Bijsluiter: Informatie voor de patiënt

Piperacilline/Tazobactam 4 g/0,5 g, poeder voor oplossing voor infusie

piperacillin / tazobactam

Read all of this leaflet carefully before you start using this medicine because it contains important information for you.
- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet
1. What [nationally completed name] is and what it is used for
2. What you need to know before you use [nationally completed name]
3. How to use [nationally completed name]
4. Possible side effects
5. How to store [nationally completed name]
6. Contents of the pack and other information

1. What [nationally completed name] is and what it is used for

Piperacillin belongs to the group of medicines known as “broad-spectrum penicillin antibiotics”. It can kill many kinds of bacteria. Tazobactam can prevent some resistant bacteria from surviving the effects of piperacillin. This means that when piperacillin and tazobactam are given together, more types of bacteria are killed.

[nationally completed name] is used in adults and adolescents to treat bacterial infections, such as those affecting the lower respiratory tract (lungs), urinary tract (kidneys and bladder), abdomen, skin or blood. [nationally completed name] may be used to treat bacterial infections in patients with low white blood cell counts (reduced resistance to infections).

[nationally completed name] is used in children aged 2-12 years to treat infections of the abdomen such as appendicitis, peritonitis (infection of the fluid and lining of the abdominal organs), and gallbladder (biliary) infections. [nationally completed name] may be used to treat bacterial infections in patients with low white blood cell counts (reduced resistance to infections).

In certain serious infections, your doctor may consider using [nationally completed name] in combination with other antibiotics.

2. What you need to know before you use [nationally completed name]

Do not use [nationally completed name]
- if you are allergic to piperacillin or tazobactam or any of the other ingredients of this medicine (listed in section 6).
- if you are allergic to antibiotics known as penicillins, cephalosporins or other beta-lactamase inhibitors, as you may be allergic to [nationally completed name].

Warnings and precautions
Talk to your doctor, pharmacist or nurse before using [nationally completed name]
- if you have allergies. If you have several allergies, make sure you tell your doctor or other healthcare professional before receiving this product.
- if you are suffering from diarrhoea before, or if you develop diarrhoea during or after your treatment. In this case, make sure you tell your doctor or other healthcare professional immediately. Do not take any medicine for the diarrhoea without first checking with your doctor.
- if you have low levels of potassium in your blood. Your doctor may want to check your kidneys before you take this medicine and may perform regular blood tests during treatment.
- if you have kidney or liver problems, or are receiving haemodialysis. Your doctor may want to check your kidneys before you take this medicine, and may perform regular blood tests during treatment.
- If you are taking another antibiotic called vancomycin at the same time as [nationally completed name], this may increase the risk of kidney injury (see also "**Other medicines and [nationally completed name]**" in this leaflet).
- if you are taking certain medicines (called anticoagulants) to avoid an excess of blood clotting (see also "**Other medicines and [nationally completed name]**" in this leaflet) or any unexpected bleeding occurs during the treatment. In this case, you should inform your doctor or other healthcare professional immediately.
- if you develop convulsions during the treatment. In this case, you should inform your doctor or other healthcare professional.
- if you think you developed a new or worsening infection. In this case, you should inform your doctor or other healthcare professional.

Haemophagocytic lymphohistiocytosis
There have been reports about a disease in which the immune system makes too many of otherwise normal white blood cells called histiocytes and lymphocytes, resulting in inflammation (haemophagocytic lymphohistiocytosis). This condition may be life-threatening if not diagnosed and treated early. If you experience multiple symptoms such as fever, swollen glands, feeling weak, feeling lightheaded, shortness of breath, bruising, or skin rash, contact your doctor immediately.
If you notice signs or symptoms of an allergic reaction along with chest pain, tell your doctor immediately. This may be a sign of a condition called Kounis syndrome.

If you notice unexplained muscle pain, tenderness or weakness and/or dark coloured urine, tell your doctor immediately. This may be a sign of muscle breakdown (called rhabdomyolysis) which may lead to kidney problems.

Children below 2 years
Piperacillin / tazobactam is not recommended for use in children below the age of 2 years due to insufficient data on safety and effectiveness.

Other medicines and [nationally completed name]
Tell your doctor or other healthcare professional if you are taking,have recently taken or might take any other medicines, including medicines obtained without a prescription. Some medicines may interact with piperacillin and tazobactam. These include:

- medicine for gout (probenecid). This can increase the time it takes for piperacillin and tazobactam to leave your body.
- medicines to thin your blood or to treat blood clots (e.g. heparin, warfarin or aspirin).
- medicines used to relax your muscles during surgery. Tell your doctor if you are going to have a general anaesthetic.
- methotrexate (medicine used to treat cancer, arthritis or psoriasis). Piperacillin and tazobactam can increase the time it takes for methotrexate to leave your body.
- medicines that reduce the level of potassium in your blood (e.g. tablets enhancing urination or some medicines for cancer).
- medicines containing the other antibiotics tobramycin, gentamycin or vancomycin. Tell your doctor if you have kidney problems. Taking [nationally completed name] and vancomycin at the same time may increase the risk of kidney injury even if you have no kidney problems.

Effect on laboratory tests
Tell the doctor or laboratory staff that you are taking [nationally completed name] if you have to provide a blood or urine sample.

Pregnancy and breastfeeding
If you are pregnant or breast-feeding, think you may be pregnant or are planning to have a baby, ask your doctor or other healthcare professional for advice before taking this medicine.
Your doctor will decide if [nationally completed name] is right for you.

Piperacillin and tazobactam can pass to a baby in the womb or through breast milk. If you are breast-feeding, your doctor will decide if [nationally completed name] is right for you.

Driving and using machines
The use of [nationally completed name] is not expected to affect the ability to drive or use machines.

[Nationally completed name] contains sodium
This medicine contains 217 mg of sodium (main component of cooking/table salt) in each vial. This is equivalent to 11% of the recommended maximum daily dietary intake of sodium for an adult.

This should be taken into consideration if you are on a controlled-sodium diet.

3. How to use [nationally completed name]

Your doctor or other healthcare professional will give you this medicine through an infusion (a drip for 30 minutes) into one of your veins.

Dosage
The dose of medicine given to you depends on what you are being treated for, your age, and whether or not you have kidney problems.

Adults and adolescents above 12 years of age
The usual dose is 4g / 0.5 g piperacillin / tazobactam given every 6-8 hours, which is given into one of your veins (directly into the blood stream).

Children aged 2 to 12 years
The usual dose for children with abdominal infections is 100 mg / 12.5 mg / kg of body weight of piperacillin / tazobactam given every 8 hours into one of your veins (directly into the blood stream).
The usual dose for children with low white blood cell counts is 80 mg / 10 mg / kg of body weight of piperacillin / tazobactam given every 6 hours into one of your veins (directly into the blood stream).

Your doctor will calculate the dose depending on your child's weight but each individual dose will not exceed 4 g / 0.5 g of [nationally completed name].

You will be given [nationally completed name] until the sign of infection has gone completely (5 to 14 days).

Patients with kidney problems
Your doctor may need to reduce the dose of [nationally completed name] or how often you are given it. Your doctor may also want to test your blood to make sure that your treatment is at the right dose, especially if you have to take this medicine for a long time.

If you receive more [nationally completed name] than you should
As you will receive [nationally completed name] from a doctor or other healthcare professional, you are unlikely to be given the wrong dose. However, if you experience side effects, such as convulsions, or think you have been given too much, tell your doctor immediately.

If you miss a dose [nationally completed name]
If you think you have not been given a dose of [nationally completed name], tell your doctor or other healthcare professional immediately.

If you have any further questions on the use of this medicine, ask your doctor or nurse.

4. Possible side effects
Like all medicines, this medicine can cause side effects, although not everybody gets them.

See a doctor immediately if you experience any of these potentially serious side effects of [nationally completed name]:

The serious side effects (with frequency in brackets) of [nationally completed name] are:
- serious skin rashes appearing initially as reddish target-like spots or circular patches often with central blisters on the trunk. Additional signs include ulcers in the mouth, throat, nose, extremities, genitals and conjunctivitis (red and swollen eyes).
  The rash may progress to widespread blistering or peeling of the skin and potentially may be life threatening. These may be signs of Stevens-Johnson syndrome (Not known), dermatitis bullous (Not known), dermatitis exfoliative (Not known), or toxic epidermal necrolysis (Rare)

- a skin condition (acute generalised exanthematous pustulosis) accompanied by fever, which consists of numerous tiny fluid filled blisters contained within large areas of swollen and reddened skin, known as acute generalised exanthematous pustulosis (Not known)
- severe potentially fatal allergic condition (drug reaction with eosinophilia and systemic symptoms) that can involve the skin and most importantly other organs under the skin such as the kidney and the liver (Not known)
- swelling of the face, lips, tongue or other parts of the body (Not known)
- shortness of breath, wheezing or trouble breathing (allergic reactions including anaphylactic shock) (Not known)
- sudden chest pain which may occur with an allergic reaction known as Kounis syndrome (Not known)
- severe rash or hives (Uncommon), itching or rash on the skin (Common)
- inflammation of the liver (hepatitis, Not known), yellowing of the eyes or skin or whites of the eyes (jaundice) (Not known)
- low levels of red blood cells (anaemia, Common), excessive breakdown of red blood cells which causes being breathless when you do not expect it, red or brown urine (haemolytic anaemia, Not known)
- low levels of platelets, which can lead to bleeding and bruising (thrombocytopenia, Common)
- low levels of white blood cells, which fight infection (leukopenia, Uncommon or neutropenia, Not known)
- very low levels of a type of white blood cell called granulocytes (agranulocytosis, Rare)
- high levels of platelets (thrombocytosis, Not known)
- high levels of a type of white blood cells called eosinophils (eosinophilia, Not known)
- low levels of all types of blood cells, including platelets (pancytopenia, Not known)
- severe or persistent diarrhoea accompanied by a fever or weakness (pseudomembranous colitis, Rare)
- decreased blood potassium (Uncommon)
- seizures (convulsions), seen in patients on high dose, or with kidney problems (Uncommon)
- intense muscle pain, tenderness or weakness (rhabdomyolysis, Not known)

If any of **the following** side effects gets serious, or if you notice any side effects not listed in this leaflet, please tell your doctor or other healthcare professional.

Very common side effects (may affect more than 1 in 10 people):
- diarrhoea

Common side effects (may affect up to 1 in 10 people**):**
- yeast infection
- antibodies in the blood that att
- ack red blood cells (positive direct Coombs), prolonged blood
- clotting time (activated partial thromboplastin time prolonged), decrease in blood protein
- headache, sleeplessness
- abdominal pain, vomiting, nausea, constipation, upset stomach
- increase in blood liver enzymes
- abnormal kidney blood tests
- fever, injection site reaction

Uncommon side effects (may affect up to 1 in 100 people)**:**
- prolonged blood clotting time (prothrombin time prolonged), decreased blood sugar
- low blood pressure, inflammation of the veins (felt as tenderness or redness in the affected area), reddening of skin
- increase of a blood pigment breakdown product (bilirubin)
- skin reactions with redness, formation of skin lesions
- joint and muscle pain
- chills

Rare side effects (may affect up to 1 in 1,000 people)**:**
bleeding of the nose, inflammation of the mucous lining of the mouth
Not known side effects (cannot be estimated from the available data)**:**
- small spot bruising, bleeding time prolonged
- blistering disease in which blisters form in the skin and mucous membranes (linear IgA disease)
- poor kidney functions and kidney problems
- a form of lung disease where eosinophils (a form of white blood cell) appear in the lung in increased numbers.
- acute disorientation and confusion (delirium)

Piperacillin therapy has been associated with an increased incidence of fever and rash in cystic fibrosis patients.

Beta-lactam antibiotics, including piperacillin tazobactam, may lead to signs of altered brain function (encephalopathy) and convulsions.

Reporting of side effects
If you get any side effects, talk to your doctor or pharmacist or nurse. This includes any possible side effects not listed in this leaflet.
You can also report side effects directly via the national reporting system listed in Appendix V. By reporting side effects you can help provide more information on the safety of this medicine.

5. How to store [nationally completed name]

Keep this medicine out of the sight and reach of children.

Do not use this medicine after the expiry date which is stated on the carton and label after “EXP”. The expiry date refers to the last day of that month.

Unopened vials/bottles:
This medicinal product does not require any special storage conditions.

For storage conditions of the reconstituted and diluted medicinal product, see at the end of the package leaflet ‘The following information is intended for medical or healthcare professionals only’.

For single use only. Discard any unused solution.

Do not throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help protect the environment.

6. Contents of the pack and other information

What [nationally completed name] contains

- The active substances are piperacillin and tazobactam.
  Each vial/bottle contains 4 g piperacillin (as piperacillin sodium) and 0.5 g tazobactam (as tazobactam sodium).
- The medicinal product contains no other ingredients than the active substances.

What [nationally completed name] looks like and contents of the pack

[Nationally completed name] is a white to off-white powder for solution for infusion packaged in glass vials or bottles. The vials or bottles are packed in carton boxes.

Pack sizes of 1, 5, 10 and 12 vials/bottles.

Not all pack sizes may be marketed.

Houder van de vergunning voor het in de handel brengen en fabrikant

Vergunninghouder:
Sandoz B.V., Hospitaaldreef 29, 1315 RC Almere, Nederland

Fabrikant:
Sandoz GmbH
Biochemiestrasse 10
6250 Kundl
Oostenrijk

In het register ingeschreven onder
Piperacilline/Tazobactam 4 g/0,5 g, poeder voor oplossing voor infusie RVG 34088.

Dit geneesmiddel is geregistreerd in de lidstaten van de Europese Economische Ruimte onder de volgende namen

Oostenrijk:	Piperacillin/Tazobactam "Hexal" 4,0 g/0,5 g - Pulver zur Herstellung einer Injektions- und Infusionslösung
Duitsland:	Piperacillin/Tazobactam HEXAL 4 g/0,5 g Pulver zur Herstellung einer Injektionslösung/Infusionslösung
Nederland:	Piperacilline/Tazobactam 4 g/0,5 g, poeder voor oplossing voor injectie/infusie

Deze bijsluiter is goedgekeurd in maart 2026

The following information is intended for medical or healthcare professionals only:

Note: Use for bacteraemia due to extended-beta-lactamase (ESBL) producing *E. coli* and *K. pneumoniae* (ceftriaxone non-suseptible), is not recommended in adult patients.

After reconstitution (and dilution):
Chemical and physical in-use stability has been demonstrated for 24 hours at 20-25°C and for 48 hours at 2-8°C.

From a microbiological point of view, once opened, the product should be used immediately.
If not used immediately, in-use storage times and conditions prior to use are the responsibility of the user and would normally not be longer than 24 hours at 2-8°C, unless reconstitution / dilution has taken place in controlled and validated aseptic conditions.

Instructions for use

[Nationally completed name] will be given by intravenous infusion (a drip for 30 minutes).

The reconstitution and dilution is to be made under aseptic conditions. The solution is to be inspected visually for particulate matter and discolouration prior to administration. The solution should only be used if the solution is clear and free from particles.

Intravenous use

Reconstitute each vial/bottle with the volume of solvent shown in the table below, using one of the compatible solvents for reconstitution. Swirl until dissolved. When swirled constantly, reconstitution generally occurs within 3 minutes (for details on handling, please see below).

Content of vial/bottle	**Volume of solvent* to be added to vial/bottle**
4 g / 0.5 g (4 g piperacillin and 0.5 g tazobactam)	20 ml

* Compatible solvents for reconstitution:
- sterile water for injections;
- sodium chloride 9 mg/ml (0.9%) solution in water for injection;
- glucose 50 mg/ml (5%) solution in water for injection;
- glucose 50 mg/ml (5%) solution in sodium chloride 9 mg/ml (0.9%) solution.

The reconstituted solutions should be withdrawn from the vial/bottle by syringe. When reconstituted as directed, the vial/bottle contents withdrawn by syringe will provide the labelled amount of piperacillin and tazobactam.

The reconstituted solutions may be further diluted to the desired volume (e.g. 50 ml to 150 ml) with one of the following compatible solvents:
- sodium chloride 9 mg/ml (0.9%) solution in water for injection;
- glucose 50 mg/ml (5%) solution in water for injection;
- dextran (grade 40) 60 mg/ml (6%) solution in sodium chloride 9 mg/ml (0.9%) solution.

Incompatibilities
Whenever [nationally completed name] is used concurrently with another antibiotic (eg, aminoglycosides), the substances must be administered separately. The mixing of beta-lactam antibiotics with aminoglycosides, *in vitro,* can result in substantial inactivation of the aminoglycoside. However, amikacin and gentamicin were determined to be compatible with [nationally completed name] *in vitro* in certain diluents at specific concentrations (see **Co-administration of [nationally completed name] with aminoglycosides** below).

Piperacillin / tazobactam should not be mixed with other substances in a syringe or infusion bottle since compatibility has not been established.

Piperacillin / tazobactam should be administered through an infusion set separately from any other medicines unless compatibility is proven.

Due to chemical instability, piperacillin / tazobactam should not be used with solutions containing only sodium bicarbonate.

Lactated Ringer's (Hartmann's) solution is not compatible with piperacillin / tazobactam.

Piperacillin / tazobactam should not be added to blood products or albumin hydrolysates.

Co-administration of [nationally completed name] with aminoglycosides
Due to the *in vitro* inactivation of the aminoglycoside by beta-lactam antibiotics, [nationally completed name] and the aminoglycoside are recommended for separate administration. [nationally completed name] and the aminoglycoside should be reconstituted and diluted separately when concomitant therapy with aminoglycosides is indicated.

In circumstances where co-administration is recommended, [nationally completed name] is compatible for simultaneous co-administration via Y-site infusion only with the following aminoglycosides under the following conditions:

Aminoglycoside	**[nationally completed name] Dose**	**[nationally completed name] Diluent volume (ml)**	**Aminoglycoside concentration range* (mg/ml)**	**Acceptable diluents**
Amikacin	2 g / 0.25 g 4 g / 0.5 g	50, 100, 150	1.75 – 7.5	0.9% sodium chloride or 5% glucose
Gentamicin	2 g / 0.25 g 4 g / 0.5 g	50, 100, 150	0.7 – 3.32	0.9% sodium chloride or 5% glucose

* The dose of aminoglycoside should be based on patient weight, status of infection (serious or life-threatening) and renal function (creatinine clearance).

Compatibility of [nationally completed name] with other aminoglycosides has not been established. Only the concentration and diluents for amikacin and gentamicin with the dose of [nationally

completed name] listed in the above table have been established as compatible for co-administration via Y-site infusion. Simultaneous co-administration via Y-site in any manner other than listed above may result in inactivation of the aminoglycoside by [nationally completed name].