# TRIMODIN POWDER
## *(Trimethoprim & Sulphadiazine)*

**SUMMARY OF PRODUCT CHARACTERISTICS**

**1 NAME OF THE VETERINARY MEDICINAL PRODUCT**

TRIMODIN POWDER.

**2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

Each Kg Contains:
Trimethoprim …… 20gm
Sulphadiazine ……... 100gm

**3. PHARMACEUTICAL FORM**

Oral Powder.

**4. CLINICAL INFORMATION**

**4.1. Target species**

Cattle & Horse.

**4.2. Indications for use specifying the target species**

The product is intended for the treatment of infections caused by microbes sensitive to the sulfadiazine-trimethoprim combination.

- **Cattle:** enteritis, pneumonia, bronchitis
- **Horse:** pneumonia, bronchitis, enteritis

**4.3. Contraindications**

Severe liver or kidney disease. Hypersensitivity to any of the ingredients of the product. Disorders of the blood-forming organs, especially the bone marrow.

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

When the calf begins to ruminate, the absorption of drugs from the rumen is reduced. The powder should not be used in fully ruminant animals, as trimethoprim is incompletely absorbed from the rumen in these animals. Drug combinations and preparations containing sulfonamides have been reported to cause keratoconjunctivitis sicca in dogs. Hepatitis, possibly due to sulfonamides, has been reported to occur in dogs in connection with trimethoprim-sulfadiazine therapy.
The adverse reactions described in section 3.6 have also been observed in dogs.

**4.5. Special precautions for use**

Special precautions for safe use in the target species:

Caution should be exercised when treating newborn animals. Caution should be exercised when treating animals with hepatic or renal impairment.

Use of the product should be based on identification and susceptibility testing of the target pathogen(s). If this is not possible, treatment should be based on epidemiological information on the susceptibility of the target pathogens at farm or local/regional level.

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

Unnecessary handling and direct contact with the product should be avoided and protective gloves should be worn if necessary. If the user of the product is hypersensitive to the medicinal substances it contains, careless handling may lead to a hypersensitivity reaction.

**Special precautions for environmental protection:**

Not applicable.

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

Cattle, horse.

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|---|---|
| Not specified (as the available data are insufficient to estimate the frequency): | Adverse Events, Diarrhea, vomiting, Anaphylaxis and other hypersensitivity reactions,<br>Crystalluria (urine crystals)<br>[1]Polyartritis<br>Frequent urination<br>Loss of appetite, fever |

**[1]** Preparations containing sulfonamides may cause crystalluria (urine crystals).

Reporting of adverse events is important. It allows for the continuous monitoring of the safety of veterinary medicines. Reports should preferably be sent by a veterinarian to either the marketing authorisation holder or the national competent authority via the national reporting system. Further contact details can also be found under the heading "Adverse reactions" on the product label.

**4.7. Use during pregnancy and lactation or lay**

The effect of the product on the developing fetus or infant offspring has not been studied.

**4.8. Interaction with other veterinary medicinal products and other forms of interaction**

The product may cause life-threatening cardiac dysfunction (arrhythmias) in horses sedated with 2-agonists. The product may prolong blood clotting time in animals receiving warfarin. Sulfonamides may potentiate the effects of methotrexate, phenylbutazone, phenytoin, salicylates and thiazide diuretics. Products containing sulfonamides should not be used concomitantly other medicinal products containing p-aminobenzoic acid or its derivatives.

**4.9. Dosage and administration route**

The preparation is administered orally.
Dosage:

The dose is 10g/40kg (corresponding to a total dose of 30mg/kg of active ingredients) per day, divided into two doses, for at least five days and for 2 days after symptoms have resolved.
To ensure correct dosing, the animal's weight must be determined as accurately as possible.

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

Anemia, leukopenia, thrombocytopenia, anorexia and unsteadiness (ataxia) have been observed with high doses of trimethoprim and sulfadiazine.

### 4.11. Restrictions and special conditions of use, including restrictions on the use of antimicrobial and antiparasitic veterinary drugs, in order to reduce the risk of resistance development

Do not use for prophylaxis.

### 4.12. Withdrawal period:

Slaughter: 14 days.
**Not Applicable:** Horse

## 5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: Combination of Antibiotics.
ATCvet Code: **QJ01EW10**

### 5.1. Pharmacodynamics properties

The product contains trimethoprim and sulfadiazine in a ratio of 1:5 and is therefore an antimicrobial. The product contains sulfadiazine, a sulfonamide drug that competes with para-aminobenzoic acid to inhibit the synthesis of dihydrofolic acid. Trimethoprim is a folic acid antagonist by its mechanism of action, preventing the conversion of dihydrofolic acid to tetrahydrofolic acid.

The combination of trimethoprim and sulfadiazine has a mutually potentiating effect. Trimethoprim and sulfadiazine are bacteriostatic when administered separately, but together they have a bactericidal effect. The antibacterial effect of the drug combination is based on the synergistic ability of the active substances to disrupt the bacterial tetrahydrofolic acid synthesis at successive stages.

Due to the synergistic effect, the microbe's sensitivity to trimethoprim generally increases by about 10-fold and to sulfonamide by about 100-fold.

The antibacterial spectrum of trimethoprim-sulfadiazine covers a broad spectrum of both Gram-positive and -negative microbes.

Microbes with an MIC of less than 0.5/9.5microg/ml (trimethoprim/sulfonamide) are considered susceptible to the drug combination contained in the product. The following gram-positive bacteria are generally susceptible to the trimethoprim-sulfadiazine combination: *S. aureus*, *Streptococcus sp.*, *Actinomyces sp.*, *Corynebacterium sp.*, *E. rhusiopathiae*, *L. monocytogenes* and the following gram-negative bacteria: *Actinobacillus sp.*, *Bordetella sp.* and enterobacteria: *E. coli*, *Klebsiella sp.*, *Proteus sp.*, *Yersinia sp.*, *Haemophilus sp*. Sensitive anaerobic bacteria include: *Actinomyces sp.*, *Bacteroides sp.*, *Fusobacterium sp.* and some *Clostridium sp*.

Gradual development of resistance to trimethoprim-sulfonamide combinations has also been observed during use. Multi-resistance R factors, which include both sulfonamide and trimethoprim resistance, have been been described in strains isolated from animals with *Salmonella typhimurium* and enterotoxigenic *E. coli*.

Other resistant bacteria include leptospires, *Pseudomonas aeruginosa*, mycoplasmas and rickettsiae.

### 5.2. Pharmacokinetic information

Trimethoprim and sulfadiazine are rapidly absorbed from the gastrointestinal tract. There is considerable inter- and intra-species variation in kinetics, due to factors such as blood pH conditions. Tissue concentrations of trimethoprim are 2–6 times and sulfadiazine 2–3 times higher than serum concentrations.

Sulfadiazine is metabolized mainly by acetylation and trimethoprim by oxidation, hydroxylation and demethylation. The metabolites, with the exception of the hydroxy metabolite, have antibacterial properties.

There is considerable inter- and intra-species variation in the excretion and metabolism of both components.

### Environmental impacts

The product is toxic to aquatic organisms. When spreading manure from treated animals, care must be taken to ensure that it does not enter water bodies. A buffer zone of at least 10 metres must be left along water bodies and ditches.

To prevent groundwater contamination, manure from treated animals must not be spread on fields located in groundwater areas or near domestic water wells or similar. Manure from treated animals must not be spread on the same field in consecutive years.

## 6. PHARMACEUTICAL INFORMATION

### 6.1 Excipients

Lactose Monohydrate.

### 6.2 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: 2 years.
Shelf life after dilution or reconstitution according to instructions: 24 hours.

### 6.4. Special precautions for storage

Store below 25°C in a dry place.
Do not store in the refrigerator or freezer.
Protect from light and moisture.
Keep out of the reach of children.
To be used as directed by the registered veterinary practitioner only.

### 6.5. Nature and composition of primary conditioning

250 gm & 2.5 kg

SPECIAL PRECAUTIONS FOR THE DISPOSAL OF WASTE MATERIALS
UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS

Any unused veterinary medicinal products or waste materials derived from such medicinal products should be disposed of in accordance with local requirements and placed in appropriate collection and disposal systems for unused or expired medicinal products.

## 7. MARKETING AUTHORISATION HOLDER

Nawan Laboratories (Pvt.) Ltd.
Plots No. 136-138, Sector-15,
Korangi Industrial Area, Karachi-74900, Pakistan.

## 8. MARKETING AUTHORISATION NUMBER

Reg. No.: 006864

## 9. DATE OF FIRST AUTHORISATION

Date of Reg.: 03-04-1983

## 10. DATE OF REVISION OF THE TEXT

17-02-2025