

# SAFETY DATA SHEET

NAME OF PRODUCT Daunomycin

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## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

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**Product/Catalog Number(s):**

60-102

60 g/vial

**Product name:**

**Daunomycin**

**Synonyms:**

Daunoblastin, daunoblastina, daunomycin chlorohydrate, daunorubicin hydrochloride, NDC 0082-4155, NSC-82151, ondena, RP 13057 hydrochloride, rubidomycin hydrochloride

**Manufacturer:**

Molecular Toxicology Inc.

**Address:**

157 Industrial Park Drive, Boone, North Carolina, 28607

**Phone:**

(1) 828 264 9099 (8:30 – 17:00 EST)

**Fax:**

828 264 0103

**Emergency contact (Chemtrec):**

Contact 1800-424-9300 (USA) or 703 527 3887 (International) at other times  
Email: [chemtrec@chemtrec.com](mailto:chemtrec@chemtrec.com); <http://www.chemtrec.com/>

**Recommended use:**

Laboratory, For Research Only

**Restrictions on use:**

Not for clinical use

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## SECTION 2. HAZARDS IDENTIFICATION

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Classification of the substance or mixture per GHS and EU Directive 1272/2008



**Danger**

**Physical hazards**

None known

**Health hazards**

Acute Toxicity, Oral (Category 3)  
Respiratory Sensitization (Category 1)  
Carcinogenicity (Category 2)  
Target Organs: Bone marrow, heart

**Environmental hazards**

See eco-toxicity section 12.

**Labelling**

**Hazard Statements**

H301 Toxic if swallowed  
H350 May cause cancer  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

**Precautionary Statements**

P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
P302+350 IF ON SKIN: Gently wash with plenty of water  
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

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P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P201 Receive special instructions before use  
P202 Do not handle until all safety precautions are understood  
P262 Do not get in eye, on skin, or on clothing  
P284 Wear respiratory protection  
P264 Wash hands thoroughly after handling  
P280 Wear protective gloves/ eye protection/ face protection  
P310 Immediately call a POISON CENTER or doctor/physician  
P361+363 Remove/immediately take off all contaminated clothing and wash before reuse

**Hazards not otherwise classified or not covered by GHS**

None

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance

Component	Purpose	CAS-No	EC-No.	Weight %
C <sub>27</sub> H <sub>29</sub> NO <sub>10</sub> * H <sub>2</sub> O Daunomycin	Biochemical used in the study of carcinogenesis	23541-50-6	245-723-4	100%

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## SECTION 4. FIRST AID MEASURES

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### Description of first aid measures

Eye Contact	Rinse eyes and under eyelids immediately with plenty of water. Consult a doctor.
Skin Contact	Wash off immediately with plenty of soap and water and rinse thoroughly. Seek immediate medical advice.
Ingestion	Rinse mouth with plenty of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
Inhalation	Move to fresh air. If required, provide artificial respiration. Keep patient warm. Get medical attention for any breathing difficulties.
Protection of first-aiders	Not required

In the event that symptoms develop or persists, obtain medical attention.

### Most important symptoms and effects, both acute and delayed

Acute: No data available

Chronic: No data available

### Indication of any immediate medical attention and special treatment needed

Seek medical attention if ingested or if breathing difficulties are observed.

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## SECTION 5. FIREFIGHTING MEASURES

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### Extinguishing media

Not flammable; use media suitable for extinguishing surrounding fire (carbon dioxide, extinguishing powder or water spray). Fight larger fires with water spray or alcohol resistant foam.

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## Special hazards arising from the substance or mixture

Hazardous thermal decomposition products: Carbon monoxide, nitrogen oxides, sulfur dioxide, sodium oxides, hydrogen chloride gas

## Advice for firefighters

Fire-fighters should wear fully protective impervious protective equipment and self-contained breathing apparatus (SCBA).

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Evacuate surrounding areas. Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas.

### Environmental precautions

Do not release material into drains.

### Methods and material for containment and cleaning up

Dispose contaminated material as waste according to section 13. Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

### Reference to other sections

Refer to Sections 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## SECTION 7. HANDLING AND STORAGE

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### Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

### Conditions for safe storage, including any incompatibilities

Store according to product packaging, tightly sealed. Protect from light. Keep in a dry, well-ventilated place. Recommended storage temperature 2-8°C. Hygroscopic. Store under inert gas.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

#### *Exposure limits*

Contains no substances with occupational exposure limit values.

#### *Monitoring methods*

N/A

### Exposure controls

#### *Engineering Measures*

Ensure adequate ventilation, especially in confined areas

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimize release or contact, and the use of properly designed

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ventilation systems, should be adopted to control hazardous materials at source. Use of a properly operating chemical fume hood designed for hazardous chemicals is recommended.

## *Personal protective equipment*

**Eye 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).

## *Hand Protection*

Chemical resistant gloves; nitrile rubber recommended. Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves (refer to manufacturer/supplier for information). If material is solubilized, account for solvent in glove assessment.

Remove gloves with care avoiding skin contamination.

## *Skin and body protection*

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

## *Respiratory Protection*

Exposure risk assessment must be performed by a qualified Industrial Hygienist. Where risk assessment shows air purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. NIOSH approved Respiratory Protection is required by EPA. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hygiene Measures** - Handle in accordance with good industrial hygiene and safety practice. Wash hands, forearms and face thoroughly after handling chemical products, before smoking, eating and using lavatory, and at the end of the work period. Employ techniques to avoid contamination of clothing. Keep away from food, beverages, and feed.

**Environmental exposure controls** – Properly operating chemical fume hood designed for hazardous chemicals.

## **Exposure limits**

Permissible Exposure Limits and Threshold Limit Values not specified by OSHA.

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

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### **Information on basic physical and chemical properties**

<b>Appearance</b>	Orange-Red Powder
<b>Auto-ignition temperature</b>	no data available
<b>Boiling point</b>	770°C
<b>Decomposition temperature</b>	no data available
<b>Evaporation Rate</b>	no data available
<b>Flammable limits in air</b>	no data available
<b>Flash point</b>	419.5°C
<b>Formula</b>	C <sub>15</sub> H <sub>18</sub> N <sub>4</sub> O <sub>5</sub>

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<b>Melting point</b>	189°C
<b>Molecular weight</b>	563.98 g/mol
<b>Odor threshold</b>	no data available
<b>Osmolality</b>	no data available
<b>Partition coefficient</b>	9.94
<b>pH</b>	no data available
<b>Solubility in water</b>	Soluble
<b>Specific gravity</b>	no data available
<b>Vapor density</b>	no data available
<b>Vapor pressure</b>	no data available
<b>Viscosity</b>	no data available

## Other information

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## SECTION 10. STABILITY AND REACTIVITY

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### Reactivity

Not reactive.

### Chemical stability

Stable under normal conditions. Decomposition will not occur if used and stored appropriately.

### Possibility of hazardous reactions

No hazardous reactions known.

### Conditions to avoid

No specific data.

### Incompatible materials

Strong oxidizers

### Hazardous decomposition products

Carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride gas

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## SECTION 11. TOXICOLOGICAL INFORMATION

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### Information on toxicological effects

#### Acute toxicity

LD<sub>50</sub> oral, rat: 290 mg/kg

#### Other information on acute toxicity

None available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitization

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No data available

## **Germ cell mutagenicity**

Laboratory experiments have shown mutagenicity

## **Carcinogenicity**

This substance is possibly carcinogenic according to IARC, ACGIH, NTP, and OSHA classifications

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

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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**

No data available

## **Teratogenicity**

No data available

## **Specific target organ toxicity - single exposure (Globally Harmonized System)**

Central nervous system depression, gastrointestinal disturbance  
Stomach irregularities

## **Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

No data available

## **Aspiration hazard**

No data available

## **Potential health effects**

**Inhalation** May be harmful if inhaled.

**Ingestion** Toxic if swallowed.

**Skin** Causes skin irritation.

**Eyes** Causes eye irritation.

## **Synergistic effects**

No data available

## **Additional toxicological information:**

RTECS: CA9275000

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## **SECTION 12. ECOLOGICAL INFORMATION**

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### **Toxicity**

**Aquatic ecotoxicity:** No further relevant information available.

**Persistence and degradability:** No further relevant information available.

**Behavior in environment systems:** No further relevant information available.

**Bioaccumulative potential:** No further relevant information available.

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**Mobility in soil:** No further relevant information available.

**Additional ecological information:**

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course, or sewage system.  
Do not allow material to be released to the environment without proper governmental permits.

**Results of PBT and vPvB Assessment**

**PBT:** Not applicable

**vPvB:** Not applicable

**Other adverse effects:** No further relevant information available.

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## SECTION 13. DISPOSAL CONSIDERATIONS

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**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

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## SECTION 14. TRANSPORT INFORMATION

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**DOT regulations:**

UN Number: UN 2811

Class: 6.1

Packing Group: III

Proper shipping name: Toxic solid, organic, n.o.s. (Daunomycin)

Marine pollutant: No

**Land transport ADR/RID (cross-border)**

UN Number: UN 2811

Class: 6.1

Packing Group: III

Proper shipping name: Toxic solid, organic, n.o.s. (Daunomycin)

Marine pollutant: No

**Maritime transport IMDG:**

UN Number: UN 2811

Class: 6.1

Packing Group: III

Proper shipping name: Toxic solid, organic, n.o.s. (Daunomycin)

Marine pollutant: No

**Air transport ICAO\_TI and IATA-DGR:**

UN Number: UN 2811

Class: 6.1

Packing Group: III

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Proper shipping name: Toxic solid, organic, n.o.s. (Daunomycin)

Marine pollutant: No

Special precautions for user: Not applicable

Transport/Additional information: None available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

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## SECTION 15. REGULATORY INFORMATION

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### OSHA Hazards

Target organ effect, toxic by ingestion, respiratory sensitizer, mutagen

### SARA 302 Components

SARA 302: No chemicals in this product are subject to 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

No components are subjected to the Massachusetts Right to Know Act

### Pennsylvania Right To Know Components

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### New Jersey Right To Know Components

23541-50-6 Daunomycin

### California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause developmental toxicity.

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## SECTION 16. OTHER INFORMATION

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Molecular Toxicology, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.moltox.com](http://www.moltox.com) and/or the invoice or packing slip for additional terms and conditions of sale.