

# MATERIAL SAFETY DATA SHEET

**Date Issued:** 12/04/2008  
**MSDS No:** 11384/11407  
**Date Revised:** 01/26/2012  
**Revision No:** 4

## Endust Single & Twin Pack - 152a Duster w/ Bitterant

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Endust Single & Twin Pack - 152a Duster w/ Bitterant

**PRODUCT DESCRIPTION:** HFC 152a Dusting Gas

**PRODUCT CODE:** 11384/11384-T/11407

#### MANUFACTURER

Norazza, Inc.

3938 Broadway

Buffalo, NY 14227

**Emergency Phone:** 716-706-1160

#### 24 HR. EMERGENCY TELEPHONE NUMBERS

**Chem Tel:**

**USA, Canada, Puerto Rico, US Virgin Islands :**(800) 255-3924

**Emergency Phone :**

(716) 706-1160

#### Contract # MIS0006632

North American continent should reference our

International Access Number at Country Code

call originating from IE: +01 or +001-813-248-0585

(Please call collect if necessary) Check local country codes

at <http://www.countrycodes.com/areacodes.callunitedstates.com>

### 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**IMMEDIATE CONCERNS:** Flammable liquid and vapor.

#### POTENTIAL HEALTH EFFECTS

**EYES:** Avoid contact with eyes; may cause redness, irritation and conjunctivitis.

**SKIN:** Liquid contact could cause frostbite.

**INGESTION:** Not likely to be ingested.

**INHALATION:** Headache, nausea, and possible coordination problems. 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:** Symptoms of overexposure include: stinging, tearing, redness and pain.

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

**INGESTION:** Not a likely route of exposure.

**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.

**CHRONIC EFFECTS:** Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

**CARCINOGENICITY:** NOT listed

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**MUTAGENICITY:** Not Established

### REPRODUCTIVE TOXICITY

**REPRODUCTIVE EFFECTS:** None Expected.

**TERATOGENIC EFFECTS:** Not considered a developmental toxicant.

**CANCER STATEMENT:** Did not cause cancer in long term animal studies.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt. %	CAS	EINECS
1,1-difluoroethane (HFC-152a)	> 99.9	75-37-6	
Ethanol	< 1	64-17-5	200-578-6
Denatonium benzoate	< 0.0001	37343-36-6	

### 4. FIRST AID MEASURES

**EYES:** Flush eye with water for 15 minutes. Get medical attention.

**SKIN:** Wash with soap and water. Get medical attention if irritation develops or persists.

**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. If breathing is difficult, give oxygen. Get medical attention.

### 5. FIRE FIGHTING MEASURES

**FLASHPOINT AND METHOD:** < -50°C (-58°F)

**FLAMMABLE LIMITS:** 3.9 to 16.9

**AUTOIGNITION TEMPERATURE:** 154°C (849°F)

**GENERAL HAZARD:** Aerosol cans may erupt with force at temperatures above 120F.

**EXTINGUISHING MEDIA:** Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

**HAZARDOUS COMBUSTION PRODUCTS:** Carbon dioxide, carbon monoxide, fluorine, hydrofluoric acid, carbonyl halides.

**EXPLOSION HAZARDS:** Vapors, when present in the flammable range (listed above), especially in a confined or poorly ventilated space, can be ignited with a flame or high intensity source of heat.

**FIRE FIGHTING PROCEDURES:** Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

**FIRE FIGHTING EQUIPMENT:** As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

### 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Vapor can be controlled using a water fog. Water streams should not be directed to the liquid as this will cause the liquid to boil and generate more vapor.

**LARGE SPILL:** -Implement cleanup procedures. -If in public area, keep public away and advise authorities. -

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Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.

**GENERAL PROCEDURES:** Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**RELEASE NOTES:** Spills and releases may have to be reported to Federal and/or local authorities.

### 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** Contents may be under pressure. Exercise caution when opening container. If containers have been stored in direct sunlight or heated above the boiling point of the solvent, the container should be cooled to below the boiling point before opening.

**HANDLING:** Use with sufficient ventilation to keep employee exposure below recommended limits. Provide adequate ventilation for storage, handling and use, especially for enclosed or low spaces. Avoid contact of liquid with eyes and prolonged skin exposure. Do not allow product to contact open flame or electrical heating elements because dangerous decomposition products may form.

**STORAGE:** Keep away from sources of ignition.

**STORAGE TEMPERATURE:** Contents under pressure. Do not expose to heat or store above (120) F (49) C.

**STORAGE PRESSURE:** Store at local atmospheric pressure.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)							
		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
Chemical Name		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Ethanol	<b>TWA</b>	1000 ppm	1900 mg/m <sup>3</sup>	1000 ppm	1880 mg/m <sup>3</sup>	NL	NL
	<b>STEL</b>	NL ppm	NL mg/m <sup>3</sup>	NL ppm	NL mg/m <sup>3</sup>	NL	NL
Denatonium benzoate	<b>TWA</b>	[1]	[1]	[1]	[1]		
<b>OSHA TABLE COMMENTS:</b>							
1. NOT ESTABLISHED							

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

#### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

**SKIN:** Skin contact with liquid may cause frostbite. General work clothing and gloves (leather) should provide adequate protection. If prolonged contact with the liquid or gas is anticipated, insulated gloves constructed of PVA, neoprene or butyl rubber should be used. Any contaminated clothing should be promptly removed and washed before reuse.

**RESPIRATORY:** NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator

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if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

**WORK HYGIENIC PRACTICES:** Wash hands before eating and wash before reuse.

**OTHER USE PRECAUTIONS:** Emergency shower and eyewash facility should be in close proximity.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Gas

**ODOR:** Low odor.

**COLOR:** Colorless

**PERCENT VOLATILE:** 99.9+

**VAPOR PRESSURE:** 87 psia at 25°C

**VAPOR DENSITY:** 2.4 (Air=1)

**BOILING POINT:** -25°C (-13°F)

**FLASHPOINT AND METHOD:** < -50°C (-58°F)

**SOLUBILITY IN WATER:** 0.28 wt% @ 25C

**SPECIFIC GRAVITY:** 0.910

**(VOC):** < 1.000 % by weight

### 10. STABILITY AND REACTIVITY

**STABILITY:** Stable under normal conditions.

**POLYMERIZATION:** Will not occur.

**CONDITIONS TO AVOID:** Heat, flames, ignition sources, and incompatibles.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon dioxide, carbon monoxide, fluorine, hydrofluoric acid, carbonyl halides.

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

### 11. TOXICOLOGICAL INFORMATION

#### ACUTE

**INHALATION LC<sub>50</sub>:** 977 g/m<sup>3</sup>, 2-hour

**EYE EFFECTS:** May be mildly irritating to eyes.

#### CARCINOGENICITY

Chemical Name	NTP Status	IARC Status	OSHA Status
Ethanol	NOT LISTED	NOT LISTED	NOT LISTED

**IARC:** NOT listed

**NTP:** NOT listed

**OSHA:** NOT listed

**NEUROTOXICITY:** Exposure to high concentrations may effect the nervous system.

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**REPRODUCTIVE EFFECTS:** Not Established

**TERATOGENIC EFFECTS:** NOT listed

**MUTAGENICITY:** Not Established

### 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** There is limited information available on the environmental fate and effects of this material. The primary environmental concern for release is the impact on aquatic and terrestrial species. Due care should be taken to avoid the accidental release of this material into the environment.

**ECOTOXICOLOGICAL INFORMATION:** Not Established

### 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Federal, State, and Local laws governing disposal of materials can differ. Ensure compliance with proper authorities before disposal.

**GENERAL COMMENTS:** Dispose of in a manner consistent with federal, state, and local regulations.

### 14. TRANSPORT INFORMATION

#### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** 1,1-difluoroethane

**PRIMARY HAZARD CLASS/DIVISION:** 2.1

**UN/NA NUMBER:** 1030

**PACKING GROUP:** NA

#### ROAD AND RAIL (ADR/RID)

**KEMLER NUMBER:** UN1030

**HAZARD CLASS:** 2.1

#### AIR (ICAO/IATA)

**SHIPPING NAME:** 1,1-difluoroethane

**UN/NA NUMBER:** 1030

**PRIMARY HAZARD CLASS/DIVISION:** 2.1

**PACKING GROUP:** NA

**NOTE:** Cargo aircraft ONLY. Copy of DOT-E 11516 must be presented.

#### VESSEL (IMO/IMDG)

**SHIPPING NAME:** 1,1-difluoroethane

**UN/NA NUMBER:** UN1030

**PRIMARY HAZARD CLASS/DIVISION:** 2.1

### 15. REGULATORY INFORMATION

#### UNITED STATES

#### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

**FIRE:** Yes **PRESSURE GENERATING:** Yes **ACUTE:** Yes

#### CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

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**CERCLA REGULATORY:** Listed in table 302.4 of 40CFR Part 302 as a hazardous substance with a reportable quantity. Releases to air, land, or water which exceed the RQ must be reported to the national response center.

**CERCLA RQ:** 100 lbs.

### TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS
1,1-difluoroethane (HFC-152a)	75-37-6
Ethanol	64-17-5

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

### OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

**29 CFR 1910.119---PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS:** None of the chemicals in this product are considered highly hazardous by OSHA.

**CALIFORNIA PROPOSITION 65:** This product does not contain any chemicals known to the State of California to cause cancer.

**RCRA STATUS:** D001

**OSHA HAZARD COMM. RULE:** Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

### CANADA

**WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):** This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

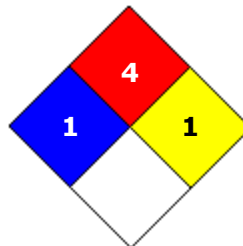
**WHMIS CLASS:** Class A - Aerosol; Class B5 - Flammable Aerosol

## 16. OTHER INFORMATION

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

**REVISION SUMMARY:** This MSDS replaces the 07/22/2011 MSDS. Revised: **Section 1:** PRODUCT CODE.

### NFPA CODES



**DATA SOURCES:** Code of Federal Regulations (CFR) The Sigma-Aldrich Library of Regulatory and Safety Data  
 OSHA Hazard Communication Standard (29CFR1910.1200) Various Federal, State and Local Regulations