



Version 3.5	Revision Date: 06.04.2024	-	S Number: 76788-00010	Date of last issue: 30.09.2023 Date of first issue: 14.02.2019	
	1: IDENTIFICATION uct name	:	Ketamine (10%)	Formulation	
Manu	facturer or supplier's d	leta	ils		
Comp	bany	:	Intervet Australia	Pty Limited (trading as MSD Animal Health)	
Addre	ess	:	91-105 Harpin St Bendigo 3550, V		
Telep	hone	:	1 800 033 461		
Emer	gency telephone number	· :	Poisons Informat	tion Centre: Phone 13 11 26	
E-ma	E-mail address :		EHSDATASTEWARD@msd.com		
Reco	mmended use of the ch	nem	ical and restriction	ons on use	
	mmended use ictions on use	:	Veterinary produ Not applicable	ct	

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification Skin corrosion/irritation	:	Category 2
Serious eye damage/eye irri- tation	:	Category 2B
Reproductive toxicity	:	Category 2
Specific target organ toxicity - repeated exposure (Dermal)	:	Category 2 (Kidney, Liver, Brain)
GHS label elements Hazard pictograms	:	
Signal word	:	Warning
Hazard statements	:	H315 + H320 Causes skin and eye irritation. H361d Suspected of damaging the unborn child. H373 May cause damage to organs (Kidney, Liver, Brain) through prolonged or repeated exposure in contact with skin.
Precautionary statements	:	Prevention:



ersion 5	Revision Date: 06.04.2024	SDS Number: 3976788-00010		ssue: 30.09.2023 ssue: 14.02.2019
		P202 Do not h and understoo P260 Do not b P264 Wash sk	d. reathe mist or va in thoroughly aft otective gloves/ p	fety precautions have been rea
		P305 + P351 - for several mir easy to do. Co P308 + P313 I attention. P332 + P313 I tion.	 P338 IF IN EYE nutes. Remove continue rinsing. F exposed or configuration of f skin irritation of 	sh with plenty of water. ES: Rinse cautiously with water ontact lenses, if present and ncerned: Get medical advice/ ccurs: Get medical advice/ atte prsists: Get medical advice/ at-
		Storage: P405 Store loo	ked up.	
		Disposal: P501 Dispose disposal plant.		tainer to an approved waste
	r hazards which do i known.	not result in classifica	ition	
CTION	3. COMPOSITION/IN	IFORMATION ON ING	REDIENTS	
Subst	tance / Mixture	: Mixture		
Comj	ponents			
	nical name		CAS-No.	Concentration (% w/w)
Chem				

General advice	:	In the case of accident or if you feel unwell, seek medical ad- vice immediately. When symptoms persist or in all cases of doubt seek medical
		advice.
If inhaled	:	If inhaled, remove to fresh air.
		Get medical attention.
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.



Ketamine (10%) Formulation

ersion .5	Revision Date: 06.04.2024	SDS Number: 3976788-00010	Date of last issue: 30.09.2023 Date of first issue: 14.02.2019				
In case of eye contact		: In case of contact, immediately flush eyes with plenty of wate for at least 15 minutes.					
		Get medical a	If easy to do, remove contact lens, if worn. Get medical attention.				
If swa	allowed	Get medical a	If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water.				
Most important symptoms and effects, both acute and delayed		: Causes skin a Suspected of May cause da	Causes skin and eye irritation. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure in contact with skin.				
Protection of first-aiders Notes to physician		: First Aid respo and use the re	onders should pay attention to self-protection, ecommended personal protective equipment ntial for exposure exists (see section 8).				
		•	natically and supportively.				

Suitable extinguishing media : Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical Unsuitable extinguishing None known. : media Specific hazards during fire-: Exposure to combustion products may be a hazard to health. fighting Hazardous combustion prod-: Carbon oxides ucts Chlorine compounds Nitrogen oxides (NOx) Specific extinguishing meth-Use extinguishing measures that are appropriate to local cir-: cumstances and the surrounding environment. ods Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do SO. Evacuate area. Special protective equipment : In the event of fire, wear self-contained breathing apparatus. for firefighters Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec-	: Use personal protective equipment.
tive equipment and emer-	Follow safe handling advice (see section 7) and personal pro-
gency procedures	tective equipment recommendations (see section 8).
Environmental precautions	 Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.





Versior 3.5	n Revision Date: 06.04.2024	SDS Numl 3976788-0		Date of last issue: 30.09.2023 Date of first issue: 14.02.2019
	ethods and materials for ntainment and cleaning up	For larg ment to be pun Clean bent. Local o posal o employ mine w Sectior	ge spills, pr b keep mate nped, store up remainin or national r of this mate yed in the cl which regula ns 13 and 1	absorbent material. ovide dyking or other appropriate contain- erial from spreading. If dyked material can recovered material in appropriate container. og materials from spill with suitable absor- egulations may apply to releases and dis- rial, as well as those materials and items eanup of releases. You will need to deter- tions are applicable. 5 of this SDS provide information regarding tional requirements.
SECTI	ON 7. HANDLING AND ST	ORAGE		
Τe	echnical measures			neasures under EXPOSURE SONAL PROTECTION section.
	ocal/Total ventilation dvice on safe handling	: Use or : Do not Do not Do not Do not Wash Handle practic sessme Take c	ly with ade- get on skin breathe mi swallow. get in eyes skin thorou e in accorda e, based or ent are to preve	quate ventilation. or clothing. st or vapours.
Ну	giene measures	flushin place. When Wash The eff engine approp	sure to che g systems a using do no contaminate fective oper ering contro priate degow	mical is likely during typical use, provide eye and safety showers close to the working t eat, drink or smoke. ed clothing before re-use. ation of a facility should include review of ols, proper personal protective equipment, whing and decontamination procedures, monitoring, medical surveillance and the

		use of administrative controls.
Conditions for safe storage	:	Keep in properly labelled containers.
		Store locked up.
		Store in accordance with the particular national regulations.
Materials to avoid	:	Do not store with the following product types:
		Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parame- ters / Permissible	Basis
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Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
3.5	06.04.2024	3976788-00010	Date of first issue: 14.02.2019

		exposure)	concentration	
Ketamine hydrochloride	1867-66-9	TWA	10 µg/m3 (OEB 3)	Internal
	Further information		(
		Wipe limit	100 µg/100 cm ²	Internal
Engineering measures :	 Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip less quick connections). All engineering controls should be implemented by facility design and operated in accordance with GMP principles protect products, workers, and the environment. Containment technologies suitable for controlling compourare required to control at source and to prevent migration the compound to uncontrolled areas (e.g., open-face con tainment devices). Minimize open handling. 			g., drip- facility ciples to ompounds gration of
Personal protective equipmen	t			
Respiratory protection:Filter type:Hand protection				
Material :	Chemical-resi	stant gloves		
Remarks:Eye protection:Skin and body protection:	If the work en mists or aeros Wear a faces potential for d aerosols.	lasses with side vironment or act sols, wear the ap nield or other full	shields or goggles. ivity involves dusty co propriate goggles. face protection if the he face with dusts, m at	ere is a
Skin and body protection .	Additional boo task being per posable suits)	ly garments sho formed (e.g., sle to avoid expose te degowning te	al. uld be used based up eevelets, apron, gaun ed skin surfaces. echniques to remove	itlets, dis-

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	No data available
Odour	:	No data available
Odour Threshold	:	No data available
рН	:	No data available



Ketamine (10%) Formulation

Vers 3.5	sion	Revision Date: 06.04.2024		S Number: '6788-00010	Date of last issue: 30.09.2023 Date of first issue: 14.02.2019
	Melting	point/freezing point	:	No data available	
	Initial b range	oiling point and boiling	:	No data available	
	Flash p	oint	:	No data available)
	Evapor	ation rate	:	No data available	9
	Flamma	ability (solid, gas)	:	Not applicable	
	Flamma	ability (liquids)	:	No data available	9
		explosion limit / Upper bility limit	:	No data available	
		explosion limit / Lower bility limit	:	No data available	
	Vapour	pressure	:	No data available)
	Relative	e vapour density	:	No data available)
	Relative	e density	:	No data available)
	Density	,	:	No data available)
	Solubili Wat	ty(ies) er solubility	:	soluble	
	Partitio octanol	n coefficient: n-	:	Not applicable	
		nition temperature	:	No data available)
	Decom	position temperature	:	No data available)
	Viscosi Visc	ty cosity, kinematic	:	No data available	9
	Explosi	ve properties	:	Not explosive	
	Oxidizir	ng properties	:	The substance of	r mixture is not classified as oxidizing.
	Molecu	lar weight	:	No data available	9
	Particle Particle	e characteristics e size	:	Not applicable	

SECTION 10. STABILITY AND REACTIVITY





Version 3.5	Revision Date: 06.04.2024		9S Number: 76788-00010	Date of last issue: 30.09.2023 Date of first issue: 14.02.2019			
Che Pos tion Cor Inco Haz	Reactivity Chemical stability Possibility of hazardous reac- tions Conditions to avoid Incompatible materials Hazardous decomposition products		 Not classified as a reactivity hazard. Stable under normal conditions. Can react with strong oxidizing agents. None known. Oxidizing agents No hazardous decomposition products are known. 				
	N 11. TOXICOLOGICAL I	NF					
Exp	oosure routes	:	Inhalation Skin contact Ingestion Eye contact				
	ute toxicity						
	classified based on availa	ble	information.				
	duct: ite oral toxicity	:	Acute toxicity est Method: Calculat	imate: > 2,000 mg/kg ion method			
<u>Cor</u>	<u>mponents:</u>						
	amine hydrochloride:						
Acu	Acute oral toxicity		LD50 (Rat): 447 ı	mg/kg			
			LD50 (Mouse): 6	17 mg/kg			
	ite toxicity (other routes of ninistration)	:	LD50 (Rat): 59 m Application Route				
			LD50 (Mouse): 59 Application Route				
			LD50 (Mouse): 34 Application Route				
			LD50 (Guinea pig Application Route				
			LD50 (Rat): 224 r Application Route				
Cau	n corrosion/irritation uses skin irritation.						
	nponents:						
	amine hydrochloride: ecies	:	Rabbit				
			7 / 13				



Ver 3.5	sion	Revision Date: 06.04.2024		9S Number: 76788-00010	Date of last issue: 30.09.2023 Date of first issue: 14.02.2019
	Result		:	irritating	
	Serious eye damage/eye irritati Causes eye irritation.		on		
	Compo	onents:			
	Ketami	ine hydrochloride:			
	Specie: Result	5	:	Rabbit irritating	
	Respira	atory or skin sensitis	atio	n	
		ensitisation ssified based on availa	ble	information.	
	Respiratory sensitisation Not classified based on available			information.	
	Chronic toxicity				
		cell mutagenicity ssified based on availa	ble	information.	
		ogenicity ssified based on availa	ble	information.	
	-	fuctive toxicity sted of damaging the u	nbo	rn child.	
	•	onents:			
	Ketami	ine hydrochloride:			
	Effects ment	on foetal develop-	:		: Intramuscular oxicity: NOAEL: 120 mg/kg body weight dney, Liver, Heart
				Symptoms: Skele	





Version 3.5	Revision Date: 06.04.2024		DS Number: 976788-00010	Date of last issue: 30.09.2023 Date of first issue: 14.02.2019		
			Symptoms: Skele			
			Test Type: Development Species: Monkey Application Route: Intramuscular Target Organs: Brain Result: Effects on prenatal and postnatal growth.			
•	productive toxicity - As- sment	:	Suspected of dar	maging the unborn child.		
STO	DT - single exposure					

Not classified based on available information.

STOT - repeated exposure

May cause damage to organs (Kidney, Liver, Brain) through prolonged or repeated exposure in contact with skin.

Components:

Ketamine hydrochloride:

Exposure routes	:	Skin contact
Target Organs	:	Kidney, Liver, Brain
Assessment	:	May cause damage to organs through prolonged or repeated
		exposure.

Repeated dose toxicity

Components:

Ketamine hydrochloride:

Species LOAEL Application Route Exposure time Target Organs Remarks		Mouse 30 mg/kg Intraperitoneal 3 Months Kidney, Liver, Bladder Significant toxicity observed in testing
Species LOAEL Application Route Exposure time Target Organs Remarks		Mouse 30 mg/kg Intraperitoneal 6 Months Kidney, Liver, Bladder Significant toxicity observed in testing
Species LOAEL	:	Mouse 30 mg/kg





	Revision Date: 06.04.2024	SDS Number: 3976788-00010	Date of last issue: 30.09.2023 Date of first issue: 14.02.2019
Appli	action Pouto	· Introporitopool	
	cation Route sure time	: Intraperitoneal : 28 Weeks	
	t Organs	: Kidney	
Rema			city observed in testing
Speci		: Mouse	
LOAE	:L cation Route	: 30 mg/kg : Intraperitoneal	
	sure time	: 30 Days	
	et Organs	: Brain, Liver	
Rema			city observed in testing
Speci		: Monkey	
LOAE		: 1 mg/kg	
	cation Route sure time	: Intraperitoneal : 6 Months	
	et Organs	: Brain	
Rema		: Significant toxic	city observed in testing
	assified based on av rience with human e		
Expe <u>Com</u> t		exposure	
Expe <u>Com</u> t	rience with human e <u>conents:</u> nine hydrochloride:	exposure : Symptoms: The	ects, hypertension, Dizziness, Headache, N
Expe Comp Ketar Inges	rience with human e <u>conents:</u> nine hydrochloride:	: Symptoms: The ous system effe sea, Drowsines	ects, hypertension, Dizziness, Headache, N
Expe Comp Ketar Inges	rience with human e <u>conents:</u> nine hydrochloride: tion	: Symptoms: The ous system effe sea, Drowsines	e most common side effects are:, central ne ects, hypertension, Dizziness, Headache, N ss
Expe Comp Ketar Inges CTION Ecoto	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II	: Symptoms: The ous system effe sea, Drowsines	ects, hypertension, Dizziness, Headache, N
Expendent Composition Ketar Inges CTION Ecoto Comp	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II	: Symptoms: The ous system effe sea, Drowsines	ects, hypertension, Dizziness, Headache, N
Experience Comp Ketar Inges CTION Ecoto Comp Ketar	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II oxicity conents:	: Symptoms: The ous system effe sea, Drowsines	ects, hypertension, Dizziness, Headache, N
Expe Comp Ketar Inges CTION Ecoto Ketar Ecoto	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II exicity conents: nine hydrochloride:	: Symptoms: The ous system effe sea, Drowsines NFORMATION	ects, hypertension, Dizziness, Headache, N
Expe Comp Ketar Inges CTION Ecoto Ketar Ecoto Acute	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II oxicity <u>conents:</u> nine hydrochloride:	Exposure : Symptoms: The ous system effores sea, Drowsines NFORMATION Sent : Toxic effects ca	ects, hypertension, Dizziness, Headache, N
Expe Comp Ketar Inges CTION Ecoto Comp Ketar Ecoto Acute Chror	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II oxicity <u>conents:</u> nine hydrochloride: oxicology Assessme aquatic toxicity	ent : Toxic effects ca : Toxic effects ca	annot be excluded
Experience Composition Ketar Inges CTION Ecoto Composition Ketar Ecoto Acute Chror Persi	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II pxicity conents: nine hydrochloride: pxicology Assessme aquatic toxicity hic aquatic toxicity	ent : Toxic effects ca : Toxic effects ca	annot be excluded
Expe Comp Ketar Inges CTION Ecoto Comp Ketar Ecoto Acute Chror Persi No da Bioac	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II oxicity conents: nine hydrochloride: oxicology Assessme aquatic toxicity nic aquatic toxicity stence and degrada ata available ccumulative potentia	ent : Toxic effects ca : Toxic effects ca : Toxic effects ca	annot be excluded
Expe Comp Ketar Inges CTION Ecoto Comp Ketar Ecoto Acute Chror Persi No da Bioac	rience with human e <u>conents:</u> nine hydrochloride: tion 12. ECOLOGICAL II oxicity conents: nine hydrochloride: oxicology Assessme aquatic toxicity nic aquatic toxicity stence and degrada ata available	ent : Toxic effects ca : Toxic effects ca : Toxic effects ca	annot be excluded





Version 3.5	Revision Date: 06.04.2024		OS Number: 76788-00010	Date of last issue: 30.09.2023 Date of first issue: 14.02.2019
octar Mobi No da Othe No da	ion coefficient: n- iol/water lity in soil ata available r adverse effects ata available	:	log Pow: 2.18	
SECTION	13. DISPOSAL CONSI	DER	ATIONS	
Disp	osal methods			
Wast	e from residues	:		of waste into sewer.
Conta	aminated packaging	:	Empty container dling site for rec	cordance with local regulations. s should be taken to an approved waste han- ycling or disposal. specified: Dispose of as unused product.
SECTION	14. TRANSPORT INFO	RM	ATION	
Inter	national Regulations			
Prope Class Subs Pack Labe Envir IATA UN/II	umber er shipping name s idiary risk ing group		Not applicable Not applicable Not applicable Not applicable Not applicable no Not applicable Not applicable	
Class		:	Not applicable	
	idiary risk ing group	÷	Not applicable Not applicable	
Labe	ls ing instruction (cargo	:	Not applicable Not applicable	
Pack	ing instruction (passen- ircraft)	:	Not applicable	
UN n Prope Class Subs Pack Labe EmS	idiary risk ing group		Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable	





Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
3.5	06.04.2024	3976788-00010	Date of first issue: 14.02.2019

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

ADG		
UN number	:	Not applicable
Proper shipping name	:	Not applicable
Class	:	Not applicable
Subsidiary risk	:	Not applicable
Packing group	:	Not applicable
Labels	:	Not applicable
Hazchem Code	:	Not applicable

Special precautions for user

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mix-
ture

Therapeutic Goods (Poisons:No poison schedule number allocated (Please use the original
publication to check for specific uses, specific conditions or
threshold limits that might apply for this chemical)

Prohibition/Licensing Requirements

: There is no applicable prohibition, authorisation and restricted use requirements, including for carcinogens referred to in Schedule 10 of the model WHS Act and Regulations.

The components of this product are reported in the following inventories:

AICS	:	not determined
DSL	:	not determined
IECSC	:	not determined

SECTION 16: ANY OTHER RELEVANT INFORMATION

Further information

Revision Date Sources of key data used to compile the Safety Data Sheet	:	06.04.2024 Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen- cy, http://echa.europa.eu/
Date format	:	dd.mm.yyyy

Full text of other abbreviations



Ketamine (10%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
3.5	06.04.2024	3976788-00010	Date of first issue: 14.02.2019

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation: DSL - Domestic Substances List (Canada): ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances: (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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