

**Imipenem / Cilastatin / Relebactam Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Imipenem / Cilastatin / Relebactam 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 : Pharmaceutical  
Restrictions on use : Not applicable

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Serious eye damage/eye irritation : Category 2A  
  
Respiratory sensitization : Category 1  
  
Reproductive toxicity : Category 2  
  
Specific target organ toxicity - repeated exposure : Category 2 (Kidney)

**GHS label elements**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H319 Causes serious eye irritation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H361d Suspected of damaging the unborn child.  
H373 May cause damage to organs (Kidney) 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 and understood.  
P260 Do not breathe dust.  
P264 Wash skin thoroughly after handling.

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

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

P284 Wear respiratory protection.

**Response:**

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

P337 + P313 If eye irritation persists: Get medical advice/ attention.

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**

Contact with dust can cause mechanical irritation or drying of the skin.

May form explosive dust-air mixture during processing, handling or other means.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Cilastatin	81129-83-1	>= 30 -< 50
Imipenem	74431-23-5	>= 30 -< 50
Relebactam	1174020-13-3	>= 10 -< 20

**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.

## Imipenem / Cilastatin / Relebactam Formula- tion

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

- |   |   |
|---|---|
| In case of eye contact                                      | : Thoroughly clean shoes before reuse.<br>In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.<br>If easy to do, remove contact lens, if worn.<br>Get medical attention.  |
| If swallowed  | : If swallowed, DO NOT induce vomiting.<br>Get medical attention.<br>Rinse mouth thoroughly with water.   |
| Most important symptoms and effects, both acute and delayed | : Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).<br>Contact with dust can cause mechanical irritation or drying of the skin.<br>Causes serious eye irritation.<br>May cause allergy or asthma symptoms or breathing difficulties if inhaled.<br>Suspected of damaging the unborn child.<br>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<br>Alcohol-resistant foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry chemical  |
| Unsuitable extinguishing media                 | : None known.   |
| Specific hazards during fire fighting          | : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.<br>Exposure to combustion products may be a hazard to health.                   |
| Hazardous combustion products                  | : Carbon oxides<br>Metal oxides   |
| Specific extinguishing methods                 | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.<br>Use water spray to cool unopened containers.<br>Remove undamaged containers from fire area if it is safe to do so.<br>Evacuate area. |
| Special protective equipment for fire-fighters | : In the event of fire, wear self-contained breathing apparatus.<br>Use personal protective equipment.  |

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

- |   |   |   |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).  |
| Environmental precautions   | : | Avoid release to the environment.<br>Prevent further leakage or spillage if safe to do so.<br>Retain and dispose of contaminated wash water.<br>Local authorities should be advised if significant spillages cannot be contained.   |
| Methods and materials for containment and cleaning up               | : | Surround spill with absorbents and place a damp covering over the area to minimize entry of the material into the air.<br>Add excess liquid to allow the material to enter into solution.<br>Soak up with inert absorbent material.<br>Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).<br>Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.<br>Clean up remaining materials from spill with suitable absorbent.<br>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.<br>Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. |

**SECTION 7. HANDLING AND STORAGE**

- |                         |   |   |
|-------------------------|---|---|
| Technical measures      | : | Static electricity may accumulate and ignite suspended dust causing an explosion.<br>Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.  |
| Local/Total ventilation | : | Use only with adequate ventilation.   |
| Advice on safe handling | : | Do not breathe dust.<br>Do not swallow.<br>Do not get in eyes.<br>Avoid prolonged or repeated contact with skin.<br>Wash skin thoroughly after handling.<br>Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Keep container tightly closed.<br>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.<br>Minimize dust generation and accumulation.<br>Keep container closed when not in use.<br>Keep away from heat and sources of ignition.<br>Take precautionary measures against static discharges. |

# Imipenem / Cilastatin / Relebactam Formula- tion

Version 7.3      Revision Date: 14.04.2025      SDS Number: 67744-00029      Date of last issue: 30.09.2023  
Date of first issue: 27.02.2015

- Hygiene measures : Take care to prevent spills, waste and minimize release to the environment.  
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.  
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Cilastatin	81129-83-1	TWA	5 mg/m <sup>3</sup> (OEB 1)	Internal
Imipenem	74431-23-5	TWA	3000 µg/m <sup>3</sup> (OEB 1)	Internal
Further information: RSEN, DSEN				
		Wipe limit	100 µg/100 cm <sup>2</sup>	Internal
Relebactam	1174020-13-3	TWA	0.3 mg/m <sup>3</sup> (OEB 2)	Internal

- Engineering measures** : Use feasible engineering controls to minimize exposure to compound.  
All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

### 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 : Particulates type
- Hand protection : Chemical-resistant gloves
- Material
- 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

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version 7.3	Revision Date: 14.04.2025	SDS Number: 67744-00029	Date of last issue: 30.09.2023 Date of first issue: 27.02.2015
----------------	------------------------------	----------------------------	---

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	: powder
Color	: White to light yellow
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	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: May form explosive dust-air mixture during processing, handling or other means.
Flammability (liquids)	: Not applicable
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: Not applicable
Relative vapor density	: Not applicable
Relative density	: No data available
Density	: No data available
Solubility(ies) Water solubility	: soluble
Partition coefficient: n-octanol/water	: Not applicable
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available
Particle characteristics	:	
Particle size	:	No data available

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	May form explosive dust-air mixture during processing, handling or other means. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks. Avoid dust formation.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Not classified based on available information.

**Components:****Cilastatin:**

Acute oral toxicity	:	LD50 (Rat): 8,000 mg/kg
		LD50 (Mouse): 8,000 mg/kg

**Imipenem:**

Acute oral toxicity	:	LD50 (Mouse): 10,000 mg/kg
Acute toxicity (other routes of administration)	:	LD50 (Rat): > 2,000 mg/kg Application Route: Intravenous

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

---

LD50 (Mouse): 1,500 mg/kg  
Application Route: Intravenous

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****Cilastatin:**

Species : Rabbit  
Result : No skin irritation

**Relebactam:**

Method : EpiDerm  
Result : No skin irritation

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Components:****Cilastatin:**

Species : Rabbit  
Result : Moderate eye irritation

**Relebactam:**

Result : No eye irritation  
Method : Bovine cornea (BCOP)

**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:****Cilastatin:**

Routes of exposure : Skin contact  
Remarks : No data available

Routes of exposure : Inhalation  
Remarks : No data available

**Imipenem:**

Remarks : May cause sensitization of susceptible persons by inhalation of aerosol or dust.



# Imipenem / Cilastatin / Relebactam Formula- tion

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

Routes of exposure : Skin contact  
Remarks : Not classified due to lack of data.

## Relebactam:

Test Type : Local lymph node assay (LLNA)  
Routes of exposure : Dermal  
Result : Not a skin sensitizer.

## Germ cell mutagenicity

Not classified based on available information.

## Components:

### Cilastatin:

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Result: negative

### Imipenem:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster lung cells  
Result: negative

Test Type: reverse mutation assay  
Result: negative

Test Type: unscheduled DNA synthesis assay  
Result: negative

Test Type: Chromosomal aberration  
Result: negative

Test Type: sister chromatid exchange assay  
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse  
Application Route: Intravenous  
Result: negative

### Relebactam:

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

Test Type: Chromosome aberration test in vitro  
Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow  
cytogenetic test, chromosomal analysis)  
Species: Rat  
Application Route: Intraperitoneal injection  
Result: negative

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

---

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

**Carcinogenicity**

Not classified based on available information.

**Reproductive toxicity**

Suspected of damaging the unborn child.

**Components:****Cilastatin:**

Effects on fertility : Test Type: Fertility/early embryonic development  
Application Route: Intravenous  
Fertility: LOAEL: 1,000  
Symptoms: No adverse effects.  
Result: No effects on fertility and early embryonic development were detected.

**Imipenem:**

Effects on fertility : Test Type: Fertility/early embryonic development  
Species: Rat, male and female  
Application Route: Intravenous  
Fertility: LOAEL: 80 mg/kg body weight  
Symptoms: No adverse effects., Reduced fetal weight.  
Result: No effects on fertility and early embryonic development were detected.

Test Type: Fertility/early embryonic development  
Species: Rat, male and female  
Application Route: Subcutaneous  
Fertility: LOAEL: 320 mg/kg body weight  
Symptoms: No adverse effects., Reduced fetal weight.  
Result: No effects on fertility and early embryonic development were detected.

Effects on fetal development : Test Type: Development  
Species: Monkey  
Application Route: Intravenous  
Developmental Toxicity: LOAEL: 100 mg/kg body weight  
Result: Embryotoxic effects and adverse effects on the offspring were detected., No teratogenic effects.

Test Type: Development  
Species: Rabbit  
Application Route: Intravenous  
Developmental Toxicity: NOAEL: 60 mg/kg body weight  
Result: No teratogenic effects.

Test Type: Development  
Species: Rat  
Application Route: Intravenous

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

Developmental Toxicity: NOAEL: 60 mg/kg body weight  
Result: No teratogenic effects.

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

**Relebactam:**

Effects on fertility : Test Type: Pre-/postnatal development  
Species: Rat  
Application Route: Subcutaneous  
Fertility: NOAEL: 450 mg/kg body weight

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Intraperitoneal injection  
Embryo-fetal toxicity.: NOAEL: 450 mg/kg body weight  
Result: No effects on fetal development.

Test Type: Embryo-fetal development  
Species: Mouse  
Application Route: Intraperitoneal injection  
Embryo-fetal toxicity.: NOAEL: 450 mg/kg body weight  
Result: No effects on fetal development.

Test Type: Development  
Species: Rat  
Application Route: Intravenous  
Developmental Toxicity: NOAEL:  $\geq$  450 mg/kg body weight  
Result: No effects on fertility and early embryonic development were detected.

Test Type: Development  
Species: Rabbit  
Application Route: Intravenous  
Developmental Toxicity: NOAEL: 450 mg/kg body weight  
Result: No effects on fetal development.

**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

May cause damage to organs (Kidney) through prolonged or repeated exposure.

**Components:****Relebactam:**

Target Organs : Kidney  
Assessment : May cause damage to organs through prolonged or repeated exposure.

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

**Repeated dose toxicity****Components:****Cilastatin:**

Species	:	Rat
NOAEL	:	>= 500 mg/kg
Application Route	:	Intravenous
Exposure time	:	90 Days
Remarks	:	No significant adverse effects were reported

Species	:	Monkey
NOAEL	:	>= 500 mg/kg
Application Route	:	Intravenous
Exposure time	:	5 Weeks
Remarks	:	No significant adverse effects were reported

**Imipenem:**

Species	:	Monkey
NOAEL	:	60 mg/kg
LOAEL	:	150 mg/kg
Application Route	:	Intravenous
Exposure time	:	6 Months
Target Organs	:	Kidney

Species	:	Monkey
NOAEL	:	120 mg/kg
Application Route	:	Subcutaneous
Exposure time	:	6 Months
Remarks	:	No significant adverse effects were reported

Species	:	Rat
NOAEL	:	180 mg/kg
Application Route	:	Intravenous
Exposure time	:	6 Months
Remarks	:	No significant adverse effects were reported

Species	:	Rabbit
LOAEL	:	150 mg/kg
Application Route	:	Intravenous
Target Organs	:	Kidney

**Relebactam:**

Species	:	Rat, female
NOAEL	:	150 mg/kg
Application Route	:	Intravenous
Exposure time	:	30 d

Species	:	Rat, male
NOAEL	:	450 mg/kg
Application Route	:	Intravenous
Exposure time	:	30 d

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

Species	: Monkey
NOAEL	: 25 mg/kg
Application Route	: Intravenous
Exposure time	: 30 d
Target Organs	: Kidney

Species	: Monkey
NOAEL	: 37.5 mg/kg
Application Route	: Intravenous
Exposure time	: 30 d

Species	: Monkey
NOAEL	: 50 mg/kg
LOAEL	: 150 mg/kg
Application Route	: Intravenous
Exposure time	: 3 Months
Target Organs	: Kidney

**Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure****Components:****Imipenem:**

Inhalation	: Symptoms: Nausea, Vomiting, Diarrhea, Fever, hypotension, Dizziness, Drowsiness, Convulsions, pruritis, Rash Remarks: May cause sensitization of susceptible persons by inhalation of aerosol or dust.
------------	---

**Relebactam:**

Skin contact	: Symptoms: Pain, Discomfort, Diarrhea, Abdominal pain, insomnia, Nausea, sore throat, Vertigo
--------------	--

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Cilastatin:**

Toxicity to fish	: LC50 (Pimephales promelas (fathead minnow)): > 111 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 99 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: EC50 (Anabaena flos-aquae): > 99 mg/l Exposure time: 72 h

# Imipenem / Cilastatin / Relebactam Formula- tion

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

Method: OECD Test Guideline 201

EC50 (*Pseudokirchneriella subcapitata* (green algae)): > 99 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (*Anabaena flos-aquae*): 99 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (*Pseudokirchneriella subcapitata* (green algae)): 99 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : EC10 (*Pimephales promelas* (fathead minnow)): > 9.9 mg/l  
Exposure time: 32 d  
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (*Daphnia magna* (Water flea)): > 10 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50: > 1,000 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209

## Imipenem:

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 78 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (*Anabaena flos-aquae* (cyanobacterium)): 0.0046 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (*Anabaena flos-aquae* (cyanobacterium)): 0.002 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

EC50 (*Pseudokirchneriella subcapitata* (green algae)): > 74 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (*Pseudokirchneriella subcapitata* (green algae)): 74 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (*Pimephales promelas* (fathead minnow)): 9.4 mg/l

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

15 / 19

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

Method: OECD Test Guideline 209

**Persistence and degradability****Components:****Cilastatin:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 27 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

**Imipenem:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 29 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

**Relebactam:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 11.3 %  
Exposure time: 28 d  
Method: OECD Test Guideline 314

**Bioaccumulative potential****Components:****Cilastatin:**

Partition coefficient: n-octanol/water : log Pow: -3.53

**Imipenem:**

Partition coefficient: n-octanol/water : log Pow: < -1

**Relebactam:**

Partition coefficient: n-octanol/water : log Pow: < -2

**Mobility in soil****Components:****Cilastatin:**

Distribution among environmental compartments : log Koc: 2.3

**Relebactam:**

Distribution among environmental compartments : log Koc: 2.3



**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

**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**

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Imipenem)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	yes

**IATA-DGR**

UN/ID No.	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Imipenem)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	956
Packing instruction (passen- ger aircraft)	:	956
Environmentally hazardous	:	yes

**IMDG-Code**

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Imipenem)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

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

Not applicable for product as supplied.

**Domestic regulation**

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

**NOM-002-SCT**

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Imipenem)
Class	:	9
Packing group	:	III
Labels	:	9

**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:**

AICS	:	not determined
DSL	:	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 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 Or-

**Imipenem / Cilastatin / Relebactam Formula-  
tion**

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
7.3	14.04.2025	67744-00029	Date of first issue: 27.02.2015

ganisation 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; TECI - 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/>

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.

MX / Z8