PRESCRIBING INFORMATION

0.9% Sodium Chloride Injection

Sterile Solution, 900 mg / 100 mL

Mfr. Std.

Solution for Intravenous Infusion

In **free***flex*® and **free***flex*® bags

Intravenous Fluid and Electrolyte Replenisher

Fresenius Kabi Canada Ltd.
165 Galaxy Blvd, Suite 100
Toronto, ON M9W 0C8

Date of Revision:
Nov 30, 2021

Submission Control Number: 254504

Prescribing Information

0.9% Sodium Chloride Injection

In **free***flex*® and **free***flex*®⊕ bags

SUMMARY PRODUCT INFORMATION

0.9% Sodium ChlorideInjection is a sterile nonpyrogenic solution for fluid and electrolyte replenishment in single dose containers for intravenous administration. 0.9% Sodium Chloride contains no bacteriostatic or antimicrobial agents or added buffers.

The composition, osmolarity, pH and ionic concentration of 0.9% Sodium Chloride Injection are shown in Table 1.

Table 1. Composition, osmolarity and pH of 0.9% Sodium Chloride Injection

Product	Volume (mL)	DIN	Composition & concentration	Ionic concentration		Total osmolarity	pH
				Na+	Cl-		
0.9% Sodium Chloride Injection in **free***flex*® / **free***flex*®⊕ bags	50 100 250 500 1000	02395150	Sodium Chloride 9 g/L	154 mEq/L	154 mEq/L	308 mOsmol/L	5.6

Table 2. Description of the free*flex*® and the free*flex*® ⊕ systems

free*flex*® container	**free*flex*® ⊕ container**
DESCRIPTION	
• The primary container consists of a bag and two ports with stoppers.	• Same as **free***flex*® container
• The secondary packaging is an overwrap.	• Same as **free***flex*® container
• The **free***flex*® plastic container is fabricated from a specially formulated polyolefines multilayer film. The amount of water that can permeate from inside the container into the overwrap is insufficient to affect the solution significantly. The **free***flex*® bags are slightly overfilled. It is guaranteed that the extractable volume conforms at the	• Same as **free***flex*® container

free*flex*® container	**free*flex*® ⊕ container**
end of shelf-life. Results of the toxicological evaluation show that the primary materials of the **free*flex*®** packaging system do not show any toxic potential even under severe extraction conditions.	
PORTS	
• Two ports, with white and blue stoppers capped with tamper-evident covers.	• Two ports, with light blue and blue stoppers capped with tamper-evident covers.
• The **white** stopper on the left port, with the arrow pointing towards the bag, is the medication/injection port.	• The **light blue** stopper on the left port, with the arrow pointing towards the bag is the medication port. It has a threaded Luer-Lock connector to secure a syringe once the tamper-evident cover is broken-off.
• The blue port with the arrow pointing away from the bag is the administration port.	• The blue port with the arrow pointing away from the bag is the administration port.
• The addition of drugs to **free*flex*®** bag via the medication port uses a syringe with a 19 to 22 gauge blunt fill needle to puncture the medication port and inject medication into the bag.	• The addition of drugs to the **free*flex*® ⊕** bag via the medication port is needle-free. This can be performed by fastening the syringe to the Luer-Lock, to inject the medication into the bag. After additions, the medication port can be marked with a permanent red protective cap to indicate medication has been added.

ACTIONS

0.9% Sodium Chloride Injection has value as a source of water and electrolytes. It is capable of inducing diuresis depending on the clinical condition of the patient.

Solutions which are di-electrolytic have value in maintaining or replenishing electrolytes. See Table 1 for ionic concentrations.

INDICATIONS

0.9% Sodium Chloride Injection, is indicated as a source of water and electrolytes.

0.9% Sodium Chloride Injection can be used as a vehicle or diluent for compatible products for parenteral administration.

0.9% Sodium Chloride Injection is also indicated for use as a priming solution in hemodialysis procedures.

CONTRAINDICATIONS

0.9% Sodium Chloride Injection, is contraindicated in patients who are hypersensitive to this drug or to any ingredient in the formulation or component of the container. For a complete listing, see the Dosage Form, Composition and Packaging section of the Prescribing Information.

0.9% Sodium Chloride Injection is contraindicated in situations where administration of sodium or chloride could be clinically detrimental.

WARNINGS AND PRECAUTIONS

General

0.9% Sodium Chloride Injection 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 0.9% Sodium Chloride Injection may result in sodium retention.

Intravenous administration of 0.9% Sodium Chloride Injection may cause fluid and/or solute overloading resulting in dilution of serum electrolyte concentrations, overhydration, congested states, clinically relevant electrolyte disturbances, acid-base imbalance and/or central and peripheral edema. The risk of fluid and/or solute overload is directly proportional to the volume of the product intravenously administrated.

Excessive administration of potassium free solutions may result in significant hypokalemia.

Carcinogenesis and Mutagenesis

Studies with 0.9% Sodium Chloride Injection have not been performed to evaluate carcinogenic potential, mutagenic potential or effects on fertility.

Hypersensitivity reactions

Hypersensitivity/infusion reactions, including hypotension, pyrexia, tremor, chills, urticaria, rash, and pruritus, have been reported with 0.9% Sodium Chloride Injection.

Stop the infusion immediately if signs or symptoms of hypersensitivity/infusion reactions 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, intravenous administration of 0.9% Sodium Chloride Injection can cause:

- fluid and/or solute overload resulting in overhydration/hypervolemia and, for example, congested states, including central and peripheral edema.

- clinically relevant electrolyte disturbances and acid-base imbalance.

In general, the risk of fluid/solute overload causing congested states and/or electrolyte disturbances is directly proportional to the volume of the products intravenously administrated.

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 at risk for sodium retention, fluid overload and edema

0.9% Sodium Chloride Injection should be used with particular caution, if at all, in patients with or at risk for:

- Hypernatremia
- Hyperchloremia
- Metabolic acidosis
- Hypervolemia
- Conditions that may cause sodium retention, fluid overload and edema (central and peripheral), such as patients with
    - primary hyperaldosteronism,
    - secondary hyperaldosteronism, associated with, for example,
        - hypertension
        - congestive heart failure
        - liver disease (including cirrhosis)
        - renal disease (including renal artery stenosis, nephrosclerosis) or
        - pre-eclampsia

    Medications that may increase the risk of sodium and fluid retention, such as corticosteroids.

Risk of Hyponatremia

Monitoring of serum sodium is important for all fluids. 0.9% Sodium Chloride Injection has an osmolarity of 308 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 Syndrome of Inappropriate Antidiuretic Hormone Secretion (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 Severe Renal Impairment

0.9% Sodium Chloride Injection should be administered with particular caution, if at all, to patients with severe renal impairment. In such patients administration of 0.9% Sodium Chloride Injection may result in sodium retention.

Risk of Air Embolism

Do not connect flexible plastic containers of intravenous solutions in series connections. Such use could result in air embolism due to possible residual air being drawn from one container before administration of the fluid from a secondary container is completed.

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.

Special Populations

Pregnancy and Lactation

There are no adequate data from the use of 0.9% Sodium Chloride Injection in pregnant or lactating women. Healthcare Practitioners should carefully consider the potential risks and benefits for each specific patient before administering 0.9% Sodium Chloride Injection.

Pediatrics

Safety and effectiveness of 0.9% Sodium Chloride Injection in pediatric patients have not been established by adequate and well controlled trials, however, the use of sodium chloride solutions in the pediatric population is referenced in the medical literature. The warnings, precautions and adverse reactions identified in the label copy should be observed in the pediatric population.

Plasma electrolyte concentrations should be closely monitored in the pediatric population because of their impaired ability to regulate fluids and electrolytes.

Geriatrics

Clinical studies of 0.9% Sodium Chloride Injection did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in the responses between elderly and younger patients.

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

In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range.

This drug is known to be substantially excreted by the kidney, and the risk of toxic reactions may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function.

Monitoring and Laboratory Tests

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 or the rate of administration warrants such evaluation.

ADVERSE REACTIONS

Adverse reactions which may occur because of the solution or the 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 and administration set for examination if deemed necessary.

Post-marketing Adverse Reactions

The following adverse reactions have been reported in the post-marketing experience, listed by MedDRA System Organ Class (SOC), then, where feasible, by Preferred Term in order of severity.

IMMUNE SYSTEM DISORDERS:

Hypersensitivity/infusion reactions, including Hypotension, Pyrexia, Tremor, Chills, Urticaria, Rash, Pruritus

GENERAL DISORDERS AND ADMINISTRATION SITE CONDITIONS:

Infusion site reactions, such as Infusion site erythema, Injection site streaking, Burning sensation, Infusion site urticaria.

The following adverse reactions have been reported with other similar products:

- Hypernatremia
- Hyperchloremic metabolic acidosis
- Hyponatremia, which may be symptomatic
- Hyponatremic encephalopathy

DRUG INTERACTIONS

Caution is advised when administering 0.9% Sodium Chloride 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 - Use in patients at risk for sodium retention, fluid overload and edema.]

Caution is advised in patients treated with lithium. Renal lithium clearance may be increased during administration of 0.9% Sodium Chloride Injection, resulting in decreased lithium levels.

Caution is advised when administering 0.9% Sodium Chloride Injection 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 Special Warnings and Precautions for Use and Adverse Reactions).

Drugs stimulating vasopressin release such as chlorpropamide, clofibrate, carbamazepine, vincristine, selective serotonin reuptake inhibitors (SSRIs), 3.4-methylenedioxy-N-methamphetamine, ifosfamide, antipsycotics, 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 0.9% Sodium Chloride Injection to patients treated with drugs that may increase the risk of hyponatremia, such as diuretics and antiepileptics (e.g., oxcarbazepine).

Studies have not been conducted to evaluate additional drug/drug or drug/food interactions with 0.9% Sodium Chloride Injection.

DOSAGE AND ADMINISTRATION

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.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration.

Do not administer unless the solution is clear and seals are intact.

0.9% Sodium Chloride Injection **free***flex*® / **free***flex*® ✪ plastic containers are intended for intravenous administration using sterile equipment. It is recommended that intravenous administration apparatus be replaced at least once every 24 hours.

Additives may be incompatible with 0.9% Sodium Chloride Injection. Compatibility of additives with 0.9% Sodium Chloride Injection must be assessed before addition. Additives known, determined or suspected to be incompatible should not be used.

Before adding a substance or medication, verify that it is soluble and/or stable in water and that the pH of 0.9% Sodium Chloride Injection is appropriate.

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

When introducing additives to 0.9% Sodium Chloride Injection, aseptic technique must be used.

After addition, check for a possible color change and/or the appearance of precipitates, insoluble complexes or crystals.

Mix the solution thoroughly when additives have been introduced. Do not store solutions containing additives.

When other electrolytes or medicines are added to this solution, the dosage and the infusion rate will also be dictated by the dose regimen of the additions.

For single use only. Discard any unused portion.

OVERDOSAGE

An excessive volume of 0.9% Sodium Chloride Injection may lead to hypernatremia (which can lead to CNS manifestations, including seizures, coma, cerebral edema and death) and sodium overload (which can lead to central and/or peripheral edema).

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

Should overdose occur, prompt and careful clinical and laboratory assessment is essential. Effective therapeutic intervention based on the condition of the patient should be planned and executed as soon as possible.

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

STORAGE

Exposure of pharmaceutical products to heat should be minimized. Avoid excessive heat.

Store at 15 °C to 25 °C.

SPECIAL HANDLING INSTRUCTIONS

For single use only.

Discard any unused portion.

DOSAGE FORM, COMPOSITION AND PACKAGING

Table 1 in the Summary Product Information section shows the volume, composition, ionic concentration, osmolarity and pH of 0.9% Sodium Chloride Injection in **free***flex*® and **free***flex*® ✪ plastic containers.

Each 100 mL of 0.9% Sodium Chloride Injection contains:

Sodium chloride	900 mg
Water for injection	q.s to 100 mL
pH adjusted with sodium hydroxide or Hydrochloric acid 25%	q.s

The formula of the active ingredient is:

Ingredient	Molecular Formula	Molecular Weight (g/mol)
Sodium Chloride	NaCl	58.44

Sodium Chloride 0.9% Injection, is available in 50, 100, 250, 500 and 1000 mL **free***flex*® and **free***flex*® ✪ plastic containers, that are PVC-free, DEHP-free and are not made with natural rubber latex.

DIRECTIONS FOR USE

WARNINGS:

Do not administer unless the solution is clear, virtually colourless and the seal is intact.

Do not use plastic containers in series connections. Such use could result in air embolism due to residual air (approximately 15 mL) being drawn from the primary container before administration of the fluid from the secondary container is completed.

From a microbiological point of view, the medicinal product should be used immediately after addition of additives. Do not store. Discard unused portion.

The physician should discontinue the infusion if adverse reactions occur.

CAUTIONS:

Aseptic technique is required including when mixing with medication. This solution is intended for intravenous administration using sterile equipment. When the 0.9% Sodium Chloride Injection is used for intermittent intravenous infusion, the intravenous administration set should be replaced every 24 hours. If 0.9% Sodium Chloride Injection is to be administered as a continuous infusion, then the administration set should be changed every 96 hours or as per hospital practice.

Do not remove the **free***flex*® / **free***flex*® ✪ IV container from its overwrap until immediately before use.

Before use, perform the following checks: Read the label. Ensure solution is the one ordered and is within the expiration date.

Parenteral drug products should be inspected visually in good light for cloudiness, haze, particulate matter and discoloration prior to administration, whenever solution and container permit. Do not administer unless the solution is clear.

The **free***flex*® / **free***flex*® ✪ IV container should also be inspected for leakage or damage, ensuring that the seals are intact. Any container which is suspect should not be used. This preservative free solution is intended for single use only. Any unused portion or waste materials should be disposed in accordance with local requirements.

0.9% Sodium Chloride Injection (900 mg/100 mL) should be used immediately after insertion of the administration set. Do not vent.

I. INFUSION APPLICATION WITH free*flex*® CONTAINER

To add medication

WARNING: Some additives may be incompatible.

To add medication before solution administration

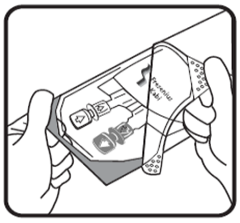
Before administering the product in plastic bags to patient, refer to INSTRUCTIONS FOR INFUSION APPLICATION WITH **free***flex*® CONTAINER, and review the following directions:

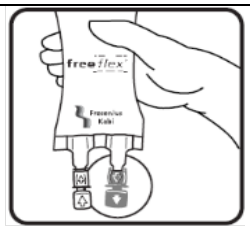
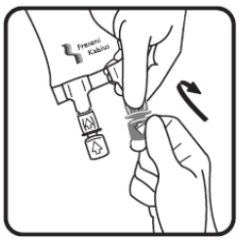
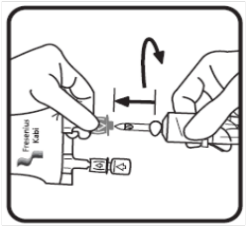
1. Prepare medication site.
2. Using a syringe with a 19 to 22 gauge blunt fill needle, puncture the resealable medication port and inject medication.
3. Mix solution and medication thoroughly. For high density medication such as potassium chloride, squeeze ports while ports are upright and mix thoroughly.
4. Place container to in-use position and begin administration.

To add medication during solution administration

1. Close clamp on the set.
2. Prepare medication site.
3. Using a syringe with a 19 to 22 gauge blunt fill needle, puncture the resealable medication port and inject medication.
4. Remove container from IV pole and place in an upright position.
5. Evacuate both ports by squeezing them while container is in the upright position.
6. Mix solution and medication thoroughly. For high density medication such as potassium chloride, squeeze ports while ports are upright and mix thoroughly.
7. Return container to in-use position and continue administration.

INSTRUCTIONS FOR INFUSION APPLICATION WITH free*flex*® CONTAINER:

1. 	Check the solution composition, lot number and expiry date, inspect the container for damage or leakage. If damaged do not use.
2. 	Place the bag on a clean, flat surface. Peel open over-wrap.

3.		Identify the blue infusion port (encircled on the right side). This is the administration port. The white port (on the left side) is the medication port where medication is to be injected.
4.		Place and keep the bag on a clean, flat surface. Break off the blue tamper-evident cover from the **free***flex*® infusion port.
5.		Close roller clamp of the administration set. Insert the spike until the clear plastic collar of the port meets the shoulder of the spike.
6.	Use a non-vented standard infusion set, or if using a vented set, close air inlet.	
7.	Hang the bag on the infusion stand. Press drip chamber to get fluid level. Prime infusion set. Connect and adjust the flow rate.	

II. NEEDLE-FREE DRUG ADDITION TO free*flex*® ⊕ CONTAINER WITH A LUER-LOCK SYRINGE

To add medication

WARNING: Some additives may be incompatible.

To add medication before solution administration

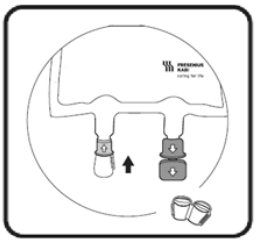
To add medication before solution administration and before administering the product in plastic bags to patient, refer to INSTRUCTIONS FOR INFUSION APPLICATION WITH **free***flex*® ⊕ CONTAINER , and review the following directions:

To add medication during solution administration

1. Close clamp on the set.
2. Prepare medication site.
3. Fasten the needleless, loaded syringe to the threaded Luer-Lock connection of the light blue **free***flex*® ⊕ medication port and inject medication.
4. Remove container from the IV pole and place in an upright position.

5. Evacuate both ports by tapping and squeezing them while container is in the upright position.
6. Mix solution and medication thoroughly. For high density medication such as potassium chloride, squeeze ports while ports are upright and mix thoroughly.
7. Return container to in-use position and continue administration.

INSTRUCTIONS FOR INFUSION APPLICATION WITH free*flex*® ⊕ CONTAINER:

1.		Using an aseptic technique and observing standard precautions, prepare a syringe with a Luer-Lock. Place the bag on a clean, flat surface. Remove the overwrap. Identify the light blue **free*flex*®** ⊕ injection port (encircled on the left side).
2.		Break off the light blue tamper evident cover from the **free*flex*®** ⊕ injection port. The membrane below the light blue cover is sterile – disinfection of the membrane is not necessary.
3.		Hold the light blue **free*flex*®** ⊕ injection port with your fingers behind the finger guard. Connect the Luer-Lock of the syringe with the injection port of the **free*flex*®** ⊕ and inject the medication into the bag, then remove the syringe. The rigid port construction supports a safe and convenient handling.
4.		If no further additions are required, mark the injection port with the provided red protective cap* to indicate that the bag is filled with a drug and attach the label with detailed information to the bag. *caps cannot be removed once fastened.
5.	Mix solution and medication thoroughly. For high density medication such as potassium chloride, squeeze ports while ports are upright and mix thoroughly.	
6.	Break-off the tamper-evident cover from the blue administration port.	
7.	Use a non-vented standard administration set, or if using a vented set, close air inlet.	
8.	Close roller clamp of the administration set. Insert the spike until the clear plastic collar of the port meets the shoulder of the spike.	
9.	Hang the bag on the infusion stand. Press drip chamber to level fluid. Prime infusion set. Connect and adjust the flow rate.	

Reporting Side Effects:

You can report any suspected side effects associated with the use of health products to Health Canada by:

- Visiting the Web page on Adverse Reaction Reporting (https://www.canada.ca/en/health-canada/services/drugs-health-products/medeffect-canada/adverse-reaction-reporting.html) for information on how to report online, by mail or by fax; or
- Calling toll-free at 1-866-234-2345.

NOTE: Contact your health professional if you need information about how to manage your side effects. The Canada Vigilance Program does not provide medical advice.

SUPPORTING PRODUCT MONOGRAPHS

0.9% Sodium Chloride Injection, USP (Solution for Infusion), submission control 224943, PRESCRIBING INFORMATION, Baxter Corporation. (April 2, 2019).

If you want more information about 0.9% Sodium Chloride Injection:

- Talk to your healthcare professional
- Find the full prescribing information that is prepared for healthcare professionals by visiting the Health Canada website (https://www.canada.ca/en/health-canada/services/drugs-health-products/drug-products/drug-product-database.html; the manufacturer's website (https://www.fresenius-kabi.com/en-ca), or by calling 1-877-821-7724.

This prescribing Information was prepared by:

Fresenius Kabi Canada Ltd.

165 Galaxy Blvd, Suite 100

Toronto, ON M9W 0C8

Date of Revision: November 30, 2021

Fresenius Kabi is a registered trademark of Fresenius SE and **free***flex*® is a registered trademark of Fresenius Kabi AG.