Albumin solution human 200 mg per 1 ml Alburex 20% solution for infusion 100ml vials | 1 vial PoM £40.00

- **Albutein** (Grifols UK Ltd)
  Albumin solution human 50 mg per 1 ml Albutein 5% solution for infusion 500ml vials | 1 vial PoM
  Albutein 5% solution for infusion 250ml vials | 1 vial PoM
  Albumin solution human 200 mg per 1 ml Albutein 20% solution for infusion 100ml vials | 1 vial PoM
  Albutein 20% solution for infusion 50ml vials | 1 vial PoM
- **Biotest** (Biotest (UK) Ltd)
  Albumin solution human 50 mg per 1 ml Human Albumin Biotest 5% solution for infusion 250ml vials | 1 vial PoM
  Albumin solution human 200 mg per 1 ml Human Albumin Biotest 20% solution for infusion 50ml vials | 1 vial PoM
  Human Albumin Biotest 20% solution for infusion 100ml vials | 1 vial PoM
- **Grifols** (Grifols UK Ltd)
  Albumin solution human 50 mg per 1 ml Human albumin Grifols 5% solution for infusion 500ml bottles | 1 bottle PoM £42.75
  Human albumin Grifols 5% solution for infusion 250ml bottles | 1 bottle PoM £21.38
  Albumin solution human 200 mg per 1 ml Human Albumin Grifols 20% solution for infusion 50ml vials | 1 vial PoM £23.40
  Human Albumin Grifols 20% solution for infusion 100ml vials | 1 vial PoM £46.80
- **Zenalb** (Bio Products Laboratory Ltd)
  Albumin solution human 45 mg per 1 ml Zenalb 4.5% solution for infusion 250ml bottles | 1 bottle PoM £27.51
  Zenalb 4.5% solution for infusion 500ml bottles | 1 bottle PoM £55.02
  Albumin solution human 200 mg per 1 ml Zenalb 20% solution for infusion 100ml bottles | 1 bottle PoM £54.00
  Zenalb 20% solution for infusion 50ml bottles | 1 bottle PoM £27.00
- **Zenbumin** (Bio Products Laboratory Ltd)
  Albumin solution human 200 mg per 1 ml Zenbumin 20% solution for infusion 50ml vials | 1 vial PoM £27.00

PLASMA SUBSTITUTES

Gelatin

- **INDICATIONS AND DOSE**

Low blood volume in hypovolaemic shock, burns and cardiopulmonary bypass

- BY INTRAVENOUS INFUSION
- Child: Initially 10–20 mL/kilogram, use 3.5–4% solution

- **CAUTIONS** Cardiac disease · severe liver disease
  CAUTIONS, FURTHER INFORMATION The use of plasma substitutes in children requires specialist supervision due to the risk of fluid overload; use is best restricted to an intensive care setting.
- **SIDE-EFFECTS**
- **Rare or very rare** Chills · dyspnoea · fever · hyperhidrosis · hypersensitivity · hypertension · hypotension · hypoxia · tachycardia · tremor · urticaria · wheezing
- **PREGNANCY** Manufacturer of *Geloplasma*® advises avoid at the end of pregnancy.
- **HEPATIC IMPAIRMENT** Manufacturers advise avoid preparations that contain lactate (risk of impaired lactate metabolism).
- **RENAL IMPAIRMENT** Use with caution in renal impairment.
- **MONITORING REQUIREMENTS**
- Urine output should be monitored. Care should be taken to avoid haematocrit concentration from falling below 25–30% and the patient should be monitored for hypersensitivity reactions.
- Plasma and plasma substitutes are often used in very ill patients whose condition is unstable. Therefore, close monitoring is required and fluid and electrolyte therapy should be adjusted according to the patient's condition at all times.
- **PRESCRIBING AND DISPENSING INFORMATION** The gelatin is partially degraded.

Gelaspan® contains succinylated gelatin (modified fluid gelatin, average molecular weight 26 500) 40 g, Na^+ 151 mmol, K^+ 4 mmol, Mg^{2+} 1 mmol, Cl^- 103 mmol, Ca^{2+} 1 mmol, acetate 24 mmol/litre; *Gelofusine*® contains succinylated gelatin (modified fluid gelatin, average molecular weight 30 000) 40 g (4%), Na^+ 154 mmol, Cl^- 124 mmol/litre; *Geloplasma*® contains partially hydrolysed and succinylated gelatin (modified liquid gelatin) (as anhydrous gelatin) 30 g (3%), Na^+ 150 mmol, K^+ 5 mmol, Mg^{2+} 1.5mmol, Cl^- 100 mmol, lactate 30 mmol/litre; *Isoplex*® contains succinylated gelatin (modified fluid gelatin, average molecular weight 30 000) 40g (4%), Na^+ 145 mmol, K^+ 4 mmol, Mg^{2+} 0.9 mmol, Cl^- 105 mmol, lactate 25mmol/litre; *Volplex*® contains succinylated gelatin (modified fluid gelatin, average molecular weight 30 000) 40 g (4%), Na^+ 154 mmol, Cl^- 125 mmol/litre.

- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug.

Infusion

- **Gelaspan** (B.Braun Medical Ltd)
  Gelatin 40 mg per 1 ml Gelaspan 4% infusion 500ml Ecobags | 1 bag PoM £5.95 (Hospital only)
- **Gelofusine** (B.Braun Medical Ltd)
  Gelatin 40 mg per 1 ml Gelofusine 4% infusion 1litre Ecobags | 1 bag PoM £9.31
  Gelofusine 4% infusion 500ml Ecobags | 1 bag PoM £4.97
- **Geloplasma** (Fresenius Kabi Ltd)
  Gelatin 30 mg per 1 ml Geloplasma 3% infusion 500ml Freeflex bags | 20 bag PoM (Hospital only)
- **Isoplex** (Kent Pharmaceuticals Ltd)
  Gelatin 40 mg per 1 ml Isoplex 4% infusion 500ml bags | 10 bag PoM £75.00 (Hospital only)
- **Volplex** (Kent Pharmaceuticals Ltd)
  Gelatin 40 mg per 1 ml Volplex 4% infusion 500ml bags | 10 bag PoM £47.00 (Hospital only)

2.3 Magnesium imbalance

Magnesium imbalance

Overview

Magnesium is an essential constituent of many enzyme systems, particularly those involved in energy generation; the largest stores are in the skeleton.

Magnesium salts are not well absorbed from the gastrointestinal tract, which explains the use of magnesium sulfate p. 646 as an osmotic laxative.

Magnesium is excreted mainly by the kidneys and is therefore retained in renal failure, but significant *hypermagnesaemia* (causing muscle weakness and arrhythmias) is rare.

Hypomagnesaemia

Since magnesium is secreted in large amounts in the gastrointestinal fluid, excessive losses in diarrhoea, stoma or fistula are the most common causes of *hypomagnesaemia*; deficiency may also occur as a result of treatment with certain drugs. Hypomagnesaemia often causes secondary hypocalcaemia (with which it may be confused), particularly in neonates, and also hypokalaemia and hyponatraemia.

Symptomatic *hypomagnesaemia* is associated with a deficit of 0.5–1 mmol/kg. Magnesium is given initially by intravenous infusion or by intramuscular injection of magnesium sulfate; the intramuscular injection is painful. Plasma magnesium concentration should be measured to determine the rate and duration of infusion and the dose should be reduced in renal impairment. To prevent *recurrence of the deficit*, magnesium may be given by mouth in divided doses, but there is limited evidence of benefit. Magnesium aspartate p. 645 powder for oral solution is available as a licensed preparation.