PRESCRIBING INFORMATION

PLASMA-LYTE A (An Electrolyte Solution) Injection

Solution for Infusion

Intravenous Fluid and Electrolyte Replenisher

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Prescribing Information

PLASMA-LYTE A (An Electrolyte Solution) Injection

Summary Product Information

PLASMA-LYTE A Injection is a sterile, nonpyrogenic intravenous solution which does not contain bacteriostatic or antimicrobial agents or added buffers. The composition, osmolarity and approximate pH of the individual solutions are shown in Table 1.

Normal physiologic isotonicity range is approximately 280 – 310 mOsmol/litre. PLASMA-LYTE A Injection has an osmolarity of 294 mOsmol/litre.

Table 1	DIN	Size (mL)	Composition (g/L)					Osmolarity (mOsmol/L)	pH	Ionic Concentration (mmol/L)									Caloric Content (kcal/L)
			Sodium Chloride, USP	Potassium Chloride, USP	Sodium Gluconate, USP	Sodium Acetate, USP	Magnesium Chloride, USP			Sodium	Potassium	Chloride	Magnesium	Calcium	Acetate	Gluconate	Lactate	Dextrose	
PLASMA-LYTE A Injection (JB2544)	02339358	1000	5.26	0.37	5.02	3.68	0.30	294	7.4 (4.0 – 8.0)	140	5	98	1.5	0	27	23	0	0	15

Actions

PLASMA-LYTE A Injection is a source of water for hydration and provides electrolytes. PLASMA-LYTE A is capable of inducing diuresis depending on the clinical conditions of the patient. See Table 1 for ionic concentrations of PLASMA-LYTE A Injection.

PLASMA-LYTE A Injection contains acetate and gluconate anions which produce a metabolic alkalinizing effect. These anions are metabolized in the liver to glycogen, and ultimately to carbon dioxide and water, which requires the consumption of hydrogen cations.

Indications and Clinical Use

PLASMA-LYTE A Injection is indicated for volume replacement, as a source of water and electrolytes, and as an alkalinizing agent.

Contraindications

PLASMA-LYTE A Injection is contraindicated in patients with a known hypersensitivity to the product. [See WARNINGS AND PRECAUTIONS]

Warnings and Precautions

General

PLASMA-LYTE A Injection is not indicated for the treatment of hypochloremic hypokalemic alkalosis and should be used with caution, if at all, in patients with hypochloremic hypokalemic alkalosis (e.g., due to prolonged vomiting, pyloric stenosis, prolonged nasogastric suctioning).

PLASMA-LYTE A Injection is not indicated for the primary treatment of severe metabolic acidosis.

Although PLASMA-LYTE A Injection has a potassium concentration similar to the concentration in plasma, it is insufficient to produce a useful effect in case of severe potassium deficiency; therefore, it should not be used for correction of severe potassium deficiency.

PLASMA-LYTE A Injection is not indicated for the treatment of hypomagnesemia.

Hypersensitivity Reactions

Hypersensitivity/infusion reactions, including anaphylactoid reactions, have been reported with PLASMA-LYTE A Injection.

The infusion must be stopped immediately if any signs or symptoms of a suspected hypersensitivity reaction develop. Appropriate therapeutic countermeasures must be instituted as clinically indicated.

Risk of Fluid and/or Solute Overload and Electrolyte Disturbances

Depending on the volume and rate of infusion, the intravenous administration of PLASMA-LYTE A Injection can cause

− fluid and/or solute overload resulting in overhydration/hypervolemia and, for example, congested states, including pulmonary congestion and edema.
- clinically relevant electrolyte disturbances and acid-base imbalance.

The risk of dilutional states is inversely proportional to the electrolyte concentrations of PLASMA-LYTE A Injection. The risk of solute overload causing congested states with peripheral and pulmonary edema is directly proportional to the electrolyte concentrations of PLASMA-LYTE A Injection.

Clinical evaluation and periodic laboratory determinations may be necessary to monitor changes in fluid balance, electrolyte concentrations, and acid-base balance during prolonged parenteral therapy or whenever the condition of the patient or the rate of administration warrants such evaluation.

Use in Patients with or at Risk of Hyponatremia

Monitoring of serum sodium is important for all fluids. PLASMA-LYTE A Injection has an osmolarity of 294 mOsmol/L.

High volume infusion must be used under specific monitoring in patients with cardiac or pulmonary failure, and in patients with non-osmotic vasopressin release (including SIADH), due to the risk of hospital-acquired hyponatremia.

Acute hyponatremia can lead to acute hyponatremic encephalopathy (brain edema) characterized by headache, nausea, seizures, lethargy and vomiting. Patients with brain edema are at particular risk of severe, irreversible and life-threatening brain injury.

Use in Patients with or at Risk for Hypermagnesemia

Solutions containing magnesium should be used with caution, if at all, in patients with
- hypermagnesemia or conditions predisposing to hypermagnesemia, including but not limited to severe renal impairment or magnesium therapy such as for eclampsia.
- myasthenia gravis.

Use in Patients with or at Risk for Alkalosis

PLASMA-LYTE A Injection should be administered with particular caution, if at all, to patients with alkalosis or at risk for alkalosis.

Excess administration of PLASMA-LYTE A Injection can result in metabolic alkalosis.

Use in Patients with Hypervolemia or Overhydration, or Conditions that Cause Sodium Retention and Edema

PLASMA-LYTE A Injection should be administered with particular caution, if at all, to hypervolemic or overhydrated patients.

PLASMA-LYTE A Injection should be administered with particular caution, if at all, to patients with conditions that may cause sodium retention, fluid overload and edema, such as patients with primary hyperaldosteronism, secondary hyperaldosteronism (associated with, for example, hypertension, congestive heart failure, renal artery stenosis, or nephrosclerosis), or preeclampsia.

Use in patients with Hypocalcemia

PLASMA-LYTE A Injection contains no calcium, and an increase in plasma pH due to its alkalinizing effect may lower the concentration of ionized (not protein-bound) calcium. PLASMA-LYTE A Injection should be administered with particular caution, if at all, to patients with hypocalcemia.

Use in Patients with or at Risk for Hyperkalemia

PLASMA-LYTE A Injection should be administered with particular caution, if at all, to patients with hyperkalemia or conditions predisposing to hyperkalemia (such as severe renal impairment or adrenocortical insufficiency, acute dehydration, or extensive tissue injury or burns) and in patients with cardiac disease.

Use in Patients with Severe Renal Impairment

PLASMA-LYTE A Injection should be administered with particular caution, if at all, to patients with severe renal impairment. In such patients administration of PLASMA-LYTE A Injection may result in sodium and/or potassium or magnesium retention.

Risk of Air Embolism

Do not connect flexible plastic containers in series in order to avoid air embolism due to possible residual air contained in the primary container.

Pressurizing intravenous solutions contained in flexible plastic containers to increase flow rates can result in air embolism if the residual air in the container is not fully evacuated prior to administration.

Use of a vented intravenous administration set with the vent in the open position could result in air embolism.

Vented intravenous administration sets with the vent in the open position should not be used with flexible plastic containers.

Precautions

Caution must be exercised in the administration of parenteral fluids, especially those containing sodium ion, to patients receiving corticosteroids or corticotropin.

Special Populations

Pediatrics

Safety and effectiveness of PLASMA-LYTE A Injection in children have not been established by adequate and well controlled trials.

Geriatrics

When selecting the type of infusion solution and the volume/rate of infusion for a geriatric patient, consider that geriatric patients are generally more likely to have cardiac, renal, hepatic, and other diseases and/or concomitant drug therapy.

Pregnant or Nursing Women

There are no adequate data from the use of PLASMA-LYTE A Injection in pregnant or lactating women. The potential risks and benefits for each specific patient should be carefully considered before using PLASMA-LYTE A Injection in pregnant or lactating women.

Monitoring and Laboratory Tests

There have been reports of false-positive test results using the Bio-Rad Laboratories Platelia Aspergillus EIA test in association with the use of Baxter gluconate-containing PLASMA-LYTE solutions. Therefore, positive test results for this test in patients receiving Baxter gluconate-containing PLASMA-LYTE solutions should be interpreted cautiously and confirmed by other diagnostic methods.

Adverse Reactions

This list of adverse reactions in this Prescribing Information is based on postmarketing reports (see below).

If any adverse reaction does occur, discontinue the infusion, evaluate the patient, institute appropriate therapeutic countermeasures, and save the remainder of the fluid and administration set for examination if deemed necessary.

Post-marketing Adverse Reactions

The following adverse reactions have been reported in the postmarketing experience, with PLASMA-LYTE A Injection, listed by MedDRA System Organ Class (SOC), then by Preferred Term in order of severity, where feasible.

IMMUNE SYSTEM DISORDERS: Hypersensitivity/infusion reactions, including Anaphylactoid reaction, and the following manifestations: Tachycardia, Chest discomfort, Dyspnea, Flushing, Hyperemia, Asthenia, Pyrexia

GENERAL DISORDERS AND ADMINISTRATION SITECONDITIONS: Infusion site reactions (e.g., Infusion site pain, Burning sensation)

Class Reactions

Adverse reactions reported with similar solutions are:

- Other manifestations of hypersensitivity/infusion reactions: Hypotension, Wheezing, Urticaria, Cold sweat, Chills
- Hyperkalemia
- Hyponatremia
- Hyponatremic encephalopathy

Drug Interactions

Caution is advised when administering PLASMA-LYTE A Injection to patients treated with drugs that may increase the risk of sodium and fluid retention, such as corticosteroids or corticotropin [See also WARNINGS AND PRECAUTIONS].

Caution is advised when administering PLASMA-LYTE A Injection to patients treated with drugs for which renal elimination is pH dependent. Due to its alkalinizing effect (formation of bicarbonate), PLASMA-LYTE A Injection may interfere with the elimination of such drugs.

- Renal clearance of acidic drugs such as salicylates, barbiturates, and lithium may be increased.
- Renal clearance of alkaline drugs such as sympathomimetics (e.g., ephedrine, pseudoephedrine), quinidine, or dextroamphetamine (dexamphetamine) sulfate, may be decreased.

Because of its potassium content, PLASMA-LYTE A Injection should be administered with caution in patients treated with agents or products that can cause hyperkalemia or increase the risk of hyperkalemia, such as potassium sparing diuretics (amiloride, spironolactone, triamterene), with ACE inhibitors, angiotensin II receptor antagonists, or the immunosuppressants tacrolimus and cyclosporine.

Caution is advised when administering PLASMA-LYTE A to patients treated with drugs leading to an increased vasopressin effect. The below listed drugs increase the vasopressin effect, leading to reduced renal electrolyte free water excretion and may increase the risk of hyponatremia following treatment with intravenous fluids. See **Warnings and Precautions** and **Adverse Reactions**.

Drugs stimulating vasopressin release such as chlorpropamide, clofibrate, carbamazepine, vincristine, selective serotonin reuptake inhibitors (SSRIs), 3,4-methylenedioxy-N-methamphetamine, ifosfamide, antipyschotics, opioids.

Drugs potentiating vasopressin action such as chlorpropamide, non-steroidal anti-inflammatories (NSAIDS), cyclophosphamide.

Vasopressin analogues such as desmopressin, oxytocin, vasopressin, terlipressin.

Caution is advised when administering PLASMA-LYTE A to patients treated with drugs that may increase the risk of hyponatremia, such as diuretics and antiepileptics (e.g., oxcarbazepine).

Dosage and Administration

Dosing Considerations

As directed by a physician. Dosage, rate, and duration of administration are to be individualized and depend upon the indication for use, the patient's age, weight, clinical condition, and concomitant treatment, and on the patient's clinical and laboratory response to treatment.

PLASMA-LYTE A Injection is intended for intravenous administration using sterile equipment.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration whenever solution and container permit. Do not administer unless the solution is clear and the seal is intact.

When introducing additives to PLASMA-LYTE A Injection, aseptic technique must be used. Mix the solution thoroughly when additives have been introduced. Do not store solutions containing additives [See ADDITIONS]

Administration

Directions for use of VIAFLEX Plastic Container

The VIAFLEX plastic container is fabricated from a specially formulated polyvinyl chloride (PL 146 Plastic). The amount of water that can permeate from inside the container into the overwrap is insufficient to affect the solution significantly. Solutions in contact with the plastic container can leach out certain of its chemical components in very small amounts within the expiration period, e.g. di-2-ethylhexyl phthalate (DEHP), up to 5 parts per million. However, the safety of the plastic has been confirmed in tests in animals according to USP biological tests for plastic containers as well as by tissue culture toxicity studies.

Do not remove unit from overwrap until ready for use.

To Open:

Tear overwrap down side at slit and remove solution container. Visually inspect the container. If the outlet port protector is damaged, detached, or not present, discard container as solution path sterility may be impaired. If supplemental medication is desired, follow directions below before preparing administration. Some opacity of the plastic due to moisture absorption during sterilization process may be observed. This is normal and does not affect the solution quality and safety. The opacity will diminish gradually. Check for leaks by squeezing inner bag firmly. If leaks are found discard solution as sterility may be impaired.

Preparation for Administration:

1. Suspend container from eyelet support.
2. Remove plastic protector from outlet port at bottom of container.
3. Attach administration set. Refer to complete directions accompanying set.

To Add Medication:

1. Prepare medication site.
2. Using a syringe and a 20 – 22 gauge needle, puncture resealable rubber plug at target area and inject. Multiple additions may be made in this manner.
3. Mix solution and medication thoroughly. For high density medications such as potassium chloride, squeeze ports while ports are upright and mix thoroughly.

Risk of Air Embolism

Do not connect flexible plastic containers in series in order to avoid air embolism. [See WARNINGS AND PRECAUTIONS]

Additions

Additives may be incompatible with PLASMA-LYTE A Injection. Complete information is not available.

As with all parenteral solutions, compatibility of the additives with the solution must be assessed before addition. Before adding a substance or medication, verify that it is soluble and/or stable in water and that the pH range of PLASMA-LYTE A Injection is appropriate. After addition, check for a possible color change and/or the appearance of precipitates, insoluble complexes or crystals.

The instructions for use of the medication to be added and other relevant literature must be consulted.

Additives known or determined to be incompatible must not be used.

If in the informed judgment of the physician it is deemed advisable to introduce additives, aseptic technique must be used. Mix the solution thoroughly when additives have been introduced. Do not store solutions containing additives.

Overdosage

Excessive administration of PLASMA-LYTE A Injection may lead to metabolic alkalosis. Metabolic alkalosis may be accompanied by hypokalemia as well as a decrease in ionized serum calcium and magnesium.

An excessive volume of PLASMA-LYTE A Injection may lead to fluid and sodium overload with a risk of edema (peripheral and/or pulmonary), particularly when renal sodium excretion is impaired.

Excessive administration of potassium may lead to the development of hyperkalemia, especially in patients with severe renal impairment.

Excessive administration of magnesium may lead to hypermagnesemia.

When assessing an overdose, any additives in the solution must also be considered.

The effects of an overdose may require immediate medical attention and treatment.

Storage

Store at 15ºC to 25ºC.

Special Handling Instructions

After opening the container, the contents should be used immediately and should not be stored for a subsequent infusion.

Do not reconnect any partially used containers.

Dosage Form, Composition and Packaging

How Supplied

Table 1 shows the composition, osmolarity, approximate pH, calories/litre and ionic concentration of PLASMA-LYTE A Injection.