MATERIAL SAFETY DATA SHEET

PERFECTDUSTER - ECODUSTER II (1.5 OZ) AUGUST 2000

SECTION I **GENERAL INFORMATION**

Distributor's Name and Address:

PerfectData Corporation
110 West Easy Street
Simi Valley,California 93065-1689
(805) 581-4000

PRODUCT:	105987-1 PR	105992-1	105885-1
	106160-1	106173-1	
	106254-1	106296-1	106365-1

NFPA Hazard Rating		NFPA	HMIS Rating		HMIS
Health	1	0 = Normal material	Health	1	0 = Minimal
Flammability	4	1 = Slightly hazardous	Flammability	3	1 = Slight
Reactivity	1	2 = Hazardous	Reactivity	1	2 = Moderate
Special	None	3 = Extremely	Special	None	3 = Serious
		4 = Deadly			4 = Severe

EMERGENCY CONTACT: CHEMTREC (800) 424-9300

SECTION 2 **COMPOSITION/INFORMATION ON INGREDIENTS**

MATERIAL(S)	CAS #	% (optional)	OSHA PEL	ACGIH TLV	OTHER LIMITS
ETHANE, 1,1,1,2 -TETRAFLUORO-	811-97-2	30-70	1000 ppm	N/A	1000 ppm
DIMETHYL ETHER	115-10-6	30-70	1000 ppm	1000 ppm	N/A

SECTION 3 **HAZARDS IDENTIFICATION**

EMERGENCY OVERVIEW: Clear colorless liquefied gas with slight ethereal odor. Contents under pressure. Prolonged exposure to sunlight or heat may cause bursting of can. Contact with liquid can cause frostbite.

POTENTIAL HEALTH EFFECTS:

EYE: Vapors may irritate eyes. Liquid and mist may irritate or damage the eyes and may cause corneal burns.

SKIN: Brief contact may dry the skin, or cause burning or stinging sensation. Prolonged or repeat contact may irritate the skin.

INHALATION: Vapors and mists may irritate the nose and throat.
Inhalation of higher concentration may cause headache, vomiting and coma. Inhalation of very prolonged exposure may cause unconsciousness or death. **Note: Intentionally concentrating and inhaling vapors of this product is harmful and may be fatal**.

INGESTION:	Not considered a likely route of exposure. Swallowing may cause headache, nausea, vomiting, stomach cramps and diarrhea, and perhaps unconsciousness or death.
CARCINOGENICITY:	None
CHRONIC EFFECT OF EXPOSURE:	Prolonged or repeated exposure to high concentration can produce severe or fatal CNS depression or may contribute to heart irregularities.

SECTION 4 **FIRST AID MEASURES**

PRICIPLE ROUTES OF EXPOSURE:	Skin, ingestion, inhalation
SKIN CONTACT:	Immediately wash skin with lots of soap and water. Remove soiled clothing and shoes; wash before reuse. Get medical attention if irritation persists after washing.
CONTACT WITH EYES:	Immediately flush eyes with lots of running water for 15 minutes, lifting the upper and lower eyelids occasionally. Get immediate medical attention.
INGESTION:	Get immediate medical attention. Do not give anything by mouth to an unconscious or convulsing person. If physician directed or involuntary vomiting occurs, keep victim's head below his hips while vomiting so he does not breath the vomitus into his lungs. Do not induce vomiting.
INHALATION:	Remove persons to fresh air. Give artificial respiration if not breathing. Get immediate medical attention.

NOTE TO PHYSICIANS:
BECAUSE OF POSSIBLE DISTURBANCES OF CARDIAC RHYTHM, CATECHOLAMINE DRUGS, SUCH AS EPINEPHRINE, SHOULD BE USED WITH SPECIAL CAUTION.

SECTION 5 **FIRE FIGHTING MEASURES**

FLASH POINT: -58ºF (estimated)

METHOD USED: TOC

FIRE AND EXPLOSION HAZARDS
Cylinders are equipped with pressure and temperature relief devices but may rupture under fire conditions.
Use water spray to cool cylinders and tanks.

EXTINGUISHING MEDIA
As appropriate for combustibles in area (water spray, water fog, dry chemical, carbon dioxide, "Alcohol" foam).

FLAMMABLE LIMITS IN AIR, % BY VOLUME: 3.9 LEL
16.9 UEL

FIRE FIGHTING PROCEDURES
Aerosol cans are under pressure – exposure to temperatures above 120^0F can cause bursting or "rocketing" of cans. Vapors are heavier than air and may travel along the ground or may be moved by ventilation. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or contents are released under fire conditions. Cool fire exposed containers with water spray. If gas exiting containers ignites, stop flow of gas. DO NOT put out the fire unless leak can be stopped immediately.

FLAMMABILITY CLASSIFICATION: (NFPA) Level 1 Aerosol

SECTION 6 **ACCIDENTAL RELEASE MEASURES**

IN CASE OF SPILL OR ACCIDENTAL RELEASE:	Ventilate area. Floor might be slippery. Be sure to use caution to avoid falling. Contain spills out of sewers and away from all water bodies, etc.
SMALL SPILLS:	Absorb liquid on paper, floor absorbent, or other absorbent material and transfer to DOT-approved containers for disposal.
LARGE SPILLS:	Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed. Stop spill at source, dike spill to prevent from spreading, pump liquid to salvage container. Remaining material may be taken up with sand, clay, earth, floor absorbent material or other absorbent material and placed in appropriate waste container with non-sparking shovel.
WASTE DISPOSAL METHOD:	Dispose in accordance with local, State, and Federal regulations. Waste may be reclaimed or incinerated by federally permitted facilities.

NOTE: Use appropriate Personal Protection Equipment during clean up.

This material meets the generic definition of an ignitable substance under CERCLA. A release of 100 lbs. may trigger the reporting requirements of CERCLA Section 103.

SECTION 7 **HANDLING AND STORAGE**

HANDLING AND STORAGE
Store in a clean, dry area, out of direct sunlight, away from high temperatures, open flames, incompatibles. Store at temperatures under 120ºF. Keep from freezing. Store out of direct sunlight. Prolonged exposure to direct sunlight or storage above 120^0F may cause can to burst.

SAFETY PRECAUTIONS
Avoid breathing high concentrations of vapors and liquid contact with skin or eye. Use with sufficient ventilation to keep employee exposure below recommended limits. Should not be mixed with air for leak testing or used with air for any other purposes above atmospheric pressure.

SECTION 8 **EXPOSURE CONTROLS/PERSONAL PROTECTION**

GENERALLY APPLICABLE CONTROL MEASURES
Respiratory protection is not required when used as directed. Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low places.

PERSONAL PROTECTIVE EQUIPMENT
Lined butyl gloves and chemical splash, goggles should be used when handling liquid. Under normal manufacturing, conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

OTHER PROTECTION EQUIPMENT
Not required when used as directed.

WORK/HYGIENIC PRACTICES
General hygienic practices include washing of hands thoroughly with soap and water after use.

SECTION 9 **PHYSICAL DATA AND CHEMICAL PROPERTIES**

MELTING POINT:	N/A
BOILING POINT:	-13ºF.
SOLUBILITY IN WATER:	N/A
VAPOR PRESSURE:	62.5 psi
VAPOR DENSITY:	2.4 (Air = 1.0)
ODOR:	Slight Ethereal
FORM:	Liquefied Gas
PERCENT VOLATILES:	100 WT%
COLOR:	Colorless
REPORTABLE VOC CONTENT:	70%
EVAPORATION RATE:	Immediate
pH:	N/A
SPECIFIC GRAVITY:	0.93 g/cc

SECTION 10 **STABILITY & REACTIVITY**

STABILITY	Material is stable. Avoid open flames and high temperatures, contact with hot(glowing) metal surfaces, etc.
INCOMPATIBILITY	Alkali or alkaline earth metals - powdered Al, Zn, Be, etc.
DECOMPOSITION	Can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids - possibly carbonyl halides, carbonyl fluoride.
POLYMERIZATION	Will not occur

SECTION 11 **TOXICOLOGICAL INFORMATION**

PRINCIPAL HEALTH HAZARDS
(including significant routes, effects symptoms of overexposure and medical conditions aggravated by exposure)

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness or death. Intentional misuse or deliberate inhalation may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact can cause frostbite.

ANIMAL DATA:

Inhalation 4-hour LC 50: 164,000 ppm in rats

The compound is untested for skin and eye irritancy, and is untested for animal sensitization. Toxicity described in animals exposed by inhalation includes anesthetic effects, depression of arterial blood pressure, changes in blood cell counts, and weight gain suppression. Cardiac sensitization occurred in dogs exposed to concentrations of 20% and greater. Long-term exposure of rats to 20,000 ppm caused liver weight reduction and alterations of liver enzymes. In another study, observations include decreased red blood cell counts, spleen changes, and decreased survival of males at 10,000 and 25,000 ppm. Red blood cell destruction (hemolysis) occurred at 25,000 ppm.

Tests in animals demonstrate no carcinogenic or developmental toxicity. The compound does not produce genetic damage in bacterial cell cultures.

HUMAN HEALTH EFFECTS:

Skin contact with the liquid may cause freezing of the skin. Eye contact with the vapor may produce eye irritation with discomfort, tearing, or blurring of vision. Overexposure by inhalation to the vapors may cause nonspecific discomfort, such as nausea, headache, or weakness. Higher exposures to the vapors may cause temporary nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; or increased susceptibility to the cardiac arrhythmic effects of epinephrine.

Individuals with preexisting diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

CARCINOGENICITY

None of the components in this material is listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

APPLICABLE EXPOSURE LIMITS

DIMETHYL ETHER
ETHANE 1,1,1,2- TETRAFLUORO

AEL (Du Pont)	1000 ppm (8 hr. TWA)
TLV (ACGIH)	None Established
PEL (OSHA)	None Established

SECTION 12 **ECOLOGICAL INFORMATION**

INTRODUCTION: This environmental effects summary is written to assist in addressing emergencies created by an accidental spill which might occur during the shipment of this material, and, in general, is not meant to address discharges to sanitary sewers or publicly owned treatment works.

SUMMARY: Data for this material have been used to estimate its environmental impact. It has the following properties.

A high biochemical oxygen demand and a potential to cause oxygen depletion in aqueous systems, a low potential to effect aquatic organisms, a low potential to persist in the environment, a low potential to bioconcentrate.

SECTION 13 **DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL
Always use up product according to label directions before disposal. Remove to a permitted waste disposal facility. Comply with Federal, State, and local regulations.
This material may be a RCRA regulated hazardous waste upon disposal due to the ignitability characteristic.
DO NOT PUNCTURE OR INCINCERATE CONTAINER.

SECTION 14 **TRANSPORT INFORMATION**

DOT (172.101 / 173.306)	DOT/IMO (172.102)
PROPER SHIPPING NAME Consumer Commodity	PROPER SHIPPING NAME Compressed Gases Flammable, N.O.S.
HAZARD CLASS ORM-D	HAZARD CLASS 2.1
UN NO. N/A	UN NO. 1954
	DOT/IMO LABEL Flammable Gas
	IMDG Code Page 2124

NOTE: For domestic shipments, outer boxes must be marked with shipping name and hazard class. Domestic shipments are exempt from labeling and shipping paper requirements except when transported by air.

SECTION 15 **REGULATORY INFORMATION**

OSHA: This product is considered hazardous based on the criteria listed in the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200

TSCA: All chemical components are listed in the TSCA inventory.

NJ RIGHT TO KNOW: In addition to the hazardous components listed in Section 2, this product contains the following components in a quantity sufficient to require identification:

No other components

SECTION 16 **OTHER INFORMATION**

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

SARA/TITLE III HAZARD CATEGORIES AND LISTS

Product Hazard Categories		Lists	
Chronic Health	No	Extremely Hazardous Substance	No
Acute Health	Yes	CERCLA Hazardous Substance	Yes
Fire Hazard	Yes	Toxic Chemicals	No
Pressure Hazard	Yes		
Reactivity Hazard	No		

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