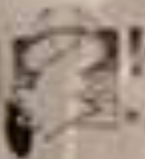


Code 30-06-03



HAES-steril®

Hydroxyethyl Starch (Pentastarch)

Fresenius
Kabi

10%

Medium Molecular Weight
Hydroxyethyl Starch in 0.9%
Sodium Chloride Infusion

Net wt in grams (approx)	500 g
Hydroxyethyl Starch (Pentastarch)	50 g
Concentration	10%
Weight average molecular weight	200,000
Number average molecular weight	41 g
Clarity	77 mmol
Sodium Chloride Ph Eur	77 mmol
Water for injections Ph Eur	500 ml
Antibiotics Ph Eur	as necessary
Antifungals Ph Eur	as necessary
Antivirals Ph Eur	as necessary
Chemical Compatibility	208 mg/ml

EXPIRES
DATE

For use under medical supervision. Do not use unless the solution is clear and free of particles and the container undamaged. Do not reconstitute partially used. Discard any unused portion. Store below 25° C. Do not freeze.

0134

EAN 5018750460031

Fresenius Kabi Limited
Runcorn, WAT 1NT

500ml

Expires end
See back of bag

100

Gelofusine Ecobag

Plasma substitute for intravenous infusion
Compatible with blood and blood products

Each unit of total base	Custom
Spiking solution	1 with 2 mg/ml heparin
Sucrylate	Do not use if white with
Glucose (D50)	in solution
Weight average molecular weight 20,000	Use only under medical supervision
Number average molecular weight 23,200	Read instructions with care
Sodium Chloride	3.45 g
Water for injection	to 500 ml
ADJUSTED for pH adjustment	Do not reconstitute with water
Electrolytes	mmol/500 ml
Sodium	77
Chloride	77
pH	7.4 ± 0.3
Osmolality	274 mOsm/l

Content: **500 ml**

Distributor:
B. Braun Medical
Thameside Park
Sheffield S10 2P

B BRAUN

Product Line:
B. Braun Medical
D-34109 Krefeld
Germany

***BLOOD
&
PLASMA EXPANDERS***

BLOOD:

Blood is a fluid connective tissue that circulates continuously around the body, allowing constant communication between tissues distant from each other.

PLASMA:

A clear, straw coloured, watery fluid in which several different types of blood cells are suspended.

BLOOD & PLASMA VOLUME EXPANDERS

- Plasma expanders are agents that have relatively high molecular weight and boost the plasma volume by increasing the osmotic pressure.
- They are used to treat patients who have suffered hemorrhage or shock.

VOLUME EXPANDERS Contd...

- Volume expanders are the i.v., fluid solutions that are used to increase or retain the volume of fluid in the circulating blood .
- Generally volume expanders are used to replace fluids that are lost due to illness, trauma , surgery, burns & extensive tissue damage
- These are used to correct hypovolemia due to loss of plasma or blood .

TYPES OF VOLUME EXPANDERS :-

1. **Crystalloids**: Crystalloids are aqueous solutions of mineral salts or other water soluble molecules. E.g, **normal saline**, **dextrose**, **ringers solution** etc,

2. **Colloids**: colloids are larger insoluble molecules, such as **dextran**, **human albumin**, **gelatin**, **blood**.

WHAT DO THEY DO??

colloid

↑ plasma volume

Less peripheral edema

Smaller volumes for resuscitation

Intravascular half-life 3-6 hrs

crystalloid

Inexpensive

Use for maintenance fluid and initial resuscitations

Restore 3rd space loss

Intravascular half-life 20-30 minutes

**IS IT COLLOIDS
OR
CRYSTALLOIDS**

IDEAL PROPERTIES OF PVEs

1

- Iso-oncotic with plasma
- Distributed to i.v., compartement only

2

- Pharmacodynamically inert
- Non-pyrogenic, non-allergic & non-antigenic

3

- No interference with blood grouping or cross matching
- Stable, easily sterilizable and cheap.

SOME VOLUME EXPANDERS :

Human albumin

Dextran

Polygeline/
PVP

DX₄₀

DX₇₀

Hetastarch

MECHANISM OF ACTION:

- ➔ Generally works on the principle of osmosis.
- ➔ Increases plasma osmotic pressure, drawing water into plasma from intestinal fluid .
- ➔ Since the lost blood is replaced with a suitable fluid, the diluted blood flows more easily, even in small vessels.

SOME CRYSTALLOIDS:



Normal saline

Lactate ringer's
solution

Dextrose solution

USES OF PLASMA EXPANDERS:

✦ Used in conditions where blood or plasma has been lost or has moved to extra vascular compartments e.g., burns , hypovolaemic shock, severe trauma, endotoxin shock and extensive tissue damage.

✦ Can also be used as a temporary measure in cases of whole blood loss till the same can be arranged.

NOTE: They do not have any o₂ carrying capacity.

CONTRADICTIONS TO PLASMA EXPANDERS:

★ Allergy

★ Heart failure

★ Severe anemia

★ Thrombocytopenia

★ Pulmonary edema




★ Renal insufficiency.

Comparison with Whole Blood

	Gelatin	Whole Blood
pH	7.0–7.6	7.3 – 7.4
Oncotic pressure	Iso-oncotic	Iso-oncotic
Intravascular/interstitial fluid balance	Restored/maintained	Restored/ maintained
Cardiovascular overload	Unlikely	possible
Plasma half-life	4–6 hours	Varies according to fraction
Effect on renal function	Renal function maintained/ improved	Usually not impaired
Effect on blood coagulation/ haemostasis	Dilution only	Possible (factor activation)
Effect on subsequent blood typing and cross-matching	None	Usually none
Adverse reactions/ side effects	Local cutaneous reactions, Transient hypotension, Histamine release	Allergic reactions, incompatibility reactions
Transmissions of diseases	None	Significant risk of viral infection as hepatitis B, C and AIDS
Shelf-life	5 years. If stored at above +25°C: 3 years	3 weeks
Storage	2–25° C	4–6° C

DONOR

RECIPIENT

	O-	O+	B-	B+	A-	A+	AB-	AB+
AB+								
AB-								
A+								
A-								
B+								
B-								
O+								
O-								

THANK YOU