Phoxillum Renal Replacement Solution
1.0 mmol/l phosphate

Available in two formulations for individualized patient therapy.

Phoxillum Solution is indicated in pediatric and adult patients for use as a replacement solution in Continuous Renal Replacement Therapy (CRRT) to replace plasma volume removed by ultrafiltration and to correct electrolyte and acid-base imbalances. It may also be used in case of drug poisoning when CRRT is used to remove dialyzable substances.

Please see Important Risk Information on the back page.
For more information, please see the enclosed full Prescribing Information.
Phoxillum Solution is available in two formulas varying in calcium, potassium and bicarbonate.

<table>
<thead>
<tr>
<th></th>
<th>Calcium Formulas</th>
<th>Calcium-Free Formulas</th>
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</thead>
<tbody>
<tr>
<td><strong>Potassium K⁺ (mEq/L)</strong></td>
<td>3.5–5.0</td>
<td>3.5–5.0</td>
</tr>
<tr>
<td>Calcium Ca²⁺ (mEq/L)</td>
<td>1.14–1.30†</td>
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</tr>
<tr>
<td>Magnesium Mg²⁺ (mEq/L)</td>
<td>0.45–0.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Sodium Na⁺ (mEq/L)</td>
<td>135–145</td>
<td>140</td>
</tr>
<tr>
<td>Chloride Cl⁻ (mEq/L)</td>
<td>100–108</td>
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<tr>
<td>Phosphate HPO₄⁻ (mmol/L)</td>
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<tr>
<td>Bicarbonate HCO₃⁻ [mEq/L]</td>
<td>22–26</td>
<td>32</td>
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<tr>
<td>Lactate [mEq/L]</td>
<td>0.5–2.2</td>
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<tr>
<td>Dextrose (mg/dL)</td>
<td>70–110</td>
<td>0</td>
</tr>
<tr>
<td>Osmolarity (mOsm/L)</td>
<td>280–296</td>
<td>294</td>
</tr>
</tbody>
</table>

Phoxillum Solution is indicated in pediatric and adult patients for use as a replacement solution in Continuous Renal Replacement Therapy (CRRT) to replace plasma volume removed by ultrafiltration and to correct electrolyte and acid-base imbalances. It may also be used in case of drug poisoning when CRRT is used to remove dialyzable substances.

Important Risk Information

Monitor hemodynamic status and fluid, electrolyte and acid-base balance throughout the procedure. During hemofiltration or hemodiafiltration using Phoxillum Replacement Solution, abnormalities in the plasma concentration of potassium, calcium, magnesium, and phosphate may develop. These abnormalities may be corrected by changing the formulations of replacement solution or by supplementation.

For more information, please see the enclosed full Prescribing Information.

References

Solution must be mixed prior to use (2.2)

Use only with extracorporeal dialysis equipment appropriate for CRRT (2.3)

---DOSAGE FORMS AND STRENGTHS---

PRISMASOL and PHOXILLUM are available in multiple combinations of ingredients and in multiple variations of strengths. See full Prescribing Information for detailed descriptions of each formulation. (2, 3, 11)

---CONTRAINDICATIONS---

None (4)

---WARNINGS AND PRECAUTIONS---

Antidiabetic therapy may need adjustment during treatment with dextrose containing formulations (5.2)

To report SUSPECTED ADVERSE REACTIONS, contact Gambro at 1-800-651-2623 or FDA 1-800-FDA-1088 or www.fda.gov/medwatch

Revised: 01/2015

HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use PRISMASOL and PHOXILLUM safely and effectively. See full prescribing information for PRISMASOL and PHOXILLUM.

PRISMASOL renal replacement solution
PRISMASOL Initial U.S. Approval: 2006

PHOXILLUM renal replacement solution
PHOXILLUM Initial U.S Approval: 2015

---RECENT MAJOR CHANGES---

DOSAGE AND ADMINISTRATION  01/2015
WARNINGS AND PRECAUTIONS  01/2015

---INDICATIONS AND USAGE---

PRISMASOL and PHOXILLUM solutions are indicated:

• As a replacement solution in Continuous Renal Replacement Therapy (CRRT) and in case of drug poisoning when CRRT is used to remove dialyzable substances (1)

---DOSEAGE AND ADMINISTRATION---

• Therapy must be individualized based on the patient’s clinical condition, fluid, electrolyte, acid-base and glucose balance (2.1)

---USE IN SPECIFIC POPULATION---

8 USE IN SPECIFIC POPULATION
8.1 Pregnancy
8.3 Nursing Mothers
8.4 Pediatric Use
8.5 Geriatric Use

11 DESCRIPTION

12 CLINICAL PHARMACOLOGY
12.1 Mechanism of Action
12.3 Pharmacokinetics

16 HOW SUPPLIED/STORAGE AND HANDLING

*Sections or subsections omitted from the full prescribing information are not listed.
FULL PRESCRIBING INFORMATION

1 INDICATIONS AND USAGE

PRISMASOL and PHOXILLUM solutions are indicated in pediatric and adult patients for use as a replacement solution in Continuous Renal Replace-

2 DOSAGE AND ADMINISTRATION

2.1 Administration Instructions

Visually inspect PRISMASOL and PHOXILLUM for particulate matter and discoloration prior to administration. Administration should only be under the direction of a physician competent in intensive care treatment including CRRT. Use only with extracorporeal dialysis equipment appropriate for CRRT. The prepared solution is for single patient use only. Aseptic technique should be used throughout administration to the patient. Discard any unused solution.

2.2 Dosing considerations

PRISMASOL replacement solutions contain 4 different combinations of active ingredients (8 different products with varying ingredient amounts).

PHOXILLUM replacement solutions contain 2 different combinations of active ingredients (2 different products with varying ingredient amounts).

PRISMASOL and PHOXILLUM are supplied in a two-compartment bag that must be mixed immediately prior to use [see Dosage and Administration (2.3)]:

- Small compartment A (250 mL) containing an electrolyte solution, and
- Large compartment B (4750 mL) containing the buffer solution.

See Table 1 for the concentrations of the active ingredients (after mixing) in these 10 different replacement solutions (total volume is 5 Liters).

2.3 Preparing the Solution

Follow the instructions below when connecting the solution bags for correct use of the access ports

Ca²⁺ = calcium, HCO₃⁻ = bicarbonate, K⁺ = potassium, Mg²⁺ = magnesium, Na⁺ = sodium, HPO₄²⁻ = phosphate, Cl⁻ = chloride; osmolarity is estimated

Select the mode of therapy, solute formulation, flow rates, and length of PRISMASOL and PHOXILLUM replacement therapy in CRRT based on the patient’s clinical condition, and fluid, electrolyte, acid-base, glucose balance. Administer either PRISMASOL or PHOXILLUM into the extracorporeal circuit

Before (pre-dilution) the hemofilter or hemodialfiltr;

After (post-dilution) the hemofilter or hemodiafiltr, or

Before and after the hemofilter or hemodiafiltr.

2.3 Preparing the Solution

Use only if the overwrap is not damaged, all seals are intact, and the solution is clear. Press bag firmly to test for any leakage. Do not use if container is damaged or leaking.

The solution may be heated to no more than 40°C/104°F inside of the overwrap. After heating, verify that the solution remains clear and contains no particulate matter.

Follow the instructions below when connecting the solution bags for correct use of the access ports

Table 1: Concentrations of Active Ingredients in the 8 PRISMASOL and 2 PHOXILLUM Replacement Solutions after Mixing

<table>
<thead>
<tr>
<th>PRISMASOL Replacement Solutions</th>
<th>Ca²⁺ mEq/L</th>
<th>HCO₃⁻ mEq/L</th>
<th>K⁺ mEq/L</th>
<th>Mg²⁺ mEq/L</th>
<th>Na⁺ mEq/L</th>
<th>HPO₄²⁻ mmol/L</th>
<th>Cl⁻ mEq/L</th>
<th>Lactate mEq/L</th>
<th>Dextrose mg/dL</th>
<th>Osmolarity mOsm/L</th>
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<tbody>
<tr>
<td>BGK0/2.5</td>
<td>2.5</td>
<td>32</td>
<td>0</td>
<td>1.5</td>
<td>140</td>
<td>0</td>
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<td>292</td>
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<td>2.5</td>
<td>32</td>
<td>4.0</td>
<td>1.5</td>
<td>140</td>
<td>0</td>
<td>113.0</td>
<td>3.0</td>
<td>100</td>
<td>300</td>
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<td>1.0</td>
<td>140</td>
<td>0</td>
<td>113.5</td>
<td>3.0</td>
<td>100</td>
<td>300</td>
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<td>1.0</td>
<td>140</td>
<td>0</td>
<td>111.5</td>
<td>3.0</td>
<td>100</td>
<td>296</td>
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<tr>
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<td>1.0</td>
<td>140</td>
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<td>108.0</td>
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<td>0</td>
<td>120.5</td>
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<td>100</td>
<td>296</td>
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<td>32</td>
<td>4.0</td>
<td>1.2</td>
<td>140</td>
<td>0</td>
<td>110.2</td>
<td>3.0</td>
<td>100</td>
<td>295</td>
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<tr>
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<td>0</td>
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<table>
<thead>
<tr>
<th>PHOXILLUM Replacement Solutions</th>
<th>Ca²⁺ mEq/L</th>
<th>HCO₃⁻ mEq/L</th>
<th>K⁺ mEq/L</th>
<th>Mg²⁺ mEq/L</th>
<th>Na⁺ mEq/L</th>
<th>HPO₄²⁻ mmol/L</th>
<th>Cl⁻ mEq/L</th>
<th>Lactate mEq/L</th>
<th>Dextrose mg/dL</th>
<th>Osmolarity mOsm/L</th>
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<tbody>
<tr>
<td>BK4/2.5</td>
<td>2.5</td>
<td>32</td>
<td>4.0</td>
<td>1.5</td>
<td>140</td>
<td>1</td>
<td>114.5</td>
<td>0</td>
<td>0</td>
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<td>1</td>
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</table>

Ca²⁺ = calcium, HCO₃⁻ = bicarbonate, K⁺ = potassium, Mg²⁺ = magnesium, Na⁺ = sodium, HPO₄²⁻ = phosphate, Cl⁻ = chloride; osmolarity is estimated

Select the mode of therapy, solute formulation, flow rates, and length of PRISMASOL and PHOXILLUM replacement therapy in CRRT based on the patient’s clinical condition, and fluid, electrolyte, acid-base, glucose balance. Administer either PRISMASOL or PHOXILLUM into the extracorporeal circuit

- Before (pre-dilution) the hemofilter or hemodiafiltr,
- After (post-dilution) the hemofilter or hemodiafiltr, or
- Before and after the hemofilter or hemodiafiltr.

Follow the instructions below when connecting the solution bags for correct use of the access ports

Figure 1

Small compartment A
Red frangible pin
Large compartment B
Injection connector (or spike connector)
Luer connector
Step 1 Immediately before use, remove the overwrap from the bag and mix the solutions in the two different compartments. As soon as the overwrap is removed, the reconstitution of compartments A and B should be done and the mixed solution should be used immediately.

After removal of the overwrap, the solution is stable for 24 hours including the duration of the treatment. Open the seal by breaking the red frangible pin between the two compartments of the bag. The frangible pin will remain in the bag. (See Figure 2 beside)

Step 2 Make sure all the fluid from the small compartment A is transferred into the large compartment B. (See Figure 3 beside)

Step 3 Rinse the small compartment A twice by pressing the mixed solution back into the small compartment A and then back into the large compartment B. (See Figure 3 beside)

Step 4 When the small compartment A is empty, shake the large compartment B so that the contents mix completely. (See Figure 4 beside)

The solution is now ready to use and the bag can be hung on the equipment.

Step 5 The replacement line may be connected to the bag through either the luer connector or the injection connector (spike connector).

Step 5a The luer connector is a needle-less and swabbable connector. Remove the cap with a twist and pull motion, and connect the male luer lock on the replacement line to the female luer receptor on the bag. (See Figure 5a beside) Ensure that the connection is fully seated and tighten. The connector is now open. Verify that the fluid is flowing freely during use.

When the replacement line is disconnected from the luer connector, the connector will close and the flow of the solution will stop.

Step 5b If the injection connector (spike connector) is used, first remove the snap-off cap. Then introduce the replacement line spike through the rubber septum of the bag connector. (See Figure 5b beside) Ensure that the spike is fully inserted and verify that the fluid is flowing freely during use.
2.4 Adding Drugs to the Solutions
After mixing, additional drugs may be added to the bag via injection connector (spike connector) in large compartment B. In general, drugs other than phosphate should be administered through a different access line. When introducing additives, use aseptic techniques.

PRISMASOL Solutions:
**Phosphate:** Phosphate up to 1.2 mmol/L may be added to the solution. If potassium phosphate is added, the total potassium concentration should not exceed 4 mEq/L.

PHOXILLUM Solutions:
**Phosphate:** Phosphate up to 0.2 mmol/L may be added to the solution. Use sodium phosphate if adding phosphate to bag. The total phosphate concentration should not exceed 1.2 mmol/L.

3 DOSAGE FORMS AND STRENGTHS
See Table 1 for the concentrations of the active ingredients (after mixing) in these 10 different replacement solutions [see Dosage and Administration (2.2)].

4 CONTRAINDICATIONS
None

5 WARNINGS AND PRECAUTIONS
5.1 Electrolyte and Volume Abnormalities
Monitor hemodynamic status and fluid, electrolyte and acid-base balance throughout the procedure. During hemofiltration or hemodiafiltration using PRISMASOL or PHOXILLUM replacement solutions, abnormalities in the plasma concentration of potassium, calcium, magnesium, and phosphate may develop. These abnormalities may be corrected by changing the formulations of replacement solution or by supplementation [see Dosage and Administration (2)].

5.2 Hyperglycemia with Dextrose Containing Solutions
The use of PRISMASOL replacement solutions containing dextrose may increase the risk for hyperglycemia in patients with impaired glucose tolerance. Patients may require initiation of or modification of antidiabetic therapy during treatment with PRISMASOL solutions containing dextrose. Monitor blood glucose.

7 DRUG INTERACTIONS
As with the use of other replacement solutions, blood concentrations of dialyzable drugs may be influenced by CRRT. The blood concentrations of certain drugs may need to be monitored and appropriate therapy implemented to correct for removal during treatment.

7.1 Citrate
When used as an anticoagulant, citrate contributes to the overall buffer load and can reduce plasma calcium levels. Select the PRISMASOL/PHOXILLUM formulation(s) accordingly.

8 USE IN SPECIFIC POPULATION
8.1 Pregnancy
Pregnancy Category C
Animal reproduction studies have not been conducted with PRISMASOL and PHOXILLUM solutions. While there are no adequate and well controlled studies in pregnant women, appropriate administration of PRISMASOL and PHOXILLUM solutions with monitoring of fluid, electrolyte, acid-base and glucose balance, is not expected to cause fetal harm, or affect reproductive capacity. Maintenance of normal acid-base balance is important for fetal well-being.

8.3 Nursing Mothers
The components of PRISMASOL and PHOXILLUM solutions are excreted in human milk. Appropriate administration of PRISMASOL and PHOXILLUM solutions with monitoring of fluid, electrolyte, acid-base and glucose balance, is not expected to harm a nursing infant.

8.4 Pediatric Use
Safety and effectiveness have been established based on published clinical data of CRRT replacement solutions with compositions similar to PRISMASOL and PHOXILLUM used in adults and two hemofiltration studies in pediatric patients, including a study of newborns to 17 years old.

8.5 Geriatric Use
The experience with PRISMASOL and PHOXILLUM solutions in geriatric patients has not identified novel concerns.

11 DESCRIPTION
PRISMASOL and PHOXILLUM solutions are clear, sterile, free of bacterial endotoxins and contain no bacteriostatic or antimicrobial agents. These solutions are used in Continuous Renal Replacement Therapies (CRRT) as a replacement solution in hemofiltration and hemodiafiltration. Depending on the product (see Table 2), the two compartments contain:

- Calcium chloride, USP, is chemically designated calcium chloride dihydrate (CaCl₂ • 2H₂O).
- Magnesium chloride, USP, is chemically designated magnesium chloride hexahydrate (MgCl₂ • 6H₂O).
- Sodium chloride, USP, is chemically designated NaCl.
- Potassium chloride, USP, is chemically designated KCl.
- Sodium bicarbonate, USP, is chemically designated NaHCO₃.
- Dextrose, USP, is chemically designated D-Glucose anhydrous (C₆H₁₂O₆) or D-Glucose monohydrate (C₆H₁₂O₆ • H₂O).
- Lactic acid, USP, is chemically designated CH₃CH(OH)COOH.
- Dibasic sodium phosphate, USP, is chemically designated as disodium hydrogen phosphate, dihydrate (Na₂HPO₄ • 2H₂O).

- Dibasic sodium phosphate, USP, is chemically designated as disodium hydrogen phosphate, dihydrate (Na₂HPO₄ • 2H₂O).
TABLE 2 – Compartment Composition (Before Mixing)

<table>
<thead>
<tr>
<th></th>
<th>Compartment A (g/L)</th>
<th>Compartment B (g/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calcium</td>
<td>Magnesium</td>
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<tr>
<td>PRISMASOL SOLUTIONS</td>
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<td>§+</td>
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<tr>
<td>BGK 0/2.5</td>
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<tr>
<td>B22K 4/0</td>
<td>0</td>
<td>3.05</td>
</tr>
</tbody>
</table>

The pH of the final solution is in the range of 7.0 to 8.5.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

PRISMASOL and PHOXILLUM solutions are pharmacologically inactive. The electrolyte concentrations in the solutions are chosen to restore plasma levels to clinically desired concentrations or maintain plasma levels at the desired concentrations. PRISMASOL and PHOXILLUM solutions are used as replacement solution to replace water and electrolytes removed during hemofiltration and hemodialfiltration. Bicarbonate (or precursor lactate) in the solution is used as an alkalining buffer to restore acid-base balance to a clinically desirable level.

12.3 Pharmacokinetics

The distribution of electrolytes, bicarbonate, and dextrose is determined by the patient’s clinical condition, metabolic status, and residual renal function. The elimination and replacement of water, electrolytes and buffer depend on the patient’s electrolyte and acid-base balance, metabolic status, residual renal function and ongoing physiologic losses through intestinal, respiratory and cutaneous routes.

16 HOW SUPPLIED/STORAGE AND HANDLING

PRISMASOL and PHOXILLUM solutions are supplied in a two-compartment bag made of polyvinyl chloride (PVC). The 5000 mL bag is composed of a small compartment (250 mL) and a large compartment (4750 mL). The two compartments are separated by a red frangible pin. The bag is overwrapped with a transparent overwrap. See Table 2 for the concentrations of the active ingredients in each compartment for each product [see Description (11)].

<table>
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<th>Container</th>
<th>Fill Volume</th>
<th>NDC</th>
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<tr>
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<tr>
<td>PRISMASOL BGK4/2.5</td>
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<td>PRISMASOL BGK4/3.5</td>
<td>5000 mL</td>
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<td>PRISMASOL BGK2/3.5</td>
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<td>PRISMASOL B22GK4/0</td>
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<td>PRISMASOL BK0/0/1.2</td>
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Not all formulations may be marketed.

Storage conditions

Store at 20°C to 25°C (68°F to 77°F); excursions permitted to 15°C-30°C (59°F-86°F). [See USP Controlled Room Temperature] Do not freeze or expose to excessive heat. Do not use if precipitate has formed or if container seals have been damaged.

Manufactured by:

Gambro Renal Products, Inc
1845 Mason Avenue
Daytona Beach, FL 32117, USA.