



## TECHNICAL NOTES

# Alfaxan<sup>®</sup> Multidose

## Anaesthetic Injection



### Active Constituents

10 mg/mL Alfaxalone

### Description

Alfaxan Multidose is a clear, colourless, sterile solution for injection presented in a multi-use injection vial.

### Actions

Alfaxalone (3- $\alpha$ -hydroxy-5- $\alpha$ -pregnane-11,20-dione) is a neuroactive steroid molecule with properties of a general anaesthetic. The primary mechanism for the anaesthetic action of alfaxalone is modulation of neuronal cell membrane chloride ion transport, induced by binding of alfaxalone to GABA<sub>A</sub> cell surface receptors.

### Pharmacokinetic particulars

The volume of distribution after a single injection of clinical doses of alfaxalone in dogs and cats is 2.4 L/kg and 1.8 L/kg, respectively. In cats, the mean terminal plasma elimination half-life ( $t_{1/2}$ ) for alfaxalone is approximately 45 minutes for a 5 mg/kg dose. Mean plasma clearance for a 5 mg/kg dose is  $25.1 \pm 7.6$  mL/kg/min. In dogs, the mean terminal plasma elimination half-life ( $t_{1/2}$ ) for alfaxalone is approximately 25 minutes for a 2 mg/kg dose. Plasma clearance for a 2 mg/kg dose is  $59.4 \pm 12.9$  mL/kg/min. Alfaxalone metabolites are likely to be eliminated from the dog and cat by the hepatic/faecal and renal routes, similar to other species.

### Contraindications

Alfaxan Multidose is contraindicated for use in combination with other intravenous anaesthetic agents.



### Precautions

**Alfaxan Multidose should be given by slow continuous injection and NOT as a rapid dose.** Some patients, especially dogs, may undergo a short period of apnoea on induction using Alfaxan Multidose by the intravenous route. This can be avoided by inducing anaesthesia by slow continuous intravenous injection over 60 seconds, while assessing the degree of anaesthesia achieved.

Appropriate analgesia should be provided in cases where procedures are anticipated to be painful.

#### **As with all general anaesthetic agents:**

It is advisable to ensure that the patient has been fasted before receiving the anaesthetic.

Additional monitoring is advised and particular attention should be paid to respiratory parameters in aged animals, or in cases where there may be additional physiological stress imposed by pre-existing pathology or shock and in animals undergoing caesarean section.

Following induction of anaesthesia, the use of an endotracheal tube is recommended to maintain airway patency.

It is advisable to administer supplemental oxygen during maintenance of anaesthesia.

Respiratory embarrassment may occur – ventilation of the lungs with oxygen should be considered if haemoglobin saturation with oxygen (SpO<sub>2</sub>%) falls below 90% or if apnoea persists for longer than 60 seconds.

If cardiac arrhythmias are detected, attention to respiratory ventilation with oxygen is the first priority followed by appropriate cardiac therapy or intervention.

During recovery, it is preferable that animals are not handled or disturbed. This may lead to paddling, minor muscle twitching or movements that are more violent. Violent movements may be stimulated by rough handling. While better avoided, such reactions are clinically insignificant. Psychomotor excitement may be encountered in a minority of dogs and cats recovering from Alfaxan Multidose anaesthesia. Post-anaesthetic recovery should thus take place in appropriate facilities and under sufficient supervision. Use of a benzodiazepine as the sole premedicant may increase the probability of psychomotor excitement. It has been noted that unpremedicated dogs may be hyperexcitable in response to some sounds during recovery.

In both dogs and cats, the dose interval for maintenance of anaesthesia by intermittent bolus administration may require lengthening by more than 20%, or the maintenance dose by intravenous infusion may require reduction by more than 20%, when hepatic blood flow is severely diminished or hepatocellular injury is severe.

### Indications

Alfaxan Multidose is an injectable steroid anaesthetic for use in dogs and cats. Alfaxan Multidose can be used:

- As an induction agent prior to gaseous anaesthesia, or
- As a sole anaesthetic agent for the induction and maintenance of anaesthesia for the performance of examination or surgical procedures.



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### Directions For Use

#### Dosage and Administration

Use contents within 28 days of first broaching the vial. Discard the unused portion.

#### Induction of Anaesthesia by the intravenous route

Dosing recommendations for induction of anaesthesia are as follows:

	DOGS		CATS	
	Unpremedicated	Premedicated	Unpremedicated	Premedicated
mg/kg	3	2	5	5
mL/kg	0.3	0.2	0.5	0.5

The dosing syringe should be prepared to contain the above dose. The rate of intravenous injection should be such that the total dose, if required, would be administered over the first 60 seconds. If, 60 seconds after complete delivery of this first induction dose, intubation is still not possible, one further similar dose may be administered to effect. The necessary injection rate can be achieved by administration of one quarter ( $\frac{1}{4}$ ) of the calculated dose every 15 seconds. Administration should continue until the clinician is satisfied that the depth of anaesthesia is sufficient for endotracheal intubation, or until the entire dose has been administered.

#### Other routes of administration

Alfaxan Multidose is only registered for intravenous administration in both dogs and cats.

#### Maintenance of Anaesthesia

Maintenance doses of Alfaxan Multidose may be given as supplemental intravenous boluses or as constant rate infusion. Alfaxan Multidose may be used in both dogs and cats for procedures lasting for up to one hour. Where maintenance of anaesthesia is with Alfaxan Multidose for procedures lasting more than five to ten minutes, a needle or catheter can be left in the vein and small amounts of Alfaxan Multidose injected subsequently to maintain the required level and duration of anaesthesia. The following doses suggested for maintenance of anaesthesia are based on data taken from controlled laboratory and field studies and represent the average amount of drug required to provide maintenance anaesthesia for a dog or cat. However, the actual dose will be based on the response of the individual patient.

Alfaxan Multidose doses suggested for maintenance of anaesthesia are as follows:

	DOGS		CATS	
	Unpremedicated	Premedicated	Unpremedicated	Premedicated
<b>Dose for constant rate infusion</b>				
mg/kg/hr	8 - 9	6 - 7	10 - 11	7 - 8
mg/kg/minutes	0.13 - 0.15	0.10 - 0.12	0.16 - 0.18	0.11 - 0.13
mL/kg/minute	0.013 - 0.015	0.010 - 0.012	0.016 - 0.018	0.011 - 0.013
<b>Bolus dose for each 10 minutes maintenance</b>				
mg/kg	1.3 - 1.5	1.0 - 1.2	1.6 - 1.8	1.1 - 1.3
mL/kg	0.13 - 0.15	0.10 - 0.12	0.16 - 0.18	0.11 - 0.13





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In most cases the average duration of recovery when using Alfaxan Multidose for maintenance will be longer than if using a volatile inhaled gas for maintenance.

### Interactions

Alfaxan Multidose has been demonstrated to be safe when used in combination with the following premedicant classes:

Drug Class	Examples
Phenothiazines	acepromazine maleate
Anticholinergic agents	atropine sulfate
Benzodiazepines	diazepam, midazolam hydrochloride
Alpha-2-adrenoceptor agonists	xylazine hydrochloride, medetomidine hydrochloride
Opiates	methadone, morphine sulfate, butorphanol tartrate, buprenorphine hydrochloride
NSAIDs	carprofen, meloxicam

The concomitant use of other CNS depressants should be expected to potentiate the depressant effects of Alfaxan Multidose, necessitating cessation of further administration of Alfaxan Multidose when the required depth of anaesthesia has been reached. The use of one premedicant or a combination of premedicants often reduces the dose of Alfaxan Multidose required, and may prolong the duration of anaesthesia, particularly in sighthounds. Premedication with  $\alpha$ -2-adrenoceptor agonists such as xylazine and medetomidine can markedly increase the duration of anaesthesia in a dose dependent fashion. Benzodiazepines should not be used as sole premedicants in dogs and cats as the quality of anaesthesia in some patients may be sub-optimal however they may be used safely and effectively in combination with other premedicants and Alfaxan Multidose.

### Safety

Acute tolerance to overdose has been demonstrated up to 10 times the recommended dose of 2 mg/kg in the dog (i.e. up to 20 mg/kg) and up to 5 times the recommended dose of 5 mg/kg in the cat (i.e. up to 25 mg/kg). For both dogs and cats, these excessive doses delivered over 60 seconds cause apnoea and a temporary decrease in mean arterial blood pressure. The decrease in blood pressure is not life threatening and is compensated for by changes in heart rate. These animals can be treated solely by intermittent positive pressure ventilation (if required) with either room air or, preferably, oxygen. Recovery is rapid with no residual effects.

It has been demonstrated that Alfaxan Multidose can be safely used in dogs and cats six weeks of age and over, in sighthounds, and in canine caesarean section.

### First Aid

If poisoning occurs contact a doctor or Poisons Information Centre. Phone 0800 764 766 in New Zealand.



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### Disposal

Dispose of empty container by wrapping with paper and putting in garbage.

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### GHS Information

For GHS information see Safety Data Sheet.

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### Presentation

Presented in 20 mL vials.

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### Storage

Store below 25°C (air conditioning). Use contents within 28 days of broaching the vial.

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### Poisons Schedule

Restricted Veterinary Medicine

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### Regulatory Information

ACVM No. A11404

EPA Group Standard Number: HSR100757