SULFADIMETHOXINE 40%- sulfadimethoxine injection Aspen Veterinary Resources, Ltd.

Sulfadimethoxine Injection 40%

Sulfadimethoxine Injection 40% (sulfadimethoxine)
ANTIBACTERIAL

Each mL contains 400 mg Sulfadimethoxine

Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

DESTRICTED DRUG (

RESTRICTED DRUG (California), USE ONLY AS DIRECTED NOT FOR USE IN HUMANS

KEEP OUT OF REACH OF CHILDREN

DESCRIPTION: Sulfadimethoxine Injection 40% is a low-dosage, rapidly absorbed, longacting sulfonamide, effective for the

treatment of shipping fever complex, bacterial pneumonia, calf diphtheria and foot rot in cattle. Sulfadimethoxine is a white, almost

tasteless and odorless compound. Chemically, it is N^1 -(2,6 dimethoxy-4-pyrimidinyl) sulfanilamide. The structural formula is:

ACTIONS: Sulfadimethoxine has been demonstrated clinically or in the laboratory to be effective against a variety of organisms, such as *streptococci*, *klebsiella*, *proteus*, *shigella*, *staphylococci*, *escherichia*, and *salmonella*. The systemic sulfonamides which include sulfadimethoxine are bacteriostatic agents. Sulfonamides competitively inhibit bacterial synthesis of folic acid (pteroylglutamic acid) from para-aminobenzoic acid. Mammalian cells are capable of utilizing folic acid in the presence of sulfonamides.

The tissue distribution of sulfadimethoxine, as with all sulfonamides, is a function of plasma levels, degree of plasma protein binding, and subsequent passive distribution in the tissues of the lipid-soluble un-ionized form. The relative amounts are determined by both its pKa and by the pH of each tissue. Therefore, levels tend to be higher in less acid tissue and body fluids or those diseased tissues having high concentrations of leucocytes.²

Slow renal excretion results from a high degree of tubular reabsorption,³ and plasma protein binding is very high, providing a blood reservoir of the drug. Thus, sulfadimethoxine maintains higher blood levels than most other long-acting sulfonamides. Single, comparatively low doses of sulfadimethoxine give rapid and sustained therapeutic blood levels.¹

To assure successful sulfonamide therapy (1) the drug must be given early in the course of the disease, and in must produce a high sulfonamide level in the body rapidly after administration, (2) therapeutically effective sulfonamide levels must be maintained in the body throughout the treatment period, (3) treatment should continue for a short period of time after the clinical signs have disappeared, and (4) the causative organisms

must be sensitive to this class of drugs.

TOXICITY AND SAFETY: Data regarding acute (LD_{50}) and chronic toxicities of sulfadimethoxine indicate the drug is very safe. The LD_{50} in mice is greater than 2 g/kg body weight when administered intraperitoneally and greater than 16 g/kg when administered orally.

In dogs receiving massive single oral doses of 3.2 g/kg body weight, diarrhea was the only adverse effect observed. Dogs given 160 mg/kg body weight orally daily for 13 weeks showed no sign of toxicity.

In cattle sulfadimethoxine has been shown to be safe through extensive clinical use with other dosage forms. In addition, studies with intravenous administration of Sulfadimethoxine Injection 40% have demonstrated that hemolysis of erythrocytes does not occur by this route of administration. Sulfadimethoxine has a relatively high solubility at the pH normally occurring in the kidney, precluding the possibility of precipitation and crystalluria.

INDICATIONS: Sulfadimethoxine Injection 40% is indicated for the treatment of bovine respiratory disease complex (shipping fever complex) and bacterial pneumonia associated with *Pasteurella* spp. sensitive to sulfadimethoxine; necrotic pododermatis (foot rot) and calf diphtheria caused by *Fusobacterium necrophorum* (*Sphaerophorus necrophorus*), sensitive to sulfadimethoxine.

LIMITATIONS: Sulfadimethoxine is not effective in viral or rickettsial infections, and as with any anti-bacterial agent, occasional failures in therapy may occur due to resistant microorganisms. The usual precautions in sulfonamide therapy should be observed.

RESIDUE WARNINGS: Milk taken from animals during treatment and for 60 hours (5 milkings) after the latest treatment must not be used for food. Do not administer within 5 days of slaughter. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

PRECAUTIONS: During treatment period, make certain that animals maintain adequate water intake.

If animals show no improvement within 2 or 3 days, consult your veterinarian. Tissue damage may result from perivascular infiltration.

DOSAGE AND ADMINSTRATION: Sulfadimethoxine Injection 40% must be administered only by the intravenous route in cattle. Cattle should receive 1 mL of Sulfadimethoxine Injection 40% per 16 pounds of body weight (55 mg/kg) as an initial dose, followed by 0.5 mL per 16 pounds of body weight (27.5 mg/kg) every 24 hours thereafter. Sulfadimethoxine boluses may be utilized for maintenance therapy in cattle. Representative weights and doses are indicated in the following table:

Each mL contains 400 mg sulfadimethoxine:

Animal Weight	Initial Dose 25 mg/lb (55 mg/kg)	Subsequent Daily Doses 12.5 mg/lb (27.5 mg/kg)
250 lb (113.6 kg)	15.6 mL	7.8 mL
500 lb (227.2 kg)	31.2 mL	15.6 mL
750 lb (340.9 kg)	46.9 mL	23.5 mL
1000 lb (454.5 kg)	62.5 mL	31.3 mL

Length of treatment depends on the clinical response. In most cases treatment for 3 to

5 days is adequate. Treatment should be continued until the animal is asymptomatic for 48 hours.

DIRECTIONS FOR INTRAVENOUS INJECTION: Equipment needed-

- 1. A nose lead and/or halter sufficiently strong enough to effectively restrain or hold the animal's head steady so that the intravenous injection can be made with ease.
- 2. Hypodermic needles, 16 or 18 gauge and 2 inches long. Only new, sharp and sterile hypodermic needles should be used. Dull needles should be discarded. Extra needles should always be available in case of the needle being used should become clogged.
- 3. Hypodermic syringes, 40 or 50 mL sterile disposable or reusable glass syringes should be available.
- 4. Alcohol (70%) or equally effective antiseptic for disinfecting the skin.

Preparation of equipment - Glass syringes and regular hypodermic needles should be thoroughly cleaned and washed. Following this, the needles and syringes should be immersed in boiling water for 30 minutes prior to each injection. Regular hypodermic needles should not be used more than 3-4 times as repeated skin puncturing and boiling of the needles causes them to become quite dull. Disposable hypodermic needles and syringes should not be used more than once.

Restraint of animal - The cow should preferably be in a stanchion for maximum restraint. If this is not possible, the animal should be restrained in a manner to prevent excessive movement. A nose lead should be applied and the animal's head turned sidewise to stretch the skin and tense the muscles of the neck region. (See Figure 1). **Locating the jugular vein -** Once the animal has been restrained (as above), you will notice a long depression of the skin from below the angle of the jaw to just above the shoulder. This is known as the jugular furrow or jugular groove. The jugular vein is located just under the jugular groove. (See Fig. 1).

Preparation of Sulfadimethoxine Injection 40% for injection - The rubber cap of the bottle should be thoroughly cleaned with 70% alcohol or other satisfactory antiseptic. The correct amount of Sulfadimethoxine Injection 40% for treatment should be calculated (see dosage directions) and that amount withdrawn into a syringe. (See Figure 2). One or two syringefuls of air should be injected into the bottle first to make withdrawing the drug easier. Sulfadimethoxine Injection 40% should preferably be at room temperature when filling syringes and when injecting intravenously.

Entering the vein - The skin of the injection area should be clean and free of dirt. Cotton saturated with 70% alcohol (or suitable antiseptic) should be used to wipe the injection site.

Apply pressure over the jugular vein close to the shoulder. This will reduce the flow of blood to the heart and cause the jugular vein to bulge or enlarge. (See Figure 3). When the jugular vein has been "raised", insert the hypodermic needle at a 45 degree angle through the skin just underneath the jugular vein. The beveled edge of the hypodermic needle should be up. (See Figure 4).

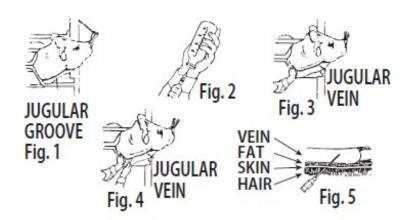
After the skin has been punctured, the point of the needle should be directed toward the side of the vein and pushed into the center of the vein. (See Figure 5). When the needle is in the center of the vein, there will be a free flow of blood back through the needle. Release external pressure when you are sure the needle is within the vein.

Injecting the Sulfadimethoxine Injection 40% - After the needle has been accurately inserted into the jugular vein, firmly attach the syringe containing Sulfadimethoxine Injection 40% to the inserted hypodermic needle. Caution, be sure syringe is free of air. Exert firm pressure on the plunger of the syringe to inject the

Sulfadimethoxine Injection 40% while the barrel is held firmly. The injection should be made moderately slow - never rapidly.

If the animal moves, causing resistance in pushing the plunger of the syringe, or if a bubble of the drug is noted under the skin, the needle is no longer within the vein. The needle should be repositioned.

When the injection is completed, quickly withdraw the syringe and needle with a quick pull and apply light pressure over the injection site with alcohol and cotton to minimize bleeding from the puncture site.



To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact

Huvepharma, Inc. at 1-877-994-4883 or www.huvepharma.us. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or http://www.fda.gov/reportanimalae.

NOTE: Store at room temperature. Should crystallization occur at cold temperatures, crystals will dissolve either by storing in room temperature for several days or by heating the vial in warm water. Crystallization and redissolution do not impair the efficacy of the product.

HOW SUPPLIED:Sulfadimethoxine Injection 40% is available in 250 mL sterile multiple dose containers.

Sulfadimethoxine Injection 40% – Each mL contains 400 mg sulfadimethoxine compounded with 20% propylene glycol, 1%

benzyl alcohol, 0.1 mg disodium edetate, 1 mg sodium formaldehyde sulfoxylate, and pH adjusted with sodium hydroxide.

REFERENCES

- 1. Data on file from Hoffmann-La Roche Inc., Nutley, New Jersey.
- 2. Stowe, C.M., THE SULFONAMIDES, in Jones. L.M. (ed.), Veterinary Pharmacology and Therapeutics, Ames, Iowa, Iowa State University Press. 1965, chapter 33.
- 3. Baggot, J.D., SOME ASPECTS OF DRUG PERSISTENCE IN DOMESTIC ANIMALS, Res. Vet. Sci. 11:2, 130, 1970

CONTENTS:

EACH mL CONTAINS: 400 mg sulfadimethoxine compounded with 20% propylene glycol, 1% benzyl alcohol, 0.1 mg disodium

edetate, 1 mg sodium formaldehyde sulfoxylate, and pH adjusted with sodium hydroxide.

DOSAGE:

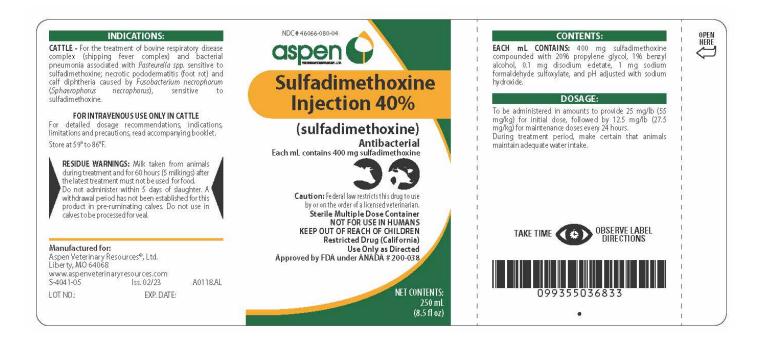
To be administered in amounts to provide 25 mg/lb (55 mg/kg) for initial dose, followed by 12.5 mg/lb (27.5 mg/kg) for maintenance doses every 24 hours.

During treatment period, make certain that animals maintain adequate water intake.

Approved by FDA under ANADA # 200-038

Manufactured for: Aspen Veterinary Resources,® Ltd. Liberty, MO 64068 www.aspenveterinaryresources.com





To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Huvepharma, Inc. at 1-877-994-4883 or www.huvepharma.us. For Huvepharma, Inc. at 1-07/39/4-000 of www.incepharma additional information about adverse drug experience animal drugs, contact FDA at 1-888-FD http://www.fda.gov/reportanimalae. 1-888-FDA-VETS

NOTE: Store at room temperature. Should crystallization occur at cold temperatures, crystals will dissolve either by storing at room temperature for several days or by heating the vial in warm water. Crystallization and redissolution do not impair the efficacy of the

HOW SUPPLIED: Sulfadimethoxine Injection 40% is available in

HOW SUPPLIES Subadimethoxine Injection 40% is available in 250 mL stelle multiple does containers.

Sulfadimethoxine Injection 40% – Each mL contains 400 mg sulfadimethoxine compounded with 20% propylene glyco, 17% benzyl alcohol, 0.1 mg disodium edetate, 1 mg sodium formaldehyde sulfoxylate, and pH adjusted with sodium hydroxide.

REFERENCES

- REFERENCES

 1. Data on file from Hoffmann-La Rochelinc, Nutley, New Jersey.

 2. Stowe, C.M., THE SULFONAMIDES, in Jones, L.M. (ed.),
 Veterinary Pharmacology and Heap-eutics, Ames, Jowa, Jowa
 State University Press. 1965, chapter 33.

 8. Baggod, J.D., SOME ASPECTS OF DRIJE OF BRUGENES

CONTENTS:

EACH mL CONTAINS: 400 mg sulfadimet hoxine compounded with 20% propylene glycol, 196 benzyl alcohol, 0.1 mg disodium edetate, 1 mg sodium formaldehyde sulfoxylate, and pH adjusted

DOSAGE:

To beadministered in amounts to provide 25 mg/lb (55 mg/kg) for initial dose, followed by 12.5 mg/lb (27.5 mg/kg) for maintenance doses every 24 hours.

During treatment period, make certain that animals maintain

Approved by FDA under ANADA # 200-038

Manufactured for: Aspen Veterinary Resources,® Ltd. Liberty, MO 64068 www.aspenveterinaryresources.com Resources,® Ltd.





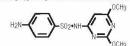
Sulfadimethoxine Injection 40% (sulfadimethoxine)

ANTIBACTERIAL Each mL contains 400 mg Sulfadimethoxine

Caution: Federal law restricts this drug to use by or on the order of a

RESTRICTED DRUG (California). USE ONLY AS DIRECTED NOT FOR USE IN HUMANS KEEP OUT OF REACH OF CHILDREN

DESCRIPTION: Sulfadimethoxine Injection 40% is a low-dosage, rapidly absorbed, long-acting sulforamide, effective for the treatment of shipping fever complex, bacterial pneumonia, calf diphtheria and foot rot in cattle. Sulfadimethoxine is a white, almost tasteless and odorless compound. Chemically, it is N1-f dimethoxy-4-pyrimidinyl) sulfanilamide. The structural formula is:



ACTIONS: Sulfadimethosine has been demonstrate de clinically or in the laboratory to be effect we against a variety of organisms, such as steeptococci, klebsielke, proteus, shigello, stophylococci, excherchia, and salmonella." The systemic sulforamides which include sulfadimethosine are bacteriostatic agents. Sulforamides competitively inhibit bacterial synthesis of folic acid (pteroylglutamic acid) from para-aminoberatoic acid. Mammallan cells are capable of utilizing folic acid in the presence of sulforamides.

The tissue distribution of sulfadimethoxine, as with all sulforemides, is a function of plasma levels, degree of plasma protein binding, and subsequent passive distribution in the tissues of the lipid-soluble unionized form. The relative amounts are determined by both its plas and by the plf of each tissue Therefore, levels tend to be higher in less acid tissue and body fluids or those diseased tissues having high concentations ofleucocyte.³ Slow renal excertion results from a high degree of tubular reabsorption,³ and plasma protein binding is very high, providing a blood reservoir of the uniq. Thus, sulfadimethoxine maintains higher blood levels than most other long-acting sulformaides. Single, comparatively low doses of sulfadimethoxine give rapid and sustained theappeatic bool elvels.⁴

therapeutic blood levels.

rretapeuric blood revers." To assure successful sulfonamide therapy (1) the drug must be given early in the course of the disease, and it must produce a high sulfonamide level in the body rapidly after administration, (2) therapeutically effective sulfonamide levels must be maintained in the body throughout the treatment period, (3) treatment should continue for a short period of time after the clinical signs have disappeared, and (4) the causative organisms must be sensitive to this class of drugs.

(4) the assattve organisms must be sensitive to this class of drugs. TOXICITY AND SAFETY: Data regarding acute ($0.D_{20}$) and chronic toxicities of suiladmethoxine indicate the drug is very safe. The $1.D_{20}$ in mice is greater than 2.9 kg body weight when administered intrapentionally and greater than 10 kglu when administered only. In dogs receiving massive single oral doses of 3.2 g/kg body weight, diarrha was the only adverse effect observed. Dog given 160 mg/kg body weight orally daily for 13 weeks showed no signs of toxicity. In cattle suiladmethoxine has been shown to be safe through extensive clinical use with other dosage forms. In addition, studies with intraversous administration of Sulfadimethoxine in jection 40% have demonstrated that hemolysis of erythrocytes does not occur by this route of administration. Sulfadimethoxine has a relatively high

solubility at the pH normally occurring in the kidney, preducing the possibility of precipitation and crystalluria.

INDICATIONS: Sulfadimethoxine Injection 40% is indicated for the Inducations statement on the injection 4096 is indicated of the treatment of bovine respiratory disease complex (hipping fever complex) and bacterial pneumonia associated with Rosewells spp. sensitive to sulfadimethoxine, necrotic pododermatis floot rot) and calf diphtheria caused by Fusobacterium necrophorum fiphaerophorus necrophorus), sensitive to sulfadimethoxine.

HMITATIONS: Sulfadimethoxine is not effective in viral or rickettsial than In 10003: Suited metrosuries is not elective in vital or increasing infections, and as with any anti-bacterial agent, occasional failures in therapy may occur due to resistant microorganisms. The usual precautions in sulforamidet herapy should be observed.

RESIDUE WARNINGS: Milk taken from animals during treatment and for 60 hours (5 milkings) after the later treatment must not be used for 600. Do not administer within 5 days of skughter. A withdrawal period has not been established for his product in pre-ministring calves. Do not use in calves to be processed for weal.

PRECAUTIONS: During treatment period, make certain that animals maintain a dequate water intake.

If animals show no improvement within 2 or 3 days, consult your

Tissue damage may result from perivascular infiltration.

DOSAGE AND ADMINISTRATION: Sulfadimethoxine Injection 40% DUSAGE AND ADMINIST IRST DIRE Suitadimethoxine injection 40% must be administered only by the intravenour source in cattle Cattle should receive 1 mL of Sulfadimethoxine Injection 40% per 16 pounds of body weight (55 mg/kg) as an initial dose, followed by OS mL per 16 pounds of body weight (275 mg/kg) every 24 hours thereafter. Sulfadimethoxine boluses may be utilized for maintenance therapy in cattle. Representative weights and doses are indicated in the following table: Each mL contains 400 mg sulfadimethoxine:

Animal Weight	Initial Dose 25 mg/lb (55 mg/kg)	Subsequent Daily Doses 12.5 mg/lb (27.5 mg/kg)	
250 lb (113.6 kg)	15.6 mL	7.8 mL	
500 lb (227,2 kg)	31.2 mL	15.6 mL	
750 lb (340.9 kg)	46.9 mL	23.5 mL	
1000 lb (454.5 kg)	62.5 mL	31.3 mL	

Length of treatment depends on the clinical response in most cases treatment for 3 to 5 days is adequate. Treatment should be continued until the animal is asymptomatic for 48 hours.

DIRECTIONS FOR INTRAVENOUS INJECTION:

DIRECTIONS FOR INTRAVENDOUS INJECTION:

Equipment accided1. A noselead and of Inalter sufficiently strong enough to
effectively restrain or hold theanimal's head steady so
that the intravenous injection on he made with rese.
2. Hyprodermic needles, 16 or 18 gauge and 21 inches long,
Ohly new, sharp and stelle hyprodermic needles should
be used. Dull needles should be discarded. Extra
needles should always be available in case the needle
being used should become dogged.
3. Hyprodermic syringes, 40 or 50 mit, stelle disposable or
reusable glass syringes should beavailable.
4. Alcohol (2009) or equally effective antiseptic for
disirfecting the skin.

Preparation of equipment - Glass syringes and regular hyprodermic
needles should be throroughly cleaned and
washed, Following this, the needles and syringes should be
immersed in boiling wate for 30 minuter, prior to each injection.
Regular hyprodermic needles should not be used more than 3-4
times as repeated skin purcturing and boiling of the needles causes

4

them to become quite dull. Disposable hypodermic needles and syringes should not be used more than once.

Restraint of animal — The cow should preferably be in a stanchion for maximum restraint. If this is not possible, the animal should be restrained in a manner to prevent excessive movement. A nose lead should be applied and the animals had utumed sidewise to stretch the sikin and temesthem usdes of the neck region. [See Figure 1].

Locating the jugular vein – Once the animal has been restrained as above how uself in outre a local desergation of the bettin from below the

above), you will notice a long depression of the skin from below the angle of the jaw to just above the shoulder. This is known as the jugular furrow or jugular groove. The jugular vein is located just under the

jugular groove. (See Figure 1). Preparation of Sulfadimethoxine Injection 40% for injection – The piguiar growe, ceet guire 1).

Preparation of Subsdimethodischie Injection 40% for injection – The rubber cap of the bottle should be throughly cleaned with 70% alcohol or other satisfactory anticepts. The correct amount of Subdimethodine Injection 40% for treatment should be calculated (see dosage direction) and rittal amount withdrawn into a syringe. Gee Rigure 2). One or two syringefuls of air should be injected into the bottle first to make withdrawning the drug assist. Subdimethodische Injection 40% should prefeably be at room tempesature when filling syringes and when injecting finitizene mostly.

Entering the vein – The Skin of the injection area should be dean and free of dirt. Corton saturated with 70% alcohol (or suitable antiseptic) should be used to wijectherigetion size.

Apply pressure over the jugular vein close to the shoulder This will reduce the flow of blood to the heart and cause the jugular vein to bulge or enlarge. Gee Figure 3). When the jugular vein to have been fasted, inset the Hypodermic needle at a 45 legalar vein has been Tasked, meet the Hypodermic needle should be theyodermic needle should be directed towards needle should be directed toward needle should be directed toward needle should be directed toward the side of the vein and purbed into the center of the directed toward the side of the vein and purbed into the center of the

directed toward the side of the vein and pushed into the center of the

5

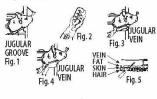
vein. (See Figure 5). When the needle is in the center of the vein, there will be a free flow of blood back through the needle. Release external pressure when you are sure the needle is within the

vein. Injecting the Sulfaclimethoxine Injection 40% – After the needle has been accurately inserted into the jugular vein, firmly attach the syringe containing Sulfadimethoxine injection 40% to the inserted hypodermic needle. Caution be sure syringe is free of air. Event firm pressure on the plunger of the syringe to linject the Sulfadimethoxine Injection 40% while the barrel is held firmly. The

injection should be made moderately slow – never rapidly.

If the animal moves, causing resistance in pushing the plunger of
the syringe, or if a bubble of the drug is noted under the skin, the
needle is no longer within the vein. The needle should be

needle is no longer within the vein. The needle should be repositioned. When the injection is completed, quickly withdraw the syringe and needle with a quick pull and apply light pressure over the injection site with alcohol and cotton to minimize bleeding from the puncture site.



Strength

SULFADIMETHOXINE 40%

sulfadimethoxine injection

Product Information

Product Type PRESCRIPTION ANIMAL DRUG Item Code (Source) NDC:46066-552 **INTRAVENOUS Route of Administration**

Active Ingredient/Active Moiety

Basis of Ingredient Name Strength

SULFADIMETHOXINE (UNII: 30CPC5LDEX) (SULFADIMETHOXINE -

400 mg **SULFADIMETHOXINE** UNII:30CPC5LDEX) in 1 mL

Inactive Ingredients

Ingredient Name Strength

BENZYL ALCOHOL (UNII: LKG8494WBH) **EDETATE DISODIUM** (UNII: 7FLD91C86K) PROPYLENE GLYCOL (UNII: 6DC9Q167V3)

SODIUM FORMALDEHYDE SULFOXYLATE (UNII: X4ZGP7K714)

SODIUM HYDROXIDE (UNII: 55X04QC32I)

water (UNII: 059QF0KO0R)

Packaging					
#	Item Code	Package Description	Marketing Start Date	Marketing End Date	
1	NDC:46066-552-04	250 mL in 1 VIAL			

Marketing Information					
Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date		
ANADA	ANADA200038	11/21/2017			

Labeler - Aspen Veterinary Resources, Ltd. (627265361)

Revised: 6/2023 Aspen Veterinary Resources, Ltd.