

Issuing Date 31-Aug-2020

Revision Date 08-June-2022

Revision Number 4

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product Name ProFume Fumigant
Product Code(s) SDS. ProFume Fumigant.Au.English.20220608.4

Other means of identification

Proper shipping name SULPHURYL FLUORIDE
UN number UN2191

Recommended use of the chemical and restrictions on use

Recommended use End use fumigant
Uses advised against Use only for intended applications

Details of manufacturer or importer**Importer**

TriCal Australia
5 Chamberlain St
Wingfield SA 5013, Australia
08 8347 3838 or 1300 FUMIG8

Supplier

Douglas Products and Packaging Company, LLC
1550 East Old 210 Highway
Liberty, MO 64068
Douglas Number 816-883-4465
Customer Information E-mail: Customer@douglasproducts.com

For further information, please contact

Contact Point Product Safety Department
E-mail address info@trical.com.au

Emergency telephone number

Emergency telephone number Chemtrec 24-hour: (02) 9037 2994

SECTION 2: Hazards identification**GHS Classification**

Gases under pressure	Liquefied gas - (H280)
Acute toxicity - Inhalation (Gases)	Category 2 - (H330)
Specific target organ toxicity – repeated exposure	Category 2 - (H373)
Acute aquatic toxicity	Category 1 - (H400)

Label elements

Gas cylinder
 Skull and crossbones
 Health hazard
 Environmentally Hazardous Substance – very toxic to aquatic life

**Signal word**

Danger

Hazard statements

H280 - Contains gas under pressure; may explode if heated
 H330 - Fatal if inhaled
 H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Do not breathe dust/fume/gas/mist/vapours/spray
 Use only outdoors or in a well-ventilated area
 Wear respiratory protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a POISON CENTER or doctor/physician
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed
 Protect from sunlight

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification

Very toxic to aquatic life. Contact with liquid may cause cold burns or frostbite.

SECTION 3: Composition/information on ingredients**Substance**

Not applicable

Mixture

Chemical name	CAS No	Weight-%
Sulfuryl fluoride	2699-79-8	99.8%
1,2-Dichloroethane	107-06-2	<0.1%

SECTION 4: First aid measures**Description of first aid measures**

General advice	Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention. Remove to fresh air. Do not breathe dust/fume/gas/mist/vapours/spray.
Emergency telephone number	Poisons Information Centre, Australia: 13 11 26
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 control center 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 prevent pulmonary edema 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.
Eye contact	Liquid: 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. Gas: No treatment required.
Skin contact	Liquid: Immediately apply water to contaminated area of clothing before removing. Once area has thawed, remove contaminated clothing, shoes, and other items covering skin. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice. Thoroughly aerate clothing and shoes contacted by liquid fumigant before wearing again. Gas: No treatment required. No decontamination of clothing or shoes covering the skin is required.
Ingestion	Call a poison control center 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 a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Self-protection of the first aider	First Aid responders should pay attention to self-protection and use the recommended protective clothing (gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Most important symptoms and effects, both acute and delayed

Symptoms	Nausea. Coughing and/ or wheezing. Difficulty in breathing. Slowing of motion, abdominal pain, numbness in extremities. See Section 11 for additional Toxicological Information.
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Indication of any immediate medical attention and special treatment needed

Note to doctors	Maintain adequate ventilation and oxygenation of the patient. 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 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 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
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the terminal event. Assisted respiration may be necessary. Clinical observation is essential. There is no known antidote for overexposure to sulfur dioxide. May cause asthma-like (reactive airways) symptoms, including pulmonary edema, which 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 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).

SECTION 5: Firefighting measures

Suitable Extinguishing Media

Suitable Extinguishing Media This material does not burn. If exposed to fire from another source: Use extinguishing agent suitable for type of surrounding fire. Flood fire area with water from a distance. Cool containers with flooding quantities of water until well after fire is out.

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Cylinders may rupture under extreme heat. Damaged cylinders should be handled only by specialists. Containers may explode when heated. Ruptured cylinders may rocket. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Hazardous combustion products Oxides of sulphur. Hydrogen fluoride. Toxic gases or vapours.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code 2XE

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Deny entry to unauthorized and unprotected personnel. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes and inhalation of vapours. Do not breathe vapour or mist. Keep people away from and upwind of spill/leak.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up 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 cleanup operations. Large spills: Contact Douglas Products for clean-up assistance. See Section 13: Disposal Considerations, for additional information.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Do not breathe vapour or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Avoid contact with skin and eyes. Take off contaminated clothing and wash it before reuse.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep away from food, drink and animal feeding stuffs. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from sunlight. Keep out of the reach of children. Store locked up.

Incompatible materials Strong bases.

SECTION 8: Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	Australia	ACGIH TLV
Sulfuryl fluoride 2699-79-8	5 ppm TWA 21 mg/m ³ TWA 10 ppm STEL 42 mg/m ³ STEL	STEL: 10 ppm TWA: 5 ppm
1,2-Dichloroethane 107-06-2	10 ppm TWA 40 mg/m ³ TWA	TWA: 10 ppm

Biological occupational exposure limits

Chemical name	Australia	ACGIH
Sulfuryl fluoride 2699-79-8	-	2 mg/L - urine (Fluoride) - prior to shift 3 mg/L - urine (Fluoride) - end of shift

Other information RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. **APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.**

Appropriate engineering controls

Engineering controls 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.

Individual protection measures, such as personal protective equipment

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 and body protection Wear clean, body-covering clothing. Consistent with general hygienic practice for any material, skin contact should be minimized. Wear suitable protective clothing.

Hand protection No special protective equipment required.

Respiratory protection Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. When respirator 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. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Environmental exposure controls Avoid release to the environment.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties**

Appearance	Colourless Liquefied gas
Physical state	Gas
Colour	Colourless
Odour	Odourless
Odour threshold	No information available
pH	No data available
Melting point / freezing point	-137 °C
Boiling point / boiling range	-55.2 °C
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	Not flammable
Flammability Limit in Air	
Upper flammability or explosive limits	Not applicable
Lower flammability or explosive limits	Not applicable
Vapour pressure	18,000 hPA @ 20 °C
Vapour density	3.5 @ 20 °C (air = 1)
Relative density	1.35 Water = 1
Water solubility	1.04 g/l @ 20 °C
Solubility(ies)	No data available
Partition coefficient	No data available
Autoignition temperature	
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available
Explosive properties	No information available.

Oxidising properties No information available.

Other information

Softening point No information available

Molecular weight No information available

VOC Content (%) No information available

Liquid Density No information available

Bulk density No information available

SECTION 10: Stability and reactivity

Reactivity

Reactivity None under normal use conditions.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact Yes.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerisation Hazardous polymerisation does not occur.

Conditions to avoid

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

Incompatible materials Strong bases.

Hazardous decomposition products

Hazardous decomposition products Hydrogen sulphide. Sulphur oxides. Thermal decomposition can lead to release of irritating and toxic gases and vapours.

SECTION 11: Toxicological information

Acute toxicity

Information on likely routes of exposure

Product Information

Inhalation Fatal if inhaled. 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.

Eye contact Specific test data for the substance or mixture is not available. Contact with liquid may cause cold burns or frostbite.

Skin contact	Specific test data for the substance or mixture is not available. Contact with liquid may cause cold burns or frostbite.
Ingestion	Toxic if swallowed.
Symptoms	Coughing and/ or wheezing. Difficulty in breathing. Nausea. Slowing of motion, abdominal pain, numbness in extremities.

Numerical measures of toxicity - Product Information**Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (inhalation-dust/mist) 0.50 mg/l

Oral LD50 100.20 mg/kg
Inhalation LC50 100.20 ppm

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sulfuryl fluoride	= 100 mg/kg (Rat)	>9599 ppm	= 991-1122 ppm (Rat) 4 h = 400-600 ppm (Mouse) 4 h
1,2-Dichloroethane	= 680 mg/kg (Rat)	= 4890 mg/kg (Rabbit)	= 4 mg/L (Rat) 6 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Most in vitro genetic toxicity studies were negative, but some were positive due to artifacts associated with the test system. Animal genetic toxicity studies were negative.
Carcinogenicity	Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	Australia
1,2-Dichloroethane - 107-06-2	Carc. 1B

Reproductive toxicity	In animal studies, did not interfere with reproduction.
Teratogenicity	Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Target organ effects	Central nervous system. Kidney. Lungs. Respiratory system. Thyroid.
Aspiration hazard	No information available.

SECTION 12: Ecological information**Ecotoxicity**

Ecotoxicity

Very toxic to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sulfuryl fluoride	EyC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Growth inhibition (cell density reduction), 3.05 mg/l EbC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Biomass, 0.58 mg/l ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, 1.13 mg/l	LC50, Danio rerio (zebra fish), static test, 96 Hour, 0.89 mg/l	-	EC50, Daphnia magna (Water flea), static test, 48 Hour, 0.62 mg/l
1,2-Dichloroethane	EC50: =166mg/L (96h, Desmodesmus subspicatus) EC50: >433mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 110 - 123mg/L (96h, Pimephales promelas) LC50: 230 - 710mg/L (96h, Lepomis macrochirus) LC50: =225mg/L (96h, Oncorhynchus mykiss)	EC50 = 1100 mg/L 15 min EC50 = 158 mg/L 5 min EC50 = 696 mg/L 5 min EC50 = 918 mg/L 30 min	EC50: 140 - 190mg/L (48h, Daphnia magna)

Persistence and degradability

Persistence and degradability Chemical degradation (hydrolysis) is expected in the environment.

Bioaccumulative potential

Bioaccumulation Bioconcentration potential is low (BCF <100 or Log Pow < 3). Partition coefficient: n-octanol/water (log Pow) : 0.41 Estimated.

Component Information

Chemical name	Partition coefficient
1,2-Dichloroethane	1.45

Mobility

Mobility in soil Potential for mobility in soil is very high (Koc between 0 and 50). Partition coefficient (Koc): 6 Estimated.

Mobility**Other adverse effects**

Other adverse effects LC50, Apis mellifera (bees), 2 Hour, mortality, 6.5 mg/l. LC50, Colinus virginianus (Bobwhite quail), 4 Hour, 1,844 ppm.

SECTION 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

SECTION 14: Transport information**ADG**

UN number	UN2191
Proper shipping name	SULPHURYL FLUORIDE
Hazard class	2.3
Description	UN2191, SULPHURYL FLUORIDE, 2.3

Hazchem code	2XE
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IATA

Description	Forbidden
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IMDG

UN number	UN2191
UN proper shipping name	SULPHURYL FLUORIDE
Transport hazard class(es)	2.3
EmS-No	F-C, S-U
Marine pollutant	Yes
Description	UN2191, SULPHURYL FLUORIDE, 2.3, MARINE POLLUTANT

SECTION 15: Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Australia**

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Classified as a scheduled poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Poison Schedule Number 6

Major hazard (accident/incident planning) regulation

Verify that licence requirements are met

<u>Hazardous chemical</u>	<u>Threshold quantity (T)</u>
Compressed or liquefied gases that meet the criteria for Toxic in table 15.3	200
Materials that meet the criteria for Toxic in table 15.3	200

National pollutant inventory

Subject to reporting requirement

Chemical name	National pollutant inventory
Sulfuryl fluoride - 2699-79-8	10 tonne/yr Threshold category 1 400 tonne/yr Threshold category 2a 1 tonne/h Threshold category 2a 2000 tonne/yr Threshold category 2b 60000 MWH Threshold category 2b

	20 MW Threshold category 2b
1,2-Dichloroethane - 107-06-2	10 tonne/yr Threshold category 1

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend:

- TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention

Chemical name	Chemicals Subject to Prior Informed Consent (PIC)
1,2-Dichloroethane - 107-06-2	Rotterdam

SECTION 16: Other information

Issuing Date	31-Aug-2020
Revision Date	08-June-2022
Revision Note	Updated Section 2. Corrected typo in Section 3.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal

Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet