

MATERIAL SAFETY DATA SHEET

Infosafe No.: ACOFS
Issue Date: March 2001
Issued by: Medical Developments International Limited
Revision No.: 3
Revision Date: May 2009

Product Name: METHOXYFLURANE INHALATION ANALGESIC
(Classified as hazardous according to criteria of NOHSC)

COMPANY DETAILS

Company Name	Medical Developments International Pty. Ltd. (ABN 14 106 340 667)
Address	7 / 56 Smith Road, Springvale, Victoria, Australia, 3171
Tel	+61 (3) 9547 1888
Fax	+61 (3) 9547 0262

IDENTIFICATION

Product Code	ME-MEOTH, ME-7590-45, ME-MS245, ME-MS246, ME-MS260
Product Name	METHOXYFLURANE INHALATION ANALGESIC
Proper Shipping Name	None Allocated
Name	2,2-dichloro-1,1-difluoroethyl methyl ether
UN Number	None Allocated
DG Class	None Allocated
Packing Group	None Allocated
Hazchem Code	None Allocated
Poisons Schedule	S4
Product Use	Inhalant analgesic for pre-hospital pain relief and short surgical procedures.

PENTHROX INHALER

Methoxyflurane must only be administered using the Pentrox Inhaler, a polyethylene tube incorporating a polypropylene wick. Do not exceed recommended dose. Oxygen can be added via a nipple in the base. The oxygen intake bypasses the internal wick. The Pentrox Inhaler is a single-patient use device. After use, replace in the carton and seal in a clean, dry, vapour-tight impervious container (polyethylene bag or jar) for disposal. The container should be clear so that the carton labelling is clearly visible.

PHYSICAL DATA

Appearance	Clear colourless liquid with a fruity odour.
Melting Point	-35°C
Boiling Point	104.6°C
Vapour Pressure	2.66 kPa @ 17.7°C
Specific Gravity	1.426 @ 25°C
Flash Point	62.8°C (as tested using Closed Cup method)
Flamm. Limit LEL	7%
Flamm. Limit UEL	Not available
Solubility in Water	<1 mg/L @ 19°C

OTHER PROPERTIES

Volatile Component	100%
Evaporation Rate	<1 (Ether = 1)
Vapour Density	>1
pH Value	Not applicable
Solubility in Organic Solvents	Soluble in acetone, alcohol, chloroform, ether, oils and rubber.
Stability	Stable under normal conditions, may be sensitive to prolonged exposure to light.
Haz. Polymerization	Will not occur.
Materials to Avoid	Oxidising agents and powdered metals.
Formula	C ₃ HCl ₂ F ₂ O
Molecular Weight	164.97

INGREDIENTS

<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
Methoxyflurane	76-38-0	≥ 99.9 %
Butylated hydroxytoluene (stabilizer)	128-37-0	0.01%

HEALTH HAZARD INFORMATION

HEALTH EFFECTS

Acute - Swallowed	The liquid may be discomforting to the gastrointestinal tract and may cause nausea and vomiting.
Acute - Eye	The liquid is irritating to the eyes and may cause pain and redness.
Acute - Skin	Prolonged or repeated skin contact with the liquid may cause irritation.
Acute - Inhaled	The vapour may be irritating to the upper respiratory tract. Exposure to low vapour concentrations can cause headache and nausea. High vapour concentrations, such as when used as an anaesthetic, have a depressant action on the central nervous system producing loss of consciousness.
Chronic	Chronic inhalation of methoxyflurane in high doses may cause liver and kidney damage. It has been reported that volatile agents may increase the risk of spontaneous abortion. To our knowledge there have been no reported cases of this occurring when methoxyflurane is used as an analgesic. However, during pregnancy, exposure to any volatile agent should be limited or avoided. The presence of other drugs or pre-existing medical conditions may increase the effects of methoxyflurane on the renal system, when used in anaesthetic quantities.
Other Information	IMPORTANT NOTE: The above information has been sourced from material related to the use of methoxyflurane during anaesthesia. In the strict dosage control when used with the Pentrox Inhaler there have been no reported side effects except: 1) occasional headache 2) occasional nausea

It is important to distinguish the risk factors of methoxyflurane when used as an anaesthetic compared to its use as an analgesic in controlled low doses.

FIRST AID

Swallowed	DO NOT INDUCE VOMITING. Rinse mouth with water and then give water to drink. Seek immediate medical assistance.
Eye	Immediately irrigate with copious amounts of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical attention.
Skin	Wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. If irritation occurs seek medical attention.
Inhaled	Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If breathing has stopped apply artificial respiration at once. In the event of cardiac arrest, apply external cardiac massage. Seek medical attention.
First Aid Facilities	Eye wash and normal washroom facilities.

ADVICE TO DOCTOR

Advice to Doctor	Treat symptomatically.
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OTHER HEALTH HAZARD INFORMATION

PRECAUTIONS FOR USE

Exposure Limits	No exposure standards have been established for this material by the National Occupational Health And Safety Commission (NOHSC), however to be consistent with other halogenated anaesthetic exposure NOHSC suggests an exposure standard of: TWA: 0.5 ppm
Other Exposure Info.	NIOSH Ceiling REL: 2 ppm/60 minutes (waste anaesthetic gases) (13.5 mg/m ³). Occupation reproductive guidelines (ORG): 8.1 mg/m ³
Eng. Controls	DO NOT enter confined spaces where vapour may have collected. Use in well ventilated areas, where ventilation is inadequate local exhaust ventilation should be used. Vapour is heavier than air - prevent concentration in hollows or sumps. Keep containers closed when not in use.

PERSONAL PROTECTION

Protective Equip.	FOR BULK HANDLING: RESPIRATOR TYPE: Where ventilation is inadequate, the use of an Air Purifying Respirator with a Type A Organic Vapour filter complying with AS/NZS 1715 and AS/NZS 1716 is recommended. EYE PROTECTION: Safety glasses or goggles. GLOVE TYPE: PVA gloves. CLOTHING: Overalls or similar protective clothing.
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FLAMMABILITY

Fire Hazards Combustible liquid.

SAFE HANDLING INFORMATION

STORAGE AND TRANSPORT

Storage Precautions This material is a Scheduled Poison (S4) and must be stored, maintained and used in accordance with the relevant regulations. Store in a cool place out of direct sunlight. Store in a well ventilated area away from foodstuffs. Keep bulk containers closed at all times - check regularly for leaks. Classified as a Class C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS1940.

Transport Not classified as a Dangerous Good, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Proper Shipping Name None Allocated.

SPILLS AND DISPOSAL

Spills & Leaks **For bulk containers.** Clear area of all unprotected personnel. Increase ventilation and remove any ignition sources. Wear protective equipment to prevent skin and eye contamination and inhalation of vapours. Contain spill, prevent run off into drains and waterways. Use absorbent (soil, sand, vermiculite or other inert material). Collect and seal in properly labelled containers for disposal.

For minor spills. Wipe spill up with absorbent material (tissue, paper towel), place absorbent material in a clean, dry, vapour-tight impervious container (polyethylene bag or jar) for disposal.

Disposal Refer to State Land Waste Management Authority.

FIRE / EXPLOSION HAZARD

Fire/Explos. Hazard Combustible liquid.
Hazardous Decomposition or Byproducts Hydrogen chloride, hydrogen fluoride, phosgene, oxides of carbon and chlorine.

Fire Fighting Procedures Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

Extinguishing Media Water spray, fog, foam, dry agent.
Hazchem Code None Allocated

OTHER INFORMATION

Toxicology	Oral (rat) LD50: 3600 mg/kg Inhalation (rat) LC50: 33500 mg/m ³ /4H Inhalation (human) TClO: 3500 ppm/1H Eye (rabbit): 100 mg (moderate irritation) No information available.
Information on Ecological Effects	
Risk Statement	R36 Irritating to eyes. (Note R36 refers to the liquid)
Safety Statement	S25 Avoid contact with eyes.
Empirical Formula & Structural Formula	C3HCl2F2O

CONTACT POINT

Contact	Poisons information Centre (24 hours) Tel: 13 11 26
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IMPORTANT NOTE:

The information contained in this Material Safety Data Sheet is, to the best of our knowledge, true and accurate, but any recommendations or suggestions that may be made are without guarantee since the conditions of use are beyond our control. Medical Developments Australia Pty. Ltd. does not assume any legal responsibility for use or reliance upon this information. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

...End of MSDS...