ADVERSE REACTIONS
Symptoms may result from an excess or deficit of one or more of the ions present in TPN® (multiple electrolyte additive), monitoring of electrolyte blood levels is recommended. Sodium excess can cause edema and exacerbation of congestive heart failure. Excess potassium can cause delays in the normal ECG (electrocardiogram). Potassium deficits can impair neuromuscular function causing muscle weakness or paralysis, i.e., cramps, ileus, and hypomagnesemia to tetany and grand mal seizures. Depressed calcium levels can precipitate neuromuscular dysfunction, hyperexcitability, psychotic behavior, tachycardia and hypertension. Magnesium excess causes muscle weakness, ECG changes, and cardiac dysrhythmias. Magnesium deficits can produce neuromuscular dysfunction, hyperexcitability, psychotic behavior, tachycardia and hypertension. Potassium deficits can impair neuromuscular function, causing muscle weakness or paralysis, i.e., cramps, ileus, and hypomagnesemia. Calcium deficits can produce neuromuscular dysfunction, hyperexcitability, psychotic behavior, tachycardia and hypertension. Magnesium excess can cause muscle weakness, ECG changes, and cardiac dysrhythmias. Magnesium deficits can produce muscle weakness, ECG changes, and cardiac dysrhythmias. Calcium deficits can produce muscle weakness, ECG changes, and cardiac dysrhythmias. Sodium deficits can cause hypotension, edema, and renal failure. Potassium deficits can cause muscle weakness and paralysis. Calcium deficits can cause hypocalcemia, tetany, and cardiac arrhythmias. Potassium excess can cause hyperkalemia and cardiac arrhythmias. Sodium excess can cause hypernatremia and edema. Calcium excess can cause hypercalcemia and cardiac arrhythmias. Calcium deficits can cause hypocalcemia and tetany. Sodium deficits can cause hyponatremia and dehydration. Potassium excess can cause hyperkalemia and cardiac arrhythmias. Calcium deficits can cause hypocalcemia and tetany. Calcium excess can cause hypercalcemia and cardiac arrhythmias. Thiamine (vitamin B1) deficiency can occur if thiamine is not added to the parenteral nutrition solution. Thiamine deficiency can cause peripheral neuropathy, myopathy, and organomegaly. Thiamine deficiency can cause lactic acidosis. Thiamine deficiency can cause Wernicke-Korsakoff syndrome. Thiamine deficiency can cause diplopia, nystagmus, and ataxia. Thiamine deficiency can cause altered mental status, including confusion, delirium, and coma. Thiamine deficiency can cause peripheral neuropathy, myopathy, and organomegaly. Thiamine deficiency can cause lactic acidosis. Thiamine deficiency can cause Wernicke-Korsakoff syndrome. Thiamine deficiency can cause diplopia, nystagmus, and ataxia. Thiamine deficiency can cause altered mental status, including confusion, delirium, and coma. Thiamine deficiency can cause peripheral neuropathy, myopathy, and organomegaly. Thiamine deficiency can cause lactic acidosis. Thiamine deficiency can cause Wernicke-Korsakoff syndrome. Thiamine deficiency can cause diplopia, nystagmus, and ataxia. Thiamine deficiency can cause altered mental status, including confusion, delirium, and coma.

Drug Abuse and Dependence
None known.

OVERDOSAGE
In the event of overhydration or solute overload, re-evaluate the patient and institute appropriate corrective measures. See WARNINGS and PRECAUTIONS.

Dosage and Administration
One 10-mL vial of TPN® (multiple electrolyte additive) is added to each liter of amino acids/dextrose solution. Alternatively, the TPN® Electrolytes can be added to the bottle of amino acids or concentrated dextrose, to permit addition of the necessary phosphate additive to the remaining bottle. This latter technique helps avoid physical incompatibilities between calcium and phosphorus. A potassium phosphate additive is recommended for addition to nutritional solutions containing TPN® Electrolytes. Between 10 and 30 mEq of potassium (as potassium chloride) should be added per liter of TPN solution, to augment the 20 mEq of potassium provided by TPN® Electrolytes.

Between two and three liters of TPN solution with added TPN® Electrolytes are usually administered daily to adults. Solutions are given continuously over the course of 24 hours, usually at a rate of 60 mL/kg daily. Serum levels associated with central nervous system (CNS) activity and amino acid utilization. Calcium excess can cause hypercalcemia and cardiac arrhythmias. Calcium deficits can produce neuromuscular dysfunction, hyperexcitability, psychotic behavior, tachycardia and hypertension. Magnesium excess can cause muscle weakness, ECG changes, and cardiac dysrhythmias. Magnesium deficits can produce muscle weakness, ECG changes, and cardiac dysrhythmias. Calcium deficits can produce muscle weakness, ECG changes, and cardiac dysrhythmias. Sodium deficits can cause hypotension, edema, and renal failure. Potassium deficits can cause muscle weakness and paralysis. Calcium deficits can cause hypocalcemia and tetany. Calcium excess can cause hypercalcemia and cardiac arrhythmias. Calcium deficits can cause hypocalcemia and tetany. Calcium excess can cause hypercalcemia and cardiac arrhythmias. Thiamine (vitamin B1) deficiency can occur if thiamine is not added to the parenteral nutrition solution. Thiamine deficiency can cause peripheral neuropathy, myopathy, and organomegaly. Thiamine deficiency can cause lactic acidosis. Thiamine deficiency can cause Wernicke-Korsakoff syndrome. Thiamine deficiency can cause diplopia, nystagmus, and ataxia. Thiamine deficiency can cause altered mental status, including confusion, delirium, and coma. Thiamine deficiency can cause peripheral neuropathy, myopathy, and organomegaly. Thiamine deficiency can cause lactic acidosis. Thiamine deficiency can cause Wernicke-Korsakoff syndrome. Thiamine deficiency can cause diplopia, nystagmus, and ataxia. Thiamine deficiency can cause altered mental status, including confusion, delirium, and coma. Thiamine deficiency can cause peripheral neuropathy, myopathy, and organomegaly. Thiamine deficiency can cause lactic acidosis. Thiamine deficiency can cause Wernicke-Korsakoff syndrome. Thiamine deficiency can cause diplopia, nystagmus, and ataxia. Thiamine deficiency can cause altered mental status, including confusion, delirium, and coma.

DESCRIPTION
TPN® (multiple electrolyte additive) is a sterile, nonpyrogenic, concentrated solution of intra- and extracellular ions for intravenous infusion after dilution as a maintenance electrolyte replacement only. It contains no phosphates and no bacteriostat, antimicrobial agent or added buffer. The pH is 6.6 (6.0 to 7.5). It may contain hydrochloric acid for pH adjustment. The cumulative concentration is 6.2 mOsmol/mL (calc.).