

TECHNICAL NOTES



ISOFLURANE



ACTIVE CONSTITUENTS

Isoflurane 1 mL/mL

INDICATIONS

Inhalation anaesthetic for use in horses, cats, dogs, ornamental birds, reptiles and small mammals.

RESTRAINTS

NOT TO BE USED in horses intended for human consumption.

CONTRAINDICATIONS

DO NOT use in animals with a known sensitivity to isoflurane or with a known susceptibility to malignant hyperthermia.

PRECAUTIONS

When using isoflurane to anaesthetise an animal with a head injury, consideration should be given as to whether artificial ventilation is appropriate to maintain normal CO₂ levels so that cerebral blood flow does not increase.

In man, the action of muscle relaxants, especially those of the non-depolarising type such as atracurium, pancuronium or vecuronium is enhanced by isoflurane. Similar potentiation might be expected to occur in the target species, although there is little direct evidence to this effect.

The concurrent use of sedative or analgesic drugs is likely to reduce the level of isoflurane required to induce and maintain anaesthesia. For example, opiates, alpha-2 agonists, acepromazine, and benzodiazepines have been reported to reduce the MAC values.

Particular caution should be exercised if administering a midazolam ketamine combination to an animal already anaesthetised with isoflurane.

Isoflurane has been reported to interact with dry carbon dioxide absorbents to form carbon monoxide. In order to minimise the risk of formation of carbon monoxide in rebreathing circuits and the possibility of elevated carboxyhaemoglobin levels, carbon dioxide absorbents should not be allowed to dry out.

AVet Isoflurane has been safely used for anaesthesia during Caesarean section in the dog and the cat. Reproduction studies have been performed in mice, rats and rabbits with no evidence of foetal malformation attributable to isoflurane at clinically relevant concentrations. However, fully comprehensive data concerning its use in pregnant, breeding or lactating animals of all target species have not been obtained.

SIDE EFFECTS

AVet Isoflurane causes dose-related respiratory and cardiovascular depression. It is important that respiration and pulse should be monitored for both rate and character.

Respiratory arrest should be treated by assisted ventilation with air or, preferably, with oxygen supplementation. It is important that a patent airway be maintained, and adequate tissue oxygenation achieved throughout the period of anaesthesia. Should cardiac arrest occur, full cardiopulmonary resuscitation methods should be applied. Cardiac arrhythmias have been reported very occasionally. However, AVet Isoflurane has a weaker sensitising action on the myocardium, to the effects of dysrhythmogenic circulating catecholamines, than halothane.

DOSAGE & ADMINISTRATION

Premedication

AVet Isoflurane should be used only in an isoflurane specific vaporiser. AVet Isoflurane should be administered using an accurately calibrated vaporiser in an appropriate anaesthetic circuit. Levels of anaesthesia may be altered rapidly and easily. AVet Isoflurane may be administered in oxygen/nitrous oxide mixtures. AVet Isoflurane may be used with other drugs commonly used in veterinary anaesthetic regimens. Drugs used for premedication should be selected for the individual animal. See CONTRAINDICATIONS, PRECAUTIONS for potential drug interactions.

The MAC (minimum alveolar concentration) in oxygen given below for the target species should be used as a guide only. The actual concentrations required in practice will depend on many variables including the concomitant use of other drugs and the clinical status of the patient.

Induction, Maintenance and Recovery

Species	MAC (%)	Induction (%*)	Maintenance (%)
Horse	1.31	3.0 – 5.0% (foals)	1.5 – 2.5
Dog	1.28	Up to 5.0	1.5 – 2.5
Cat	1.63	Up to 4.0	1.5 – 3.0
Ornamental Birds	ca. 1.45	3.0 – 5.0	0.6 – 5.0
Reptiles	Not Published	2.0 – 4.0	1.0 – 3.0
Small Mammals	2.05 (rabbit) 1.34 (mouse) 1.38 – 2.40 (rat)	2.0 – 3.0	0.25 – 2.0

* Induction usually occurs via face mask

In all species, recovery is normally smooth and rapid.

GENERAL DIRECTIONS

Further Information

Metabolism of isoflurane is minimal (about 0.2%) mainly to inorganic fluoride and almost all of the administered isoflurane is excreted unchanged by the lungs. AVet Isoflurane inhalation anaesthetic produces unconsciousness by its action on the central nervous system and is a good muscle relaxant for surgical procedures. It has negligible analgesic properties and consideration should be given to the analgesic requirements of the animal before recovery from anaesthesia takes place.

PRESENTATION

A clear, colourless volatile liquid for the generation of gaseous anaesthetic, with a mildly pungent odour, containing 100% isoflurane. Chemically it is 1-chloro-2,2,2-trifluoroethylidifluoromethyl ether. AVet Isoflurane is available in 250 mL amber glass bottles.

SAFETY DIRECTIONS

May irritate the eyes and skin. Avoid contact with eyes and skin. Ensure adequate ventilation during use.

FIRST AID

If poisoning occurs, contact a doctor or phone the Poisons Information Centre on 13 11 26 (Australia).

SAFETY DATA SHEET

For Safety Data Sheet see www.avet.health

ADDITIONAL USER SAFETY

Do not breathe the vapour. The recommended occupational exposure standard (OES) on an 8-hour time weighted basis is 50 ppm (UK standards).

Operating rooms should be provided with adequate ventilation and active extraction to prevent the accumulation of isoflurane vapours. Induction and recovery areas should be well ventilated.

Care should be taken when dispensing AVet Isoflurane into the vaporiser. Spillage should be contained or removed immediately, using sawdust, sand or other inert absorbents, to a well-ventilated place.

Repeated exposure to halogenated anaesthetics has been linked to increased miscarriages in personnel of operating theatres.

In the event of severe acute accidental exposure remove the operator from the source of exposure, seek urgent medical assistance and show the label.

Wash any splashes from skin immediately with soap and water. Contaminated eyes should be washed with water for 10 minutes.

DISPOSAL

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

STORAGE

Store below 30°C. Protect from direct sunlight and direct heat. Store in tightly closed original container.

POISONS SCHEDULE

S4

REGISTRATION NUMBERS

APVMA Approval Number: 92735