SAFETY DATA SHEETS

This SDS packet was issued with item:

078946870

N/A

SECTION 1: IDENTIFICATION	
1.1 Product identifier	
Product name	Sevoflurane
Chemical name	sevoflurane
Synonyms	$C_4H_3F_7O$; ether, fluoromethyl 2,2,2-trifluoro-1-(trifluoromethyl)ethyl-; fluoromethyl 2,2,2-trifluoro-1-(trifluoromethyl)ethyl ether; 1,1,1,3,3,3-hexafluoro-2-(fluoromethoxy)propane; MR6S4; propane, 1,1,1,3,3,3-hexafluoro-2-(fluoromethoxy)-; HFE-347mmz1; Sevofrane; Travenol; Sevorane; general inhalation volatile anaesthetic halogenated ether
Proper shipping name	Aviation regulated liquid, n.o.s. (contains sevoflurane)
Chemical formula	$C_4H_3F_7O$
Other means ofidentification	Not Available
CAS number	28523-86-6
1.2 Relevant identified uses of the substances or mixture and uses advised against	
Recommended uses	Inhalation anesthetic (prescription drug) for use in dogs SDS are intended for use in the workplace. For domestic-use products, refer to consumer labels.
1.3 Details of the supplier of the substance or mixture	
Registered company name (US)	Dechra Veterinary Products
Address	7015 College Blvd Suite 525 Overland Park KS 66211 USA
Telephone	866-933-2472
Fax	Not Available
Email	Not Available
1.4 Emergency telephone numbers	
Dechra (US)	866-933-2472

SECTION 2: HAZARDS IDENTIFICATION	
2.1 Classification of the substance or mixture	
NFPA 704 diamond  Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)	
Classification	Serious Eye Damage/Eye Irritation Category 2B
2.2 Label elements	
Hazard pictogram(s)	Not Applicable
Signal word	Warning
Hazard statement(s)	
H320	Causes eye irritation.
Hazard(s) not otherwise classified Not Applicable	
Precautionary statement(s) prevention	
P264	Wash all exposed external body areas thoroughly after handling.
Precautionary statement(s) response	
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) storage Not Applicable
Precautionary statement(s) disposal Not Applicable

SECTION 3: INFORMATION ON THE INGREDIENTS

3.1 Substances

CAS No.	% w/w	Name
28523-86-6	100	sevoflurane

3.2 Mixtures
See section above for composition of Substances

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Remove contact lenses, if present and easy to do. Seek medical help if needed.
Skin contact	Wash affected area immediately for at least 15 minutes while removing contaminated clothing and shoes. Seek medical help if needed.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Seek immediate medical attention.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water. If swallowed do **NOT** induce vomiting. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed
See section 11

4.3 Indication of immediate medical attention and special treatment needed
Treat symptomatically

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use foam, dry chemical powder, BCF (where regulations permit), carbon dioxide or water spray or fog – large fires only

5.2 Special hazards arising from the substance or mixture

Fire incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

5.3 Special protective actions for fire-fighters:

Firefighting	Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use water delivered as a fine spray to control fire and cool adjacent area. Avoid spraying water onto liquid pools. **DO NOT** approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire.
Fire / explosion hazard	**Contains low boiling substance:** Closed containers may rupture due to pressure buildup under fire conditions. Non flammable liquid, however vapour will burn when in contact with high temperature flame. Ignition ceases on removal of flame. May form a flammable or explosive mixture in an oxygen enriched atmosphere Heating may cause expansion/vaporization with violent rupture of containers. Decomposes on heating and produces corrosive fumes of hydrochloric acid, carbon monoxide and small amounts of toxic phosgene.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
See Section 8

6.2 Environmental precautions
See Section 12

6.3 Methods and material for containment and cleaning up

Minor spills	Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Allow to evaporate. Isolate area until gas has dispersed. Avoid breathing vapours and contact with skin and eyes. Ventilate area of leak or spill. Wear appropriate personal protective equipment.
Major spills	Contain and recover liquid when possible. Do not let product enter drains. Collect liquid in an appropriate container or absorb with an inert material (e. g., sand, silica gel, acid binder, universal binder, sawdust) and place in a chemical waste container. Do not flush to sewer.

Personal Protective Equipment advice is contained in Section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling	Wear personal protective equipment. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe vapors or spray mist. Avoid contact with skin and eyes. **DO NOT** allow clothing wet with material to stay in contact with skin. **DO NOT** enter confined spaces until atmosphere has been checked. **DO NOT** eat, drink or smoke. Observe manufacturer's storage/handling recommendations contained within this SDS.
Other information	Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Observe manufacturer's storage and handling recommendations contained within this SDS. Keep out of reach of children.

7.2 Conditions for safe storage, including any incompatibilities

Suitable container	Sevoflurane is packaged in amber colored bottles containing 250 mL sevoflurane **DO NOT** use aluminium or galvanised containers
Storage incompatibility	Segregate from powdered metals such as aluminium, zinc and alkali metals such as sodium, potassium and lithium. May attack, soften or dissolve rubber, many plastics, paints and coatings

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits (OEL)
INGREDIENT DATA
Not Available

EMERGENCY LIMITS

Ingredient	TEEL-1	TEEL-2	TEEL-3
Sevoflurane	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
sevoflurane	Not Available	Not Available

8.2 Exposure controls

Appropriate engineering controls	Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide a high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to

	reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Employers may need to use multiple types of controls to prevent employee overexposure.
Personal protection	
Eye and face protection	Safety glasses with side shields, chemical goggles Contact lenses may pose a special hazard
Skin protection	See hand protection below.
Hands/feet protection	Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber
Body protection	See other protection below.
Other protection	Overalls, P.V.C apron, barrier cream, skin cleansing cream, eye wash unit
Respiratory protection	Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: Clear liquid	**Vapor density:** 6.94
Physical state: Liquid	**Auto ignition temperature (degrees C):** NA
Odor: Not Available	**Decomposition temperature (degrees C):** NA
Odor threshold: NA	**Viscosity (degrees C):** NA
pH (as supplied): NA	**Explosive properties:** NA
Melting point / freezing point (degrees C): NA	**Oxidizing properties:** NA
Initial boiling point and boiling range: 58.6°C	**Partition coefficient:** NA
Flash point: NA	**Molecular weight:** 200.07
Evaporation rate: NA	**Taste:** NA
Flammability: NA	**Surface tension:** NA
Upper/lower flammability or explosive limits: NA	**Volatile component (%vol):** 100
	Gas group: NA
Vapor pressure: 32.65	**pH as a solution:** NA
Relative density (at degrees C): 1.52	**VOC g/L:** NA
Solubility in water (mg/l): Immiscible	**Specific gravity @ 20 degrees C (water = 1):** NA

10: STABILITY AN REACTIVITY

Reactivity	See Section 7
Chemical stability	Product is considered stable. Hazardous polymerization will not occur. Unstable in the presence of incompatible materials
Possibility of hazardous reactions	See Section 7
Conditions to avoid	See Section 7
Incompatible materials	See Section 7
Hazardous composition	See Section 5

SECTION 11: TOXICOLOGICAL INFORMATION

Inhalation	The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and

	occasionally, distress. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual.
Skin contact	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.
Eye contact	Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals.
Chronic	Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. The material may produce mutagenic effects in man.

	Acute toxicity	**Irritation**
sevoflurane	Inhalation(Rat) LC_{50}: 29000 ppm 4 h[2] Oral (Rat) LD_{50}: 10800 mg/kg[2]	Eye (rabbit): slight *

1 Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Acute Toxicity	✘	Carcinogenicity	✘
Skin Irritation/Corrosion	✘	Reproductivity	✘
Serios Eye Damage/Irritation	✓	STOT – Single Exposure	✘
Respiratory or Skin Sensitization	✘	STOT – Repeated Exposure	✘
Mutagenicity	✘	Aspiration Hazard	✘

✘ - Data either not available or does not fill the criteria for classification
✓ - Data available to make classification

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

	Endpoint	**Test Duration (hr)**	**Species**	**Value**	**Source**
sevoflurane	NOEC(ECx)	0.02h	Fish	163.656 mg/L	4

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - 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.

12.2 Persistence and degradability

Ingredient	**Persistence: Water/Soil**	**Persistence: Air**
sevoflurane	HIGH	HIGH

12.3 Bioaccumulative potential

Ingredient	**Bioaccumulation**
sevoflurane	LOW (LogKOW = 1.7478)

12.4 Mobility in soil

Ingredient	**Mobility**
sevoflurane	LOW (KOC = 131.9)

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / packaging disposal	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. **DO NOT** allow wash water from cleaning or process equipment to enter drains.

SECTION 14: TRANSPORT INFORMATION			
Labels required			
			
Marine pollutant	No		
Land transport (US: DOT)			
Not regulated for transport of dangerous goods			
Air transport (ICAO-IATA / DGR)			
UN number	3334		
UN proper shipping name	Aviation regulated liquid, n.o.s.* (contains sevoflurane)		
Transport hazard class(es)	ICAO/IATA Class	9	
	ICAO / IATA Subrisk	Not Applicable	
	ERG Code	9A	
Packing group	III		
Environmental hazard	Not Applicable		
Special precautions for user	Special provisions		A27
	Cargo Only Packing Instructions		964
	Cargo Only Maximum Qty / Pack		450L
	Passenger and Cargo Packing Instructions		964
	Passenger and Cargo Maximum Qty / Pack		450L
	Passenger and Cargo Limited Quantity Packing Instruction		Y964
	Passenger and Cargo Limited Maximum Qty / Pack		30 kg G
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			
Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code			
Product name	**Group**		
sevoflurane	Not Available		
Transport in bulk in accordance with the ICG Code			
Product name	**Ship type**		
sevoflurane	Not Available		

SECTION 15: REGULATORY INFORMATION	
15.1 Safety, health and environmental regulations / legislation specific for thesubstance or mixture	
Product regulated by FDA as a veterinary product **sevoflurane is found on the following regulatory lists** Not applicable	
Federal Regulations	
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Section 311/312 hazard categories	
Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No

Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)
None Reported

State Regulations

US. California Proposition 65
None Reported

National Inventory Status	
Australia - AIIC / Australia Non-Industrial Use	No (sevoflurane)
Canada - DSL	No (sevoflurane)
Canada - NDSL	No (sevoflurane)
China - IECSC	No (sevoflurane)
Europe - EINEC / ELINCS / NLP	No (sevoflurane)
Japan - ENCS	No (sevoflurane)
Korea - KECI	No (sevoflurane)
New Zealand - NZIoC	No (sevoflurane)
Philippines - PICCS	No (sevoflurane)
USA - TSCA	No (sevoflurane)
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	No (sevoflurane)
Russia - FBEPH	No (sevoflurane)

Yes = All CAS declared ingredients are on the inventory
No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration

SECTION 16: OTHER INFORMATION

Classification of the preparation and its individual components has drawn on an independent review by the Chemwatch Classification committee using available literature references.

Definitions and abbreviations

ACGIH: American Conference of Governmental Industrial Hygienists
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
TLV: Threshold Limit Value

BCF: BioConcentration Factors
AIIC: Australian Inventory of Industrial Chemicals DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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