SAFETY DATA SHEET

PROFUME™ GAS FUMIGANT

Date Prepared: 18th September 2018 **Replaces:** 11th January 2016

™ Trademark of Douglas Products

1. IDENTIFICATION

Product Identifier:	PROFUME™ Gas Fumigant
Other Means of Identification:	Sulfuryl Fluoride
Uses:	Fumigant for insect control
Importer Name:	TriCal Australia
Address:	5 Chamberlain St, Wingfield, SA, 5013
Customer Service Telephone:	(08) 8347 3838 **or** 1300 FUMIG8
Email:	info@trical.com.au
24 HOUR EMERGENCY CONTACT:	**(02) 9037 2994**

2. HAZARDS IDENTIFICATION

Acute Toxicity – Inhalation, Category 3
Acute Toxicity – Aquatic, Category 1

Danger **Warning** **Warning**

GHS Hazard Phrases:
H280 Contains gas under pressure; may explode if heated
H331: Toxic if Inhaled
H400: Very toxic to aquatic life

GHS Precaution Phrases:
P261: Avoid breathing gas
P271: Use only outdoors in well ventilated areas
P273: Avoid release to the environment

GHS Response Phrases:
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P311: Call a POISON CENTRE or doctor/physician
P336: Thaw frosted parts with lukewarm water. Do not rub affected areas.

GHS Storage and Disposal Phrases:
P403 + P233+ P235: Store in a well-ventilated place. Keep cylinder tightly closed. Keep cool
P405: Store locked up
P501: Dispose of contents/cylinder by returning to supplier

Classified as **HAZARDOUS** according to the criteria of NOHSC
Classified as **DANGEROUS GOODS** for Land and Marine Transport (See Section 14)

3. COMPOSITION/INGREDIENTS

Identity (Other Names)	CAS Number	Proportion
Sulfuryl Fluoride	2699-79-8	99.8%

4. FIRST AID MEASURES

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc.). Call a poison information centre or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel. If the 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 rescuer. To prevent pulmonary oedema have the

	person inhale 5 shots of an aerosol corticosteroid metered dose inhaler (if available), such as beclomethasone or fluticasone, etc., every 10 minutes until the person is evaluated by a physician.
Skin Contact:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison information centre or doctor for treatment advice. In case of frostbite, immediately flush skin with plenty of water for 15 minutes. Seek medical attention. A suitable volume of water should be immediately available for emergency wash.
Eye Contact:	In case of frostbite, immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention promptly, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
Ingestion:	Call a poison information centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison information centre or doctor. Never give anything by mouth to an unconscious person.
Most Important Symptoms and effects, both acute and delayed:	Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.
Indication of Immediate Medical Attention and Special Treatment Needed:	Maintain adequate ventilation and oxygenation of the patient. Sulfuryl fluoride is a gas which has no warning properties such as odour or eye irritation. The prediction of possible human effects is based in part on observations made on laboratory animals. Treat for frostbite if present (eyes, skin) with gentle rewarming 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 (greater than 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 oedema, 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 overexposure to sulfuryl fluoride. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Consider administering a complete aerosol corticosteroid metered dose inhaler (100-150 shots) or equivalent as initial preventive treatment for incipient pulmonary edema. Consider administering 250-1000 mg prednisolone IV on the first day of treatment. Treat for frostbite, if present. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

5. FIRE FIGHTING MEASURES

Extinguishing Media:	This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.
Hazardous Combustion Products:	Fire conditions may cause this product to decompose. Refer to section 10 - Thermal Decomposition.
Fire and Explosion Hazards:	Container may rupture from gas generation in a fire situation.
Fire Fighting Procedures:	Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the “Accidental Release Measures” and the “Ecological Information” sections of this SDS.
Precautions for Fire Fighters:	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.
Hazchem Code:	2RE

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	Isolate area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Environmental Precautions:	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
Containment of Spill:	Isolate area until gas has dispersed. **Small spills:** Knock down and dilute vapours with water fog or spray. Apply vapour suppression foams until spill can be cleaned up. Use non-sparking tools in clean-up operations. **Large spills:** Contact TriCal Australia for clean-up assistance.

7. HANDLING AND STORAGE

Precautions for Safe Handling:	Keep out of reach of children. Avoid contact with eyes, skin, and clothing. Do not swallow. Do not breathe vapour. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Conditions for Safe Storage:	Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.
A BEI notation following the exposure guideline refers to a guidance value for assessing biological monitoring results as an indicator of the uptake of a substance from all routes of exposures.

Exposure Limits:

Component	List	Type	Value
Sulfuryl fluoride	ACGIH ACGIH	TWA STEL	5 ppm BEI 10 ppm BEI
	EU IOELV	TWA	2.5 mg/m3
	AU OEL	TWA	21 mg/m3 5 ppm
	AU OEL	STEL	42 mg/m3 10 ppm

Engineering Controls: **Ventilation:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there is no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapour/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PAKAGING WORKERS:

Personal Protective Equipment: **Respiratory Protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Eye/Face Protection: For handling the gas, wear safety glasses (with side shields). When contact with the liquid (condensed gas) is possible, wear chemical goggles.

Skin Protection: Wear clean, body-covering clothing.

Safety Boots: Wearing safety boots in industrial situations is advised.

Other Information: Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:
AS/NZS 1336: Recommended practices for eye protection in the industrial environment.
AS/NZS 1337: Eye protectors for industrial applications.
AS/NZS 1715: Selection, use and maintenance of respiratory protective devices.
AS/NZS 2161: Occupational protective gloves.
AS/NZS 2210: Occupational protective footwear.
AS 2919: Industrial clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless Gas
Odour:	Odourless
pH:	Not applicable
Melting Point:	-137°C Estimated
Freezing Point:	Not applicable
Boiling Point (760 mmHg):	-54°C *EC Method A2*
Flash Point – Closed Cup:	Not applicable
Evaporation Rate (Butyl Acetate = 1):	Not applicable
Flammability (solid, gas):	No
Flammable limits In Air:	**Lower:** Not applicable **Upper:** Not applicable
Vapour Pressure:	16,000 hPa @ 20°C
Vapour Density (air = 1):	3.5 @ 20°C
Specific Gravity (H2O = 1):	1.35
Solubility in Water (by weight):	1.04 g/l 20°C, Unbuffered
Partition coefficient, n-octanol/water (log Pow):	0.41 *Estimated*
Autoignition Temperature:	Not applicable
Decomposition Temperature:	No test data available
Kinematic Viscosity:	Not applicable
Explosive Properties:	No
Oxidising Properties:	No

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical Stability: Thermally stable at recommended temperatures and pressures.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with Strong Bases.

Hazardous Decomposition Products: Decomposition products can include and are not limited to: Hydrogen fluoride. Sulfur oxides. Toxic gases are released during decomposition.

Polymerisation: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE

Swallowed: Moderate toxicity if swallowed. Swallowing is unlikely because of the physical state. As product: Single dose oral LD50 has not been determined.

Aspiration Hazard: Based on physical properties, not likely to be an aspiration hazard.

Dermal: Prolonged skin contact is unlikely to result in absorption of harmful amounts. The dermal LD50 has not been determined. Essentially non-irritating to skin. Liquid may cause frostbite upon skin contact.

Inhalation:	Vapour concentrations are attainable which may be fatal with single exposure. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs. For narcotic effects: Relevant data not available. LC50, 4 h, rat 991 - 1,122 ppm
In Eyes:	No hazard from gas. Liquid may cause frostbite upon skin contact.
CHRONIC Repeated Dose Toxicity:	In animals, effects have been reported on the following organs: Central nervous system. Kidney. Lung. Respiratory tract. Thyroid. Observations in animals include: Convulsions. Tremors. May cause fluorosis of teeth and bones.
Reproductive Effects:	In animal studies, did not interfere with reproduction.
Teratogenic Effects:	Has been toxic to the foetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.
Mutagenic Effects:	In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative in some cases and positive in other cases.
Carcinogenic Effects:	Did not cause cancer in laboratory animals.

12. ECOLOGICAL INFORMATION

Movement and Partitioning:	**Mobility in soil:** Potential for mobility in soil is very high (Koc between 0 and 50). **Partition coefficient, soil organic carbon/water (Koc):** 6 Estimated **Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3). **Partition coefficient, n-octanol/water (log Pow):** 0.41 Estimated.
Ecotoxicity:	Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species). **Fish Acute & Prolonged Toxicity** LC50, Danio rerio (zebra fish), static test, 96 h: 0.89 mg/l **Aquatic Invertebrate Acute Toxicity** EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 0.62 mg/l **Aquatic Plant Toxicity** EbC50, Pseudokirchneriella subcapitata (green algae), static test, biomass growth inhibition, 72 h: 0.58 mg/l ErC50, Pseudokirchneriella subcapitata (green algae), static test, Growth rate inhibition, 72 h: 1.13 mg/l **Toxicity to Above Ground Organisms** LC50, Apis mellifera (bees): 6.5 mg/l LC50, Colinus virginianus (Bobwhite quail): 1,844 ppm
Persistence / Degradability:	No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal Methods: Empty cylinders should have all valves closed and be returned to the point of sale. Do not use empty containers to store any other material.
If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities.

14. TRANSPORT INFORMATION

ADG NON-BULK

UN Number:	2191
Proper Shipping Name:	SULFURYL FLUORIDE
DG Class (Subsidiary Risk):	2.3
Classification:	2RE
Hazard Identification No:	26
Environmental Hazard:	Yes

ADG BULK

UN Number:	2191
Proper Shipping Name:	SULFURYL FLUORIDE
DG Class (Subsidiary Risk):	2.3

IMDG

UN Number:	2191
Proper Shipping Name:	SULFURYL FLUORIDE
DG Class (Subsidiary Risk):	2.3
EMS Number:	F-C, S-U
Marine Pollutant	Yes

ICA/IATA	FORBIDDEN ON BOTH PASSENGER AND CARGO AIRCRAFT PER IATA DUE TO INHALATION HAZARD
Environmental Hazard:	Yes
Hazchem Code:	2RE

15. REGULATORY INFORMATION

Poison Scheduling:	S6
Registration/Notification:	APVMA Product No. 59952

16. OTHER INFORMATION

Glossary

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation

References

AS/NZS 1715-2009 Selection Use and Maintenance of Respiratory Protective Devices
AS/NZS 1716-2012 Respiratory Protective Devices

Australian Dangerous Goods Code
International Maritime Dangerous Goods Code
International Air Transport Association (IATA) Dangerous Goods Regulation
WorkSafe Australia Hazardous Substance Information System

DISCLAIMER: The information contained in this Safety Data Sheet is provided to the best of our knowledge at the date of issue, but no warranty can be made that the information is accurate or complete. Individuals reading this information must exercise their independent judgement in determining its appropriateness in any situation. TriCal Australia makes no representation as to the accuracy and comprehensiveness of the information and to the full extent allowed by the law excludes all liability whatsoever, whether with respect to negligence or otherwise, for any loss or damage arising from or connection with the supply or use of the information in this Safety Data Sheet.
Please read the label carefully before using this product.

CHANGE REGISTER

Revision Date	Revision Details
11/01/2016	Update to Section 4 'Skin Contact' – Addition of: A suitable volume of water should be available for emergency wash.
18/09/2018	**Company Details changed –** from A-Gas Rural to TriCal Australia Pty Ltd