PIPERACILLIN AND TAZOBACTAM

<table>
<tr><td>Trade Name</td><td>PipTaz-AFT® (AFT Pharmaceuticals)
Piptaz or Pipertaz® (Novartis)
Tazocin® EF (Pfizer)</td></tr>
<tr><td>Class</td><td>Broad Spectrum penicillin antibiotic</td></tr>
<tr><td>Mechanism of Action</td><td>Inhibits bacterial cell wall synthesis through interaction with penicillin-binding-proteins.
Tazobactam= helps to prevent degradation of piperacillin by beta-lactamase.</td></tr>
<tr><td>Indications

Individual ID approval required for full treatment course</td><td>Treatment of non-CNS aerobic and anaerobic gram positive and negative infections including E.coli, Enterobacter, Klebsiella, Haemophillus influenzae, Pseudomonas and Staph aureus.</td></tr>
<tr><td>Contraindications</td><td>Hypersensitivity to penicillins or cephalosporins</td></tr>
<tr><td>Supplied As</td><td>4.5g per vial (dry powder for reconstitution)
Each vial contains 4g piperacillin + 500mg tazobactam</td></tr>
<tr><td>Dilution

TWO dilution steps required

TWO dilution steps required</td><td>Step 1: Reconstitute the vial
<table>
<tr><th rowspan="2">Drug</th><th>Add Diluent</th><th rowspan="2">Total Volume</th><th rowspan="2">Concentration</th></tr>
<tr><th>Water for injection</th></tr>
<tr><td>4.5 g (dry powder)</td><td>16.8 mL</td><td>20 mL</td><td>225 mg/mL</td></tr>
</table>
**the displacement value of the powder is approximately 0.69 mL/g as per communication from Wyeth & AFT (updated as per Notes on Injectable drugs Oct 2023)

Swirl the solution around until all the powder is completely dissolved – this may take a few minutes.

Step 2: Further dilute the 225mg /mL solution in step 1
<table>
<tr><th rowspan="2">Drug</th><th>Add Diluent</th><th rowspan="2">Total Volume</th><th rowspan="2">FINAL CONCENTRATION</th></tr>
<tr><th>Water for injection</th></tr>
<tr><td>225 mg = 1mL</td><td>3.5 mL</td><td>4.5mL</td><td>50 mg/mL</td></tr>
</table></td></tr>
<tr><td>Dosage</td><td>112.5mg/kg/dose (this is equivalent to 100mg/kg piperacillin)</td></tr>
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<table>
<tr><td>Interval</td><td>Ref. NEOFAX 2009
<table>
<tr><th>Postmenstrual age (weeks)</th><th>Postnatal age (days)</th><th>Interval (hours)</th></tr>
<tr><td>< 30</td><td>0-28
>28</td><td>12
8</td></tr>
<tr><td>30 - 36^{+6}</td><td>0-14
>14</td><td>12
8</td></tr>
<tr><td>37- 44^{+6}</td><td>0-7
>7</td><td>12
8</td></tr>
<tr><td>≥ 45</td><td>ALL</td><td>8</td></tr>
</table></td></tr>
<tr><td>Administration</td><td>Infusion over 30 minutes</td></tr>
<tr><td>Compatible With</td><td>Solution: Sodium chloride 0.9%, Glucose 5%, Water for injection.
Terminal Y-site: adrenaline, amikacin, aminophylline, calcium chloride, calcium gluconate, cefepime, dexamethasone, dexmedetomidine, diazepam, digoxin, dopamine, ephedrine, erythromycin, fluconazole, furosemide heparin, hydrocortisone, lidocaine, lipid, magnesium sulphate, meropenem, methylprednisolone, metronidazole, milrinone, morphine, noradrenaline, octreotide, pamidronate, pancuronium, paracetamol, phenobarbital, potassium chloride, ranitidine, trimethoprim/sulphamethoxazole, vasopressin, voriconazole, zidovudine.</td></tr>
<tr><td>Incompatible With</td><td>acyclovir, amiodarone, amphotericin B, azithromycin, ciprofloxacin, dobutamine, famotidine, ganciclovir, gentamicin, insulin, midazolam, pentamidine, phenytoin, sodium bicarbonate, tobramycin and vancomycin.</td></tr>
<tr><td>Monitoring</td><td>Serum electrolytes, prothrombin time</td></tr>
<tr><td>Stability</td><td>Prepare immediately prior to use.
Discard any unused portion immediately after use.</td></tr>
<tr><td>Storage</td><td>Unopened vials of dry powder should be stored at room temperature below 25ºC</td></tr>
<tr><td>Adverse Reactions</td><td>Rash, diarrhoea, raised ALT, AST, BUN and creatinine
hypokalaemia, eosinophilia, hyperbilirubinaemia, prolonged prothrombin time, tachyarrhythmia, hypertension</td></tr>
<tr><td>Metabolism</td><td>Piperacillin is mainly excreted unchanged by the kidneys (80%) with the reminder excreted in bile.
Tazobactam is partially excreted unchanged by the kidney (69%) and the remainder is metabolised in the liver.
Mean half-life in neonates = 1.5 hours.
Penetration into the CNS is low.</td></tr>
<tr><td>Comments</td><td>Each vial of PipTaz-AFT 4.5g contains 9.3mmol of sodium
Each vial of Pipertaz® 4.5g contains 9.44mmol of sodium
Each vial of Tazocin® 4.5g contains 9.38mmol of sodium</td></tr>
</table>

References	1. Neofax 2009 2. Medsafe.govt.nz/datasheets 3. BNF for children 2009 4. Paediatric Dosage Handbook Taketomo et al 16th Ed 2009. 5. Notes on Injectable Drugs 5th Edition NZHPA 2004.& www.noids.nz
Updated By	A Lynn, B Robertshawe, Dec 2011 A Lynn, B Robertshawe Dec 2012 (re-order profile) A Lynn, Tony Walls (Paed ID) July 2013 (PHARMAC update Ab approvals) A Lynn, B Robertshawe February 2022 (update brand and compatibilities) A Lynn, B Robertshawe March 2023 (Add AFT brand + new displacement info) A Lynn, B Robertshawe January 2024 (Further update of AFT displacement info as per noids 2023)