

Material Safety Data Sheet



ProFume* Gas Fumigant

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1. Product Identification:**Product name:** ProFume* Gas Fumigant**Product use:** For control of certain stored product pests in empty cereal grain mills and storage facilities.**Product code number:** 79465**GMID numbers:** 257451**MSDS number:** DASCII-228**Effective date:** May 1, 2008**Supplier:**Dow AgroSciences Canada Inc.
Suite 2100, 450 - 1st Street SW,
Calgary, Alberta,
Canada, T2P 5H1
www.dowagro.ca**This product is regulated under authority of the Pest Control Products Act****2. Composition:**

Component	CAS Number	% (w/w)
Sulfuryl fluoride	002699-79-8	99.8
Balance	Not available	0.2

3. Hazard Identification:**Emergency Overview:**

This product is a colorless, odorless compressed gas. Evacuate the immediate area if a leak occurs. Excessive vapor concentrations are attainable and a single exposure may cause death.

EMERGENCY PHONE NUMBER: CANUTEC 613-996-6666**Potential Health Effects:**

Eyes: This product is essentially non-irritating to eyes in its gaseous form. If liquid ProFume contacts the eye, evaporation may cause frostbite-type injury due to rapid cooling.

Skin contact: This product is essentially non-irritating to skin in its gaseous form. If liquid ProFume contacts the skin, evaporation may cause frostbite-type injury due to rapid cooling.

Skin absorption: No adverse effects anticipated by skin absorption.

Ingestion: ProFume is moderately toxic if swallowed. Ingestion is unlikely due to this product's physical state.

Inhalation: Vapor concentrations are attainable and a single exposure may cause death. Excessive exposure may cause severe irritation to the upper respiratory tract (nose and throat) and lungs.

4. First Aid Measures:

Consult a physician in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention at once.

Eyes: In case of frostbite, immediately flush eyes with water. Remove contact lenses, if present, after the first five minutes, then continue flushing eyes for at least 15 minutes. Obtain specialist medical attention at once.

Skin: If shoes, gloves or clothing covering the skin become wet with sulfuryl fluoride, Immediately apply water to the contaminated clothing before removing them. Once the area has thawed, remove the contaminated items covering the skin. Then rinse the affected skin immediately with plenty of water.

Ingestion: If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Seek medical attention.

Inhalation: Move affected person to fresh air. If person not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention at once. If person is not breathing and has no pulse, consider cardiopulmonary resuscitation (CPR); use pocket resuscitation mask, bag valve mask, etc., to avoid risk of poisoning the rescuer.

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Note to physician: Sulfuryl fluoride is a gas, which has no warning properties such as odor or eye irritation. The prediction of possible human effects is based in part on observations made on laboratory animals. Treat frostbite if present (eyes, skin) with gentle re-warming by water irrigation for at least 15 minutes. It is predicted that persons exposed to sulfuryl fluoride will show little evidence of intoxication at first, unless the concentration is very high (>400 ppm). Early symptoms of exposure to sulfuryl fluoride are respiratory irritation and central nervous system depression. Excitation may follow. Slowed movement, reduced awareness, and slow or garbled speech may be noted. It is essential to keep such an individual at bed rest for at least 24 hours. Clinical observations should be directed at the pulmonary, hepatic, and renal systems. Prolonged exposure can produce lung irritation, pulmonary edema, nausea, and abdominal pain. Repeated exposure to high concentrations can result in significant lung and kidney damage. Convulsions may ensue with respiratory arrest being the terminal event. Assisted respiration may be necessary. Clinical observation is essential. There is no known antidote for over-exposure to sulfuryl fluoride. Consider administering a complete aerosol corticosteroid metered dose inhaler (100 to 150 shots) or equivalent as initial preventive treatment for incipient pulmonary edema. Consider administering 250 to 1,000 mg prednisolone IV on the first day of treatment. There is no specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire-Fighting Measures:

Flash point: Not applicable

Flammable limits Not applicable

Auto-ignition temperature: Not applicable

Extinguishing media: Water fog or foam

Sensitivity to mechanical impact/static discharge: Not available

Unusual fire and explosion hazards: Sulfuryl fluoride is not combustible. Cylinders exposed to fire may vent and release toxic gas through melted fusible plugs on cylinders. If cylinders are in a fire area, water should be used to keep them cool to help prevent discharge of product caused by melted fusible plugs on the cylinders. Use of water will also help to scrub out part of any hydrofluoric acid and sulfur dioxide, which may be formed by decomposition of the product in a fire.

Fire-fighting equipment: Wear positive-pressure, self-contained breathing apparatus and full turnout gear. When fighting fires in atmospheres containing potentially high concentrations of sulfuryl fluoride, encapsulating protective suits should be worn due to possible formation of hydrofluoric acid. Protective suit material should be compatible with exposure to hydrofluoric acid.

6. Accidental Release Measures:

Evacuate immediate area if a cylinder begins to leak. Use an approved positive-pressure, self-contained breathing apparatus (SCBA) or combination air-supplied/SCBA respirator, such as manufactured by Ranger, Survivair, Scott, or MSA, for entry into affected areas to correct any problems. For leaking cylinders occurring near the structure being fumigated, place the cylinder inside the designated structure if it can be done safely. If the leaking cylinder occurs elsewhere, move leaking or damaged cylinder(s) outdoors or to an isolated location, observing strict safety precautions. Work upwind if possible. Do not permit entry into leakage area by unprotected persons until concentration of the fumigant is determined to be 1 ppm or less, as determined by a detection device with sufficient sensitivity such as an INTERSCAN or MIRAN gas analyzer.

7. Handling and Storage:

Handling: Keep out of reach of children. Do not breathe gas. Keep all unnecessary people and pets out of area containing sulfuryl fluoride gas.

Storage: Store in original containers only away from heat and residential dwellings.

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8. Exposure Controls, Personal Protection and Exposure limits:**Exposure limits:**

Sulfuryl fluoride: ACGIH TLV is 5 ppm TWA, 10 ppm STEL; OSHA PEL is 5 ppm TWA.

Balance: Not available :

Engineering controls: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guideline. Lethal concentrations may exist in areas with poor ventilation.

Breathing: Atmospheric levels should be maintained below exposure guideline. When respiratory protection is required for certain operations, use an approved positive-pressure supplied-air respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained breathing apparatus or an approved positive-pressure supplied-air respirator. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply.

Protective clothing: Skin contact with the liquid may cause freeze injury if the liquid is confined to the skin; therefore, the use of any protective clothing such as unsealed encapsulating suits, exposed open topped boots or open-cuffed gloves that may entrap the liquid next to the skin must be avoided.

Eyes: Wear Chemical Workers' Goggles.

Other protection: None stated

9. Physical and Chemical Properties:

Boiling point: -55°C

Vapor pressure: 15.2 atmospheres at 20°C

Vapor density: 4.3 g/L at 20°C

pH: Not available

Appearance: Colorless compressed gas

Odor: Odorless

Coefficient of water/oil distribution: Not available

Specific gravity: 1.35 at 20°C

Solubility in water: Practically insoluble

Freezing point: Not available

Odor threshold: Not available

Melting point: Not applicable

10. Stability and Reactivity:

Stability: Cylinders may leak or rupture in a fire.

Incompatibility: Avoid strong base materials.

Hazardous decomposition products: Sulfur dioxide and hydrogen fluoride may be formed under fire conditions with hydrocarbons.

Hazardous polymerization: Not known to occur

11. Toxicological Information:

Skin absorption: Not available

Ingestion: The acute oral LD50 of sulfuryl fluoride (rat) is 100 mg/kg, Swallowing sulfuryl fluoride is unlikely because of the physical state of this product.

Inhalation: The inhalation LC50 of sulfuryl fluoride for a four-hour exposure (rat) is 991 to 1122 ppm.

Sensitization: Not available

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Chronic effects: In animals, effects have been reported on the brain, central nervous system, kidney, lung, respiratory tract and thyroid gland. Observations in animals include convulsions and tremors. This product may cause fluorosis of teeth and bones.

Cancer: This product did not cause cancer in laboratory animals.

Birth defects: Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Sulfuryl fluoride did not cause birth defects in animals; other effects were seen in the fetus only at doses that caused toxic effects to the mother.

Reproductive effects: In animal studies, sulfuryl fluoride has been shown not to interfere with reproduction.

Mutagenicity: *In-vitro* and animal mutagenicity studies with sulfuryl fluoride were negative.

12. Ecological Information:

Sulfuryl fluoride is highly toxic to aquatic invertebrates on an acute basis. No information is available regarding avian toxicity but it is expected to be similar to that for humans and other vertebrates. Bio-concentration potential for sulfuryl fluoride is low. For more complete eco-toxicological information contact Dow AgroSciences at 800 667 3852.

Degradation and Metabolism:

The hydrolysis half-life of sulfuryl fluoride ranges from 18 minutes to three days.

13. Disposal Considerations:

Unused unwanted product: Wastes of ProFume are toxic. If these wastes cannot be disposed of by labeled use, consult your provincial pesticide or hazardous waste regulating authority for guidance.

Container disposal: Promptly return all empty ProFume cylinders to Dow AgroSciences.

14. Transport Information:

This product is regulated as follows under regulations of the Transportation of Dangerous Goods Act: **UN2191/SULFURYL FLUORIDE/Class 2.3**

15. Regulatory Information:

Pest Control Products Act registration number: 28241

For information phone: 800 667 3852

Master reference: 000506

MSDS status: Revised Sections: 14. Transportation

Replaces MSDS dated: May 3, 2006

16. Other Information:

National Fire Code Classification: Not regulated

NFPA Ratings: Health: 3, Flammability: 0; Reactivity: 1.

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