothing. Maintain a safe distance and prevent skin contact.

6. ACCIDENTAL RELEASE MEASURES

- **Personal precautions:** Avoid the generation and inhalation of powder. Ensure adequate ventilation and evacuate the area. Use personal protective equipment as detailed in Section 8.

- **Environmental precautions:** Prevent the product from entering drains.

- **Methods for containment and cleaning up:** Cover drains. Carefully collect the material and place it in a suitable container for disposal. Clean the affected area and avoid the generation of powder.

7. HANDLING AND STORAGE

- **Advice on safe handling:** Work under a chemical fume hood. Do not inhale the substance. Follow precautions listed in Section 2.2.

- **Storage conditions:** Keep the container tightly closed in a dry, well-ventilated place. Store locked up and ensure access is restricted to authorized personnel.

- **Storage class:** 6.1C (Combustible, acute toxic Cat.3 / toxic compounds or compounds causing chronic effects).

- **Recommended storage temperature:** 36 - 46 °F / 2 - 8 °C.

- **Storage stability:** The material is moisture and light sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Control parameters:** Contains no substances with occupational exposure limit values.

- **Engineering measures:** N/A

- **Personal protective equipment:**

- **Respiratory protection:** Required when powder is generated. Use a P3 type filter (DIN EN 143).

- **Hand protection:** Use nitrile rubber gloves (0.11 mm thickness) for both full and splash contact. Breakthrough time is 480 minutes.

- **Eye protection:** Use safety glasses tested and approved under NIOSH (US) or EN 166 (EU) standards.

- **Skin and body protection:** Wear appropriate protective clothing.

- **Hygiene measures:** Change contaminated clothing immediately. Apply preventive skin protection. Wash hands and face thoroughly after handling the substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** powder

- **Color:** N/A

- **Odor:** N/A

- **Odor Threshold:** N/A

- **pH:** N/A

- **Melting point/range:** 421 °F / 216 °C (decomposition)
- **Boiling point:** N/A
- **Flash point:** N/A
- **Evaporation rate:** N/A
- **Flammability:** N/A
- **Explosion limits:** N/A
- **Vapor pressure:** N/A
- **Relative vapor density:** N/A
- **Relative density:** N/A
- **Density:** N/A
- **Water solubility:** N/A
- **Partition coefficient (n-octanol/water):** N/A
- **Autoignition temperature:** N/A
- **Decomposition temperature:** N/A
- **Viscosity:** N/A
- **Explosive properties:** Not classified as explosive.
- **Oxidizing properties:** None
- **Molecular weight:** 579.98 g/mol

10. STABILITY AND REACTIVITY

- **Reactivity:** Fine powder distributed in air may pose a potential dust explosion hazard.
- **Chemical stability:** Stable under standard ambient conditions (room temperature).
- **Possibility of hazardous reactions:** Contact with nitrites, nitrates, or nitrous acid may liberate nitrosamines. Violent reactions are possible with strong oxidizing agents.
- **Conditions to avoid:** Exposure to light and moisture.
- **Incompatible materials:** N/A.
- **Hazardous decomposition products:** See Section 5 for combustion products.

11. TOXICOLOGICAL INFORMATION

- **Acute toxicity:** LD50 Oral (Mouse): 570 mg/kg. Absorption occurs via the oral route. N/A for inhalation or dermal routes.
- **Skin corrosion/irritation:** N/A.
- **Serious eye damage/irritation:** N/A.
- **Respiratory or skin sensitization:** N/A.
- **Germ cell mutagenicity:** May cause genetic defects. Positive results were observed in Ames tests (S. typhimurium), sister chromatid exchange assays (human lymphocytes), mouse lymphoma tests, and chromosome aberration tests (Chinese hamster ovary cells and rat bone marrow).
- **Carcinogenicity:** Presumed to have carcinogenic potential. NTP identifies it as "Reasonably anticipated to be a human carcinogen." Not identified as a carcinogen by IARC or OSHA at levels $\geq 0.1\%$.

- **Reproductive toxicity:** May damage fertility or the unborn child.
- **STOT - single/repeated exposure:** N/A.
- **Aspiration hazard:** N/A.
- **Additional Information:** RTECS: QI9295900. Toxicological properties have not been thoroughly investigated. Potential for nitrosamine formation in the presence of nitrites. Known to cause liver irregularities based on human evidence.

12. ECOLOGICAL INFORMATION

- **Ecotoxicity:** N/A.
- **Persistence and degradability:** N/A.
- **Bioaccumulative potential:** N/A.
- **Mobility in soil:** N/A.
- **Other adverse effects:** This product does not contain Class I or Class II ozone-depleting substances as defined by the U.S. Clean Air Act.

13. DISPOSAL CONSIDERATIONS

- **Waste treatment methods:** Waste must be disposed of in accordance with national and local regulations. Chemicals should be left in their original containers and not mixed with other waste. Handle uncleaned containers with the same precautions as the product itself.

14. TRANSPORT INFORMATION

- **DOT (49 CFR):** Not regulated as a dangerous good.
- **IMDG:** Not regulated as a dangerous good.
- **IATA:** Not regulated as a dangerous good.
- **Transport in bulk:** Not applicable for the product as supplied.
- **Special precautions:** Not classified as dangerous in the meaning of transport regulations. Poison Inhalation Hazard: No.

15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 : Acute Health Hazard

Hazards Chronic Health Hazard

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.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Doxorubicin hydrochloride 25316-40-9

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California Prop. 65

WARNING: This product can expose you to chemicals including Doxorubicin hydrochloride,

which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

TSCA : Product contains substance(s) not listed on TSCA inventory.

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

16. OTHER INFORMATION

Revision Date: 2026/07/16

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product. Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.