SECTION 1 - CHEMICAL IDENTIFICATION

PRODUCT NAME:	Doxorubicin Hydrochloride Powder
RPI CATALOG #:	D43010
SUPPLIER'S NAME:	Research Products International Corp.
SUPPLIERS ADDRESS:	410 N Business Center Drive Mount Prospect, Il 60056
EMERGENCY CONTACT:	1-800-424-9300
OTHER INFORMATION:	847-635-7330

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H302	Acute toxicity, Oral	Category 4
H340	Germ cell mutagenicity	Category 1B
H350	Carcinogenicity	Category 1B
H360	Reproductive toxicity	Category 1B

2.2 GHS Label elements, including Hazard and Precautionary Statement(s)

Pictogram



Signal word: Danger

Hazard statement(s)

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

Prevention, Response, Storage and Disposal Precautionary Statement(s)

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood.
P264	Wash 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.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number: 25316-40-9
EINECS Number: 246-818-3
Molecular Weight: 580.0 g/mol
Formula: $C_{27}H_{29}NO_{11} \cdot HCl$

SECTION 4 - FIRST-AID MEASURES

4.1 Description of first aid measures
General advice: Consult a doctor and show this safety data sheet.

i. **If inhaled:** Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

ii. **In case of skin contact:** Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

iii. **In case of eye contact:** Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

iv. **If swallowed:** Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed: Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

5.2 Special hazards arising from the substance or mixture: Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas.

5.3 Precautions for fire-fighters: Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

5.4 Further information: no data available

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions: Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up: Cover spillage with suitable absorbent material. Using non-spark tools, sweep up material and place in an appropriate container. Decontaminate spill site with 10% caustic solution and ventilate area until after disposal is complete. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections: For required PPE see section 8. For disposal see section 13.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling:
Use in a chemical fume hood, with air supplied by an independent system. Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities: Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use. Recommended storage temperature 2 - 8 °C.

7.3 Specific end use(s): Use in a laboratory fume hood where possible. Refer to employer's COSHH risk assessment.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters: This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

8.2 Exposure Controls

i. **Appropriate engineering controls:** Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

8.3 Personal protective equipment

i. **Eye/face protection:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

ii. **Skin protection:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

iii. **Body Protection:** Wear appropriate protective clothing. Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

iv. **Respiratory Protection:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

v. **Control of environmental exposure:** Do not let product enter drains

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Orange/Red Solid	**Vapor Pressure**	No Data Available
Odor	No Data Available	**Vapor Density**	No Data Available
Odor Threshold	No Data Available	**Relative Density**	No Data Available
pH	No Data Available	**Water Solubility**	No Data Available
Melting / Freezing Point	216 °C	**Partition Coefficient**	No Data Available
Initial Boiling Point Range	No Data Available	**Auto-Ignition Temperature**	No Data Available
Flash Point	No Data Available	**Decomposition Temperature**	No Data Available

Evaporation Rate	No Data Available	**Viscosity**	No Data Available
Flammability (Solid, Gas)	No Data Available	**Explosive Properties**	No Data Available
Upper / Lower Flammability Or Explosive Limits	No Data Available	**Oxidizing Properties**	No Data Available

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable under recommended transport or storage conditions.
Conditions to Avoid: Heat, moisture air or water, incompatibles.
Incompatible Materials: Strong oxidizing agents.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity: No data available

Chronic Toxicity

Carcinogenicity Classification:
IARC: (International Agency for Research on Cancer): Group 1 - Carcinogenic to Humans, Group 2A - Probably Carcinogenic to Humans, Group 2B - Possibly Carcinogenic to Humans.
NTP: (National Toxicity Program): Known Carcinogen Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen.
Mutagenic Effects: Mutagenic effects have occurred in humans.
Reproductive Effects: Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects: Developmental effects have occurred in experimental animals.
Teratogenicity: Teratogenic effects have occurred in experimental animals.
STOT - single exposure: Respiratory system
STOT - repeated exposure: Kidney Liver Heart Blood
Other Adverse Effects: Tumorigenic effects have been reported in experimental animals. The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence and degradability/ Bioaccumlative potential: No data available
Mobility in soil/ Results of PBT and vPvB assessment: No data available
Other adverse effects: May be harmful to the aquatic environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14 - TRANSPORT INFORMATION

DOT	TDG	IATA	IMDG/IMO
Not regulated	Not regulated	Not regulated	Not regulated

SECTION 15 - REGULATORY INFORMATION

INTERNATIONAL INVENTORIES

TSCA	DSL	NDSL	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
-	-	-	-	-	-	-	-	-	Listed

USA FEDERAL REGULATION

TSCA 12(b)/ OSHA/ CERCLA/ SARA 313: Not Applicable
Clean Water Act/ Clean Air Act: Not Applicable

SARA 311/312 HAZARDOUS CATEGORIZATION

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release Of Pressure Hazard	Reactive Hazard
Yes	Yes	No	No	No

California Proposition 65: This product contains Proposition 65 chemicals.

Component	CAS Number	California Prop. 65	Category
Doxorubicin Hydrochloride	25316-40-9	Carcinogen Developmental Male Reproductive	Developmental Carcinogen

HMIS Rating

Health hazard	Chronic Health Hazard	Flammability	Physical Hazard
2	*****	**0**	**0**

NFPA Rating

Health Hazard	Fire Hazard	Reactivity Hazard
2	**0**	**0**

STATE RIGHT TO KNOW

Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
-	Listed	Listed	Listed	-

US DEPARTMENT OF TRANSPORTATION

REPORTABLE QUANTITY (RQ)	DOT MARINE POLLUTANT	DOT SEVER MARINE POLLUTANT
No	**No**	**No**

U.S. DEPARTMENT OF HOMELAND SECURITY: This product does not contain any DHS chemicals.

Canada: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

This SDS complies with the requirements of Regulation (EC).

SECTION 16 - OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Research Products International Corp. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. This product is sold for laboratory research and development purposes use only.