
Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

HFO DUSTER AND FREEZE #764-2960, 764-2963, 764-2967

SYNONYMS

"Manufacturer's Codes: 764-2960, 764-2963, 764-2967", "HFO Duster and Freeze ES1054, ES1054E, ES1624, ES1624E, ES1026, ES1026E"

PROPER SHIPPING NAME

AEROSOLS

PRODUCT USE

- Application is by spray atomisation from a hand held aerosol pack.

 Aerosol propellant. Blowing agent. Refrigerant.
SUPPLIER

Company: RS Components Pty Ltd
 Address:
 Units 30 & 31, 761 Great South Road
 Penrose
 Auckland, 1006
 New Zealand
 Telephone: +64 9 526 1600
 Fax: +64 9 579 1700

Company: RS Components Pty Ltd
 Address:
 25 Pavesi Street
 Smithfield
 NSW, 2164
 Australia
 Telephone: +1 300 656 636
 Emergency Tel: 1800 039 008 (24 hours)
 Emergency Tel: +61 3 9573 3112
 Fax: +1 300 656 696

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE **DANGEROUS GOODS. NON-HAZARDOUS SUBSTANCE. According to NOHSC Criteria, and ADG Code.****RISK**

- May form explosive peroxides.
- Risk of explosion if heated under confinement.

SAFETY

- Handle and open container with care.
- This material and its container must be disposed of as hazardous waste.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
1, 3, 3, 3- tetrafluoropropene	29118-24-9	>60

Section 4 - FIRST AID MEASURES

SWALLOWED

- Not considered a normal route of entry.
- Avoid giving milk or oils.
- Avoid giving alcohol.

EYE

- If aerosols come in contact with the eyes:
 - Immediately hold the eyelids apart and flush the eye with fresh running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - Seek medical attention without delay; if pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If solids or aerosol mists are deposited upon the skin:
- Flush skin and hair with running water (and soap if available).
- Remove any adhering solids with industrial skin cleansing cream.
- DO NOT use solvents.
- Seek medical attention in the event of irritation.

INHALED

- If aerosols, fumes or combustion products are inhaled:
- Remove to fresh air.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

NOTES TO PHYSICIAN

- Treat symptomatically.
- for intoxication due to Freons/ Halons;
- A: Emergency and Supportive Measures
- Maintain an open airway and assist ventilation if necessary
 - Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
 - Monitor the ECG for 4-6 hours
- B: Specific drugs and antidotes:
- There is no specific antidote.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- SMALL FIRE: Use extinguishing agent suitable for type of surrounding fire.
- LARGE FIRE: Cool cylinder.
- DO NOT direct water at source of leak or venting safety devices as icing may occur.
- SMALL FIRE:
- Water spray, dry chemical or CO₂
- LARGE FIRE:
- Water spray or fog.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.

FIRE/EXPLOSION HAZARD

- Non combustible.
 - Not considered to be a significant fire risk.
 - Heating may cause expansion or decomposition leading to violent rupture of containers.
 - Aerosol cans may explode on exposure to naked flames.
- Decomposition may produce toxic fumes of: carbon dioxide (CO₂), hydrogen fluoride, other pyrolysis products typical of burning organic material.
- Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.
- Vented gas is more dense than air and may collect in pits, basements.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

HAZCHEM

2YE

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Wear protective clothing, impervious gloves and safety glasses.
- Shut off all possible sources of ignition and increase ventilation.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

SUITABLE CONTAINER

- DO NOT use aluminium or galvanised containers.
- Aerosol dispenser.
- Check that containers are clearly labelled.

STORAGE INCOMPATIBILITY

- Haloalkenes are highly reactive.
- Some of the more lightly substituted lower members are highly flammable; many members of the group are peroxidisable and polymerisable.
- Avoid reaction or contact with potassium or its alloys - although apparently stable on contact with a wide range of halocarbons, reaction products may be shock-sensitive and may explode with great violence on light impact. Severity generally increases with the degree of halocarbon substitution and potassium-sodium alloys give extremely sensitive mixtures.
BREITHERICK L.: Handbook of Reactive Chemical Hazards
- Avoid reaction with metal halides and active metals, eg. sodium (Na), potassium (K), calcium (Ca), zinc (Zn), powdered aluminium (Al), magnesium (Mg) and magnesium alloys.
- Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances.

STORAGE REQUIREMENTS

- Polymerisation may occur slowly at room temperature.
- Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- 1, 3, 3, 3- tetrafluoropropene:

CAS:29118- 24- 9 CAS:29118- 25- 0

MATERIAL DATA

1,3,3,3-TETRAFLUOROPROPENE:

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- Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat.

Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations.

HFO DUSTER AND FREEZE #764-2960, 764-2963, 764-2967:

- May act as a simple asphyxiants; these are gases which, when present in high concentrations, reduce the oxygen content in air below that required to support breathing, consciousness and life; loss of consciousness, with death by suffocation may rapidly occur in an oxygen deficient atmosphere.

continued...

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

CARE: Most simple asphyxiants are odourless or possess low odour and there is no warning on entry into an oxygen deficient atmosphere.

PERSONAL PROTECTION**RESPIRATOR**

- Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

- No special equipment for minor exposure i.e. when handling small quantities.

OTHERWISE: For potentially moderate or heavy exposures:

- Safety glasses with side shields.

- NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.

HANDS/FEET

- No special equipment needed when handling small quantities.

- OTHERWISE:

- For potentially moderate exposures:

- Wear general protective gloves, eg. light weight rubber gloves.

OTHER

- No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.

- Skin cleansing cream.

- Eyewash unit.

- Do not spray on hot surfaces.

ENGINEERING CONTROLS

- Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**APPEARANCE**

Clear colourless gas with a slight characteristic odour. Aerosol spray can Liquefied compressed gas.

PHYSICAL PROPERTIES

Gas.

State	Compressed Gas	Molecular Weight	Not Available
Melting Range (°C)	Not Available	Viscosity	Not Available
Boiling Range (°C)	- 19	Solubility in water (g/L)	Not Available
Flash Point (°C)	Not Applicable	pH (1% solution)	Not Available
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Available
Autoignition Temp (°C)	368	Vapour Pressure (kPa)	Not Available
Upper Explosive Limit (%)	Not Available	Specific Gravity (water=1)	1.13
Lower Explosive Limit (%)	Not Available	Relative Vapour Density (air=1)	4
Volatile Component (%vol)	Not Available	Evaporation Rate	>1 BuAC = 1

Section 10 - STABILITY AND REACTIVITY**CONDITIONS CONTRIBUTING TO INSTABILITY**

- Elevated temperatures.
- Presence of open flame.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Overexposure is unlikely in this form.

Not normally a hazard due to physical form of product.

Considered an unlikely route of entry in commercial/industrial environments.

EYE

- Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

Not considered to be a risk because of the extreme volatility of the gas.

SKIN

- Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.

There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.

Spray mist may produce discomfort.

Fluorocarbons remove natural oils from the skin, causing irritation, dryness and sensitivity.

Open cuts, abraded or irritated skin should not be exposed to this material.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

- Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.

Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.

There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour displace and replace air in breathing zone, acting as a simple asphyxiant.

Symptoms of asphyxia (suffocation) may include headache, dizziness, shortness of breath, muscular weakness, drowsiness and ringing in the ears. If the asphyxia is allowed to progress, there may be nausea and vomiting, further physical weakness and unconsciousness and, finally, convulsions, coma and death. Significant concentrations of the non-toxic gas reduce the oxygen level in the air. As the amount of oxygen is reduced from 21 to 14 volume %, the pulse rate accelerates and the rate and volume of breathing increase. The ability to maintain attention and think clearly is diminished and muscular coordination is somewhat disturbed. As oxygen decreases from 14-10% judgement becomes faulty; severe injuries may cause no pain. Muscular exertion leads to rapid fatigue. Further reduction to 6% may produce nausea and vomiting and the ability to move may be lost. Permanent brain damage may result even after resuscitation at exposures to this lower oxygen level. Below 6% breathing is in gasps and convulsions may occur. Inhalation of a mixture containing no oxygen may result in unconsciousness from the first breath and death will follow in a few minutes.

The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.

WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.

Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved.

CHRONIC HEALTH EFFECTS

- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

The reactivity of an epoxide intermediate may be the reason for the cancer-causing properties of halogenated oxiranes. It is reported that 1,1-dichloroethyne, vinyl chloride, trichloroethylene, tetrachloroethylene and chloroprene all cause cancer.

Chloroprene has been reported to cause chromosomal abnormalities, and an increased incidence of skin and lung cancer in animal testing.

Generally speaking, substances with one halogen substitution show higher potential to cause cancer compared to substances with two.

Principal route of occupational exposure to the gas is by inhalation.

Fluorocarbons can cause an increased risk of cancer, spontaneous abortion and birth defects.

TOXICITY AND IRRITATION

- Inhalation of perfluoroalkenes can cause lung injury, kidney damage, brain changes and death. Repeated exposures may alter blood pressure and the production of blood cells. The potential for causing cancer is the subject of speculation. Fluoroalkanes, in contrast, are less toxic.

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
1, 3, 3, 3- tetrafluoropropene	No Data Available	No Data Available	No Data Available	No Data Available

Section 13 - DISPOSAL CONSIDERATIONS

- Consult State Land Waste Management Authority for disposal.
- Discharge contents of damaged aerosol cans at an approved site.
- Allow small quantities to evaporate.
- DO NOT incinerate or puncture aerosol cans.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: NON-FLAMMABLE COMPRESSED GAS

HAZCHEM:

2YE (ADG7)

ADG7:

Class or Division	2.2	Subsidiary Risk:	None
UN No.:	1950	Packing Group:	None
Special Provision:	63 190 277 327	Limited Quantity:	See SP 277
Portable Tanks & Bulk Containers - Instruction:	None	Portable Tanks & Bulk Containers - Special Provision:	None
Packagings & IBCs - Packing Instruction:	P003 LP02	Packagings & IBCs - Special Packing Provision:	PP17 PP87 L2

Name and Description: AEROSOLS

Air Transport IATA:

ICAO/IATA Class	2.2	ICAO/IATA Subrisk:	None
UN/ID Number:	1950	Packing Group:	-
Special provisions:	A145		

Shipping name:AEROSOLS

Maritime Transport IMDG:

IMDG Class	2.2	IMDG Subrisk:	SP63
UN Number:	1950	Packing Group:	None
EMS Number:	F- D, S- U	Special provisions:	63 190 277 327 344 959
Limited Quantities:	See SP277		

Shipping name:AEROSOLS

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

REGULATIONS**Regulations for ingredients**

continued...

No data for HFO Duster and Freeze #764-2960, 764-2963, 764-2967 (CW: 35-3794)

No data for 1,3,3,3-tetrafluoropropene (CAS: , 29118-24-9, 29118-25-0)

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name

CAS

1, 3, 3, 3- tetrafluoropropene

29118- 24- 9, 29118- 25- 0

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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This is the end of the MSDS.