

**MATERIAL SAFETY DATA SHEET****Finished Product**

**Date-Issued:** 01/20/2003  
**MSDS Ref. No:** RX100-10  
**Date-Revised:** 01/20/2003  
**Revision No:** New MSDS

**ECG Electronics Freezer****1. PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** ECG Electronics Freezer  
**PRODUCT DESCRIPTION:** HFC-134a with Anti-stat  
**PRODUCT CODE:** RX100-10  
**CHEMICAL FAMILY:** Hydrofluorocarbons

**MANUFACTURER**

NTE Electronics, Inc.  
 44 Farrand St.  
 Bloomfield, NJ 07003

**Phone: 973-748-5089**

**24 HR. EMERGENCY TELEPHONE NUMBERS**

**CHEMTREC (U.S.):** (800) 424-9300

**CANUTEC:** (613) 996-6666

**Emergency Phone:** 1-888-748-1777 8:00 am - 5:00 pm CST

**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)	98	811-97-2	223770
Methanol	2	67-56-1	200-659-6

**EEC LABEL SYMBOL AND CLASSIFICATION**

EEC Irritant - "Xi"



EEC Harmful - "Xn"

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### 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. Very mild (if any) eye/skin irritant.

#### POTENTIAL HEALTH EFFECTS

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

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

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

**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).

**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:** Not Established

**CARCINOGENICITY:** Not Established

**MUTAGENICITY:** None known.

#### REPRODUCTIVE TOXICITY

**REPRODUCTIVE EFFECTS:** Not yet Determined

**TERATOGENIC EFFECTS:** Contains Methanol which has been established as a teratogen by inhalation. See Sec.11 for details.

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### 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.

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## 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

**EXTINGUISHING MEDIA:** As appropriate for combustibles in area.

**EXPLOSION HAZARDS:** This product is not flammable at ambient temperatures and atmospheric pressure. However, this material may become combustible when mixed with air under pressure and exposed to strong ignition sources.

**FIRE FIGHTING PROCEDURES:** Use water spray to cool containers.

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

**COMMENTS:** \*Based on ASHRAE Standard 34 with match ignition.

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## 6. ACCIDENTAL RELEASE MEASURES

**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.

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## 7. HANDLING AND STORAGE

**HANDLING:** Follow standard safety precautions for handling and use of compressed gas cylinders.

**STORAGE:** Store in a cool place in original container and protect from sunlight.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE GUIDELINES:****OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)**

	<b>EXPOSURE LIMITS</b>					
	<b>OSHA PEL</b>		<b>ACGIH TLV</b>		<b>Supplier OEL</b>	
	<b>ppm</b>	<b>mg/m<sup>3</sup></b>	<b>ppm</b>	<b>mg/m<sup>3</sup></b>	<b>ppm</b>	<b>mg/m<sup>3</sup></b>
1,1,1,2-Tetrafluoroethane (HFC-134a)	<b>TWA</b>	NONE	NONE	NONE		1000 <sup>[1]</sup>
Methanol	<b>TWA</b>	S 200 <sup>[2]</sup>	260	S 200	262	NL NL
	<b>STEL</b>	250	310	250	328	NL NL

**OSHA TABLE COMMENTS:**

1. Limit established by supplier
2. S = Skin

**ENGINEERING CONTROLS:** Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

**PERSONAL PROTECTIVE EQUIPMENT**

**EYES AND FACE:** Wear safety glasses with side shields (or goggles) and a face shield.

**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:** 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)

**MOLECULAR WEIGHT:** 102

**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.

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## 11. TOXICOLOGICAL INFORMATION

### ACUTE

**EYES:** Moderately to severely irritating

**DERMAL LD<sub>50</sub>:** Mildly to moderately irritating.

**ORAL LD<sub>50</sub>:** Oral Rat LD50: 5628 mg/kg for methanol.

**INHALATION LC<sub>50</sub>:** >500000 ppm, 4-hour

Inhalaton Rat LC50: 64000 ppm/4H for methanol.

**EYE EFFECTS:** High vapor concentrations may cause moderate to severe eye irritation.

### SUBCHRONIC:

Subchronic inhalation (rat) NOEL - 50,000 ppm

Chronic NOEL - 10,000 ppm

### CARCINOGENICITY:

**IARC:** NOT listed

**OSHA:** NOT listed

**MUTAGENICITY:** Collective data indicate non-mutagenic.

**REPRODUCTIVE EFFECTS:** Not Established

**TERATOGENIC EFFECTS:** Teratogenic NOEL (rat and rabbit) - 40,000 ppm

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## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** Degradability (BOD): This material is a gas at room temperature; therefore, it is unlikely to remain in water.

**DISTRIBUTION:** Octanol Water Partition Coefficient: Log P=1.06

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## 13. DISPOSAL CONSIDERATIONS

**GENERAL COMMENTS:** 1,1,1,2-tetrafluoroethane is subject to U.S. Environmental Protection Agency Clean Air Act Regulations, Section 608 in 40 CFR Part 82 regarding refrigerant recycling.

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## 14. TRANSPORT INFORMATION

### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** CONSUMER COMMODITY ORM-D

**TECHNICAL NAME:** CONSUMER COMMODITY ORM-D

**UN/NA NUMBER:** NA

**PACKING GROUP:** NA

### AIR (ICAO/IATA)

**PROPER SHIPPING NAME:** CONSUMER COMMODITY ID8000

**PRIMARY HAZARD CLASS/DIVISION:** 2.2

**UN/NA NUMBER:** ID8000

**PACKING GROUP:** NA

### VESSEL (IMO/IMDG)

**PROPER SHIPPING NAME:** AEROSOLS IN LIMITED QUANTITIES OF CLASS 2

**UN/NA NUMBER:** UN1950

**IMDG NOTE:** Page 2102

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## 15. REGULATORY INFORMATION

### UNITED STATES

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

**311/312 HAZARD CATEGORIES:** IMMEDIATE / PRESSURE

**FIRE:** NO **PRESSURE GENERATING:** YES **REACTIVITY:** NO **ACUTE:** YES  
**CHRONIC:** NO

**313 REPORTABLE INGREDIENTS:** Methanol (<1%)

#### 302/304 EMERGENCY PLANNING

**EMERGENCY PLAN:** Methanol (#67-56-1)

#### 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. Methanol (#67-56-1)

**CERCLA RQ:** 5000 lbs

#### TSCA (TOXIC SUBSTANCE CONTROL ACT)

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

**RCRA STATUS:** U154

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

**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.

**CANADA**

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

**EUROPEAN COMMUNITY**

**EEC LABEL SYMBOL AND CLASSIFICATION**



EEC Irritant - "Xi"



EEC Harmful - "Xn"

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

**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.

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**16. OTHER INFORMATION**

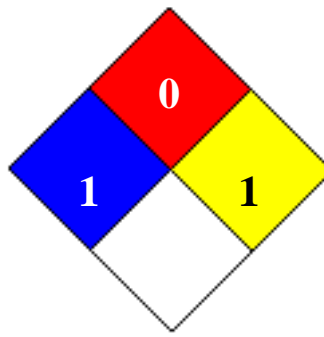
**APPROVED BY:** Pierce A. Pillon    **TITLE:** Chemist

**REVISION SUMMARY** New MSDS

**HMIS RATING**

<b>HEALTH:</b>		<b>1</b>
<b>FLAMMABILITY:</b>		<b>0</b>
<b>PHYSICAL HAZARD:</b>		<b>1</b>
<b>PERSONAL PROTECTION:</b>		

**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

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