

Safety Data Sheet (SDS) According to the REACH Regulation (EC) No. 1907/2006

Issuing Date: 2018-03-23

Revision Date: 2024-03-26

Version: 2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product No 5927
Product name Doxorubicin

Contains

Chemical name	Index No.	CAS No
(8S-cis)-10-((3-Amino-2,3,6-trideoxy- α -L-lyxo -hexopyranosyl)oxy)-7,8,9,10-tetrahydro-6,8,11-tri- hydroxy-8-(hydroxyacetyl)-1-methoxynaphthacen- e-5,12-dione hydrochloride (90 - 100%)	Not Listed	25316-40-9

Formula $C_{27}H_{30}ClNO_{11}$
Molecular Weight 579.98 g/mol

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

Identified uses For Research Use Only. Not for Use in Diagnostic Procedures.

1.3. Details of the supplier of the safety data sheet

Importer	Manufacturer
Cell Signaling Technology Europe B.V. Dellaertweg 9b 2316 WZ Leiden The Netherlands TEL: +31 (0)71 7200 200 FAX: +31 (0)71 891 0019	Cell Signaling Technology, Inc. 3 Trask Lane Danvers, MA 01923 United States TEL: +1 978 867 2300 FAX: +1 978 867 2400

Website www.cellsignal.com
E-mail Address info@cellsignal.eu

1.4. Emergency telephone number

CHEMTREC 24 hours a day, 7 days a week, 365 days a year
+1 703 527 3887 (INTERNATIONAL) +1 800 424 9300 (NORTH AMERICA)

Europe 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Acute oral toxicity	Category 4 - (H302)
Germ cell mutagenicity	Category 1B - (H340)
Carcinogenicity	Category 1B - (H350)
Reproductive toxicity	Category 1B - (H360FD)

2.2. Label elements



Signal word

Danger

Hazard statement(s)

H302 - Harmful if swallowed.

H340 - May cause genetic defects.

H350 - May cause cancer.

H360FD - May damage fertility. May damage the unborn child.

Precautionary statement(s)

P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P264 - Wash face, hands and any exposed 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.

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P308 + P313 - IF exposed or concerned: Get medical advice/attention.

P330 - Rinse mouth.

P405 - Store locked up.

P501 - Dispose of contents/container to an approved waste disposal plant.

2.3. Other hazards

No information available.

For the full text of the H-phrases & EUH-phrases mentioned in this Section, see Section 16

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms

Doxorubicin Hydrochloride;
Adriamycin;
Antineoplastic antibiotic obtained from Streptomyces peucetius;
Lipodox

Formula

C₂₇H₃₀ClNO₁₁

Chemical name	CAS No	Weight-%	EC No	Classification (1272/2008)	REACH Registration Number
(8S-cis)-10-((3-Amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy)-7,8,9,	25316-40-9	100	246-818-3	Acute Tox. 4 (H302) Muta. 1B (H340) Carc. 1B (H350) Repr. 1B (H360FD)	no data available

10-tetrahydro-6,8,11-trihydroxy-8-(hydroxyacetyl)-1-methoxynaphthacene-5,12-dione hydrochloride				STOT RE 2 (H373)	
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For the full text of the R-phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Use first aid treatment according to the nature of the injury. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	Move to fresh air. Consult a physician.
Skin contact	Take off contaminated clothing. Wash off immediately with plenty of water. Consult a physician.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion	Clean mouth with water and afterwards drink plenty of water. Consult a physician.
Protection of first-aiders	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. May cause an allergic skin reaction including itching, redness, and rash.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Dry chemical, CO₂, water spray or alcohol-resistant foam
Unsuitable Extinguishing Media No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products Carbon oxides (CO_x), Nitrogen oxides (NO_x), Hydrogen chloride

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing. Use personal protective equipment.
For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Methods for containment
Methods for cleaning up

Prevent further leakage or spillage if safe to do so.
Use personal protective equipment. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid dust formation. Clean contaminated surface thoroughly.

6.4. Reference to other sections

See Sections 8 & 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe dust. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

7.3. Specific end use(s)

Use as a laboratory reagent.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The product does not contain any hazardous materials with occupational exposure limits established.

8.2. Exposure controls

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection

Tightly fitting safety goggles

Skin protection

Wear protective gloves and protective clothing

Hand protection

Impervious gloves

Other

Impervious gloves Impervious clothing

Respiratory protection

Use with local exhaust ventilation In case of inadequate ventilation wear respiratory protection

Environmental Exposure Controls

No information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid - Crystalline Powder
Color	Orange
Odor	No information available

Property	Values	Remarks • Method
pH	No information available	No information available
Melting point/freezing point	No information available	No information available
Boiling point or initial boiling point and boiling range	No information available	No information available
Flash point	No information available	No information available.
Evaporation rate	No information available	No information available
Flammability	No information available	No information available
Upper/lower flammability or explosive limits	No information available	No information available
Vapor pressure	No information available	No information available
Relative vapor density	No information available	No information available
Density and/or relative density	No information available	No information available
Solubility	Practically insoluble	No information available
Partition coefficient: n-octanol/water	No information available	No information available
Autoignition temperature	No information available	No information available
Decomposition temperature	No information available	No information available.
Viscosity	No information available	No information available
Explosive properties	No information available	No information available
Oxidizing properties	No information available	No information available

9.2. Other information

Softening point	No information available
Molecular Weight	579.98 g/mol
Solubility in other solvents	No information available
VOC content	No information available
Liquid Density	No information available

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization	Hazardous polymerization does not occur.
Hazardous reactions	None under normal processing

10.4. Conditions to avoid

None known based on information supplied

10.5. Incompatible materials

Strong acids, Strong bases, Strong oxidizing agents, Strong reducing agents.

10.6. Hazardous decomposition products

None under normal use conditions

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
(8S-cis)-10-((3-Amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy)-7,8,9,10-tetrahydro-6,8,11-trihydroxy-8-(hydroxyacetyl)-1-methoxynaphthacene-5,12-dione hydrochloride	698 mg/kg (Mouse)	-	-

Unknown Acute Toxicity No information available.

Information on likely routes of exposure

Inhalation There is no data available for this product.
Eye contact There is no data available for this product.
Skin contact There is no data available for this product.
Ingestion May be harmful if swallowed.

Symptoms Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. May cause an allergic skin reaction including itching, redness, and rash.

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Sensitization No information available.

Mutagenic effects In vitro tests have shown mutagenic effects. Some in vivo tests have shown mutagenic effects. Mutagenic in vitro in the bacterial reverse mutation assays (AMES test).

Carcinogenicity Laboratory experiments on animals have reported the development of tumors. Listed as probable human carcinogen by IARC (Group 2A).

Chemical name	European Union	IARC
(8S-cis)-10-((3-Amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy)-7,8,9,10-tetrahydro-6,8,11-trihydroxy-8-(hydroxyacetyl)-1-methoxynaphthacene-5,12-dione hydrochloride		Group 2A (Adriamycin)

Legend:

IARC: (International Agency for Research on Cancer) *Group 2A - Probably Carcinogenic to Humans*

Reproductive toxicity Experiments have shown reproductive toxicity effects on laboratory animals. May damage fertility or the unborn child.

STOT - single exposure No information available.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Target Organ Effects Heart, Liver, Reproductive system.

Aspiration Hazard No information available.

11.2. Information on other hazards

No information available.

SECTION 12: Ecological information

12.1. Toxicity

No information available.

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

Bioaccumulation No information available.

Bioconcentration factor (BCF) No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

No information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.
Other information	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

IMDG/IMO

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	None
14.6 Special precautions for user	None
14.7 Maritime transport in bulk according to IMO instruments	Not regulated

ADR/RID

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	None
14.6 Special precautions for user	None

IATA

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	None
14.6 Special precautions for user	None

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

This product does not contain Substances of Very High Concern (SVHC).

SEVESO Directive Information

This product does not contain substances identified in the SEVESO Directive.

International inventories

TSCA 8(b)	-
DSL/NDSL	-
EINECS/ELINCS	Complies
ENCS	-
IECSC	-
KECL	Complies
PICCS	-
AICS	-

International inventories legend

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
- ENCS - Japan Existing and New Chemical Substances
- IECSC - China Inventory of Existing Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out

SECTION 16: Other information

Full text of H-Statements referred to under Sections 2 and 3

- H302 - Harmful if swallowed
- H340 - May cause genetic defects if inhaled

H350 - May cause cancer if swallowed

H360FD - May damage fertility. May damage the unborn child

Classification procedure: Expert judgment and weight of evidence determination.

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.