

**ANNEX I**  
**SUMMARY OF PRODUCT CHARACTERISTICS**

## **1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Kexxtone 32.4g continuous-release intraruminal device for cattle

## **2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

### **Active substance:**

Monensin 32.4 g (equivalent to 35.2 g monensin sodium)

Each intraruminal device contains 12 subunits each containing 2.7 g monensin (equivalent to 2.9 g monensin sodium).

For the full list of excipients, see section 6.1.

## **3. PHARMACEUTICAL FORM**

Continuous-release intraruminal device.

A cylindrical orange polypropylene intraruminal device uniquely identified with a number, fitted with wings, consisting of a core which presents as a stack of 12 subunits.

## **4. CLINICAL PARTICULARS**

### **4.1 Target species**

Cattle (dairy cows and heifers)

### **4.2 Indications for use, specifying the target species**

For the reduction in the incidence of ketosis in the peri-parturient dairy cow/heifer which is expected to develop ketosis.

### **4.3 Contraindications**

Do not use in animals weighing less than 300 kg bodyweight.

Do not use in cases of hypersensitivity to the active substance or to any of the excipients.

### **4.4 Special warnings for each target species**

Identification of animals for treatment should be at veterinary discretion. Risk factors may include a history of energy-deficiency-related diseases, high body condition score and parity.

In the event of early regurgitation, identify the animal by matching the animal ID number with the number on the intraruminal device and re-administer an undamaged intraruminal device (See section 4.5).

### **4.5 Special precautions for use**

#### Special precautions for use in animals

Hold treated cattle in a confined area for 1 hour after administration to observe for failure to swallow or regurgitation. If this occurs re-administer the intraruminal device if undamaged. If damaged,

administer a new intraruminal device. Recheck cattle for up to 4 days after dosing to observe for signs of an intraruminal device lodging in the oesophagus.

Signs of lodging may include bloat which may be followed by coughing, drooling, inappetence and unthriftiness.

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

Exposure to the active substance may elicit an allergic response in susceptible individuals. People with known hypersensitivity to monensin or any of the excipients should avoid contact with the veterinary medicinal product.

Do not eat, drink or smoke when handling the veterinary medicinal product.

Use gloves when handling an intraruminal device, including during retrieval of a regurgitated intraruminal device.

Remove gloves and wash hands and exposed skin after handling intraruminal devices.

#### Other precautions

Ingestion or oral exposure to monensin can be fatal in dogs, horses, other equines or guinea fowl. Do not allow dogs, horses, other equines or guinea fowl access to veterinary medicinal products containing monensin.

Due to the risk of bolus regurgitation, do not allow these species access to areas where treated cattle have been kept.

#### **4.6 Adverse reactions (frequency and seriousness)**

In rare cases, digestive signs (e.g. diarrhoea, ruminant stomach disorder) have been observed. In very rare cases, oesophagus obstruction has been observed.

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**

Can be used during pregnancy and lactation.

#### **4.8 Interaction with other medicinal products and other forms of interaction**

None known.

#### **4.9 Amounts to be administered and administration route**

Intraruminal use.

A single intraruminal device is to be administered to a dairy cow/heifer 3-4 weeks prior to expected calving, using an appropriate administration tool.

Kexxtone delivers an approximate average dose of 335 mg of monensin per day for approximately 95 days.

Follow instructions carefully.

Adequate animal restraint is required to properly administer this intraruminal device. Such restraint must limit forward/backward motion and allow the animal's head to be held in the forward extended position and without pressure on the neck to prevent choking.

1. Each intraruminal device has an individual number along the device body. This should be recorded with the corresponding animal identification number so that, should an intraruminal device be regurgitated, the animal can be identified.
2. Fold wings down along the intraruminal device body and insert the device into an appropriate administration tool, orifice end first.
3. Restrain the animal with its head and neck stretched forward. Grasp the animal with one hand in the corner of the animal's mouth. Introduce the administration tool into the mouth avoiding the front teeth. In order to avoid trauma and damage to the pharynx and oesophagus, do not use excessive force.
4. Insert the administration tool past the base of the tongue making sure to avoid the molar teeth. As the animal swallows, the administration tool will move easily over the base of the tongue. **DO NOT USE EXCESSIVE FORCE.** If resistance is encountered, withdraw the tool slightly and repeat the procedure.
5. Be sure the head of the administration tool is past the base of the tongue. When the animal swallows, eject the intraruminal device from the administration tool.

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

Accidental administration of more than one intraruminal device could result in some adverse reactions which are typical of monensin overdose, including decreased appetite, scouring and lethargy. These are generally transient. The highest tolerated dose is typically between 1 mg and 2 mg monensin/kg bodyweight/day.

#### **4.11 Withdrawal period(s)**

Meat and offal: zero days

Milk: zero days

### **5. PHARMACOLOGICAL PROPERTIES**

Pharmacotherapeutic group: Other alimentary tract and metabolism products: drugs for prevention and/or treatment of acetonemia. ATC vet code: QA16QA06

Monensin is a member of the pharmacotherapeutic group of polyether ionophores, specifically the carboxylic subgroup. They are the product of natural fermentation products produced by *Streptomyces cinnamomensis*.

## **5.1 Pharmacodynamic properties**

Monensin binds to bacterial cell membranes and interferes with the maintenance of important ion gradients in the cell which are needed for the transport of nutrients and to generate proton-motive force. Monensin is mainly active against Gram-positive bacteria. Gram-negative bacteria have complex outer cell membranes, resulting in inherent resistance to the action of ionophores. Thus, the ultimate effect of monensin within the rumen is to shift the microbial population resulting in a decrease of the bacteria that produce acetate and butyrate and increasing the bacteria that produce propionate, the gluconeogenic precursor. As a result of the change in population of bacteria within the rumen, efficiency of energy metabolism is improved. In the peri-parturient dairy cow, the positive effects of monensin include reduced blood ketones, increased serum glucose and reduced incidence of ketosis.

## **5.2 Pharmacokinetic particulars**

The site of action for intraruminal administered monensin is the gastrointestinal tract. Intraruminal administration of monensin is followed by extensive first pass metabolism which results in low concentrations of monensin in the systemic circulation. Metabolites and parent drug are excreted in the bile.

When the tablet-subunits inside the intraruminal device are in contact with rumen fluid at the orifice of the device, a gel is formed and is slowly released from the intraruminal device. Monensin is released from the intraruminal device at an approximate average dose of 335 mg/day.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

#### Subunit

Sucrose fatty acid ester

Carbomer

Lactose monohydrate

Magnesium stearate

Silica, colloidal anhydrous

#### Device

Polypropylene\* orifice cap.

Polypropylene\* plunger.

Polypropylene\* barrel and wing.

Steel spring.

\*The polypropylene components are coloured with sunset yellow E110

### **6.2 Major incompatibilities**

Not applicable

### **6.3 Shelf life**

Shelf life of the veterinary medicinal product as packaged for sale: 3 years

Shelf life after first opening the immediate packaging: 6 months

### **6.4. Special precautions for storage**

Keep the foil tightly closed.

## **6.5 Nature and composition of immediate packaging**

Aluminium foil bag containing 1, 3 or 5 intraruminal device(s).

Not all pack sizes may be marketed.

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

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

## **7. MARKETING AUTHORISATION HOLDER**

Elanco GmbH  
Heinz-Lohmann-Str. 4  
27472 Cuxhaven  
Germany

## **8. MARKETING AUTHORISATION NUMBER(S)**

EU/2/12/145/001-003

## **9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

Date of first authorisation: 28/01/2013

Date of last renewal: 06/12/2017

## **10. DATE OF REVISION OF THE TEXT**

MM/YYYY

Detailed information on this veterinary medicinal product is available on the website of the European Medicines Agency [\(http://www.ema.europa.eu/\)](http://www.ema.europa.eu/).

## **PROHIBITION OF SALE, SUPPLY AND/OR USE**

Not applicable.

**ANNEX II**

- A. MANUFACTURER RESPONSIBLE FOR BATCH RELEASE**
- B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE**
- C. STATEMENT OF THE MRLs**

## A. MANUFACTURER RESPONSIBLE FOR BATCH RELEASE

### Name and address of the manufacturer responsible for batch release

Eli Lilly and Company Ltd  
Speke Operations  
Fleming Road  
Liverpool  
UK-L24 9LN

Elanco France S.A.S  
26 Rue de la Chapelle  
68330 Huningue  
France

The printed package leaflet of the medicinal product must state the name and address of the manufacturer responsible for the release of the concerned batch.

## B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE

Veterinary medicinal product subject to prescription.

## C. STATEMENT OF THE MRLs

The Committee for Medicinal Products for Veterinary Use has recommended the inclusion of Monensin in Kexxtone in table 1 (Allowed substances) of the annex to Commission Regulation (EU) No 37/2010 as follows:

| Pharmacologically active substance | Marker residue | Animal species | MRLs   | Target tissues                           | Other provisions | Therapeutic classification       |
|------------------------------------|----------------|----------------|--|--|------------------|----------------------------------|
| Monensin                           | Monensin A     | Bovine         | 2 µg/kg<br>10 µg/kg<br>50 µg/kg<br>10 µg/kg<br>2 µg/kg | Muscle<br>Fat<br>Liver<br>Kidney<br>Milk | None             | Anti-infectious agent/antibiotic |

The excipients listed in section 6.1 of the SPC are either allowed substances for which table 1 of the annex to Commission Regulation (EU) No 37/2010 indicates that no MRLs are required, or are considered as not falling within the scope of Regulation (EC) No 470/2009 when used as in this veterinary medicinal product.



**ANNEX III**  
**LABELLING AND PACKAGE LEAFLET**

## **A. LABELLING**

**PARTICULARS TO APPEAR ON THE OUTER PACKAGE**

**FOIL-BAG CONTAINING 1,3 OR 5 CONTINUOUS-RELEASE INTRARUMINAL DEVICES**

**1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Kexxtone 32.4g continuous-release intraruminal device for cattle  
monensin

**2. STATEMENT OF ACTIVE SUBSTANCES**

35.2 g monensin sodium (equivalent to 32.4 g monensin)

**3. PHARMACEUTICAL FORM**

Continuous-release intraruminal device.

**4. PACKAGE SIZE**

1 intraruminal device  
3 intraruminal devices  
5 intraruminal devices

**5. TARGET SPECIES**

Cattle (dairy cows and heifers)

**6. INDICATION(S)**

**7. METHOD AND ROUTE(S) OF ADMINISTRATION**

Read the package leaflet before use.  
Intraruminal use

**8. WITHDRAWAL PERIOD(S)**

Meat and offal: zero days  
Milk: zero days

**9. SPECIAL WARNING(S), IF NECESSARY**

Read the package leaflet before use.

Ingestion or oral exposure to monensin can be fatal in dogs, horses, other equines or guinea fowl. Do not allow dogs, horses, other equines or guinea fowl access to veterinary medicinal products containing monensin.

Due to the risk of bolus regurgitation, do not allow these species access to areas where treated cattle have been kept.

Exposure to the active substance may elicit an allergic response in susceptible persons. People with known hypersensitivity to monensin or any of the excipients should avoid contact with the veterinary medicinal product.

Do not eat, drink or smoke when handling the veterinary medicinal product.

Use gloves when handling an intraruminal device, including during retrieval of a regurgitated intraruminal device.

Remove gloves and wash hands and exposed skin after handling intraruminal devices.

#### **10. EXPIRY DATE**

EXP { month/year }

Once opened use by...

Shelf life after first opening the immediate packaging: 6 months

#### **11. SPECIAL STORAGE CONDITIONS**

Keep the foil tightly closed.

#### **12. SPECIAL PRECAUTIONS FOR THE DISPOSAL OF UNUSED PRODUCTS OR WASTE MATERIALS, IF ANY**

Dispose of waste material in accordance with local requirements.

#### **13. THE WORDS “FOR ANIMAL TREATMENT ONLY” AND CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE, IF APPLICABLE**

For animal treatment only. To be supplied only on veterinary prescription.

#### **14. THE WORDS “KEEP OUT OF THE SIGHT AND REACH OF CHILDREN”**

Keep out of the sight and reach of children.

#### **15. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER**

Elanco GmbH  
Heinz-Lohmann-Str. 4  
27472 Cuxhaven  
Germany

**16. MARKETING AUTHORISATION NUMBER(S)**

EU/2/12/145/001  
EU/2/12/145/002  
EU/2/12/145/003

**17. MANUFACTURER'S BATCH NUMBER**

Lot {number}

**B. PACKAGE LEAFLET**

**PACKAGE LEAFLET:**  
**Kexxtone 32.4g continuous-release intraruminal device for cattle**

**1. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER AND OF THE MANUFACTURING AUTHORISATION HOLDER RESPONSIBLE FOR BATCH RELEASE, IF DIFFERENT**

Marketing authorisation holder:

Elanco GmbH  
Heinz-Lohmann-Str. 4  
27472 Cuxhaven  
Germany

Manufacturer responsible for batch release:

Eli Lilly and Company Ltd  
Speke Operations  
Fleming Road  
Liverpool  
L24 9LN  
United Kingdom

Elanco France S.A.S  
26 Rue de la Chapelle  
68330 Huningue  
France

**2. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Kexxtone 32.4g continuous-release intraruminal device for cattle  
monensin

**3. STATEMENT OF THE ACTIVE SUBSTANCE(S) AND OTHER INGREDIENT(S)**

Monensin 32.4 g (equivalent to 35.2 g monensin sodium)

A cylindrical orange polypropylene intraruminal device uniquely identified with a number, fitted with wings, consisting of a core which presents as a stack of 12 subunits.

**4. INDICATION(S)**

For the reduction in the incidence of ketosis in the peri-parturient dairy cow/heifer which is expected to develop ketosis.

**5. CONTRAINDICATIONS**

Do not use in animals weighing less than 300 kg bodyweight.  
Do not use in cases of hypersensitivity to the active substance or to any of the excipients.

## **6. ADVERSE REACTIONS**

In rare cases, digestive signs (e.g. diarrhoea, ruminant stomach disorder) have been observed. In very rare cases, oesophagus obstruction has been observed.

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).

If you notice any side effects, even those not already listed in this package leaflet or you think that the medicine has not worked, please inform your veterinary surgeon.

## **7. TARGET SPECIES**

Cattle (dairy cows and heifers)

## **8. DOSAGE FOR EACH SPECIES, ROUTE(S) AND METHOD OF ADMINISTRATION**

Intraruminal use.

A single intraruminal device is to be administered to a dairy cow/heifer 3-4 weeks prior to expected calving, using an appropriate administration tool.

Kexxtone delivers an approximate average dose of 335 mg of monensin per day for approximately 95 days.

## **9. ADVICE ON CORRECT ADMINISTRATION**

Follow directions carefully.

Adequate animal restraint is required to properly administer this intraruminal device. Such restraint must limit forward/backward motion and allow the animal's head to be held in the forward extended position and without pressure on the neck to prevent choking.

Each intraruminal device has an individual number along the intraruminal device body. This should be recorded with the corresponding animal identification number so that, should an intraruminal device be regurgitated, the animal can be identified.

Fold wings down along the intraruminal device body and insert the intraruminal device into an appropriate administration tool, orifice end first.

Standing to one side of the animal, restrain it with its head and neck stretched forward and held firmly against your side. Grasp the animal with one hand in the corner of the animal's mouth. Introduce the administration tool into the mouth avoiding the front teeth. In order to avoid trauma and damage to the pharynx and oesophagus, do not use excessive force.

Insert the administration tool past the base of the tongue making sure to avoid the molar teeth. As the animal swallows the administration tool will move easily over the base of the tongue. **DO NOT USE EXCESSIVE FORCE.** If resistance is encountered, withdraw the tool slightly and repeat the procedure.

Be sure the head of the administration tool is past the base of the tongue. When the animal swallows, eject the intraruminal device from the administration tool.

Hold treated cattle in a confined area for 1 hour after administration to observe for failure to swallow or regurgitation. If this occurs re-administer the intraruminal device if undamaged. If damaged,



administer a new intraruminal device. Recheck cattle for up to 4 days after dosing to observe for signs of an intraruminal device lodging in the oesophagus. In the event of early regurgitation, identify the animal by matching the animal ID number with the number on the intraruminal device.

Signs of lodging may include bloat which may be followed by coughing, drooling, inappetence and unthriftiness.

#### **10. WITHDRAWAL PERIOD(S)**

Meat and offal: zero days

Milk: zero days

#### **11. SPECIAL STORAGE PRECAUTIONS**

Keep out of the sight and reach of children

Keep the foil tightly closed.

Shelf life after first opening the immediate packaging. 6 months

Do not use this veterinary medicinal product after the expiry date which is stated on the package after "EXP". The expiry date refers to the last day of that month.

#### **12. SPECIAL WARNING(S)**

##### Special precautions for use in animals:

Identification of animals for treatment should be at veterinary discretion. Risk factors may include a history of energy-deficiency-related diseases, high body condition score and parity.

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

Exposure to the active substance may elicit an allergic response in susceptible individuals. People with known hypersensitivity to monensin or any of the excipients should avoid contact with the veterinary medicinal product.

Do not eat, drink or smoke when handling the veterinary medicinal product.

Use gloves when handling an intraruminal device, including during retrieval of a regurgitated intraruminal device.

Remove gloves and wash hands and exposed skin after handling intraruminal devices.

##### Other precautions

Ingestion or oral exposure to monensin can be fatal in dogs, horses, other equines or guinea fowl. Do not allow canine, horses, other equines or guinea fowl access to veterinary medicinal products containing monensin.

Due to the risk of bolus regurgitation, do not allow these species access to areas where treated cattle have been kept.

##### Pregnancy and lactation:

Can be used during pregnancy and lactation.

Overdose (symptoms, emergency procedures, antidotes):

Accidental administration of more than one intraruminal device could result in some adverse reactions which are typical of monensin overdose, including decreased appetite, scouring and lethargy. These are generally transient. The highest tolerated dose is typically between 1 mg and 2 mg monensin/kg bodyweight/day.

Incompatibilities:

Not applicable

**13. SPECIAL PRECAUTIONS FOR THE DISPOSAL OF UNUSED PRODUCT OR WASTE MATERIALS, IF ANY**

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

**14. DATE ON WHICH THE PACKAGE LEAFLET WAS LAST APPROVED**

<DD/MM/YY>

Detailed information on this veterinary medicinal product is available on the website of the European Medicines Agency (<http://www.ema.europa.eu/>).

**15. OTHER INFORMATION**

Aluminium foil bag containing 1, 3 or 5 intraruminal device(s).

Not all pack sizes may be marketed.

For any information about this veterinary medicinal product, please contact the marketing authorisation holder.