



Frozen Premix

# First and Only

ZOSYN (piperacillin and tazobactam) Injection

The first and only premix piperacillin and tazobactam injection is manufactured by and available from Baxter — the leader in frozen premix IV anti-infectives.



## ZOSYN premix for patient safety considerations and operational efficiency



### Safety

- Standardized concentration may help reduce medication errors associated with compounding preparations<sup>1,2</sup>
- Barcoded for bedside scanning to help ensure the right patient gets the right medication<sup>2</sup>



### Efficiency

- No admixing or batching required—which may help streamline deployment and save pharmacy time and resources
- Premix medications like **Zosyn** premix support inventory management and help reduce waste<sup>3</sup>



### Consistent concentration

- A manufacturer-prepared piperacillin and tazobactam injection helps ensure that patients receive a consistent concentration of medication<sup>2</sup>

## Indications

**Zosyn** is a combination of piperacillin, a penicillin-class antibacterial and tazobactam, a beta-lactamase inhibitor, indicated for the treatment of:

- Intra-abdominal infections in adult and pediatric patients 2 months of age and older
- Nosocomial pneumonia in adult and pediatric patients 2 months of age and older
- Skin and skin structure infections in adults
- Female pelvic infections in adults
- Community-acquired pneumonia in adults

## Select Important Risk Information

### Contraindications

**Zosyn** is contraindicated in patients with a history of allergic reactions to any of the penicillins, cephalosporins, or beta-lactamase inhibitors.

**Please see full Indications and additional Important Risk Information to follow.**



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ZOSYN (piperacillin and tazobactam) Injection



## ZOSYN (piperacillin and tazobactam) Injection:



Strength                      2.25 g/50 mL                      3.375 g/50 mL                      4.5 g/100 mL

Product Code                      2G3582                      2G3583                      2G3584

NDC                      0338-9632-24                      0338-9636-24                      0338-9638-12

UPC                      3 03389 63201 6

3 03389 63601 4

3 03389 63801 8

To order **ZOSYN** premix contact your Baxter representative or visit our [ecatalog](#)

Please see full Indications and Important Risk Information to follow.





## ZOSYN (piperacillin and tazobactam) Injection

2.25 g/50 mL, 3.375 g/50 mL, 4.5 g/ 100 mL

### Indications and Important Risk Information

#### Indications

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- Community-acquired pneumonia in adults

To reduce the development of drug-resistant bacteria and maintain the effectiveness of **Zosyn** and other antibacterial drugs, **Zosyn** should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria.

#### Important Risk Information

##### Contraindications

**Zosyn** is contraindicated in patients with a history of allergic reactions to any of the penicillins, cephalosporins, or beta-lactamase inhibitors.

##### Warnings and Precautions

- **Hypersensitivity Adverse Reactions:** Serious and occasionally fatal hypersensitivity (anaphylactic/anaphylactoid) reactions (including shock) have been reported in patients receiving therapy with **Zosyn**. These reactions are more likely to occur in individuals with a history of penicillin, cephalosporin, or carbapenem hypersensitivity or a history of sensitivity to multiple allergens. If an allergic reaction occurs, **Zosyn** should be discontinued and appropriate therapy instituted.
- **Severe Cutaneous Adverse Reactions:** **Zosyn** may cause severe cutaneous adverse reactions, such as Stevens-Johnson syndrome, toxic epidermal necrolysis, drug reaction with eosinophilia and systemic symptoms, and acute generalized exanthematous pustulosis. If patients develop a skin rash they should be monitored closely and **Zosyn** discontinued if lesions progress.
- **Hemophagocytic Lymphohistiocytosis (HLH):** Cases of HLH have been reported in pediatric and adult patients treated with **Zosyn**. Signs and symptoms of HLH may include fever, rash, lymphadenopathy, hepatosplenomegaly and cytopenia. If HLH is suspected, discontinue **Zosyn** immediately and institute appropriate management.
- **Hematologic Adverse Reactions:** Bleeding manifestations have occurred in some patients receiving beta-lactam drugs, including piperacillin. These reactions have sometimes been associated with abnormalities of coagulation tests such as clotting time, platelet aggregation and prothrombin time, and are more likely to occur in patients with renal failure. If bleeding manifestations occur, **Zosyn** should be discontinued and appropriate therapy instituted. The leukopenia/neutropenia associated with **Zosyn** administration appears to be reversible and most frequently associated with prolonged administration. Periodic assessment of hematopoietic function should be performed, especially with prolonged therapy, i.e.,  $\geq 21$  days.
- **Central Nervous System Adverse Reactions:** As with other penicillins, **Zosyn** may cause neuromuscular excitability or seizures. Patients receiving higher doses, especially patients with renal impairment may be at greater risk for central nervous system adverse reactions. Closely monitor patients with renal impairment or seizure disorders for signs and symptoms of neuromuscular excitability or seizures.



## ZOSYN (piperacillin and tazobactam) Injection Warnings and Precautions (cont.)

- **Nephrotoxicity in Critically Ill Patients:** The use of **Zosyn** was found to be an independent risk factor for renal failure and was associated with delayed recovery of renal function as compared to other beta-lactam antibacterial drugs in critically ill patients. Alternative treatment options should be considered in the critically ill population. If alternative treatment options are inadequate or unavailable, monitor renal function during treatment with **Zosyn**.
- ***Clostridioides difficile*-associated diarrhea (CDAD):** CDAD has been reported with use of nearly all antibacterial agents, including **Zosyn**, and may range in severity from mild diarrhea to fatal colitis. Treatment with antibacterial agents alters the normal flora of the colon leading to overgrowth of *C. difficile*. *C. difficile* produces toxins A and B which contribute to the development of CDAD. Hypertoxin producing strains of *C. difficile* cause increased morbidity and mortality, as these infections can be refractory to antimicrobial therapy and may require colectomy. CDAD must be considered in all patients who present with diarrhea following antibacterial drug use. Careful medical history is necessary since CDAD has been reported to occur over two months after the administration of antibacterial agents. If CDAD is suspected or confirmed, ongoing antibacterial drug use not directed against *C. difficile* may need to be discontinued. Appropriate fluid and electrolyte management, protein supplementation, antibacterial treatment of *C. difficile*, and surgical evaluation should be instituted as clinically indicated.
- **Adverse Reactions:** The most common adverse reactions (incidence >5%) are diarrhea, constipation, nausea, headache, and insomnia.
- **Renal Impairment:** In patients with creatinine clearance  $\leq 40$  mL/min and dialysis patients (hemodialysis and CAPD), the intravenous dose of **Zosyn** should be reduced to the degree of renal function impairment.
- **Drug Interactions:**
  - **Zosyn** administration can significantly reduce tobramycin concentrations in hemodialysis patients. Monitor tobramycin concentrations in these patients.
  - Probenecid prolongs the half-lives of piperacillin and tazobactam and should not be co-administered with **Zosyn** unless the benefit outweighs the risk.
  - Co-administration of **Zosyn** with vancomycin may increase the incidence of acute kidney injury. Monitor kidney function in patients receiving **Zosyn** and vancomycin.
  - Monitor coagulation parameters in patients receiving **Zosyn** and heparin or oral anticoagulants.
  - **Zosyn** may prolong the neuromuscular blockade of vecuronium and other non-depolarizing neuromuscular blockers. Monitor for adverse reactions related to neuromuscular blockade.

Please see accompanying full Prescribing Information for **Zosyn**.

**References:** 1. Institute for Safe Medication Practices. ISMP Guidelines for Sterile Compounding and the Safe Use of Sterile Compounding Technology; 2022. <https://www.ismp.org/resources/guidelines-sterile-compounding-and-safe-use-sterile-compounding-technology>. Accessed July 8, 2022. 2. Billstein-Leber M, Carrillo CJD, Cassano AT, Moline K, Robertson JJ. ASHP Guidelines on Preventing Medication Errors in Hospitals. *Am J Health-Syst Pharm*. 2018 Oct;75(19):1493-1517. doi 10.2146/ajhp170811. 3. ASHP Expert Panel on Medication Cost Management. ASHP guidelines on medication cost management strategies for hospitals and health systems. *Am J Health-Syst Pharm*. 2008;65(14):1368-1384.