

Cefalexin Formulation

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|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 26.11.2024 |
| 2.0 | 14.04.2025 | 11474864-00002 | Date of first issue: 26.11.2024 |

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Cefalexin Formulation

Manufacturer or supplier's details

| | |
|--------------------------|--|
| Company name of supplier | : MSD |
| Address | : 126 E. Lincoln Avenue Rahway, New Jersey U.S.A. 07065 |
| Telephone | : 908-740-4000 |
| Emergency telephone | : 1-908-423-6000 |
| E-mail address | : EHSDATASTEWARD@msd.com |

Recommended use of the chemical and restrictions on use

| | |
|---------------------|----------------------|
| Recommended use | : Veterinary product |
| Restrictions on use | : Not applicable |

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

| | |
|---|---|
| Acute toxicity (Oral) | : Category 5 |
| Respiratory sensitization | : Category 1 |
| Reproductive toxicity | : Category 2 |
| Specific target organ toxicity - single exposure | : Category 3 |
| Specific target organ toxicity - repeated exposure | : Category 2 (Kidney, Adrenal gland, Blood, Gastrointestinal tract) |

GHS label elements

Hazard pictograms :



Signal Word : Danger

| | |
|-------------------|--|
| Hazard Statements | : H303 May be harmful if swallowed. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H361f Suspected of damaging fertility. H373 May cause damage to organs (Kidney, Adrenal gland, Blood, Gastrointestinal tract) through prolonged or repeated exposure. |
|-------------------|--|

| | |
|--------------------------|--|
| Precautionary Statements | : Prevention: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read |
|--------------------------|--|

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and understood.

P260 Do not breathe mist or vapors.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P284 Wear respiratory protection.

Response:

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

| Chemical name | CAS-No. | Concentration (% w/w) |
|---------------|------------|-----------------------|
| Cefalexin | 15686-71-2 | >= 20 -< 30 |

SECTION 4. FIRST AID MEASURES

| | |
|-------------------------|---|
| General advice | : In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice. |
| If inhaled | : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| In case of skin contact | : In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse. |
| In case of eye contact | : Flush eyes with water as a precaution. Get medical attention if irritation develops and persists. |
| If swallowed | : If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water. |
| Most important symptoms | : Excessive exposure may aggravate preexisting asthma and |

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| | | |
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| and effects, both acute and delayed | | other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome). May be harmful if swallowed. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Suspected of damaging fertility. May cause damage to organs through prolonged or repeated exposure. |
| Protection of first-aiders | : | First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8). |
| Notes to physician | : | Treat symptomatically and supportively. |

SECTION 5. FIRE-FIGHTING MEASURES

| | | |
|--|---|---|
| Suitable extinguishing media | : | Water spray Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical |
| Unsuitable extinguishing media | : | None known. |
| Specific hazards during fire fighting | : | Exposure to combustion products may be a hazard to health. |
| Hazardous combustion products | : | Carbon oxides Nitrogen oxides (NO _x) Sulfur oxides |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8). |
| Environmental precautions | : | Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. |

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Methods and materials for containment and cleaning up : Soak up with inert absorbent material.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling : Do not breathe mist or vapors.
Do not swallow.
Avoid contact with eyes.
Avoid prolonged or repeated contact with skin.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Already sensitized individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitizers.
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

Conditions for safe storage : Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents
Gases

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---------------------------|------------|----------------------------------|--|----------|
| Cefalexin | 15686-71-2 | TWA | 550 µg/m ³ (OEB 2) | Internal |
| Further information: RSEN | | | | |

Engineering measures : Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).
All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.
Laboratory operations do not require special containment.

Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapor type

Hand protection : Chemical-resistant gloves

Material : Chemical-resistant gloves

Eye protection : Wear safety glasses with side shields or goggles.
If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection : Work uniform or laboratory coat.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : clear

Odor : No data available

Odor Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

Flash point : No data available

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| | | |
|--|---|--|
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | Not applicable |
| Flammability (liquids) | : | No data available |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapor pressure | : | No data available |
| Relative vapor density | : | No data available |
| Relative density | : | No data available |
| Density | : | No data available |
| Solubility(ies) | : | |
| Water solubility | : | No data available |
| Partition coefficient: n-octanol/water | : | No data available |
| Autoignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity | : | |
| Viscosity, kinematic | : | No data available |
| Explosive properties | : | Not explosive |
| Oxidizing properties | : | The substance or mixture is not classified as oxidizing. |
| Molecular weight | : | No data available |
| Particle characteristics | : | |
| Particle size | : | Not applicable |

SECTION 10. STABILITY AND REACTIVITY

| | | |
|------------------------------------|---|--|
| Reactivity | : | Not classified as a reactivity hazard. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | Can react with strong oxidizing agents. |
| Conditions to avoid | : | None known. |
| Incompatible materials | : | Oxidizing agents |
| Hazardous decomposition products | : | No hazardous decomposition products are known. |

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

May be harmful if swallowed.

Product:

Acute oral toxicity : Acute toxicity estimate: 2,381 mg/kg
Method: Calculation method

Components:**Cefalexin:**

| | |
|---|--|
| Acute oral toxicity | : LD50 (Mouse): 1,600 - 6,200 mg/kg LD50 (Dog): > 2,000 mg/kg Symptoms: Vomiting LD50 (Monkey): > 1,000 mg/kg Symptoms: Vomiting LD50 (Rat): > 20,000 mg/kg |
| Acute toxicity (other routes of administration) | : LD50 (Dog): > 1 g/kg Application Route: Intraperitoneal LD50 (Dog): > 0.1 g/kg Application Route: Intravenous |

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitization**Skin sensitization**

Not classified based on available information.

Respiratory sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Components:**Cefalexin:**

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|------------|--|
| Assessment | : Probability or evidence of high respiratory sensitization rate in humans |
| Remarks | : Based on data from similar materials |

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|| May cause sensitization by inhalation.

|| Result : Sensitizer
|| Remarks : Based on data from similar materials
|| May cause sensitization by inhalation.

Germ cell mutagenicity

Not classified based on available information.

Components:**Cefalexin:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: Chromosomal aberration
Test system: Chinese hamster ovary cells
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Suspected of damaging fertility.

Components:**Cefalexin:**

Effects on fertility : Test Type: Two-generation study
Species: Rat
Application Route: Oral
Fertility: NOAEL: 250 mg/kg body weight
Result: May cause adverse reproductive effects., Reduced fertility of F1 generation.

Effects on fetal development : Test Type: Development
Species: Mouse
Application Route: Oral
Embryo-fetal toxicity.: NOAEL: 400 mg/kg body weight
Remarks: No significant adverse effects were reported
Maternal toxicity observed.

Test Type: Development
Species: Rat
Application Route: Oral
Embryo-fetal toxicity.: NOAEL: 1,200 mg/kg body weight
Remarks: No significant adverse effects were reported

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Maternal toxicity observed.

Reproductive toxicity - Assessment : Suspected of damaging fertility.

STOT-single exposure

May cause respiratory irritation.

Components:**Cefalexin:**

| | |
|--------------------|-------------------------------------|
| Routes of exposure | : Inhalation |
| Assessment | : May cause respiratory irritation. |

STOT-repeated exposure

May cause damage to organs (Kidney, Adrenal gland, Blood, Gastrointestinal tract) through prolonged or repeated exposure.

Components:**Cefalexin:**

| | |
|---------------|--|
| Target Organs | : Kidney, Adrenal gland, Blood, Gastrointestinal tract |
| Assessment | : May cause damage to organs through prolonged or repeated exposure. |

Repeated dose toxicity**Components:****Cefalexin:**

| | |
|-------------------|---|
| Species | : Rat |
| NOAEL | : < 160 mg/kg |
| Application Route | : Oral |
| Target Organs | : Kidney, Adrenal gland, Blood |
| Symptoms | : Vomiting, Diarrhea, Kidney disorders, Blood disorders |

| | |
|-------------------|---|
| Species | : Dog |
| NOAEL | : < 160 mg/kg |
| Application Route | : Oral |
| Target Organs | : Kidney, Adrenal gland, Blood |
| Symptoms | : Vomiting, Diarrhea, Blood disorders, Kidney disorders |

| | |
|-------------------|---|
| Species | : Monkey |
| NOAEL | : < 160 mg/kg |
| Application Route | : Oral |
| Target Organs | : Kidney, Adrenal gland, Blood |
| Symptoms | : Vomiting, Diarrhea, Blood disorders, Kidney disorders |

Aspiration toxicity

Not classified based on available information.

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Experience with human exposure**Components:****Cefalexin:**

| | | |
|------------|---|--|
| Inhalation | : | Target Organs: Respiratory Tract Remarks: May cause irritation of respiratory tract. May cause sensitization by inhalation. |
| Ingestion | : | Target Organs: Gastrointestinal tract Symptoms: The most common side effects are:, Nausea, Vomiting, Abdominal pain, Diarrhea, liver function change, blood effects |

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Cefalexin:****Ecotoxicology Assessment**

| | | |
|--------------------------|---|----------------------------------|
| Acute aquatic toxicity | : | Toxic effects cannot be excluded |
| Chronic aquatic toxicity | : | Toxic effects cannot be excluded |

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

| | | |
|------------------------|---|--|
| Waste from residues | : | Do not dispose of waste into sewer. Dispose of in accordance with local regulations. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product. |

SECTION 14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

Not regulated as a dangerous good

IATA-DGR

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UN/ID No. : UN 3334
Proper shipping name : Aviation regulated liquid, n.o.s.
II (Cefalexin)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation**NOM-002-SCT**

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Federal Law for the control of chemical precursors, : Not applicable
essential chemical products and machinery for
producing capsules, tablets and pills.

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

DSL : not determined
AICS : not determined
IECSC : not determined

SECTION 16. OTHER INFORMATION

Revision Date : 14.04.2025
Date format : dd.mm.yyyy

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for

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Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information is considered as correct, but not exhaustive, and will be used only as a guide, which is based in the current knowledge of the substance or mixture, and is applicable to proper safety precautions for the product.

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