SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

KARIDOX 100 mg/ml solution for use in drinking water for chickens and pigs

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:

Active substances:

Doxycycline 100 mg
(equivalent to doxycycline hyclate 116.0 mg)

Excipients:

Qualitative composition of excipients and other constituents
Propylene glycol

Clear, dense, brownish-yellow solution.

3. CLINICAL INFORMATION

3.1 Target species

Chicken (broilers) and pigs.

3.2 Indications for use for each target species

CHICKENS (BROILERS)
Metaphylaxis and treatment of chronic respiratory disease (CRD) and mycoplasmosis caused by microorganisms sensitive to doxycycline.

PIGS
Metaphylaxis and treatment of clinical respiratory disease due to *Pasteurella multocida* and *Mycoplasma hyopneumoniae* sensitive to doxycycline.

The presence of the disease in the herd should be established before the metaphylactic treatment.

3.3 Contraindications

Do not use in case of hypersensitivity to tetracyclines.
Do not use in case of resistance to tetracyclines occurs.
Do not use in animals with hepatic dysfunction.

3.4 Special warnings

Sick animals may have a reduced appetite and altered drinking patterns and should, if necessary, be medicated parenterally.
In cases of altered food or drinking water uptake, the concentrations should be adjusted in such a way that the recommended dosage is achieved.
Do not administer to laying hens.

3.5 Special precautions for use

Special precautions for safe use in the target species:

Prolonged or repeated use of this veterinary medicinal product is discouraged. Attention should be paid to avoidance of stressful conditions and improvement of management practices and hygiene standards.
Avoid administration in oxidised drinking equipment.
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 and farm level) epidemiological information about susceptibility of the target bacteria, taking into account official national antimicrobial policies.
Inappropriate use of the product may increase the prevalence of bacteria resistant to doxycycline and may decrease the effectiveness of treatment with tetracyclines, due to the potential for cross-resistance.

Due to variability (time, geographical) in susceptibility of bacteria for doxycycline, bacteriological sampling and susceptibility testing of micro-organisms from diseased birds on farm are highly recommended.

A high resistance rate of *E.coli*, isolated from chickens, against tetracyclines has been documented. Therefore the product should be used for the treatment of infections caused by *E.coli* only after susceptibility testing has been carried out.

As eradication of the target pathogens may not be achieved, medication should therefore be combined with good management practices, e.g. good hygiene, proper ventilation, no overstocking.

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

Tetracyclines may – in very rare cases – induce photosensitivity and allergic reactions.
People with known hypersensitivity to doxycycline should avoid contact with the veterinary medicinal product. Personal protective equipment consisting of gloves, work overall, safety glasses should be worn when handling the veterinary medicinal product. This veterinary medicinal product is acid and likely to be irritant. The veterinary medicinal product can be harmful by skin contact and inhalation and may cause eye irritation. Avoid contact with skin and eyes. In case of contact with skin, rinse immediately with plenty of water. In

case of contact with eyes, rinse immediately with copious amounts of water and seek medical advice.
Do not smoke, eat or drink while handling this veterinary medicinal product.
In case of accidental ingestion seek medical advice and show the package leaflet or the label to the physician.
If any symptom should appear, such as a cutaneous eruption, seek prompt medical advice. Swelling of the face, lips or eyes or respiratory difficulties are the most serious signs which require urgent medical attention.

Special precautions for the protection of the environment:

Not applicable.

3.6 Adverse events

Chickens (broilers) and pigs.

Undetermined frequency (cannot be estimated from the available data):	Allergic reaction[1] photosensitivity [1] Disorder of gastrointestinal flora [1,2] Digestive disturbance [1,2]

[1] If suspected adverse reactions occur, treatment should be discontinued.
[2] In very prolonged treatments.

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 use is not recommended during pregnancy or lactation.

Laying birds
Do not use in bords in lay and breeding birds

3.8 Interaction with other medicinal products and other forms of interaction

Doxycycline absorption may be reduced by the presence of high quantities of calcium, iron, magnesium or aluminium in the diet. Do not administer together with antacids, kaolin and iron preparations.
Do not administer together with bactericidal antibiotics.
The solubility of the product is pH dependent and will precipitate if mixed in alkaline solution
Do not administer with milk replacers

3.9 Administration routes and dosage

To be administered in drinking water

CHICKEN (broilers): 11.5 – 23 mg doxycycline hyclate / kg body weight / day, corresponding to 0.1 – 0.2 ml of the veterinary medicinal product per kg body weight, for 3-5 consecutive days
PIGS: 11.5 mg doxycycline hyclate/ kg body weight / day, corresponding to 0.1 ml of the veterinary medicinal product per kg body weight, for 5 consecutive days).

Based on the recommended dose, and the number and weight of the animals to be treated, the exact daily amount of the veterinary product should be calculated according to the following formula:

$$\frac{\text{X ml veterinary medicinal product/ kg body weight/day} \times \text{Average body weight (kg) of animals to be treated}}{\text{Average daily water intake (l/animal)}} = \text{X ml veterinary medicinal product per litre of drinking water}$$

To ensure a correct dosage body weight should be determined as accurately as possible. The intake of medicated water depends on the clinical condition of the animals. In order to obtain the correct dosage, the concentration of doxycycline in drinking water may need to be adjusted accordingly.

The use of suitably calibrated measuring equipment is recommended if part packs are used. The daily amount is to be added to the drinking water such that all medication will be consumed in 24 hours. Medicated drinking water should be freshly prepared every 24 hours. It is recommended to prepare a concentrated pre-solution – approximately 100 grams product per litre drinking water – and to dilute this further to therapeutic concentrations if required. Alternatively, the concentrated solution can be used in a proportional water medicator.
Medicated water should be the only drinking source.
The remaining medicated water should be disposed of in accordance with local requirements.

If no improvement in clinical signs is seen within the treatment duration, the diagnosis should be reviewed and treatment changed.

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

No data available.

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

Meat & offal:
Chickens (broilers): 7 days
Pigs: 7 days.

Eggs: Not for use in birds producing or intended to produce eggs for human consumption.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code: QJ01AA02

4.2 Pharmacodynamics

Doxycycline is a bacteriostatic agent that acts by interfering with the bacterial protein synthesis of sensitive species.
Doxycycline is a semi-synthetic tetracycline derived from oxytetracicline. It acts on the subunit 30S of the bacterial ribosome, to which is linked reversibly, blocking the union between aminoacyl-tRNA (transfer RNA) to the mRNA-ribosome complex, preventing the addition of new aminoacids into the growing peptide chain and thus interfering with protein synthesis.
Doxycycline is active against Gram-positive and Gram-negative bacteria.

Spectrum of activity:

Streptococcus spp.
Staphylococcus aureus
Chlamydia spp.
Mycoplasma spp.
Salmonella spp.
Pasteurella multocida

In vitro sensitivity of doxycycline against *Pasteurella multocida* and *Bordetella bronchiseptica* strains isolated from pigs has been determined by means of a plate diffusion method, and against *Mycoplasma hyopneumoniae* by a dilution method, with MIC_{90} values of 0.517 µg/ml, 0.053 µg/ml and 0.200 µg/ml, respectively.
According to the NCCLS standard, strains sensitive to doxycycline have MIC values below or equal to 4 µg/ml and those resistant have MIC values above or equal to 16 µg/ml.

There are at least two mechanisms of resistance to tetracyclines. The most important mechanism is due to decreased cellular accumulation of the drug. This is due to the establishment of either a pump elimination path or an alteration in the transport system that limits the uptake of tetracycline. The alteration in the transport system is produced by inducible proteins codified in plasmids and transposons. The other mechanism is evidenced by decreased ribosome affinity for the Tetracycline-Mg^{2+} complex owing to chromosomal mutations. Resistance to tetracyclines may not only be the result of therapy with tetracyclines, but may also be caused by therapy with other antibiotics leading to selection of multi-resistant strains including tetracyclines. Although minimal inhibitory concentrations (MIC) tend to be lower for doxycycline than for older generation tetracyclines, pathogens resistant to one tetracycline are generally also resistant to doxycycline (cross resistance). Both long term treatment and treating for an insufficient length of time and/or sub-therapeutic dosages can select for antimicrobial resistance and should be avoided.

4.3 Pharmacokinetics

Doxycycline is bioavailable after oral administration. When orally administered, it reaches values greater than 70% in most species.
Feeding can modify the oral bioavailability of doxycycline. In fasting conditions bioavailability is around 10-15% greater than when the animal is fed.
Doxycycline is well distributed through the body as it is highly lipid soluble. It accumulated in liver, kidney, bones and intestine; enterohepatic recycling occurs. In lungs, it always reaches higher concentrations than in plasma. Therapeutic concentrations have been detected in aqueous humour, myocardium, reproductive tissues, brain and mammary gland. Plasma protein binding is 90-92%.
40% of the drug is metabolized and largely excreted through faeces (biliary and intestinal route), mainly as microbiologically inactive conjugates.

CHICKENS (broilers)
After oral administration, doxycycline is rapidly absorbed reaching maximum concentrations (C_{max}) around 1.5 h. Bioavailability was about 75%. The presence of food in the gastrointestinal tract reduces its absorption, reaching a bioavailability around 60% and extending considerably the time at which it reaches the maximum peak concentration, (t_{max}) 3.3 h.

PIGS
After an oral dose of 10 mg/kg/day, the concentration at steady state (C_{ss}) was around 1.30 µg/mL and plasma elimination half-life ($t_{1/2}$) was 7.01 h.

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: 2 years
Shelf life after first opening the immediate packaging: 3 months
Shelf life after dilution according to directions: 24 hours

5.3 Special precautions for storage

Do not store above 30 °C.
Protect from light.

5.4 Nature and composition of immediate packaging

White high-density polyethylene containers closed with a screw cap of the same material with induction sealing.

Pack sizes:
1 bottle of 1 L
1 barrel of 5 L

Not all pack sizes may be marketed.

5.5 Special precautions for the disposal of unused veterinary medicinal product 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

Laboratorios Karizoo S.A

7. MARKETING AUTHORISATION NUMBER

Vm 31223/4000

8. DATE OF FIRST AUTHORISATION

20 August 2008

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

October 2025

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCT

Veterinary medicinal product subject to prescription.

Find more product information by searching for the 'Product Information Database' on www.gov.uk.

Gavin Hall
Approved: 19 December 2025