

# Zoletil 100 Injectable Anaesthetic/Sedative for Dogs, Cats, Zoo and Wild Animals

Virbac (Australia) Pty Limited

Chemwatch Hazard Alert Code: 1

Chemwatch: 6978267

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Safety Data Sheet according to WHS and ADG requirements

Initial Date: **Not Available**

L.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

<b>Product name</b>	Zoletil 100 Injectable Anaesthetic/Sedative for Dogs, Cats, Zoo and Wild Animals
<b>Synonyms</b>	APVMA No.: 38837
<b>Other means of identification</b>	Not Available

### Relevant identified uses of the substance or mixture and uses advised against

<b>Relevant identified uses</b>	For the anaesthesia and immobilisation of dogs, cats, zoo and wild animals.
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### Details of the supplier of the safety data sheet

<b>Registered company name</b>	Virbac (Australia) Pty Limited
<b>Address</b>	361 Horsly Road Milperra NSW 2214 Australia
<b>Telephone</b>	1800 242 100
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<b>Website</b>	www.virbac.com.au
<b>Email</b>	au_customerservice@virbac.com.au

### Emergency telephone number

<b>Association / Organisation</b>	Poisons Information Centre
<b>Emergency telephone numbers</b>	13 11 26
<b>Other emergency telephone numbers</b>	Not Available

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS.** According to the WHS Regulations and the ADG Code.

#### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	1
Toxicity	1	1
Body Contact	1	1
Reactivity	1	1
Chronic	0	0

0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

<b>Poisons Schedule</b>	S4
<b>Classification</b>	Not Applicable

### Label elements

Continued...

<b>GHS label elements</b>	Not Applicable
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<b>SIGNAL WORD</b>	<b>NOT APPLICABLE</b>
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**Hazard statement(s)**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
14176-50-2	10-30	<u>tiletamine hydrochloride</u>
33754-49-3	10-30	<u>zolazepam hydrochloride</u>
	balance	Ingredients determined not to be hazardous

**SECTION 4 FIRST AID MEASURES****Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> </ul>

**Indication of any immediate medical attention and special treatment needed**

In the use of psychoactive substances, four recognised chronic reactions have been reported

- ▶ Prolonged psychotic reactions
- ▶ Depression sufficiently severe to be life-threatening
- ▶ Flashbacks
- ▶ Exacerbation of pre-existing psychiatric illness

Some persons who have experienced many psychedelic trips, especially those who have had acute adverse reactions, develop what appears to be

serious long-term personality disruption.

These prolonged psychotic reactions have similarities to schizophrenic reactions and appear to occur most often in persons with pre-existing psychological difficulties - primarily pre-psychotic or psychotic personalities.

Psychedelic-induced personality disorders can be severe and prolonged.

Appropriate treatment often requires antipsychotic medication (antipsychotics, neuroleptics, major tranquillisers) and residential care in a mental health facility.

In certain cases, psychedelic-induced chronic psychological problems lead to complicated patterns of polydrug abuse that requires additional treatment approaches.

**Note:**

Antipsychotics are associated with a range of side effects. It is well-recognized that many people stop taking them (around two-thirds even in controlled drug trials) due in part to adverse effects.

Notable and relatively common adverse effects of antipsychotics include extrapyramidal symptoms (which involve motor control) and hyperprolactinaemia primarily in typical's and weight gain and metabolic abnormalities mostly in atypicals. Temporary withdrawal symptoms including insomnia, agitation, psychosis, and motor disorders may occur during dosage reduction of antipsychotics, and can be mistaken for the return of the underlying condition.

Many psychoactives are also monoamine oxidase inhibitors (MAOIs):

Special care should be taken with any drug therapy in view of the many hazards of monoamine oxidase inhibitor interactions. In particular metaraminol and other sympathomimetic agents are not suitable for the treatment of hypotension, which should be managed with intravenous fluids and, in severe shock, intravenous hydrocortisone

Treat symptomatically.

For severe benzodiazepine overdose the stomach should be emptied by aspiration and lavage. Recovery usually follows symptomatic relief.

Dialysis is of no value. [Martindale]

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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### Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).</li> <li>▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.</li> <li>▶ In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL) are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Explosible Concentration", MEC).</li> <li>▶ When processed with flammable liquids/vapors/mists, ignitable (hybrid) mixtures may be formed with combustible dusts. Ignitable mixtures will increase the rate of explosion pressure rise and the Minimum Ignition Energy (the minimum amount of energy required to ignite dust clouds - MIE) will be lower than the pure dust in air mixture. The Lower Explosive Limit (LEL) of the vapour/dust mixture will be lower than the individual LELs for the vapors/mists or dusts.</li> <li>▶ A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.</li> </ul>

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- ▶ Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.
  - ▶ Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
  - ▶ Build-up of electrostatic charge may be prevented by bonding and grounding.
  - ▶ Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
  - ▶ All movable parts coming in contact with this material should have a speed of less than 1-meter/sec.
  - ▶ A sudden release of statically charged materials from storage or process equipment, particularly at elevated temperatures and/ or pressure, may result in ignition especially in the absence of an apparent ignition source.
  - ▶ One important effect of the particulate nature of powders is that the surface area and surface structure (and often moisture content) can vary widely from sample to sample, depending of how the powder was manufactured and handled; this means that it is virtually impossible to use flammability data published in the literature for dusts (in contrast to that published for gases and vapours).
  - ▶ Autoignition temperatures are often quoted for dust clouds (minimum ignition temperature (MIT)) and dust layers (layer ignition temperature (LIT)); LIT generally falls as the thickness of the layer increases.
- Combustion products include: carbon monoxide (CO) carbon dioxide (CO<sub>2</sub>) hydrogen chloride phosgene hydrogen fluoride, nitrogen oxides (NO<sub>x</sub>) sulfur oxides (SO<sub>x</sub>) other pyrolysis products typical of burning organic material May emit poisonous fumes.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

## Personal precautions, protective equipment and emergency procedures

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up waste regularly and abnormal spills immediately.</li> <li>▶ Avoid breathing dust and contact with skin and eyes.</li> <li>▶ Wear protective clothing, gloves, safety glasses and dust respirator.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Vacuum up or sweep up. <b>NOTE:</b> Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>▶ Dampen with water to prevent dusting before sweeping.</li> <li>▶ Place in suitable containers for disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ <b>CAUTION:</b> Advise personnel in area.</li> <li>▶ Alert Emergency Services and tell them location and nature of hazard.</li> <li>▶ Control personal contact by wearing protective clothing.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ <b>IF DRY:</b> Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. <b>IF WET:</b> Vacuum/shovel up and place in labelled containers for disposal.</li> <li>▶ <b>ALWAYS:</b> Wash area down with large amounts of water and prevent runoff into drains.</li> <li>▶ If contamination of drains or waterways occurs, advise Emergency Services.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

## Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ <b>DO NOT allow material to contact humans, exposed food or food utensils.</b></li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended</li> </ul>
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	<ul style="list-style-type: none"> <li>▶ in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)</li> <li>▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.</li> <li>▶ Establish good housekeeping practices.</li> <li>▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</li> <li>▶ Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion. According to NFPA Standard 654, dust layers 1/32 in.(0.8 mm) thick can be sufficient to warrant immediate cleaning of the area.</li> <li>▶ Do not use air hoses for cleaning.</li> <li>▶ Minimise dry sweeping to avoid generation of dust clouds. Vacuum dust-accumulating surfaces and remove to a chemical disposal area. Vacuums with explosion-proof motors should be used.</li> <li>▶ Control sources of static electricity. Dusts or their packages may accumulate static charges, and static discharge can be a source of ignition.</li> <li>▶ Solids handling systems must be designed in accordance with applicable standards (e.g. NFPA including 654 and 77) and other national guidance.</li> <li>▶ Do not empty directly into flammable solvents or in the presence of flammable vapors.</li> <li>▶ The operator, the packaging container and all equipment must be grounded with electrical bonding and grounding systems. Plastic bags and plastics cannot be grounded, and antistatic bags do not completely protect against development of static charges.</li> </ul> <p>Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.</p> <ul style="list-style-type: none"> <li>▶ <b>Do NOT cut, drill, grind or weld such containers.</b></li> <li>▶ In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.</li> </ul>
<b>Other information</b>	<p><b>NOTE:</b> Special security requirements may be mandated under Federal/State Regulation(s).</p> <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Store in vault fitted with warning devices or detectors recommended by various Federal/State authorities.</li> <li>▶ Store in vault used only for the purpose of storage of drugs of addiction.</li> <li>▶ Vault must be locked at all times except when the materials stored therein are required.</li> <li>▶ Keep storage area free from debris, wastes and combustibles.</li> <li>▶ Keep dry.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Protect containers against physical damage.</li> <li>▶ Check regularly for spills and leaks.</li> </ul>

**Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check that containers are clearly labelled.</li> <li>▶ Tamper-proof containers.</li> <li>▶ Polyethylene or polypropylene containers.</li> <li>▶ Metal drum with sealed plastic liner.</li> <li>▶ Glass container is suitable for laboratory quantities</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> </ul>

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION****Control parameters****OCCUPATIONAL EXPOSURE LIMITS (OEL)****INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Zoletil 100 Injectable Anaesthetic/Sedative for Dogs, Cats, Zoo and Wild Animals	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
tiletamine hydrochloride	Not Available	Not Available
zolazepam hydrochloride	Not Available	Not Available

**MATERIAL DATA**

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## Exposure controls

Enclosed local exhaust ventilation is required at points of dust, fume or vapour generation.

HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapours.

Barrier protection or laminar flow cabinets should be considered for laboratory scale handling.

A fume hood or vented balance enclosure is recommended for weighing/ transferring quantities exceeding 500 mg.

When handling quantities up to 500 gram in either a standard laboratory with general dilution ventilation (e.g. 6-12 air changes per hour) is preferred. Quantities up to 1 kilogram may require a designated laboratory using fume hood, biological safety cabinet, or approved vented enclosures. Quantities exceeding 1 kilogram should be handled in a designated laboratory or containment laboratory using appropriate barrier/ containment technology.

Manufacturing and pilot plant operations require barrier/ containment and direct coupling technologies.

Barrier/ containment technology and direct coupling (totally enclosed processes that create a barrier between the equipment and the room) typically use double or split butterfly valves and hybrid unidirectional airflow/ local exhaust ventilation solutions (e.g. powder containment booths). Glove bags, isolator glove box systems are optional. HEPA filtration of exhaust from dry product handling areas is required.

Fume-hoods and other open-face containment devices are acceptable when face velocities of at least 1 m/s (200 feet/minute) are achieved. Partitions, barriers, and other partial containment technologies are required to prevent migration of the material to uncontrolled areas. For non-routine emergencies maximum local and general exhaust are necessary. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, etc. evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)

## Appropriate engineering controls

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2.5 m/s (200-500 f/min.) for extraction of gases discharged 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

The need for respiratory protection should also be assessed where incidental or accidental exposure is anticipated: Dependent on levels of contamination, PAPR, full face air purifying devices with P2 or P3 filters or air supplied respirators should be evaluated.

The following protective devices are recommended where exposures exceed the recommended exposure control guidelines by factors of:

10; high efficiency particulate (HEPA) filters or cartridges

10-25; loose-fitting (Tyvek or helmet type) HEPA powered-air purifying respirator.

25-50; a full face-piece negative pressure respirator with HEPA filters

50-100; tight-fitting, full face-piece HEPA PAPR

100-1000; a hood-shroud HEPA PAPR or full face-piece supplied air respirator operated in pressure demand or other positive pressure mode.

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<b>Personal protection</b>	
<b>Eye and face protection</b>	<p>When handling very small quantities of the material eye protection may not be required. For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs:</p> <ul style="list-style-type: none"> <li>▶ Chemical goggles.</li> <li>▶ Face shield. Full face shield may be required for supplementary but never for primary protection of eyes.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>▶ frequency and duration of contact,</li> <li>▶ chemical resistance of glove material,</li> <li>▶ glove thickness and</li> <li>▶ dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>▶ When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>▶ When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>▶ Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>▶ Contaminated gloves should be replaced.</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <ul style="list-style-type: none"> <li>▶ Rubber gloves (nitrile or low-protein, powder-free latex, latex/ nitrile). Employees allergic to latex gloves should use nitrile gloves in preference.</li> <li>▶ Double gloving should be considered.</li> <li>▶ PVC gloves.</li> <li>▶ Change gloves frequently and when contaminated, punctured or torn.</li> <li>▶ Wash hands immediately after removing gloves.</li> <li>▶ Protective shoe covers. [AS/NZS 2210]</li> <li>▶ Head covering.</li> </ul> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>▶ polychloroprene.</li> <li>▶ nitrile rubber.</li> <li>▶ butyl rubber.</li> <li>▶ fluorocautchouc.</li> <li>▶ polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/ or degradation constantly.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ For quantities up to 500 grams a laboratory coat may be suitable.</li> <li>▶ For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs.</li> <li>▶ For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.</li> <li>▶ For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection.</li> <li>▶ Eye wash unit.</li> <li>▶ Ensure there is ready access to an emergency shower.</li> <li>▶ For Emergencies: Vinyl suit</li> </ul>
<b>Thermal hazards</b>	Not Available

**Respiratory protection**

Particulate. (AS/NZS 1716 &amp; 1715, EN 143:000 &amp; 149:001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

\* - Negative pressure demand \*\* - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Yellow crystalline freeze-dried solid; soluble in water.		
<b>Physical state</b>	Divided Solid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

## Zoletil 100 Injectable Anaesthetic/Sedative for Dogs, Cats, Zoo and Wild Animals

## Information on toxicological effects

Inhaled	<p>The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.</p> <p>Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual.</p> <p>Ketamine exposure may produce psychological manifestations such as hallucinations, dream-like states.</p> <p>Recovery from ketamine-induced anaesthesia may produce adverse emergence reactions including delirium, vivid, often, unpleasant dreams, confusion, hallucination, irrational behaviour and increased muscle tone. Blood pressure and heart-rate may be temporarily increased although hypotension, arrhythmias and bradycardia may also occur. Ketamine may produce tonic and clonic movements that resemble seizure. Depressed respiration, apnoea, laryngospasm, diplopia, nystagmus, anorexia, nausea, vomiting, headache and transient skin rashes have been reported. Biological action involves antagonism of the neuroreceptor, NMDA.</p> <p>Pharmacologically, ketamine is classified as an NMDA receptor antagonist, but it also acts at numerous other sites (including opioid receptors and monoamine transporters). It is classified as a dissociative agent. The state it induces is described as a "trancelike cataleptic state of 'sensory isolation' [which] is characterized by potent analgesia, sedation, and amnesia while maintaining cardiovascular stability and preserving spontaneous respirations and protective airway reflexes</p> <p>Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p>
Ingestion	<p>Accidental ingestion of the material may be damaging to the health of the individual.</p> <p>Dopamine reuptake inhibitors (DRIs) are notorious for their high abuse potential and liability to cause cravings, addiction, and dependence. Pure DRIs such as cocaine and combination releasing agents such as amphetamine, methamphetamine, MDMA ("Ecstasy"), and 4-methylaminorex are widely abused throughout the world.</p> <p>Notably, some DRIs have a lower abuse potential than others. Those that have a slow onset and long duration of action such as bupropion and methylphenidate (Ritalin) are typically much less reinforcing than faster acting ones which produce a rush like cocaine. In fact, bupropion is often used as a maintenance therapy for treating stimulant addiction. However, depending on the route of administration (e.g., insufflation, inhalation, or injection), the pleasurable effects of the DRI in question can be dramatically enhanced, potentially rendering those with only mild rewarding effects to become far more reinforcing than they would be under normal circumstances.</p> <p>DRIs can induce a wide range of physiological and psychological effects, including the following:</p> <p><b>Physiological:</b> dizziness, lightheadedness, or vertigo; mydriasis or pupil dilation; xerostomia or dry mouth; nausea and/or emesis or vomiting; gastrointestinal disturbances such as diarrhea and/or constipation; headache or migraine; trembling, shakiness, or muscle tremors; anorexia or decreased appetite and subsequent weight loss; insomnia or inability to fall asleep; analgesia or pain relief; hypertension or increased blood pressure; tachycardia or increased heart rate; hyperthermia or increased body temperature; hyperhidrosis or increased perspiration or sweating.</p> <p><b>Psychological:</b> A general and subjective alteration in consciousness; stimulation, arousal, and hyperactivity; increased alertness, awareness, and wakefulness; increased energy and endurance; agitation or restlessness; enhanced attention, focus, and concentration; increased desire, drive, and motivation; improved cognition, memory, and learning; goal-oriented thoughts or organized behavior; rapid speech and/or racing thoughts; antidepressant benefits or mood lift; euphoria and/or rushes of pleasure; anxiolysis and/or stress reduction; sociability and/or talkativeness, as well as enhanced charisma and/or humor; increased self-confidence, arrogance, and/or egotism; feelings of power, grandiosity, and superiority; irritability, aggression, anger and/or rage; impulsivity or impetuosity; hypersexuality and aphrodisiac effects.</p> <p><b>Miscellaneous:</b> increased or decreased drug cravings and/or addiction (depending on the setting and usage); drug tolerance with time and/or chronic administration, potentially resulting in dependence; drug interactions such as abolished effects from dopamine releasing agents like amphetamine.</p> <p>It should be noted, however, that many of these properties are dependent on whether the DRI in question is capable of crossing the blood-brain-barrier. Those that do not will only produce peripheral effects.</p> <p><b>Overdose:</b> At very high doses and/or with chronic administration characterized by overdose, stimulant psychosis may develop, the symptoms of which can include the following:</p> <p><b>Physiological;</b> myoclonus or involuntary and intense muscle twitching; hyperreflexia or overresponsive/overreactive reflexes.</p> <p><b>Psychological :</b> disorientation and/or confusion; anxiety, severe paranoia, and/or panic attacks; hypervigilance or increased sensitivity to perceptual stimuli, accompanied by significantly increased threat detection; hypomania or full-blown mania; derealization and/or depersonalisation; hallucinations and/or delusions; thought disorder or disorganised thinking; cognitive and memory impairment potentially to the point of retrograde or anterograde amnesia; delirium and/or insanity.</p> <p><b>Miscellaneous:</b> syncope or fainting or loss of consciousness; seizures or convulsions; neurotoxicity or brain damage; coma and/or death.</p> <p>Additionally, potential incarceration, hospitalisation, institutionalization, and/or death, on account of extreme erratic behavior which may include acts of crime, assault, accidental or intentional self-injury, and/or suicide, as well as illicit drug abuse, may ensue under such circumstances.</p> <p>As a reuptake inhibitor, for the dopamine, DRIs block the action of the dopamine transporter (DAT) This in turn leads to increased extracellular concentration dopamine and, therefore, an increase in dopaminergic neurotransmission. A condition known as dopamine dysregulation syndrome (DDS), sometimes known as hedonistic dysregulation is encountered in dopamine replacement therapies used in the treatment of Parkinson's disease. This is due to a long exposure to dopamine replacement therapy (DRT) and is characterised by self-control problems such as addiction to medication, gambling, or hypersexuality.</p> <p>NMDA receptor antagonism may produce anaesthetic, amnesic, dissociative, and hallucinogenic effects. NMDA antagonists</p>

## Zoletil 100 Injectable Anaesthetic/Sedative for Dogs, Cats, Zoo and Wild Animals

have been used as neuroprotective agents counteracting the effects of overactivation of the receptor; however such antagonists may also be harmful, at high doses, as the neuron also needs calcium for normal function. Very high doses may produce irreversible damage (including the psychomimetic effects caused by PCP - "angel dust" - abuse). Certain NMDA antagonists (notably those used to produce anaesthetics) induce arousal and even seizures. This class of drug has also produced a model psychosis indistinguishable from schizophrenia.

Although benzodiazepine overdose is frequent, severe poisonings are rare. Ingestion of massive amounts have been reported without the occurrence of coma, hypotension or respiratory depression. Interactions with alcohol may potentiate the effects of the benzodiazepines. Side-effects of benzodiazepines are usually mild and infrequent. Drowsiness and lightheadedness and ataxia (loss of muscle coordination) are the most common and are dose-related. Other effects may include hypotension, respiratory depression, nausea and constipation, changes in salivation, blurred vision and diplopia (double vision), dysarthria (speech difficulty), skin rashes, urinary detention, incontinence, mental depression, tremor, libido. Blood changes and jaundice may occur occasionally. In an occupational setting, incidental exposure to the material may produce identical effects to those produced in therapy. Individual workers are expected to exhibit the same range of responses as those receiving the drug under supervision. Because individuals with a history of psychiatric disorders of addiction to, or abuse of, drugs and alcohol are at increased risk of habituation and dependence, they should be under surveillance when receiving any hypnotic drug. The most common side-effects of sleep medicines include drowsiness, dizziness, lightheadedness and difficult coordination. Alcohol may increase the side-effects of these drugs. Sleep medicines may also cause a special type of memory loss or "amnesia". When this occurs an individual may not remember events occurring several hours after taking the drug. When taking sleep drugs every night for several weeks, tolerance may develop and may lead to the individual increasing the dose to elicit earlier effects. When used at high doses for several weeks, dependence or "addiction" may also occur. Withdrawal symptoms may include unpleasant feelings in mild cases, whilst in more severe cases there may be abdominal and muscle cramps, vomiting, sweating, shakiness, and rarely, seizures. Rebound insomnia may also occur after withdrawal of the drug; an individual may have more trouble sleeping the first few nights after the drug is stopped than before starting treatment. Less common amongst individuals using hypnotic drugs are behavioural changes: these include loss of personal identity, confusion, strange behaviour, agitation, hallucinations, worsening of depression and suicidal thoughts. Sleep drugs may also cause sedation of the unborn baby when used during the last weeks of pregnancy.

**Skin Contact**

The material is not thought to be a skin irritant (as classified by EC Directives using animal models). Abrasive damage however, may result from prolonged exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material

Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

**Eye**

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

**Chronic**

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Exposure to the material may cause concerns for humans owing to possible developmental toxic effects, on the basis that similar materials tested in appropriate animal studies provide some suspicion of developmental toxicity in the absence of signs of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not a secondary non-specific consequence of other toxic effects.

With sustained use of some substances, psychological and physical dependence ("addiction") may develop, making the cycle of abuse even more difficult to interrupt.

Psychoactive drugs operate by temporarily affecting a person's neurochemistry, which in turn causes changes in a person's mood, cognition, perception and behavior. There are many ways in which psychoactive drugs can affect the brain. Each drug has a specific action on one or more neurotransmitter or neuroreceptor in the brain.

Exposure to a psychoactive substance can cause changes in the structure and functioning of neurons, as the nervous system tries to re-establish the homeostasis disrupted by the presence of the drug. Exposure to antagonists for a particular neurotransmitter increases the number of receptors for that neurotransmitter, and the receptors themselves become more sensitive. This is called sensitisation. Conversely, overstimulation of receptors for a particular neurotransmitter causes a decrease in both number and sensitivity of these receptors, a process called desensitisation or tolerance. Sensitisation and desensitisation are more likely to occur with long-term exposure, although they may occur after only a single exposure. These processes are thought to underlie addiction.

Addiction can be divided into two types: psychological addiction, by which a user feels compelled to use a drug despite negative physical or societal consequence, and physical dependence, by which a user must use a drug to avoid physically uncomfortable or even medically harmful withdrawal symptoms. Not all drugs are physically addictive, but any activity that stimulates the brain's dopaminergic reward system - typically, any pleasurable activity - can lead to psychological addiction. Drugs that are most likely to cause addiction are drugs that directly stimulate the dopaminergic system, like cocaine and amphetamines. Drugs that only indirectly stimulate the dopaminergic system, such as psychedelics of the tryptamine class, are not as likely to be addictive.

The first large-scale, longitudinal study of ketamine users found current frequent (averaging 20 days/month) ketamine users had increased depression and impaired memory by several measures, including verbal, short-term memory, and visual memory. Current infrequent (averaging 3.25 days/month) ketamine users and former ketamine users were not found to differ from controls in memory, attention, and psychological well-being tests. This suggests the infrequent use of ketamine does not cause cognitive deficits, and that any deficits that might occur may be reversible when ketamine use is discontinued. However, abstinent, frequent, and infrequent users all scored higher than controls on a test of delusional symptoms. Irritative urinary tract symptoms from ketamine abuse have been reported. Urinary tract symptoms have been collectively

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referred as "ketamine-induced ulcerative cystitis" or "ketamine-induced vesicopathy", and they include urge incontinence, decreased bladder compliance, decreased bladder volume, detrusor overactivity, and painful haematuria (blood in urine). Bilateral hydronephrosis and renal papillary necrosis have also been reported in some cases. The pathogenesis of papillary necrosis has been investigated in mice, and mononuclear inflammatory infiltration in the renal papilla resulting from ketamine dependence has been suggested as a possible mechanism. The time of onset of lower urinary tract symptoms varies depending, in part, on the severity and chronicity of ketamine use; however, it is unclear whether the severity and chronicity of ketamine use corresponds linearly to the presentation of these symptoms. All reported cases where the user consumed greater than 5 g/day reported symptoms of the lower urinary tract. Urinary tract symptoms appear to be most common in daily ketamine abusers who have abused the drug for an extended period of time. These symptoms have presented in only one case of medical use of ketamine. However, following dose reduction, the symptoms remitted.

Studies of ketamine-induced neurotoxicity have focused on primates in an attempt to use a more accurate model than rodents. One such study administered daily ketamine doses consistent with typical recreational doses (1 mg/kg IV) to adolescent cynomolgus monkeys for varying periods of time. Decreased locomotor activity and indicators of increased cell death in the prefrontal cortex were detected in monkeys given daily injections for six months, but not those given daily injections for one month. A study conducted on rhesus monkeys found a 24-hour intravenous infusion of ketamine caused signs of brain damage in five-day-old but not 35-day-old animals. Some neonatal experts do not recommend the use of ketamine as an anesthetic agent in human neonates because of the potential adverse effects it may have on the developing brain. These neurodegenerative changes in early development have been seen with other drugs that share the same mechanism of action of NMDA receptor antagonism as ketamine.

Prolonged use of the benzodiazepines may lead to the development of dependence of the barbiturate-alcohol type. They have a low ability for abuse. Tolerance, physical dependence and a withdrawal syndrome are now recognised as possible consequences of long-term high dose therapy. Benzodiazepine withdrawal syndrome - often abbreviated to "benzo withdrawal" - is the cluster of symptoms that emerge when a person who has taken benzodiazepines and has developed a physical dependence undergoes dosage reduction or discontinuation. It is characterised by often severe sleep disturbance, irritability, increased tension and anxiety, panic attacks, hand tremor, sweating, difficulty with concentration, confusion and cognitive difficulty, memory problems, dry retching and nausea, weight loss, palpitations, headache, muscular pain and stiffness, a host of perceptual changes, hallucinations, seizures, psychosis, and suicide. Further, these symptoms are notable for the manner in which they wax and wane and vary in severity from day to day or week by week instead of steadily decreasing in a straightforward monotonic manner. Benzodiazepine withdrawal can be severe and can provoke life-threatening withdrawal symptoms, such as seizures, particularly with abrupt or over-rapid dosage reduction from high doses or long time users.

Benzodiazepines are thought to produce extrapyramidal effects and may precipitate tardive dyskinesia (characterised by continual chewing movements with intermittent darting movements of the tongue). Medical conditions aggravated by benzodiazepines include arteriosclerosis and renal, hepatic and respiratory dysfunction.

Benzodiazepines rapidly penetrate membranes and, therefore, rapidly cross over into the placenta with significant uptake of the drug. Use of benzodiazepines in late pregnancy, especially high doses, may result in hypotonia, also known as floppy infant syndrome.

An increased risk of congenital malformation has been associated with some benzodiazepine derivatives. The substance diffuses readily across the placenta and may cause defects (including cleft lip and palate). This finding, however is equivocal. The risk for a variety of cancers potentially induced by the benzodiazepines has been the subject of several studies. One case-control study of ovarian cancer reported an increased risk for diazepam use; this was not confirmed by another study. Other studies have not found a positive association with benzodiazepine use and other types of cancer, including breast cancer. Children borne of mothers taking sedative/hypnotic drugs may be at risk for withdrawal symptoms from the drug during the postnatal period. In addition, neonatal flaccidity has been reported in infants born of mothers who receive sedative/hypnotic drugs during pregnancy.

Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.

<b>Zoletil 100 Injectable Anaesthetic/Sedative for Dogs, Cats, Zoo and Wild Animals</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>tiletamine hydrochloride</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>zolazepam hydrochloride</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>TILETAMINE HYDROCHLORIDE &amp; ZOLAZEPAM HYDROCHLORIDE</b>	No significant acute toxicological data identified in literature search.
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Acute Toxicity	☒	Carcinogenicity	☒
Skin Irritation/Corrosion	☒	Reproductivity	☒
Serious Eye Damage/Irritation	☒	STOT - Single Exposure	☒
Respiratory or Skin sensitisation	☒	STOT - Repeated Exposure	☒
Mutagenicity	☒	Aspiration Hazard	☒

Legend: **✗** – Data available but does not fill the criteria for classification

**✓** – Data required to make classification available

☒ – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
tiletamine hydrochloride	EC50	96	Algae or other aquatic plants	3.891mg/L	3
tiletamine hydrochloride	EC50	96	Algae or other aquatic plants	6.978mg/L	3
tiletamine hydrochloride	LC50	96	Fish	11.488mg/L	3

**Legend:**

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
tiletamine hydrochloride	HIGH	HIGH

### Bioaccumulative potential

Ingredient	Bioaccumulation
tiletamine hydrochloride	LOW (LogKOW = 2.7904)

### Mobility in soil

Ingredient	Mobility
tiletamine hydrochloride	LOW (KOC = 1013)

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product / Packaging disposal</b>	<p>Valuable substance, hold all residues for recovery. Disposal of the material must be carried out in accordance with the requirements of the relevant Federal/State Act(s) or Code(s) regulating the disposal of Drugs of Addiction.</p> <ul style="list-style-type: none"> <li>▶ Consult manufacturer/supplier for recycling options.</li> <li>▶ Decontaminate empty containers with water; incinerate plastic bags.</li> <li>▶ <b>DO NOT reuse containers.</b> Bury empty containers in an authorised landfill.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should</p>
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Continued...

- be consulted.
- ▶ **DO NOT** allow wash water from cleaning or process equipment to enter drains.
  - ▶ It may be necessary to collect all wash water for treatment before disposal.
  - ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
  - ▶ Where in doubt contact the responsible authority.

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

#### TILETAMINE HYDROCHLORIDE(14176-50-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

#### ZOLAZEPAM HYDROCHLORIDE(33754-49-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

National Inventory	Status
Australia - AICS	N (tiletamine hydrochloride; zolazepam hydrochloride)
Canada - DSL	N (tiletamine hydrochloride; zolazepam hydrochloride)
Canada - NDSL	N (tiletamine hydrochloride; zolazepam hydrochloride)
China - IECSC	N (tiletamine hydrochloride; zolazepam hydrochloride)
Europe - EINEC / ELINCS / NLP	N (tiletamine hydrochloride)
Japan - ENCS	N (tiletamine hydrochloride; zolazepam hydrochloride)
Korea - KECI	N (tiletamine hydrochloride; zolazepam hydrochloride)
New Zealand - NZIoC	Y
Philippines - PICCS	N (tiletamine hydrochloride; zolazepam hydrochloride)
USA - TSCA	N (tiletamine hydrochloride; zolazepam hydrochloride)
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net](http://www.chemwatch.net)

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

### Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average

**Zoletil 100 Injectable Anaesthetic/Sedative for Dogs, Cats, Zoo and Wild Animals**

PC—STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit,  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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