Summary of Product Characteristics

1 NAME OF THE VETERINARY MEDICINAL PRODUCT

Novomate 277.8 mg/ml powder and solvent for suspension for injection for cattle

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Powder vial contains:
Active substance:
Each 5 g vial contains:

Penethamate hydriodide:	5 g (equivalent to 3.86 g penethamate)

Each 10 g vial contains:

Penethamate hydriodide:	10 g (equivalent to 7.72 g penethamate)

Solvent vial contains (15 ml or 30 ml of a sterile solvent):
Excipients:

Methyl parahydroxybenzoate (E 218):	1.8 mg/ml
Propyl parahydroxybenzoate:	0.18 mg/ml

Each ml of the reconstituted product contains:
Active substance:

Penethamate hydriodide:	277.8 mg (equivalent to 214.5 mg penethamate)

Excipients:

Methyl parahydroxybenzoate (E 218):	1.5 mg/ml
Propyl parahydroxybenzoate:	0.15 mg/ml

For the full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Powder and solvent for suspension for injection.
Powder vial: White to slightly yellow powder
Solvent vial: Clear, colourless solution

The reconstituted suspension is of white to slightly yellow colour.

4 CLINICAL PARTICULARS

4.1 Target Species

Cattle (lactating cows)

4.2 Indications for use, specifying the target species

Treatment of mastitis in lactating cows caused by *Streptococcus uberis, Streptococcus dysgalactiae, Streptococcus agalactiae* and *Staphylococcus aureus* (beta-lactamase non-producing), sensitive to penicillin.

4.3 Contraindications

Do not use in cases of hypersensitivity to penicillins, cephalosporins, and/or any of the excipients.
Do not administer intravenously.
Do not administer to animals with renal disease including anuria or oliguria.

4.4 Special warnings for each target species

None.

4.5 Special precautions for use

Special precautions for use in animals

Use of the product should be based on susceptibility testing of the bacteria isolated from the animal. If this is not possible, therapy should be based on local (regional, farm level) epidemiological information about susceptibility of the target bacteria.'

Official and local antimicrobial policies should be taken into account when the product is used.

Use of the product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to benzylpenicillin and may decrease the effectiveness of treatment with other beta-lactams due to the potential for cross-resistance.

Using penethamate hydriodide for the treatment of mastitis must be accompanied by hygienic measures to prevent reinfection.

The feeding of waste milk containing penicillin residues to calves should be avoided up to the end of the milk withdrawal period (except during the colostral phase), because it could select antimicrobial-resistant bacteria within the intestinal microbiota of the calf and increase the faecal shedding of these bacteria.

Special precautions to be taken by the person administering the veterinary medicinal product to animals

Penicillins and cephalosporins may cause hypersensitivity (allergy) following injection, inhalation, ingestion or skin contact. Hypersensitivity to penicillins may lead to cross-reactions to cephalosporins and vice versa. Allergic reactions to these substances may occasionally be serious.

Do not handle this product if you know you are sensitised to penicillins or any of the excipients, or if you have been advised not to work with such preparations.
Handle the product with great care to avoid exposure, taking all recommended precautions.

If you develop symptoms following exposure, such as a skin rash, you should seek medical advice and show the Doctor this warning. Swelling of the face, lips or eyes or difficulty breathing are more serious symptoms and require urgent medical attention.

Care should be taken to avoid accidental self-injection and contact with the skin. In case of accidental self-injection, seek medical advice immediately.

Wash hands after use.

4.6 Adverse reactions (frequency and seriousness)

Animals may experience discomfort or pain upon administration of the product. Minimal swelling, which should resolve without treatment, may be observed at the injection site after administration of the product.
In very rare cases anaphylactic shock may occur, which can be fatal.

The frequency of adverse reactions is defined using the following convention:
- very common (more than 1 in 10 animals treated displaying adverse reaction(s))
- common (more than 1 but less than 10 animals in 100 animals treated)
- uncommon (more than 1 but less than 10 animals in 1,000 animals treated)
- rare (more than 1 but less than 10 animals in 10,000 animals treated)
- very rare (less than 1 animal in 10,000 animals treated, including isolated reports).

4.7 Use during pregnancy, lactation or lay

Pregnancy:
Can be used during pregnancy.

Lactation:
Can be used during lactation.

4.8 Interaction with other medicinal products and other forms of interactions

Penicillins should not be administered concurrently with bacteriostatic antibiotics.

4.9 Amounts to be administered and administration route

For intramuscular use.
Reconstitution: Reconstitute the suspension by using a suitably scaled syringe to add exactly 15 ml solvent to the contents of the 5 g powder vial OR exactly 30 ml solvent to the contents of the 10 g powder vial, giving reconstituted volumes of 18 ml and 36 ml respectively. Once broached, the solvent vial with any residual solvent must be discarded.
Use only 5 g vial with 15 ml diluent and 10 g vial with 30 ml diluent to provide the correct dose.
Shake well after reconstitution and before each use.
Dosage:
The dose is 15 mg penethamate hydriodide per kg bodyweight.
This is equivalent to 5.4 ml of the reconstituted suspension per 100 kg bodyweight.
Shake well before administration.

The injection should be repeated with a time interval of 24 hours for 4 consecutive days in total.
The injection site volume should not exceed a maximum of 20 ml per injection site.

To ensure a correct dosage, bodyweight should be determined as accurately as possible to avoid under-dosing.

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary

None known.

4.11 Withdrawal period(s)

Meat and offal: 10 days
Milk: 96 hours

5 PHARMACOLOGICAL or IMMUNOLOGICAL PROPERTIES

Pharmacotherapeutic group: Beta lactamase sensitive penicillins.
ATCvet code: QJ01CE90

5.1 Pharmacodynamic properties

In aqueous solution penethamate is hydrolysed to form benzylpenicillin and diethylaminoethanol. The mode of action of benzylpenicillin is by prevention of cell wall synthesis during bacterial cell growth and its activity is primarily bactericidal. The antimicrobial spectrum of the active substance corresponds to that of benzylpenicillin which is effective against beta-lactamase negative *Streptococcus agalactiae*, *Streptococcus dysgalactiae*, *Streptococcus uberis* and *Staphylococcus aureus.*

Mechanisms of resistance:
The most frequent mechanism is producing beta-lactamases (more specifically penicillinase especiallyin *S. aureus*), which break the beta-lactam ring of penicillins making them inactive.

5.2 Pharmacokinetic particulars

Penethamate hydriodide is a prodrug which is hydrolysed to benzylpenicillin and diethylaminoethanol in aqueous solution. The pKa-value of penethamate hydriodide is 8.4. This means that in aqueous solution at physiological pH of 7.2, 8.2% of the drug will be present as the uncharged molecule while 91.8% will be present as the ion. After intramuscular injection, penethamate itself as well as the released alcohol, diethylaminoethanol, has not shown any unexpected pharmacological effects.

Following intramuscular injection of the product to cows the active ingredient is quickly absorbed and maximum serum concentrations are reached approximately 3 hours post treatment. Systemic elimination proceeds with a half-life of 3.5 hours and is virtually completed after 24 hours.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Methyl parahydroxybenzoate (E 218):
Propyl parahydroxybenzoate
Sodium citrate
Polysorbate 80
Citric acid monohydrate
Water for injections

6.2 Major incompatibilities

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

6.3 Shelf-life

Shelf life of the veterinary medicinal product as packaged for sale: 3 years
Shelf life after reconstitution according to directions:
Storage in refrigerator (2°C – 8°C): 7 days
Storage below 25°C: 2 days

6.4 Special precautions for storage

Powder and Solvent:
This veterinary medicinal product does not require any special storage conditions.

Reconstituted product:
Store the reconstituted product in the outer carton in order to protect from light.
Store the reconstituted product in a refrigerator (2 °C – 8 °C) or below 25°C.

6.5 Nature and composition of immediate packaging

Powder:
Colourless, glass vials (siliconised) (30 ml) (type I) glass vials (siliconised) (50 ml) (type II) closed with rubber stoppers (bromobutyl) and aluminium caps.

Solvent:
Colourless, glass vials (20 ml) (type I), glass vials (50 ml) (type II) closed with rubber stoppers (bromobutyl) and aluminium caps.

Pack sizes:
Cardboard box with 1 pair of vials (10 g powder and 30 ml solvent)
Cardboard box with 2 pairs of vials (10 g powder and 30 ml solvent)
Cardboard box with 6 pairs of vials (10 g powder and 30 ml solvent)
Cardboard box with 1 pair of vials (5 g powder and 15 ml solvent)
Cardboard box with 2 pairs of vials (5 g powder and 15 ml solvent)
Cardboard box with 6 pairs of vials (5 g powder and 15 ml solvent)
Not all pack sizes may be marketed.

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

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal product should be disposed of in accordance with local requirements.

7 MARKETING AUTHORISATION HOLDER

Lohmann Pharma Herstellung GmbH
Heinz-Lohmann-Strasse 5
27472 Cuxhaven
Germany

8 MARKETING AUTHORISATION NUMBER(S)

VPA22931/001/001

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 04 December 2015
Date of last renewal: 03 December 2020

10 DATE OF REVISION OF THE TEXT

April 2021