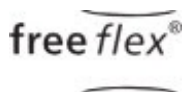


POTASSIUM CHLORIDE IN LACTATED RINGERS AND DEXTROSE - potassium chloride, sodium chloride, calcium chloride, sodium lactate, and dextrose monohydrate injection, solution
Fresenius Kabi USA, LLC

INTRAVENOUS SOLUTIONS WITH POTASSIUM CHLORIDE POTASSIUM CHLORIDE IN LACTATED RINGER'S AND 5% DEXTROSE INJECTION, USP



Flexible Plastic Container

Rx only

DESCRIPTION

Intravenous solution with potassium chloride (I.V. solutions with KCl) is a sterile and nonpyrogenic solution in water for injection. This solution is for administration by intravenous infusion only.

See Table 1 below for summary of content and characteristics of this solution.

Table 1		COMPOSITION (g/L)					Calculated Osmolarity (mOsmol/L)
Potassium Chloride in Lactated Ringer's and 5% Dextrose Injection, USP		Dextrose, Hydrus	Potassium Chloride	Sodium Chloride	Sodium Lactate, Anhydrous	Calcium Chloride Dihydrate	
mEq Potassium Added	Size (mL)						
20 mEq	1000	50	1.79	6	3.1	0.2	563

pH	Approx. Ionic Concentrations (mEq/L)					Approx. kcal/L
	Calcium (Ca++)	Sodium (Na+)	Potassium (K+)	Chloride (Cl-)	Lactate	
4.9 (3.5 to 6.5)	2.7	130	24	129	28	179

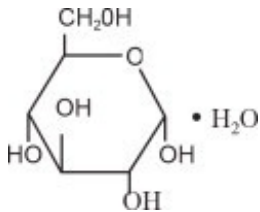
May contain HCl for pH adjustment.

The solution contains no bacteriostat, antimicrobial agent or added buffer and each is intended only for use as a single-dose injection. When smaller doses are required the unused portion should be discarded.

This solution is a parenteral fluid, nutrient and/or electrolyte replenisher.

Dextrose, USP is chemically designated D-glucose, monohydrate (C₆H₁₂O₆ • H₂O), a

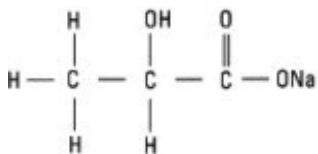
hexose sugar freely soluble in water. It has the following structural formula:



Potassium Chloride, USP is chemically designated KCl, a white granular powder freely soluble in water. Sodium Chloride, USP is chemically designated NaCl, a white crystalline powder freely soluble in water.

Calcium Chloride, USP is chemically designated calcium chloride dihydrate (CaCl₂ • 2H₂O), white fragments or granules freely soluble in water.

Sodium Lactate, USP is chemically designated monosodium lactate [CH₃CH(OH)COONa], a 50% aqueous solution miscible in water. It has the following structural formula:



Water for Injection, USP is chemically designated H₂O.

The flexible plastic container is fabricated from a specially formulated non-plasticized, film containing polypropylene and thermoplastic elastomers (**freeflex**[®] bag). Water can permeate from inside the container into the overwrap but not in amounts sufficient to affect the solution significantly. Solutions in contact with the plastic container may leach out certain chemical components from the plastic in very small amounts; however, biological testing was supportive of the safety of the plastic container materials. Exposure to temperatures above 25°C/77°F during transport and storage will lead to minor losses in the moisture content. Higher temperatures lead to greater losses. It is unlikely that these minor losses will lead to clinically significant changes within the expiration period.

CLINICAL PHARMACOLOGY

When administered intravenously, this solution provides a source of water and electrolytes with carbohydrate calories.

Solutions containing carbohydrate in the form of dextrose restore blood glucose levels and provide calories. Carbohydrate in the form of dextrose may aid in minimizing liver glycogen depletion and exerts a protein-sparing action. Dextrose injected parenterally undergoes oxidation to carbon dioxide and water.

Calcium chloride in water dissociates to provide calcium (Ca⁺⁺) and chloride (Cl⁻) ions. They are normal constituents of the body fluids and are dependent on various physiologic mechanisms for maintenance of balance between intake and output. Approximately 80% of body calcium is excreted in the feces as insoluble salts; urinary excretion accounts for the remaining 20%.

Sodium lactate provides sodium (Na⁺) and lactate (C₃H₅O⁻) ions. The lactate anion is in equilibrium with pyruvate and has an alkalizing effect resulting from simultaneous

removal by the liver of lactate and hydrogen ions. In the liver, lactate is metabolized to glycogen which is ultimately converted to carbon dioxide and water by oxidative metabolism. The sodium (Na^+) ion combines with bicarbonate ion produced from carbon dioxide of the body and thus retains bicarbonate to combat metabolic acidosis (bicarbonate deficiency). The normal plasma level of lactate ranges from 0.9 to 1.9 mEqK/liter.

Intravenous solutions containing potassium chloride are particularly intended to provide needed potassium cation (K^+). Potassium is the chief cation of body cells (160 mEq/liter of intracellular water). It is found in low concentration in plasma and extracellular fluids (3.5 to 5.0 mEq/liter in a healthy adult). Potassium plays an important role in electrolyte balance. Normally about 80 to 90% of the potassium intake is excreted in the urine; the remainder in the stools and to a small extent, in the perspiration. The kidney does not conserve potassium well so that during fasting or in patients on a potassium-free diet, potassium loss from the body continues resulting in potassium depletion. A deficiency of either potassium or chloride will lead to a deficit of the other.

Sodium chloride in water dissociates to provide sodium (Na^+) and chloride (Cl^-) ions. Sodium (Na^+) is the principal cation of the extracellular fluid and plays a large part in the therapy of fluid and electrolyte disturbances. Chloride (Cl^-) has an integral role in buffering action when oxygen and carbon dioxide exchange occurs in the red blood cells. The distribution and excretion of sodium (Na^+) and chloride (Cl^-) are largely under the control of the kidney which maintains a balance between intake and output.

Water is an essential constituent of all body tissues and accounts for approximately 70% of total body weight. Average normal adult daily requirement ranges from two to three liters (1.0 to 1.5 liters each for insensible water loss by perspiration and urine production).

Water balance is maintained by various regulatory mechanisms. Water distribution depends primarily on the concentration of electrolytes in the body compartments and sodium (Na^+) plays a major role in maintaining physiologic equilibrium.

INDICATIONS AND USAGE

This solution is indicated in patients requiring parenteral administration of potassium chloride and the replacement of extracellular losses of fluids and electrolytes with minimal carbohydrate calories.

CONTRAINDICATIONS

Solutions containing potassium chloride are contraindicated in diseases where high potassium levels may be encountered.

Solutions containing lactate are NOT FOR USE IN THE TREATMENT OF LACTIC ACIDOSIS.

WARNINGS

Solutions containing calcium ions should not be administered simultaneously through the same administration set as blood because of the likelihood of coagulation.

Solutions which contain potassium ions should be used with great care, if at all, in

patients with hyperkalemia, severe renal failure and in conditions in which potassium retention is present.

To avoid potassium intoxication, do not infuse these solutions rapidly. In patients with severe renal insufficiency or adrenal insufficiency, administration of potassium chloride may cause potassium intoxication.

Solutions containing sodium ions should be used with great care, if at all, in patients with congestive heart failure, severe renal insufficiency and in clinical states in which there exists edema with sodium retention.

In patients with diminished renal function, administration of solutions containing sodium or potassium ions may result in sodium or potassium retention.

Solutions containing lactate ions should be used with great care in patients with metabolic or respiratory alkalosis. The administration of lactate ions should be done with great care where there is an increased level or an impaired utilization of lactate ions, as in severe hepatic insufficiency.

The intravenous administration of this solution can cause fluid and/or solute overloading resulting in dilution of serum electrolyte concentrations, overhydration, congested states or pulmonary edema.

The risk of dilutional states is inversely proportional to the electrolyte concentration of administered parenteral solutions. The risk of solute overload causing congested states with peripheral and pulmonary edema is directly proportional to the electrolyte concentrations of such solutions.

PRECAUTIONS

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

Solutions containing dextrose should be used with caution in patients with known subclinical or overt diabetes mellitus.

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

Potassium replacement therapy should be guided primarily by serial electrocardiograms. Plasma potassium levels are not necessarily indicative of tissue potassium levels.

High plasma concentrations of potassium may cause death through cardiac depression, arrhythmias or arrest.

Potassium-containing solutions should be used with caution in the presence of cardiac disease, particularly in digitalized patients or in the presence of renal disease.

Solutions containing lactate ions should be used with caution as excess administration may result in metabolic alkalosis.

Care should be exercised to insure that the needle (or catheter) is well within the lumen of the vein and that extravasation does not occur.

Do not administer unless solution is clear and container is undamaged. Discard unused portion.

Pregnancy. Animal reproduction studies have not been conducted with dextrose, potassium chloride or Lactated Ringer's Injection. It is also not known whether dextrose, potassium chloride or Lactated Ringer's Injection can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Dextrose, potassium chloride or Lactated Ringer's Injection should be given to a pregnant woman only if clearly needed.

Pediatric Use:

The safety and effectiveness in the pediatric population are based on the similarity of the clinical conditions of the pediatric and adult populations. In neonates or very small infants the volume of fluid may affect fluid and electrolyte balance.

Frequent monitoring of serum glucose concentrations is required when dextrose is prescribed to pediatric patients, particularly neonates and low birth weight infants.

In very low birth weight infants, excessive or rapid administration of dextrose injection may result in increased serum osmolality and possible intracerebral hemorrhage.

ADVERSE REACTIONS

Reactions which may occur because of the solutions or technique of administration include febrile response, infection at the site of injection, venous thrombosis or phlebitis extending from the site of injection, extravasation and hypervolemia.

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

Nausea, vomiting, abdominal pain and diarrhea have been reported with potassium therapy. The signs and symptoms of potassium intoxication include paresthesias of the extremities, flaccid paralysis, listlessness, mental confusion, weakness and heaviness of the legs, hypotension, cardiac arrhythmias, heart block, electrocardiographic abnormalities such as disappearance of P waves, spreading and slurring of the QRS complex with development of a biphasic curve and cardiac arrest.

Potassium-containing solutions are intrinsically irritating to tissues. Therefore, extreme care should be taken to avoid perivascular infiltration. Local tissue necrosis and subsequent sloughing may result if extravasation occurs. Chemical phlebitis and venospasm have also been reported.

Should perivascular infiltration occur, I.V. administration at that site should be discontinued at once. Local infiltration of the affected area with procaine hydrochloride, 1%, to which hyaluronidase may be added, will often reduce venospasm and dilute the potassium remaining in the tissues locally. Local application of heat may also be helpful.

To report SUSPECTED ADVERSE REACTIONS, contact Fresenius Kabi USA, LLC at 1-800-551-7176 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

OVERDOSAGE

In the event of potassium overdosage, discontinue the infusion immediately and institute intensive corrective therapy to reduce serum potassium levels. See **WARNINGS** and **PRECAUTIONS**.

DOSAGE AND ADMINISTRATION

This solution should be administered only by intravenous infusion and as directed by the physician. The dose and rate of injection are dependent upon the age, weight and clinical condition of the patient. If the serum potassium level is greater than 2.5 mEq/liter, potassium should be given at a rate not to exceed 10 mEq/hour in a concentration less than 30 mEq/liter. Somewhat faster rates and greater concentrations (usually up to 40 mEq/liter) of potassium may be indicated in patients with more severe potassium deficiency. The total 24-hour dose should not generally exceed 200 mEq of potassium.

As reported in the literature, the dosage and constant infusion rate of intravenous dextrose must be selected with caution in pediatric patients, particularly neonates and low birth weight infants, because of the increased risk of hyperglycemia/hypoglycemia.

Drug Interactions

Additives may be incompatible. Consult with pharmacist, if available. When introducing additives, use aseptic technique, mix thoroughly and do not store.

The presence of calcium limits their compatibility with certain drugs that form precipitates of calcium salts, and also prohibits their simultaneous infusion through the same administration set as blood because of the likelihood of coagulation.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. See **PRECAUTIONS**.

HOW SUPPLIED

Potassium Chloride (20 mEq Added) in Lactated Ringer's and 5% Dextrose Injection, USP is supplied in single-dose **freeflex**[®] plastic containers as follows:

Product Code	Unit of Use	Unit of Sale
360236	NDC 65219-246-00 One 1000 mL freeflex [®] bag	NDC 65219-246-10 Package of 10 freeflex [®] bags

Store at 20 to 25°C (68 to 77°F). [See USP Controlled Room Temperature.] Avoid excessive heat. Protect from freezing.

The container closure is not made with natural rubber latex. Non-PVC, Non-DEHP, Sterile.

INSTRUCTIONS FOR USE

Check flexible container solution composition, lot number, and expiry date.

Do not remove solution container from its overwrap until immediately before use. Use sterile equipment and aseptic technique.

Flexible Plastic Container (**freeflex**[®] bag)

To Open

1. Turn solution container over so that the text is face down. Using the pre-cut corner tabs, peel open the overwrap and remove solution container.
2. Check the solution container for leaks by squeezing firmly. If leaks are found, or if the seal is not intact, discard the solution.
3. Do not use if the solution is cloudy or a precipitate is present.

To Add Medication

1. Identify WHITE Additive Port with arrow pointing toward container.
2. Immediately before injecting additives, break off WHITE Additive Port Cap with the arrow pointing toward container.
3. Hold base of WHITE Additive Port horizontally.
4. Insert needle horizontally through the center of WHITE Additive Port's septum and inject additives.
5. Mix container contents thoroughly.

Preparation for Administration

1. Immediately before inserting the infusion set, break off BLUE Infusion Port Cap with the arrow pointing away from container.
2. Use a non-vented infusion set or close the air-inlet on a vented set.
3. Close the roller clamp of the infusion set.
4. Hold the base of BLUE Infusion Port.
5. Insert spike through BLUE Infusion Port by rotating wrist slightly until the spike is inserted. **NOTE:** See full directions accompanying administration set.

WARNING: Do not use flexible container in series connections.

Manufactured for:



Lake Zurich, Illinois 60047

Made in Norway

451662

www.fresenius-kabi.com/us

Issued: September 2022

PACKAGE LABEL - PRINCIPAL DISPLAY -Potassium Chloride in Lactated Ringer's and 5% Dextrose Bag Label

20mEq POTASSIUM ADDED

1000 mL NDC 65219-246-00

freeflex[®]

20 mEq POTASSIUM CHLORIDE in Lactated Ringer's and 5% Dextrose Injection, USP

Rx only

100

20 mEq POTASSIUM ADDED

1000 mL

NDC 65219-246-00

free flex[®]

200

**20
mEq**

POTASSIUM CHLORIDE

in Lactated Ringer's
and 5% Dextrose
Injection, USP

300

Rx Only

Each 100 mL contains: Potassium Chloride 179 mg; Sodium Chloride 600 mg; Sodium Lactate, Anhydrous 310 mg; Calcium Chloride, Dihydrate 20 mg; Dextrose, Hydrous 5 g in Water for Injection. May contain HCl for pH adjustment.

400

Electrolytes per 1000 mL (not including ions for pH adjustment): Potassium 24 mEq; Sodium 130 mEq; Chloride 129 mEq; Calcium 2.7 mEq; Lactate 28 mEq.

563 mOsmol/L (Calc.) pH 4.9 (3.5 to 6.5)

NOT FOR USE IN THE TREATMENT OF LACTIC ACIDOSIS.

500

ADDITIVES MAY BE INCOMPATIBLE. CONSULT WITH PHARMACIST, IF AVAILABLE. WHEN INTRODUCING ADDITIVES, USE ASEPTIC TECHNIQUE, MIX THOROUGHLY AND DO NOT STORE.

Single-Dose Container. For Intravenous Use.
Discard Unused Portion.

600

Usual dosage: See package insert.

The overwrap is a moisture barrier.

Use immediately once removed from overwrap.

403634

STORE AT: 20° to 25°C (68° to 77°F) [see USP Controlled Room Temperature]. Avoid excessive heat. Protect from freezing.

FUH 3204

01-62-16-022

The container closure is not made with natural rubber latex.

Non-PVC, Non-DEHP, Sterile.



(01)00365219246008

700

Manufactured for:



Lake Zurich, IL 60047

Made in Norway

www.fresenius-kabi.com/us

LOT NO

EXP DATE


PACKAGE LABEL - PRINCIPAL DISPLAY -Potassium Chloride in Lactated Ringer's and 5% Dextrose Case Label

NDC 65219-246-10 360236
20 mEq Potassium Chloride in Lactated Ringer's and 5% Dextrose Injection, USP

1000 mL x 10

Store at 20° to 25°C (68° to 77°F)
[see USP Controlled Room Temperature].

Avoid excessive heat. Protect from freezing.

NDC 65219-246-10	360236	
<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">20 mEq</div> <p>Potassium Chloride in Lactated Ringer's and 5% Dextrose Injection, USP 1000 mL x 10 Store at 20° to 25°C (68° to 77°F) [see USP Controlled Room Temperature]. Avoid excessive heat. Protect from freezing.</p>	Manufactured for:  FRESENIUS KABI Lake Zurich, IL 60047 Made in Norway www.fresenius-kabi.com/us	
 (17) YYMMDD (10) 0000000 (30) 10	QTY: 10 EXP: MM-YYYY LOT: 000000	
 (01) 30365219246108	63759 FUH 3204 01-82-16-022	

POTASSIUM CHLORIDE IN LACTATED RINGERS AND DEXTROSE
 potassium chloride, sodium chloride, calcium chloride, sodium lactate, and dextrose monohydrate injection, solution

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:65219-246
Route of Administration	INTRAVENOUS		

Active Ingredient/Active Moiety		
Ingredient Name	Basis of Strength	Strength
POTASSIUM CHLORIDE (UNII: 660YQ98I10) (POTASSIUM CATION - UNII:295O53K152, CHLORIDE ION - UNII:Q32ZN48698)	POTASSIUM CHLORIDE	1.79 g in 1000 mL
SODIUM CHLORIDE (UNII: 451W47IQ8X) (SODIUM CATION - UNII:LYR4M0NH37,	SODIUM	6 g

CHLORIDE ION - UNII:Q32ZN48698)	CHLORIDE	in 1000 mL
CALCIUM CHLORIDE (UNII: M4I0D6VV5M) (CALCIUM CATION - UNII:2M83C4R6ZB, CHLORIDE ION - UNII:Q32ZN48698)	CALCIUM CHLORIDE	0.2 g in 1000 mL
SODIUM LACTATE (UNII: TU7HW0W0QT) (SODIUM CATION - UNII:LYR4M0NH37, LACTIC ACID, UNSPECIFIED FORM - UNII:33X04XA5AT)	SODIUM LACTATE	3.1 g in 1000 mL
DEXTROSE MONOHYDRATE (UNII: LX22YL083G) (ANHYDROUS DEXTROSE - UNII:5SL0G7R0OK)	DEXTROSE MONOHYDRATE	50 g in 1000 mL

Inactive Ingredients

Ingredient Name	Strength
WATER (UNII: 059QF0KO0R)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:65219-246-10	10 in 1 CASE	11/04/2022	
1	NDC:65219-246-00	1000 mL in 1 BAG; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA211428	04/03/2020	

Labeler - Fresenius Kabi USA, LLC (013547657)

Establishment

Name	Address	ID/FEI	Business Operations
Fresenius Kabi Norge AS		731170932	ANALYSIS(65219-246) , MANUFACTURE(65219-246) , PACK(65219-246)

Revised: 6/2023

Fresenius Kabi USA, LLC