



5600 Blazer Parkway
Dublin, OH 43017

Isoflurane, USP
Oct-23-2007

029404
ISOETHESIA (ISOFLURANE)
100ML PVL
029405
ISOETHESIA (ISOFLURANE)
250ML PVL



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer Name and Address: Abbott Laboratories
Pharmaceutical Products Group
100 Abbott Park Road
Abbott Park, IL 60064

Customer Service Telephone: 1-800-255-5162 (US and Canada only)

Emergency Telephone: CHEMTREC: 1(800) 424-9300 (in USA and Canada) or Access Code + (703) 527-3887

Product Name: Isoflurane, USP

Synonyms: Forane
Forene
Isoflurane liquid
Isoflurane
Isoflurane USP liquid
1-Chloro-1-(difluoromethoxy)-2,2,2-trifluoroethane
1-Chloro-2,2,2-trifluoroethyl difluoromethyl ether

List Number: 5260
B506

Drug Code Number: 24275
38765
89063

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percent	OSHA PEL	ACGIH TLV	AIHA WEEL	Abbott EEL	Skin Notation
Isoflurane 26675-46-7	100	Not Listed	Not Listed	Not Applicable	60 ppm (450 mg/m ³) TWA	None

3. HAZARDS IDENTIFICATION

Emergency Overview:
Clear, colorless liquid.
Mild, pungent, musty, ethereal odor.
Product has sedative/anesthetic effects. May be irritating to skin, eyes and respiratory tract.

Routes of Exposure:
Oral: No
Dermal: Not determined.
Inhalation: Clinical Route

Hazard Information:
Ingestion Rating: None.
Skin Absorption Rating: Not determined.

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3. HAZARDS IDENTIFICATION

Inhalation Rating: None
Corrosiveness Rating: Not determined.
Skin Contact Rating: Not determined.
Skin Sensitization Rating: Not determined.
Eye Contact Rating: Not determined.
Target Organs: Nervous System, Respiratory System, Cardiovascular System , Digestive System , Fetus.

Carcinogenicity Rating:

Ingredients	Percent	OSHA:	NTP:	IARC:	ACGIH:
Isoflurane	100	Not Listed	Not Listed	Not Listed	Not Listed

NFPA Rating: Not determined.

Signs and Symptoms: None known from occupational exposure. Clinical data suggests the following: headaches, incoordination, nausea, slow heart rate, sedation, sleep, drowsiness, dizziness, hyperthermia, vomiting, breathing difficulty.

Medical Conditions Aggravated by Exposure: Data suggest any preexisting ailments in the following organs: central nervous system, cardiovascular system, gastrointestinal system, respiratory system. Hypersensitivity to the material and/or similar materials.

4. FIRST AID MEASURES

Eye Contact: Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Skin Contact: Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Inhalation: Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Ingestion: Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

Notes To Physician: Maintain ventilation, electrolyte balance and monitor cardiovascular function, as necessary.

5. FIRE FIGHTING MEASURES

Flammability:

Flammability Class: Non-flammable.
Lower Explosive Limit: Not determined.
Autoignition Temp. (°C): Not determined.

Fire-Fighting Information:

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Suitable Extinguishing Media: Use appropriate medium for the underlying cause of the fire.

Special Protective Equipment: Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Special Exposure Hazards: Thermal decomposition products may include: oxides of carbon , HCl. and HF

Min. Ignition Energy-Cloud (mJ): > 5000

6. ACCIDENTAL RELEASE MEASURES

Methods of Cleaning and Collecting: Clean up promptly. Absorb with suitable material. Ventilate and wash spill area. Place into an appropriate container for disposal. Dispose of material as directed in Section 13. Wash spill area site after wipe up is complete.

Personal Precautions: Restrict spill area to those equipped with personal protection specified in Section 8.

Environmental Precautions: Not determined.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin, or clothing.

Storage: Store according to label instructions.

Special Precautions: Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Anesthetic gas scavenging systems should be used during typical product application. Handle inside a process enclosure or chemical fume hood during manufacturing or laboratory use.

Respiratory Protection: If engineering controls are in place, respirators are generally not required during normal conditions of use.

Eyes: Eye protection not required during typical product use conditions. Wear eye protection appropriate to exposures during manufacturing/laboratory use.

Gloves: Impervious gloves.

Other PPE Data: Not determined.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, colorless liquid.

Odor: Mild, pungent, musty, ethereal odor.

Boiling Pt. @ 760 mm Hg (°C): 48.5

Melting/Freezing Point (°C): Not determined.

Vapor Pressure (mm Hg) 295 - 330 mm Hg at 25 deg. C

Vapor Density (Air = 1): 6.3

Bulk Density at 20°C: 1.45

Solubility: Soluble in: organic solvents. Slightly soluble in: water (11.2 grams/l)

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9. PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 1.496 @ 25 deg C
pH: Not determined.
Viscosity (centipoise): Not determined.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.
Self-Heating Tendency: No exotherms seen below 300 deg C in ARC testing.
Materials to Avoid: Strong bases. Alkaline metals.
Hazardous Decomposition Products: When heated to decomposition it emits : HF, HCl, COx.
Hazardous Polymerization: Not known to occur.
Conditions to Avoid: Not determined.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity - Oral: Data for component (s) given below.

Ingredients	Percent	Acute Test	Value	Units	Species
Isoflurane	100	LD50 =	4770 - 5080	mg/kg	Mice Rats

Acute Toxicity - Dermal: Not determined.

Acute Toxicity - Inhalation: Data for component (s) given below.

Ingredients	Percent	Test	Value	Units	Species
Isoflurane	100	LC 50 =	15,300 - 16,800	ppm	Rats Mice

Corrosivity: Not determined.

Dermal Irritation: Not determined.

Eye Irritation: A similar material is an eye irritant.

Sensitization: Not determined.

Target Organ Effects: In clinical use target organ effects include: central nervous system.

Reproductive Effects: In animals adverse reproductive effects include: maternal toxicity, reduced fetal growth, fetal abnormalities.

Carcinogenicity: Not determined.

Mutagenicity: Negative in the Ames assay. Negative in the chromosomal aberration assay.

Ingredients	Percent	Ames Test:	Mouse Lymphoma Assay	Micronucleus Assay	Chromosomal Abbr. Assay
Isoflurane	100	Negative	No Data.	No Data.	Negative

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Notes:

1. ALD: Approximate lethal dosage
2. LC50: Concentration in air that produces 50% mortality
3. LD50: Oral or dermal dosage that produces 50% mortality

12. ECOLOGICAL INFORMATION

Aquatic Toxicity: Not determined.

Biodegradation: Not determined.

General Notes: Do not allow undiluted material or large quantities to reach groundwater, bodies of water or sewer system.

Notes:

1. EC50: Concentration in water that produces 50% mortality in *Daphnia* sp.
2. LC50: Concentration in water that produces 50% mortality in fish.
3. EbC50/ErC50: Concentration in water that produces 50% inhibition of growth and in algae.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: All waste must be packaged, labeled, transported and disposed of in conformance with applicable local, state, and federal laws and regulations and in accordance with good engineering practices.

14. TRANSPORT INFORMATION

DOT/ADR:

Status: Not Regulated.

ICAO/IATA:

Status: Regulated.

Proper Shipping Name: Aviation regulated liquid, n.o.s (1-Chloro-1-(difluoromethoxy)-2,2,2-trifluoroethane)

Hazard Class: 9

UN ID: UN3334

IMDG:

Status: Not Regulated.

TDG (Canada):

Status: Not Regulated.

15. REGULATORY INFORMATION

SARA 313 Information

Ingredients	Percent	SARA 313 Chemical:	CERCLA RQ/SARA EHS RQ (lbs):	SARA EHS TPQ (lbs):
Isoflurane	100	No	Not Applicable	Not applicable

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SARA 311/312 Hazard Categories:

Immediate Health: No
Delayed Health: No
Fire: No
Sudden Pressure: No
Reactivity: No

TSCA Inventory Status: Exempt.

CERCLA Status: Not determined.

RCRA Status: Not determined.

Proposition 65 Status: Does not contain chemicals known to the state of California to cause cancer or reproductive harm.

EC HAZARD CLASSIFICATION:

Category of Danger: Exempt.
Indication of danger: Exempt.
GHS Classification: Not determined.

CANADIAN REGULATIONS:

Canadian Inventory: Not determined.
Canadian NDSL: Not determined.
WHMIS Hazard Class: Not determined.

Notes:

1. SARA = Superfund Amendments and the Reauthorization Act.
2. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act.
3. FIFRA = Federal Insecticide, Fungicide and Rodenticide Act.
4. TSCA = Toxic Substances Control Act.
5. EC = European Community.
6. WHMIS = Canadian Workplace Hazardous Materials Information System.
7. UN GHS = United Nations Globally Harmonized System for Hazard Identification.

16. OTHER INFORMATION

Document Authored By: Global Occupational Toxicology (D-05TX)

Supersedes the MSDS dated: Oct-19-2007

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