

Comparison of the SPCs for the 3 most commonly used UK induction agents

Please refer to appropriate product SPC (Summary of Product Characteristics) for specific and full details
Where more than one product is licenced the information from the SPCs has been amalgamated

Characteristic	Alfaxan® Multidose	Propofol (No Preservative)*	Propofol (With Preservative)	Ketamine
Species	<ul style="list-style-type: none"> Dog Cat Pet rabbit 	<ul style="list-style-type: none"> Dog Cat 	<ul style="list-style-type: none"> Dog Cat 	<ul style="list-style-type: none"> Cat Dog# Sub-human primates, horse, donkey, pig, cattle, goat, guinea pig, hamster, rat, rabbit, mouse#
Indication	<ul style="list-style-type: none"> Induction prior to inhalation maintenance Induction & maintenance in dogs & cats for up to 1 hour 	<ul style="list-style-type: none"> Induction prior to inhalation maintenance Induction and maintenance 	<ul style="list-style-type: none"> Induction prior to inhalation maintenance Induction & maintenance for <30 minutes in dog & cat. <i>Not for prolonged infusion (see product SPC)</i> 	<ul style="list-style-type: none"> Species and SPC dependent# For restraint for minor surgical procedures where muscle relaxation is not required, or anaesthesia when combined with other products*
Age Breed Weight Disease status	<ul style="list-style-type: none"> No upper age limit Safety not established <12 weeks of age (dogs, cats) & <16 weeks (rabbits). Use according to risk-benefit analysis 	<ul style="list-style-type: none"> >8 years old – prolonged clearance* Safety not established <16 weeks of age* Prolonged recovery in sighthounds* Prolonged recovery in overweight/obese patients* 	<ul style="list-style-type: none"> Safety not established < 20 weeks of age 	<ul style="list-style-type: none"> Contraindicated if pre-existing hepatic or renal pathology Caution with pulmonary disease* Do not use if: CV disease; severe hypertension; (pre-)eclampsia, glaucoma; ocular interventions; seizures; for surgical intervention on larynx, pharynx, trachea, bronchial tree if inadequate muscle relaxation* Do not use prior to myelography* Protect eyes
Interactions with other products	<ul style="list-style-type: none"> None reported 	<ul style="list-style-type: none"> Cardiac arrest has been observed if propofol followed by alfentanil in dogs* Delayed recoveries when used with drugs metabolised via cytochrome P450 e.g. chloramphenicol, loperamide, ketoconazole* 	<ul style="list-style-type: none"> None reported 	<ul style="list-style-type: none"> Theophylline may provoke epileptic crises* Prolonged recovery when combined with barbiturates, opiates or diazepam. Effects additive* No interactions reported in some SPCs*

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Characteristic	Alfaxan® Multidose	Propofol (No Preservative)*	Propofol (With Preservative)	Ketamine
Maintenance	<ul style="list-style-type: none"> Intermittent bolus or CRI 	<ul style="list-style-type: none"> Intermittent bolus or CRI Maintenance > 30 mins = slow recovery, especially cats 	<ul style="list-style-type: none"> Intermittent bolus Maintenance > 30 mins = slow recovery, especially cats 	<ul style="list-style-type: none"> Reduced initial dose IM or IV - dependent on species and combination of drugs. SPC specific* Not all SPCs state anaesthesia can be maintained with ketamine in all recommended species*
Maximum stated dose Repeat dosing	<ul style="list-style-type: none"> No maximum dose No accumulation Can be repeated 	<ul style="list-style-type: none"> No maximum dose Limit repeat anaesthesia to intervals of more than 48 hours* Repeat dosing in cats may cause oxidative injury and Heinz body production. Recovery may be prolonged* 	<ul style="list-style-type: none"> Maximum dose = 24mg/kg Limit repeat anaesthesia to intervals of more than 48 hours Repeated dosing in cats may cause oxidative injury and Heinz body production. Recovery may be prolonged 	<ul style="list-style-type: none"> No maximum dose stated
Administration	<ul style="list-style-type: none"> IV administration Minimal stage II excitement if administer slowly Minimal apnoea if administered slowly 	<ul style="list-style-type: none"> IV administration Rapid administration can lead to cardiopulmonary depression (apnoea, bradycardia, hypotension)* 	<ul style="list-style-type: none"> IV administration Inadequate plane of anaesthesia if give slowly. Administer over 10-40 seconds <i>(increased risk of apnoea with rapid administration)</i> 	<ul style="list-style-type: none"> IV, IM or SC. Varies between species* Pain on IM administration common
Induction	<ul style="list-style-type: none"> Smooth Apnoea less common than with propofol. Requires 2.5x more than the stated dose to cause the same degree of apnoea as propofol 	<ul style="list-style-type: none"> Smooth Transient apnoea may occur Mild hypotension may occur* Occasional excitation 	<ul style="list-style-type: none"> Smooth Occasional excitation - paddling, nystagmus, opisthotonus, tremors 	<ul style="list-style-type: none"> Large inter-individual variation Dose dependent respiratory depression reported* Increased muscle tone Increased heart rate and blood pressure Some animals unresponsive to clinical doses May cause salivation in cats* Muscle twitching & mild tonic convulsions in cats occasionally seen Hypotension possible in cats* Occasional seizure-like activity in dogs Eyes remain open and pupils dilated

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Transition	<ul style="list-style-type: none"> Sufficient time to intubate and attain inhalation maintenance without requirement for initially high volatile concentrations 	<ul style="list-style-type: none"> May need higher initial concentration of volatile than inductions with barbiturates* 	<ul style="list-style-type: none"> May need higher initial concentration of volatile than inductions with barbiturates 	<ul style="list-style-type: none"> Maintained or increased muscle tone
C-sections	<ul style="list-style-type: none"> Used successfully for induction prior to canine C-section Mice, rats & rabbits – no effects on dam, foetuses or gestation 	<ul style="list-style-type: none"> Used successfully for induction prior to canine C-section Maintenance with propofol during C-section not recommended due to risk of neonatal death* 	<ul style="list-style-type: none"> No data. Use according to risk/benefit In man – benzyl alcohol is associated with fatal toxic syndrome in unborn neonates 	<ul style="list-style-type: none"> Not recommended or safety not established during pregnancy & lactation (SPC dependent). Use according to risk-benefit analysis*
Metabolism	<ul style="list-style-type: none"> Established metabolic pathways Rapid elimination Half-life: <ul style="list-style-type: none"> o Dog = 25 minutes o Cat = 45 minutes o Rabbit = 46 minutes 	<ul style="list-style-type: none"> Long, variable half-life: <ul style="list-style-type: none"> o 90-300 minutes Cats = obligate carnivores & minimal inherent ability to metabolise phenols 	<ul style="list-style-type: none"> Long, variable half-life: <ul style="list-style-type: none"> o 90-300 minutes Cats = obligate carnivores & minimal inherent ability to metabolise phenols 	<ul style="list-style-type: none"> Species dependent*
Recovery	<ul style="list-style-type: none"> Rapid Possible minor muscle twitching, paddling, more violent movements. Not clinically significant 	<ul style="list-style-type: none"> Rapid Vomiting, excitation* Cats – sneezing, retching, paw/face licking* 	<ul style="list-style-type: none"> Rapid Occasional vomiting & excitation dogs Occasional retching, vomiting, excitation & paw/face licking in cats 	<ul style="list-style-type: none"> Prolonged: 1-4 or 5 hours (cats)* Twitching and excitement may occur*
Preservative toxicity	<ul style="list-style-type: none"> None reported at clinically relevant doses 	<ul style="list-style-type: none"> No preservative 	<ul style="list-style-type: none"> Benzyl alcohol: Cats - delayed recovery, hyperkinesia & death Dogs: Neurological signs e.g. tremors & death No antidote 	<ul style="list-style-type: none"> None stated

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