



Vortex™ and Vortex™ 360° Duster

High Velocity Dusters
1697

Introduction

Formulated with HFC-134a, these exceptionally pure, moisture free, inert gas, high velocity products remove particles without the use of harmful solvents. Vortex™ 360°, an invertible high velocity duster, can be sprayed in any direction without threat of dispensing liquid on valuable equipment. Vortex™ and Vortex™ 360° clean and remove microscopic contaminants and dust particles from all types of electronic equipment. They are ideal for the removal of dust, lint and other contaminants from computers, printers as well as optical cleaning equipment.

Features / Benefits

- Non-Flammable
- Non-Ozone Depleting
- Leaves No Residue
- Quad-Filtered
- Inert
- Moisture Free

Chemical Components

1,1,1,2-Tetrafluoroethane.....	(811-97-2)	100%
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Environmental Policy

Techspray® is committed to developing products to ensure a safer and cleaner environment. We will continue to meet and sustain the regulations of all federal, state and local government agencies.

Packaging and Availability

Vortex™ and Vortex™ 360° are available in the following sizes:

1697-8S	8 Ounce Aerosol Invertible Duster
1697-10S	10 Ounce Aerosol

MATERIAL SAFETY DATA SHEET

Finished Product

MSDS Ref. No: 1697-A

Vortex Duster

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Vortex Duster
PRODUCT DESCRIPTION: Inert Dusting Gas
PRODUCT CODE: 1697/CAN/EUR-8S, 10S
CHEMICAL FAMILY: Hydrofluorocarbons
GENERIC NAME: HFC-134a

MANUFACTURER

Techspray, L.P.

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS#</u>	<u>EINECS#</u>
1,1,1,2-Tetrafluoroethane (HFC-134a)	100	811-97-2	223770

EEC LABEL SYMBOL AND CLASSIFICATION

Currently not classified according to EEC Directives.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Clear, Colorless, Volatile Liquid**IMMEDIATE CONCERNS:** Warning! High concentrations of vapor can reduce oxygen available for breathing. Harmful if inhaled. May decompose on contact with flames or extremely hot metal surfaces to

produce toxic and corrosive products.

POTENTIAL HEALTH EFFECTS

EYES: Liquid contact can cause irritation, which may be severe.

SKIN: Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INHALATION: High concentrations in immediate area can displace oxygen and can cause dizziness, unconsciousness, and possibly death with longer exposure. Keep people away from such vapors without self-contained breathing apparatus.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Can cause severe eye irritation.

SKIN: Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold" burn).

INHALATION: High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

ACUTE TOXICITY: Overexposure may cause dizziness and loss of concentration. At higher levels, CNS depression and cardiac arrhythmia may result.

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

SKIN: In case of cold burns (frostbite) caused by rapidly expanding gas or vaporizing liquids, get medical attention promptly.

INGESTION: Ingestion is unlikely because of the physical properties and is not expected to be hazardous. Do not induce vomiting unless instructed to do so by a physician.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: Not Applicable

FLAMMABLE LIMITS: None*

AUTOIGNITION TEMPERATURE: > 750°C (1382°F)

FLAMMABLE CLASS: Not Applicable

FLAME PROPAGATION OR BURNING RATE OF SOLIDS: Not Applicable

washed before reuse.

RESPIRATORY: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Gas

ODOR: Faint ethereal odor

pH: Neutral

PERCENT VOLATILE: 100 at 20°C (68°F)

VAPOR PRESSURE: 85.8 psi at 21.1°C (70°F)

VAPOR DENSITY: 3.5 (Air=1)

BOILING POINT: -26.2°C (-15.1°F)

FREEZING POINT: -101°C (-149.8°F)

SOLUBILITY IN WATER: Negligible

EVAPORATION RATE: >1 (CCL4=1)

SPECIFIC GRAVITY: 1.22 (water=1) at 20°C (68°F)

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID: Stable. However, may decompose if heated.

STABILITY: Stable.

POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: May form hydrochloric and hydrofluoric acids - possibly carbonyl halides, when exposed to high temperatures.

INCOMPATIBLE MATERIALS: Chemically active metals: potassium, calcium, powdered aluminum, magnesium and zinc.

11. TOXICOLOGICAL INFORMATION

ACUTE

INHALATION LC₅₀: >500000 ppm, 4-hour

SENSITIZATION: Cardiac sensitization threshold (dog) 80,000 ppm. NOEL - 50,000 ppm.

SUBCHRONIC:

Subchronic inhalation (rat) NOEL - 50,000 ppm

Chronic NOEL - 10,000 ppm

PRESSURE GENERATING: YES ACUTE: YES

313 REPORTABLE INGREDIENTS: Not considered a SARA 313 "Toxic Chemical".

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: Releases to air, land, or water which exceed the RQ must be reported to the National Response Center [(800)424-8802] and to your Local Emergency Planning Committee.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: This product is listed on the TSCA Inventory.

CANADA

WHMIS CLASS: Class A, Class D2B.

DOMESTIC SUBSTANCE LIST (INVENTORY): All components of this product are listed on the Canadian DSL.

EUROPEAN COMMUNITY

EEC LABEL SYMBOL AND CLASSIFICATION

Currently not classified according to EEC Directives.

GENERAL COMMENTS: 1,1,1,2-tetrafluoroethane is subject to U.S. Environmental Agency Clean Air Act Regulations, (40CFR Part 82).

COMMENTS: WARNING: Contains 1,1,1,2-tetrafluoroethane (HFC-134a), a greenhouse gas which may contribute to global warming.

16. OTHER INFORMATION

APPROVED BY: Pierce A. Pillon **TITLE:** Chemist

PREPARED BY: Steve Cook

REVISION SUMMARY Revision #: 1

This MSDS replaces the January 20, 2003 MSDS. Any changes in information are as follows:

In Section 15

EEC Symbol Id. EEC Risk Phrase Codes

In Section 16

Manufacturer Disclaimer