SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Sedator, 1.0 mg/ml, solution for injection for cats and dogs

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:

Active ingredients

Medetomidine hydrochloride	1.00 mg
(equivalent to 0.85 mg medetomidine)	
FR: Medetomidine (as hydrochloride)	*0.85 mg*
(equivalent to 1.0 mg medetomidine hydrochloride)	

Excipients

Methyl parahydroxybenzoate (E 218)	1.00 mg
Propyl parahydroxybenzoate (E 216)	0.20 mg

For a full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Solution for injection.
Clear and colourless sterile aqueous solution

4. CLINICAL PARTICULARS

4.1. Target species

Dog, cat

4.2. Indications for use, specifying the target species

In dogs and cats:
Sedation to facilitate handling. Premedication prior to general anaesthesia.
In cats:
In combination with ketamine for general anaesthesia for minor surgical procedures of short duration.

4.3. Contraindications

Do not use in animals with:
- Severe cardiovascular disease or respiratory diseases or impaired liver or kidney function.
- Mechanical disturbances of the gastro-intestinal tract (torsio ventriculi, incarcerations, oesophageal obstructions).
- Diabetes mellitus.
- State of shock, emaciation or serious debilitation.

Do not use concomitantly with sympathomimetic amines.
Do not use in cases of known hypersensitivity to the active substance or to any other excipients.
Do not use in animals with ocular problems where an increase in intraocular pressure would

be detrimental.
See also section 4.7

4.4. Special warnings for each target species

Medetomidine may not provide analgesia throughout the entire period of sedation, therefore consideration should be given to providing additional analgesia for painful procedures.

4.5. Special precautions for use

Special precautions for use in animals
A clinical examination should be carried out in all animals before the use of veterinary medicinal products for sedation and/or general anaesthesia. Higher doses of medetomidine should be avoided in large breed dogs. Care should be taken when combining medetomidine with other anaesthetics or sedatives (e.g. ketamine, thiopental, propofol, halothane), because of its marked anaesthetic sparing effects. The dose of the anaesthetic should be reduced accordingly and titrated to response due to considerable variability in requirements between patients. Before using any combinations, the warnings and contra-indications in the product literature for the other products should be observed.
Animals should be fasted 12 hours before anaesthesia.
The animal should be placed in a calm and quiet surrounding to let the sedation gain its maximum effect. This takes about 10 – 15 minutes. One should not start any procedure or give other medicines before maximum sedation is reached.
Treated animals should be kept warm and at a constant temperature, both during the procedure and recovery. The eyes should be protected by a suitable lubricant.
Nervous, aggressive or excited animals should be given the possibility to calm down before initiation of treatment
Sick and debilitated dogs and cats should only be premedicated with medetomidine before induction and maintenance of general anaesthesia based on a risk-benefit assessment.
Care should be taken with use of medetomidine in animals with cardiovascular disease, or which are elderly or in general poor health. Liver and kidney function should be evaluated prior to use.
Medetomidine may cause respiratory depression and under these circumstances, manual ventilation and oxygen may be administered.
To reduce the recovery time following anaesthesia or sedation the effect of the veterinary medicinal product can be reversed by administration of an alpha-2 antagonist e.g. atipamezole or yohimbine. As ketamine alone can elicit cramps, alpha-2 antagonists should be administered not before 30-40 min. after ketamine. For dosage directions, see section 4.10.

Special precautions to be taken by the person administering the veterinary medicinal product to animals
In the case of accidental oral intake or self-injection, seek medical advice immediately and show the package insert to the physician but DO NOT DRIVE as sedation and changes in blood pressure may occur.
Avoid skin, eye or mucosal contact.
Wash the exposed skin immediately after exposure with large amounts of water.
Remove contaminated clothes that are in direct contact with skin.
In the case of accidental contact of the product with eyes, rinse abundantly with fresh water. If symptoms occur, seek the advice of a physician.
If pregnant women handle the product, special caution should be observed not to self-inject as uterine contractions and decreased foetal blood pressure may occur after accidental systemic exposure.
Advice to doctors: Medetomidine is an alpha2-adrenoreceptor agonist, symptoms after absorption may involve clinical effects including dose-dependent sedation, respiratory depression, bradycardia, hypotension, a dry mouth, and hyperglycaemia. Ventricular

arrhythmias have also been reported. Respiratory and haemodynamic symptoms should be treated symptomatically.

4.6. Adverse reactions (frequency and seriousness)

Bradycardia with atrioventricular block (1st and 2nd degree) and occasionally extrasystolia. Vasoconstriction of coronary artery. Decreased cardiac output. Blood pressure will increase initially after administration and then return to normal, or slightly below normal. Some dogs and most cats will vomit within 5-10 minutes of injection. Cats may also vomit on recovery. Sensitivity to loud noises is observed in some individuals.
Increased diuresis, hypothermia, respiratory depression, cyanosis, pain at injection site and muscle tremor may be seen. In individual cases reversible hyperglycaemia due to depression of insulin secretion. Pulmonary oedema has been reported as a rare adverse reaction after use of medetomidine.
In circulatory and respiratory depression manual ventilation and an oxygen supplement may be indicated. Atropine may increase the cardiac rate.
Dogs with a body weight of less than 10 kg may show the undesirable effects mentioned above more often.

4.7. Use during pregnancy, lactation or lay

The safety of the product has not been established during pregnancy and lactation. Therefore it should not be used during pregnancy and lactation.

4.8. Interactions with other veterinary medicinal products and other forms of interaction

The concomitant use of other CNS depressants should be expected to potentiate the effect of either active substance. Appropriate dose adjustments should be made.
Medetomidine has marked anaesthetic sparing effects. See also section 4.5.
The effects of medetomidine may be antagonized by administration of atipamezole or yohimbine. See also section 4.10.

4.9. Amounts to be administered and administration route

The veterinary medicinal product is intended for:
Dogs: Intramuscular or intravenous injection.
Cats: Intramuscular injection.
Use of an appropriately graduated syringe is recommended to ensure accurate dosing when administering small volumes.

Dogs:
For sedation the veterinary medicinal product should be administered at the rate of 750 µg medetomidine hydrochloride i.v. or 1000 µg medetomidine hydrochloride i.m. per square meter of body surface. Use the table below to determine the correct dosage on the basis of body weight:
Maximal effect is obtained within 15-20 minutes. Clinical effect is dose-dependent, lasting from 30 – 180 minutes.

Dosages of the veterinary medicinal product in ml and corresponding amount of medetomidine hydrochloride in µg /kg bw:

body weight (kg)	intravenous injection (ml)	corresponding to (µg/kg bw)	intramuscular injection (ml)	corresponding to (µg/kg bw)
1	0,08	80.0	0,10	100.0
2	0,12	60.0	0,16	80.0
3	0,16	53.3	0,21	70.0
4	0,19	47.5	0,25	62.5
5	0,22	44.0	0,30	60.0
6	0,25	41.7	0,33	55.0
7	0,28	40.0	0,37	52.9
8	0,30	37.5	0,40	50.0
9	0,33	36.7	0,44	48.9
10	0,35	35.0	0,47	47.0
12	0,40	33.3	0,53	44.2
14	0,44	31.4	0,59	42.1
16	0,48	30.0	0,64	40.0
18	0,52	28.9	0,69	38.3
20	0,56	28.0	0,74	37.0
25	0,65	26.0	0,86	34.4
30	0,73	24.3	0,98	32.7
35	0,81	23.1	1,08	30.9
40	0,89	22.2	1,18	29.5
50	1,03	20.6	1,37	27.4
60	1,16	19.3	1,55	25.8
70	1,29	18.4	1,72	24.6
80	1,41	17.6	1,88	23.5
90	1,52	16.9	2,03	22.6
100	1,63	16.3	2,18	21.8

For premedication the veterinary medicinal product should be administered at a dosage of 10-40 µg medetomidine hydrochloride per kg body weight, corresponding to 0.1-0.4 ml of the veterinary medicinal product per 10 kg body weight. The exact dose depends on the combination of drugs used and the dosage(s) of the other drug(s). The dose should furthermore be adjusted to the type of surgery, length of procedure and patient temperament and weight. Premedication with medetomidine will significantly reduce the dosage of the induction agent required and will reduce volatile anaesthetic requirements for maintenance anaesthesia. All anaesthetic agents used for induction or maintenance of anaesthesia should be administered to effect. Before using any combinations, product literature for the other products should be observed. See also section 4.5.

Cats:
For moderate-deep sedation and restraint of cats the veterinary medicinal product should be administered at a dosage of 50 – 150 µg medetomidine hydrochloride /kg bw (corresp. to 0.05 – 0.15 ml of the veterinary medicinal product / kg bw).
For anaesthesia the veterinary medicinal product should be administered at a dosage of 80 µg medetomidine hydrochloride / kg bw (corresp. to 0.08 ml of the veterinary medicinal product / kg bw) and 2.5 to 7.5 mg ketamine / kg bw. Using this dosage anaesthesia occurs within 3 – 4 minutes and is apparent for 20 – 50 minutes. For longer lasting procedures administration has to be repeated by using ½ of the initial dose (i.e. 40 µg medetomidine hydrochloride (corresp. to 0.04 ml of the veterinary medicinal product / kg bw) and 2.5 - 3.75 mg ketamine / kg bw) or 3.0 mg ketamine / kg bw alone. Alternatively, for longer lasting procedures anaesthesia may be extended by use of the inhalation agents isoflurane or halothane, with oxygen or

oxygen/nitrous oxide. See section 4.5

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

In the case of overdose the main signs are prolonged anaesthesia or sedation. In some cases cardio-respiratory effects may occur. For treatment of these cardio-respiratory effects of an overdose it is recommended to administer an alpha-2 antagonist e.g. atipamezole or yohimbine, provided that reversal of sedation is not dangerous to the patient (atipamezole does not reverse the effects of ketamine which may cause seizures in dogs and elicit cramps in cats when used alone). Alpha-2 antagonists should be administered not before 30-40 min. after ketamine.
Use atipamezole hydrochloride 5 mg/ml intramuscularly in the dog in the same volume as the veterinary medicinal product, in the cat use half the volume. The required dose of atipamezole hydrochloride corresponds in dogs to the 5-fold dose of the medetomidine hydrochloride dose in mg administered before and in cats to the 2.5-fold dose.
If it is imperative to reverse bradycardia but maintain sedation, atropine may be used.

4.11. Withdrawal periods

Not applicable.

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: sedative and analgesic.
ATCvet code: QN05CM91

5.1. Pharmacodynamic properties

The active ingredient of the veterinary medicinal product is (R,S)-4-[1-(2,3-dimethylphenyl)-ethyl)]-imidazole-hydrochloride (INN: Medetomidine), a sedative compound with analgesic and myorelaxing properties. Medetomidine is a selective, specific and highly efficacious alpha-2-receptor agonist. The activation of alpha-2 receptors leads to a decrease in release and turnover of norepinephrine in the central nervous system, leading to sedation, analgesia and bradycardia. In the periphery medetomidine causes vasoconstriction via stimulation of postsynaptic alpha-2 adrenoceptors, leading to a transient arterial hypertension. Within 1 – 2 hours arterial blood pressure falls back to normotension or slight hypotension. The respiratory rate may be transiently decreased. Depth and duration of sedation and analgesia are dose related. Profound sedation and recumbency, with reduced sensitivity to environmental stimuli (sounds, etc.), are seen with medetomidine. Medetomidine acts synergistically with ketamine and opiates, such as fentanyl, leading to better anaesthesia. The amount of volatile anaesthetics, such as halothane, will be reduced by medetomidine. Beside its sedative, analgesic and myo-relaxing properties, medetomidine also exerts hypothermic and mydriatic effects, inhibits salivation and decreases intestinal motility.

5.2. Pharmacokinetic particulars

After intramuscular administration medetomidine is rapidly and nearly completely absorbed from the injection site and pharmacokinetics is very similar to intravenous administration. Maximal plasma concentrations are reached within 15 and 20 minutes. Plasma half-life is considered to be 1.2 hours in the dog and 1.5 hours in the cat. Medetomidine is mainly oxidised in the liver, a smaller amount undergoes methylation in the kidneys. Metabolites will be excreted mainly via urine.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Methyl parahydroxybenzoate (E 218),
Propyl parahydroxybenzoate (E 216),
Sodium chloride,
Hydrochloric acid (for pH-adjustment)
Sodium hydroxide (for pH-adjustment)
Water for injections

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: 3 years
Shelf-life after first opening the container: 28 days

6.4. Special precautions for storage

Do not freeze.

6.5. Nature and composition of immediate packaging

Cardboard box with 1 clear glass type I vial of 5, 10 or 20 ml, with a teflon coated halogenated type I rubber stopper and aluminium cap. Not all pack sizes may be marketed.

6.6. Special precautions for the disposal of unused veterinary medicinal products or waste materials

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

7. MARKETING AUTHORISATION HOLDER

Eurovet Animal Health B.V.
Handelsweg 25, 5531 AE Bladel,
The Netherlands
Tel: + 31 497 544300
Fax: + 31 497 544302

8. MARKETING AUTHORISATION NUMBER

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

10 DATE OF REVISION OF THE TEXT

Prohibition of sale, supply and/or use / prescription