

## Safety Data Sheet

according to WHS Regulations

Printing date 01.11.2021

Revision: 01.11.2021

### 1 Identification

**Product Name:** FROSTBITE

**Product Code:** FB248

**Recommended Use of the Chemical and Restriction on Use:** Cryogenic cold spray

**Details of Manufacturer or Importer:**

Australian Dental Manufacturing  
25 Billabong Street  
Kenmore Hills, QLD, 4069

**Phone Number:** 07 3878 1901

**Emergency telephone number:** National Poisons Information Centre: 13 11 26

### 2 Hazard(s) Identification

**Hazardous Nature:**

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition).



Flame

Flam. Gas 1A H220 Extremely flammable gas.



Gas cylinder

Press. Gas C H280 Contains gas under pressure; may explode if heated.

**Signal Word** Danger

**Hazard Statements**

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

**Precautionary Statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 In case of leakage, eliminate all ignition sources.

P410+P403 Protect from sunlight. Store in a well-ventilated place.

### 3 Composition and Information on Ingredients

**Chemical Characterisation: Substances**

**CAS No. Description**

115-10-6 Dimethyl ether 100%

### 4 First Aid Measures

**Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems develop.

(Contd. on page 2)

# Safety Data Sheet

## according to WHS Regulations

Printing date 01.11.2021

Revision: 01.11.2021

**Product Name: FROSTBITE**

(Contd. of page 1)

**Skin Contact:**

In case of skin contact, immediately remove contaminated clothing and wash affected areas with lukewarm water. Seek immediate medical attention.

**Eye Contact:**

In case of eye contact, hold eyelids open and rinse with water for at least 15 minutes. Protect eyes from bright light. Seek immediate medical attention.

**Ingestion:**

Ingestion is not considered a likely route of exposure.

If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

**Symptoms Caused by Exposure:**

Inhalation: May cause respiratory irritation, headache, dizziness and nausea. May cause Central Nervous System (CNS) effects including incoordination, mood disturbances, confusion and narcotic effects leading to unconsciousness and death. May cause asphyxiation by displacement of oxygen. Signs of asphyxiation will be noticed when oxygen content is reduced to 16%. Unconsciousness leading to CNS damage and death will occur if the oxygen content is reduced to 8% or less.

Skin Contact: Skin contact may cause frostbite and cold burns with blistering and inflammation.

Eye Contact: Eye contact may cause irritation, frostbite and cold burns. May cause permanent eye damage.

Ingestion: Ingestion is not considered a potential route of exposure, as this product is a liquefied gas which vapourises quickly at room temperature and pressure. If the product enters the mouth it may cause irritation, frostbite and cold burns.

## 5 Fire Fighting Measures

**Suitable Extinguishing Media:** Water fog, foam, dry chemical or carbon dioxide.

**Specific Hazards Arising from the Chemical:**

Hazardous combustion products include oxides of carbon, water vapour, smoke and traces of silicon oxides. Product is extremely flammable. Vapours may travel considerable distances to a source of ignition where they can ignite, flashback, or explode.

Contains gas under pressure; may explode if heated. Containers close to fire should be removed if safe to do so. Use water spray to cool fire exposed containers.

HAZCHEM Code: None

**Special Protective Equipment and Precautions for Fire Fighters:**

When fighting a major fire wear self-contained breathing apparatus and protective equipment.

## 6 Accidental Release Measures

**Personal Precautions, Protective Equipment and Emergency Procedures:**

Wear approved self-contained breathing apparatus and full protective clothing. Evacuate all non-essential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation. Extinguish all sources of ignition. Avoid sparks and open flames. No smoking.

**Environmental Precautions:**

In the event of a major spill, prevent spillage from entering drains or water courses.

**Methods and Materials for Containment and Cleaning Up:**

Avoid inhalation and skin or eye contact with vapour. Vapour is heavier than air and will settle in low points.

Use water spray to disperse vapour.

Stop leak if safe to do so and absorb spill with sand, earth, vermiculite or some other absorbent material.

Collect the spilled material and place into a suitable container for disposal. Small spills can be cleaned up with paper towels. Use only non-sparking tools. Wash area with plenty of water.

(Contd. on page 3)

# Safety Data Sheet

## according to WHS Regulations

Printing date 01.11.2021

Revision: 01.11.2021

**Product Name: FROSTBITE**

(Contd. of page 2)

### 7 Handling and Storage

**Precautions for Safe Handling:**

This product is only to be used by qualified dental staff.

Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours. Use only in a well-ventilated area.

Take precautionary measures against static discharge. Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

**Conditions for Safe Storage:**

Store in a cool, dry and well ventilated area. Protect from heat, static electricity, sparks, open flames and other sources of ignition. Store at below 25 °C. Protect containers from physical damage. Check regularly for leaks.

Keep away from strong oxidising agents, acids and halogens.

### 8 Exposure Controls and Personal Protection

**Exposure Standards:****CAS: 115-10-6 Dimethyl ether**

WES	STEL: 950 mg/m <sup>3</sup> , 500 ppm TWA: 760 mg/m <sup>3</sup> , 400 ppm
-----	---

**Engineering Controls:**

Maintain air concentration below occupational exposure standards, providing adequate ventilation. Use explosion-proof ventilating equipment.

**Respiratory Protection:**

Use an approved vapour respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapour, inadequate ventilation, development of respiratory tract irritation) and engineering controls are not feasible. See Australian Standards AS/NZS 1715 and 1716 for more information.

**Skin Protection:**

PVC, PVA, nitrile, neoprene, rubber or vinyl gloves. See Australian/New Zealand Standard AS/NZS 2161 for more information. When selecting gloves for use against certain chemicals, the degradation resistance, permeation rate and permeation breakthrough time should be considered.

Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See Australian/New Zealand Standard AS/NZS 4501 for more information.

**Eye and Face Protection:**

Eye and face protectors for protection against gases or liquids. See Australian/New Zealand Standard AS/NZS 1337 for more information.

### 9 Physical and Chemical Properties

**Appearance:**

<b>Form:</b>	Compressed liquefied gas
<b>Colour:</b>	Colourless
<b>Odour:</b>	Perceptible ethereal chloroform-like odour.
<b>Odour Threshold:</b>	No information available
<b>pH-Value:</b>	No information available
<b>Melting point/freezing point:</b>	-141.5 °C
<b>Initial Boiling Point/Boiling Range:</b>	-24.8 °C

(Contd. on page 4)

# Safety Data Sheet

## according to WHS Regulations

Printing date 01.11.2021

Revision: 01.11.2021

**Product Name: FROSTBITE**

(Contd. of page 3)

<b>Flash Point:</b>	-41 °C
<b>Flammability:</b>	Extremely flammable
<b>Auto-ignition Temperature:</b>	235 °C
<b>Decomposition Temperature:</b>	No information available
<b>Explosion Limits:</b>	
<b>Lower:</b>	3%
<b>Upper:</b>	18.6%
<b>Vapour Pressure at 20 °C:</b>	5.16 kPa
<b>Density:</b>	No information available
<b>Vapour Density:</b>	1.6
<b>Evaporation Rate:</b>	No information available
<b>Solubility in Water:</b>	Soluble
<b>Partition Coefficient (n-octanol/water):</b>	No information available

### 10 Stability and Reactivity

**Possibility of Hazardous Reactions:** Hazardous polymerisation will not occur.

**Chemical Stability:** Stable at ambient temperature and under normal conditions of storage and use.

**Conditions to Avoid:** Heat, sparks, open flames and other sources of ignition.

**Incompatible Materials:**

Strong oxidising agents (such as ozone, perchlorates, peroxides, permanganates, chlorates, nitrates, chlorine, bromine and fluorine), strong acids (such as hydrochloric, sulfuric and nitric acids) and halogens.

**Hazardous Decomposition Products:** Oxides of carbon, water vapour, smoke and traces of silicon oxides.

### 11 Toxicological Information

**Toxicity:**

**LD50/LC50 Values Relevant for Classification:**

**CAS: 115-10-6 Dimethyl ether**

Inhalation	LC50/4 h	308 mg/l (rat)
------------	----------	----------------

**Acute Health Effects**

**Inhalation:**

May cause respiratory irritation, headache, dizziness and nausea. May cause Central Nervous System (CNS) effects including incoordination, mood disturbances, confusion and narcotic effects leading to unconsciousness and death. May cause asphyxiation by displacement of oxygen. Signs of asphyxiation will be noticed when oxygen content is reduced to 16%. Unconsciousness leading to CNS damage and death will occur if the oxygen content is reduced to 8% or less.

**Skin:** Skin contact may cause frostbite and cold burns with blistering and inflammation.

**Eye:** Eye contact may cause irritation, frostbite and cold burns. May cause permanent eye damage.

**Ingestion:**

Ingestion is not considered a potential route of exposure, as this product is a liquefied gas which vapourises quickly at room temperature and pressure. If the product enters the mouth it may cause irritation, frostbite and cold burns.

**Skin Corrosion / Irritation:** Based on classification principles, the classification criteria are not met.

**Serious Eye Damage / Irritation:** Based on classification principles, the classification criteria are not met.

**Respiratory or Skin Sensitisation:** Based on classification principles, the classification criteria are not met.

**Germ Cell Mutagenicity:** Based on classification principles, the classification criteria are not met.

**Carcinogenicity:** This product does NOT contain any IARC listed chemicals.

(Contd. on page 5)

# Safety Data Sheet

## according to WHS Regulations

Printing date 01.11.2021

Revision: 01.11.2021

**Product Name: FROSTBITE**

(Contd. of page 4)

**Reproductive Toxicity:** Based on classification principles, the classification criteria are not met.**Specific Target Organ Toxicity (STOT) - Single Exposure:**

Based on classification principles, the classification criteria are not met.

**Specific Target Organ Toxicity (STOT) - Repeated Exposure:**

Based on classification principles, the classification criteria are not met.

**Aspiration Hazard:** Based on classification principles, the classification criteria are not met.**Chronic Health Effects:**

Repeated or prolonged exposure may cause damage to the liver, lungs, kidneys and CNS.

**Existing Conditions Aggravated by Exposure:** No information available

### 12 Ecological Information

**Ecotoxicity:** No adverse ecological effects are expected.**Aquatic toxicity:** No further relevant information available.**Persistence and Degradability:** This product is volatile and will readily vapourise into the atmosphere.**Bioaccumulative Potential:** Bioaccumulation is not expected to occur.**Mobility in Soil:**

This product will quickly vapourise and is not likely to penetrate into soils or contaminate ground water.

**Other adverse effects:** No further relevant information available.

### 13 Disposal Considerations

**Disposal Methods and Containers:** Dispose according to applicable local and state government regulations.**Special Precautions for Landfill or Incineration:**

Please consult your state Land Waste Management Authority for more information.

### 14 Transport Information

<b>UN Number</b>	
<b>ADG, IMDG, IATA</b>	UN1950
<b>Proper Shipping Name</b>	
<b>ADG, IMDG, IATA</b>	AEROSOLS
<b>Dangerous Goods Class</b>	
<b>ADG Class:</b>	2.1
<b>Subsidiary Risk:</b>	
<b>Packing Group:</b>	None
<b>Marine pollutant:</b>	
<b>EMS Number:</b>	F-D,S-U
<b>Hazchem Code:</b>	None
<b>Special Provisions:</b>	63, 190, 277, 327, 344, 381
<b>Limited Quantities:</b>	1L
<b>Packagings &amp; IBCs - Packing Instruction:</b>	P207, LP200
<b>Packagings &amp; IBCs - Special Packing Provisions:</b>	PP87, L2

(Contd. on page 6)

# Safety Data Sheet

## according to WHS Regulations

Printing date 01.11.2021

Revision: 01.11.2021

**Product Name: FROSTBITE**

(Contd. of page 5)

### 15 Regulatory Information

**Australian Inventory of Industrial Chemicals:** All ingredients are listed.

**Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Poison Schedule:**  
Not Scheduled.

### 16 Other Information

**Date of Preparation or Last Revision:** 01.11.2021

**Prepared by:** MSDS.COM.AU Pty Ltd

[www.msds.com.au](http://www.msds.com.au)

**Abbreviations and acronyms:**

ADG: Australian Dangerous Goods

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TWA: Time Weighted Average

NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)

Flam. Gas 1A: Flammable gases – Category 1A

Press. Gas C: Gases under pressure – Compressed gas

**Data altered compared to the previous version:**

Sectoin 14: Special Provisions, Packagings & IBCs - Packing Instruction

**Disclaimer**

This SDS is prepared in accord with the Safe Work Australia document "Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - July 2020"

The information contained in this safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. Australian Dental Manufacturing makes no representation of the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. MSDS.COM.AU Pty Ltd is not in a position to warrant the accuracy of the data herein. The user is cautioned to make their own determinations as to the suitability of the information provided to the particular circumstances in which the product is used.