Material Safety Data Sheet
134a

1. Chemical Product and Company Identification

Product Trade Name: DUST-OFF® SPECIAL APPLICATION DUSTER

Chemical Family: 1,1,1,2-Tetrafluoroethane
FSP Model No: DPN, DPNCN, DPNJB, DPNR, DPNRCN, DPNXL, DPNXLCN, DPNXL2, DNXLP3CN

Chemical Manufacturer: Dupont Or Honeywell
Address:

Phone:
Product Manufacturer: Falcon Safety Products, Inc.
Address: 25 Imclone Drive
Branchburg, NJ 08876
Phone: 1-908-707-4900

Emergency Telephone USA: **(800) 498-7192**

2. Composition/Information on Ingredients

Chemical Name	Wt.%Range	TLV Units
Tetrafluoroethane	99.0	1000 ppm

CAS #811-97-2
All components of this material are listed on the TSCA inventory.

3. Hazard Identification

Emergency Overview: Clear colorless liquefied gas. Nonflammable. Liquid acts as a refrigerant and exposure of unprotected skin to liquid can cause frostbite. Keep away from children.

Potential Health Effects

INHALATION Gross overexposure may cause: Central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness. Irregular heart beat with a strange sensation in the chest, "heart thumping", apprehension, lightheadedness, feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness and death. Suffocation, if air is displaced by vapors.

SKIN CONTACT ETHANE, 1,1,1,2-TETRAFLUORO
Immediate effects of overexposure may include: Frostbite, if liquid or escaping vapor contacts the skin.

EYE CONTACT ETHANE, 1,1,1,2-TETRAFLUORO
"Frostbite-like" effects may occur if the liquid or escaping vapors contact the eyes.

ADDITIONAL HEALTH EFFECTS ETHANE, 1,1,1,2-TETRAFLUORO

Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the: central nervous system, cardiovascular system.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

Medical Conditions Aggravated by Exposure:
Preexisting disease of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

4. First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a doctor.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse. Treat for frostbite if necessary by gently warming affected area.

Eyes: Immediately flush with water. Remove any contact lenses and continue flushing for 15 minutes, lifting eyelids occasionally until no evidence of the chemical remains. If irritation develops or persists call a physician.

Ingestion: Not considered a potential route of exposure. Treat for possible frostbite. Swallowing less than an ounce of material is unlikely to cause significant harm. For larger amounts, do not induce vomiting. Call a physician.

Note to Attending 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.

There is no specific antidote to overexposure. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Immediate medical attention for acute overexposure is required.

5. Firefighting Measures

Flash Point: Will not burn.
Autoignition Temperature: > 750° C
Flammable Limits in Air: LEL/UEL: Not Applicable.
Extinguishing Media: Use dry chemical, "alcohol" foam, CO2 or water.

Special Firefighting Procedures:

Evacuate personnel. Wear self contained breathing apparatus (SCBA) and full protective equipment. Keep containers cool. Containers build pressure under fire conditions causing violent bursting and dangerous propelling of container.

Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of torch flames. This flame effect will only occur in concentrations of product well above the recommended exposure limit, therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames.
HFC-134a is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of HFC-134a with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source.

HFC-134a can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing HFC-134a and air, or HFC-134a in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, HFC-134a should not be allowed to exist with air above atmospheric pressure or at high temperatures; or
in an oxygen enriched environment. For example HFC-134a should NOT be mixed with air under pressure for leak testing or other purposes.

6. Accidental Release Measures

Spill or Leak: Although the chances of a large spill or leak is unlikely in aerosol containers, in the event of such an occurrence, evacuate area. Protected personnel should remove ignition sources and shut off fire sources. Provide ventilation.

7. Handling and Storage

Avoid breathing vapors or mist. Keep containers closed. Use only with adequate ventilation. Avoid repeated or prolonged contact with eyes, skin or clothing. Wash thoroughly after handling. Do not store in direct sunlight. Store in cool dry place, away from heat, sparks or flames which may generate toxic decomposition products. Vapors are heavy and may concentrate in low poorly ventilated areas.

8. Exposure Controls/Personal Protection

Respiratory Protection: Use only with adequate ventilation. Keep container closed. Use approved NIOSH self-contained or supplied air respirators for emergencies and in situations where air may be displaced by vapors.

Eye Protection: Use chemical protective safety glasses.

Protective Clothing: Where there is potential for skin contact, use appropriate impervious gloves, apron, pants and jacket.

Exposure Guidelines: Applicable Exposure Limits.

Tetrafluoroethane:

PEL (OSHA)	none established
TLV (ACGIH)	none established
AEL (DuPont)	1000 ppm, 8 & 12 hour TWA
WEEL (AIHA)	1000 ppm, 8 hour TWA

NFPA, NPCA-HIMIS RATING:

Health	1
Flammability	0
Reactivity	1

Personal Protection rating to be supplied by user depending on use conditions.

9. Physical and Chemical Properties

Physical Form: Liquefied Gas
Odor: Slight Ethereal
Boiling Point: -26.5^{o} C / -15.7^{o} F
pH: Not Applicable
Solubility in Water: 0.15 wt.% @ 25^{o}C (77^{o}F) @ 14.7 psia.
Specific Gravity: 1.208 @ 25^{o} C / 77^{o} F
Liquid Density 1.21 g/cm^{3} @ 25^{o} C (77^{o} F)
% Volatile by Weight: 100
Vapor Pressure: 96 psia @ 25^{o} C / 77^{o} F
Vapor Density (air=1): 3.6 @ 25^{o} C / 77^{o} F

10. Reactivity

Chemical Stability: Material is stable.

Conditions to Avoid: Avoid open flames and high temperatures

Incompatibilities: Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, etc.

Decomposition Products: Decomposition products are hazardous. High temperatures (open flames, glowing metal surfaces, etc.) will decompose this material forming hydrofluoric acid and possibly carbonyl fluoride. These materials are toxic and irritating. Contact should be avoided.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

Animal Data

ETHANE, 1,1,1,2-TETRAFLUORO

Eye: A short duration spray of vapor produced very slight eye irritation.

Skin: Animal testing indicates this material is a slight skin irritant, but not a skin sensitizer.

Inhalation: 4 hour, ALC, rat: 567,000 ppm.

Single exposure caused : Cardiac sensitization, a potentially fatal disturbance of heart rhythm associated with a heightened sensitivity to the action of epinephrine.

Lowest-Observed-Adverse-Effect-Level for cardiac sensitization : 75,000 ppm. Single exposure caused: Lethargy, Narcarcosis, Increased respiratory rates. These effects were temporary. Single exposure to near lethal doses caused: Pulmonary edema. Repeated Exposure caused: Increased adrenals, liver, spleen weight. Decreased uterine, prostate weight. Repeated dosing of higher concentrations caused: the following temporary effects- Tremors, Incoordination.

CARCINOGENIC, DEVELOPMENTAL, REPRODUCTIVE, MUTAGENETIC EFFECTS:

In a two-year inhalation study HFC-134a, at a concentration of 50,000 ppm produced an increase in late-occurring benign testicular tumors, testicular hyperplasia and testicular weight. The no effect level for this study was 10,000 ppm. Animal data shows slight fetotoxicity but only at exposure levels producing other toxic effects in the adult animal. Reproductive data on male mice show: No change in reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. In animal testing, this material has not caused permanent genetic damage in reproductive cells of mammals (has not produced heritable genetic damage).

12. Ecological Information

Aquatic Toxicity:

48 hour EC50 - Daphnia magna: 980 mg/L
96 hour LC50 - Rainbow Trout: 450 mg/L

13. Disposal Considerations

Waste Disposal: Recover by distillation or remove to a permitted waste disposal facility. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations.

14. Transportation Information

Transport for Aerosol Packaging:

Ground Transport: Consumer Commodity ORM-D
Air Transport: Refrigerant Gas, N.O.S. (Tetrafluoroethane), UN3159, Class 2.2, Pkg.Group N/A, Pkg.Instr.200, Authorization: per DOT-SP-10232. NOTE: Exemption copy required with shipping papers. Hazard Label: Nonflammable Gas

15. Regulatory Information

Section 313 Supplier Information:

This material contains the following toxic chemicals subject to the emergency reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40 CFR 372:

CAS#	Chemical Name	% by Weight
-	none	-

This information must be included in all MSDSs that are copied and distributed for this material.
California V.O.C. Data: This product contains 0 grams total VOC per liter.

Title III Hazard Communications Sections 311, 312

Acute	Yes
Chronic	Yes
Fire	No
Reactivity	No
Pressure	Yes

HAZARDOOUS CHEMICAL LIST

SARA Extremely Hazardous Substance	No
CERCLA Hazardous Substance	No
SARA Toxic Chemical	No

16. Other Information

NFPA, NPCA-HMIS

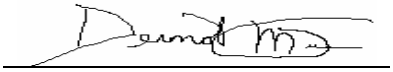
NPCA-HMIS Rating

Health :	1
Flammability :	0
Reactivity :	1

WHIMIS - Canada

Class A - Compressed Gas
CEPA DSL: 1,1,1,2-Tetrafluoroethane

Personal Protection rating to be supplied by user depending on use

Signature	Printed Name	Title	Revision Date
	Dermot McLeer	Technical Manager	4/12/07