1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Calmafusion 380mg/60mg/50mg, solution for infusion for cattle, sheep and pigs

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:

Active substances:

Calcium gluconate for injection	380 mg (equivalent to 34.0 mg or 0.85 mmol of Ca^{2+})
Magnesium chloride hexahydrate	60 mg (equivalent to 7.2 mg or 0.30 mmol of Mg^{2+})
Boric acid	50 mg

Excipients:

Qualitative composition of excipients and other constituents
Water for injections

Clear, colourless to yellowish brown solution.
pH of the solution 3.0 – 4.0
Osmolality 2040 – 2260 mOsm/kg

3. CLINICAL INFORMATION

3.1 Target species

Cattle, sheep, pigs.

3.2 Indications for use for each target species

Treatment of acute hypocalcaemia complicated by deficiency of magnesium.

3.3 Contraindications

Do not use in cases of hypercalcaemia and hypermagnesemia.
Do not use in cases of calcinosis in cattle and sheep.
Do not use following administration of high doses of vitamin D_3.
Do not use in cases of chronic kidney insufficiency or in cases of circulatory or cardiac disorders.
Do not use in cattle suffering septicaemic processes in the course of acute mastitis in cattle.
Do not administer inorganic phosphate solutions simultaneously or shortly after the infusion.
Do not use in cases of hypersensitivity to the active substances or to any of the excipients.

3.4 Special warnings

In case of acute hypomagnesemia, the administration of a solution with a higher concentration of magnesium may be necessary.

3.5 Special precautions for use

Special precautions for use in the target species:
The veterinary medicinal product must be administered only slowly intravenously.
The solution should be warmed to body temperature before administration.

During the infusion, the heart rate, rhythm and circulation must be monitored. In case of symptoms of overdosing (cardiac arrhythmia, fall in blood pressure, agitation), the infusion should be stopped immediately.

Special precautions to be taken by the person administering the veterinary medicinal product to animals:
This veterinary medicinal product contains boric acid, and should not be administered by pregnant women, users of childbearing age, and users trying to conceive.
In case of accidental self-injection, seek medical advice immediately and show the package leaflet or the label to the physician.
This veterinary medicinal product can cause slight skin and eye irritation due to the low pH of the product formulation.
Avoid contact with skin and eyes.
Wear protective gloves and glasses.
When the veterinary medicinal product comes into contact with the skin or eyes, rinse immediately with water.

Special precautions for the protection of the environment:
Not applicable.

3.6 Adverse events

Cattle, sheep, pigs:

Undetermined frequency (cannot be estimated from the available data):	Hypercalcaemia[1] Bradycardia[2], tachycardia[3] Agitation Muscle tremor Hypersalivation Tachypnoea General illness[4]

[1] Transient.
[2] Initially.
[3] Increase in heart rate following initial bradycardia may indicate overdose. In this case, stop the infusion immediately.
[4] Delayed undesirable effects may appear in form of disturbances of the general state of health and symptoms of hypercalcaemia up to 6 – 10 hours after administration and must not be diagnosed as recurring hypocalcaemia.

Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. Reports should be sent, preferably via a veterinarian, to either the marketing authorisation holder or its local representative or the national competent authority via the national reporting system. See the package leaflet for respective contact details.

3.7 Use during pregnancy, lactation or lay

Pregnancy and lactation:

The safety of the veterinary medicinal product has not been established during pregnancy and lactation. Use only according to the benefit-risk assessment by the responsible veterinarian.

3.8 Interaction with other medicinal products and other forms of interaction

Calcium increases the efficacy of cardiac glycosides.
Calcium increases the cardiac effects of β-adrenergic drugs and methylxanthines.
Glucocorticoids increase the renal excretion of calcium by way of vitamin D antagonism.

3.9 Administration routes and dosage

For slow intravenous infusion, recommended over a period of 20 – 30 minutes.
The smaller volumes (less than 50 ml) should be administered by a sterile syringe or syringe infusion pump.

Cattle
Administer 14 – 20 mg Ca^{2+} (0.34 – 0.51 mmol Ca^{2+}) and 2.9 – 4.3 mg Mg^{2+} (0.12 – 0.18 mmol Mg^{2+}) per 1 kg bodyweight (equivalent to 0.4 – 0.6 ml of veterinary medicinal product per 1 kg bodyweight).

Sheep, calf, pig
Administer 10 – 14 mg Ca^{2+} (0.26 – 0.34 mmol Ca^{2+}) and 2.2 – 2.9 mg Mg^{2+} (0.09 – 0.12 mmol Mg^{2+}) per 1 kg bodyweight (equivalent to 0.3 – 0.4 ml of veterinary medicinal product per 1 kg bodyweight).

Dosage instructions above serve as guidance. The dose should always be adapted to the existing individual deficit and condition of the circulatory system.
The second treatment may be administered not earlier than 12 hours after the first administration. The administration can be repeated twice at 24-hour intervals, if the hypocalcaemic condition is persisting.

3.10 Symptoms of overdose (and where applicable, emergency procedures and antidotes)

When the intravenous administration is performed too rapidly, hypercalcaemia and/or hypermagnesemia with cardiotoxic symptoms such as initial bradycardia with subsequent tachycardia, cardiac arrhythmia and in severe cases ventricular fibrillation with cardiac arrest may occur.
Additional symptoms of hypercalcaemia are: motor weakness, muscle tremors, increased excitability, agitation, sweating, polyuria, fall in blood pressure, depression and coma.
Symptoms of hypercalcaemia may persist 6 – 10 hours after the infusion and must not be incorrectly diagnosed as symptoms of hypocalcaemia.

3.11 Special restrictions for use and special conditions for use, including restrictions on the use of antimicrobial and antiparasitic veterinary medicinal products in order to limit the risk of development of resistance

Not applicable.

3.12 Withdrawal periods

Cattle, pigs, sheep:
Meat and offal: Zero days.

Cattle, sheep:
Milk: Zero hours.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code: QA12AX

4.2 Pharmacodynamics

The veterinary medicinal product brings calcium and magnesium to the animal. The parenteral administration increases rapidly the plasmatic concentration of these ions for the treatment of hypocalcaemia.

Calcium
Calcium is an essential mineral in the body. Only free ionized calcium in the blood is biologically active and regulates calcium metabolism. Free calcium participates in many functions in the body, e.g. release of hormones and neurotransmitters, impulse transmission, blood coagulation and formation of action potentials in sensitive membranes as well as muscle contraction.

Magnesium
Magnesium, also an essential mineral, is a co-factor in a number of enzymatic processes and transmission mechanisms being important in the formation of impulses and their transmission in nerve and muscle cells. During neuromuscular transmission of motor end plates impulses of magnesium decreases the release of acetylcholine. Magnesium ion can influence the release of transmitters in central nervous system and in vegetative ganglia. Magnesium causes delay of impulse transmission in heart muscle. Magnesium also stimulates the secretion of parathyroid hormone and therefore regulates serum calcium levels.

This veterinary medicinal product contains calcium in an organic compound (as calcium gluconate) and magnesium in form of magnesium chloride as active substances. By the addition of boric acid, calcium borogluconate is formed, which increases its solubility and tissue tolerability.

4.3 Pharmacokinetics

After parenteral administration, calcium and magnesium are rapidly distributed. The rate of protein binding is around 50% for calcium and 30 to 50 % for magnesium. Calcium is mainly excreted via faeces and magnesium via kidney.

5. PHARMACEUTICAL PARTICULARS

5.1 Major incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal products.

5.2 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 3 years.
Shelf life after first opening the immediate packaging: use immediately.

5.3 Special precautions for storage

This veterinary medicinal product does not require any special storage conditions.

5.4 Nature and composition of the immediate packaging

Graduated polypropylene bottle, closed with a bromobutyl rubber stopper and secured with an aluminium cap or flip-off cap with polypropylene cover.
Package size: 500 ml.
Multipack size: 12 x 500 ml in a cardboard box.
Not all pack sizes may be marketed.

5.5 Special precautions for the disposal of unused veterinary medicinal products or waste materials derived from the use of such products

Medicines should not be disposed of via wastewater or household waste.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any national collection systems applicable to the veterinary medicinal product concerned.

6. NAME OF THE MARKETING AUTHORISATION HOLDER

Interchemie Werken De Adelaar Eesti AS

7. MARKETING AUTHORISATION NUMBER(S)

VPA22812/001/001

8. DATE OF FIRST AUTHORISATION

17/01/2020

9. DATE OF THE LAST REVISION OF THE SUMMARY OF THE PRODUCT CHARACTERISTICS

29/12/2025

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS

Veterinary medicinal product subject to prescription.

Detailed information on this veterinary medicinal product is available in the Union Product Database (https://medicines.health.europa.eu/veterinary).