

## Chemical Safety Data Sheet MSDS / SDS

## Erythromycin

Revision Date:2024-07-27 Revision Number:1

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

**Product identifier**

Product name : Erythromycin  
CBnumber : CB8300078  
CAS : 114-07-8  
EINECS Number : 204-040-1  
Synonyms : Erythromycin,USP

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

**Classification of the substance or mixture**

Not classified.

**Label elements****Pictogram(s)**

☐

Signal word : Warning

**Hazard statement(s)**

H225 Highly Flammable liquid and vapour

H333 May be harmful if inhaled

H371 May cause damage to organs

**Precautionary statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P405 Store locked up.

**Prevention**

none

**Response**

none

**Storage**

none

**Disposal**

none

**Other hazards**

no data available

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## SECTION 3: Composition/information on ingredients

**Substance**

Product name	: Erythromycin
Synonyms	: Erythromycin,USP
CAS	: 114-07-8
EC number	: 204-040-1
MF	: C37H67NO13
MW	: 733.93

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## SECTION 4: First aid measures

**Description of first aid measures****If inhaled**

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately.

Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

**Following skin contact**

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

**Following eye contact**

Rinse with pure water for at least 15 minutes. Consult a doctor.

**Following ingestion**

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

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

**SYMPTOMS:** Symptoms of exposure to this compound include nausea, vomiting, diarrhea and abdominal cramps. Chronic overexposure may cause jaundice. This may be accompanied by fever, leukocytosis, eosinophilia and elevated activities of transaminases in plasma. Allergic reactions to this compound may include fever, eosinophilia, skin eruptions, urticaria and anaphylaxis. Cholestatic hepatitis occurs rarely. Epigastric distress, possibly severe may also occur. Intramuscular injections of large quantities of this compound may cause extremely severe pain that persists for hours. Intravenous infusions of 1 gram doses have reportedly been followed by thrombophlebitis. Prolonged use may

result in an overgrowth of nonsusceptible bacteria or fungi. There have been isolated reports of reversible hearing loss occurring after exposure to this chemical, chiefly in persons with renal insufficiency. ACUTE/CHRONIC HAZARDS: When heated to decomposition, this compound may emit toxic fumes of NOx. (NTP, 1992)

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

Decontamination: Administer activated charcoal orally if conditions are appropriate. Gastric lavage is not necessary after small to moderate ingestions if activated charcoal can be given promptly. Antibacterial agents

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## SECTION 5: Firefighting measures

### **Extinguishing media**

As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

### **Specific Hazards Arising from the Chemical**

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

### **Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

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## SECTION 6: Accidental release measures

### **Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **Environmental precautions**

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### **Methods and materials for containment and cleaning up**

Wear approved respiratory protection, chemically compatible gloves, and protective clothing. Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing dust. Place spillage in appropriate labeled container for disposal. Wash spill site.

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## SECTION 7: Handling and storage

### **Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### **Conditions for safe storage, including any incompatibilities**

Commercially available erythromycin topical solutions and gels should be stored at 15 - 30 deg C; exposure to heat or open flames should be avoided. The topical ointment should be stored at a temperature less than 27 deg C.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

no data available

#### Biological limit values

no data available

### Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### Individual protection measures

#### Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

#### Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	powder
Colour	white to faint yellow
Odour	Odorless
Melting point/freezing point	360°C(lit.)
Boiling point or initial boiling point and boiling range	359°C(lit.)
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	64°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	pH (saturated solution): 8 to 10.5; pH <4 is destructive
Kinematic viscosity	no data available

Solubility	ethanol: soluble
Partition coefficient n-octanol/water	no data available
Vapour pressure	4.94E-31mmHg at 25°C
Density and/or relative density	1.2g/cm <sup>3</sup>
Relative vapour density	no data available
Particle characteristics	no data available

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## SECTION 10: Stability and reactivity

### Reactivity

no data available

### Chemical stability

no data available

### Possibility of hazardous reactions

This material is assumed to be combustible. A base. Readily forms salts with acids. (NTP, 1992)

### Conditions to avoid

no data available

### Incompatible materials

no data available

### Hazardous decomposition products

When heated to decomp it emits toxic fumes of nitric oxides.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - Mice and rats (male/female) - > 5 000 mg/kg bw. Remarks: Rats.
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### **Carcinogenicity**

no data available

### **Reproductive toxicity**

no data available

### **STOT-single exposure**

no data available

### **STOT-repeated exposure**

no data available

### **Aspiration hazard**

no data available

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## SECTION 12: Ecological information

### **Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### **Persistence and degradability**

AEROBIC: Erythromycin was 0, 75, 100% degraded at 4, 20, and 30 deg C, respectively, in sandy loam soil plus cattle feces in 30 days; a half-life of 11 days was reported in feces-amended soil at 20 deg C(1). Degradation of erythromycin has been reported at 25% in 30 days using a sandy loam mixed with manure(2). Using the closed bottle test, erythromycin, present at 3 ug/L and 2.46 mg/L exhibited theoretical BODs of -3 and -3% after 14 and 28 days incubation, respectively, using an inoculum of municipal sewage treatment plant effluent and maintained at 20 deg C(3). Addition of a readily biodegradable source of organic carbon such as sodium acetate increased the theoretical BOD to 23.1% after 28 days(3). Using a sandy loam soil (pH 6.0-6.3, clay 16.3%; sand 60.0%; silt 23.7%) amended with chicken feces, 3% and 75% activity was lost in 30 days at 4 and 20 deg C, respectively, corresponding to a half-life of 11 days; 100% activity was observed at 30 deg C after 18 days, corresponding to a half-life of 8.5 days(4).

### **Bioaccumulative potential**

An estimated BCF of 49 was calculated in fish for erythromycin(SRC), using a log Kow of 3.06(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate(SRC).

### **Mobility in soil**

The Koc of erythromycin is estimated as 570(SRC), using a log Kow of 3.06(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that erythromycin is expected to have low mobility in soil. Freundlich adsorption coefficients for erythromycin A of  $3.1 \times 10^{-23}$ , 0.86,  $1.9 \times 10^{-14}$ ,  $2.0 \times 10^{-5}$ , 0.50, 2.57, 0.94 and 4.95 have been reported using HK, KK, CaK, FeK, HM, KM, CaM and FeM homoionic clays, respectively, at 25 deg C(4). The pKa of erythromycin is 8.9(5), indicating that this compound

will exist almost entirely in the cation form in the environment and cations generally adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(6).

### **Other adverse effects**

no data available

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## **SECTION 13: Disposal considerations**

### **Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## **SECTION 14: Transport information**

### **UN Number**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **UN Proper Shipping Name**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **Transport hazard class(es)**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **Packing group, if applicable**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

### **Special precautions for user**

no data available

### **Transport in bulk according to IMO instruments**

no data available

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## SECTION 15: Regulatory information

### **Safety, health and environmental regulations specific for the product in question**

#### **European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

#### **EC Inventory**

Listed.

#### **United States Toxic Substances Control Act (TSCA) Inventory**

Not Listed.

#### **China Catalog of Hazardous chemicals 2015**

Not Listed.

#### **New Zealand Inventory of Chemicals (NZIoC)**

Listed.

#### **PICCS**

Listed.

#### **Vietnam National Chemical Inventory**

Listed.

#### **IECSC**

Listed.

#### **Korea Existing Chemicals List (KECL)**

Listed.

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## SECTION 16: Other information

### **Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%



EC50: Effective Concentration 50%

## References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pagenID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagenID=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Disclaimer:

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