

# MATERIAL SAFETY DATA SHEET

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** NU-CLEAR I, NU-CLEAR II

**MSDS NUMBER:** 230160

**GENERAL USE:** Acid alcohol rinse.

**PRODUCT DESCRIPTION:** Clear flammable liquid, characteristic alcohol odor

**Thermo**  
ELECTRON CORPORATION

**MANUFACTURER'S NAME (Distributor in the Americas)**  
Thermo Electron Corporation

**DATE PREPARED:** November 26, 2003  
**SUPERSEDES:** December 1, 2000

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**ADDRESS (NUMBER, STREET, P.O. BOX)**  
171 Industry Drive

**TELEPHONE NUMBER FOR INFORMATION**  
(412) 788-1133

**(CITY, STATE AND ZIP CODE)**  
Pittsburgh, PA 15275

**COUNTRY**  
USA

**EMERGENCY TELEPHONE NUMBER**  
CHEM • TEL (800) 255-3924 Outside USA (813) 248-0585

**DISTRIBUTOR'S NAME (Outside the Americas)**  
Thermo Electron Corporation

**ADDRESS (NUMBER, STREET, P.O. BOX)**  
93/96 Chadwick Road, Astmoor

**TELEPHONE NUMBER FOR INFORMATION**  
+44 (0) 1928 562547

**(CITY, STATE AND ZIP CODE)**  
Runcorn, Cheshire WA7 1PR

**COUNTRY**  
United Kingdom

**EMERGENCY TELEPHONE NUMBER**  
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## SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	% (by weight)	CAS #	EINECS #	Hazard Symbol	RISK PHRASES Full Text Section 16
Ethanol	60 - 70	64-17-5	200-578-6	F	R-11
Methyl alcohol (a,b,c)	1 - 5	67-56-1	200-659-6	F, T	R-11, 23/24/25, 39
Methyl isobutyl ketone (a,b,c)	0.5 - 1.5	108-10-1	203-550-1	F, Xn	R-11, 20, 36/37, 66

(a,c) See Section 15

(b) Indicates that the Resource Conservation and Recovery Act (RCRA) has determined the waste for this chemical is listed as hazardous and must be handled according to regulations in 40 CFR 260-281.

## SECTION 3 - HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Flammable liquid. Contains methanol, harmful if swallowed. Product cannot be made non-poisonous. Contact with skin and eyes may cause irritation. Hazard symbols for this product - F, Xn. Risk Phrases - R11, 20/21/22

### POTENTIAL HEALTH EFFECTS

**INHALATION:** High concentrations may cause dizziness, drowsiness, nausea, and vomiting.

**SKIN:** Brief contact may cause slight irritation; no evidence of other adverse effects from available information.

**EYES:** Contact may cause minor irritation.

**INGESTION:** Causes dizziness, drowsiness, decreased reaction, euphoria, nausea, vomiting, staggering gait, and coma. Ingestion of a large quantity of this product will result in methyl alcohol poisoning.

**CARCINOGENICITY**

NTP? No IARC MONOGRAPHS? No OSHA REGULATED? No

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**SECTION 4 - FIRST AID MEASURES**

**INHALATION:** Remove affected person to fresh air; provide oxygen if breathing is difficult; if affected person is not breathing, administer CPR and seek emergency medical attention.

**SKIN:** Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

**EYES:** Remove contact lenses. Flush eyes with clear running water for 15 minutes while holding eyelids open; if irritation persists, seek medical attention.

**INGESTION:** Give two glasses of water for dilution; Induce vomiting by sticking fingers down throat; never give anything by mouth to an unconscious person; seek medical attention.

**SECTION 5 - FIRE FIGHTING MEASURES**

**GENERAL HAZARDS:** Product is flammable. Products of combustion include compounds of carbon, hydrogen and oxygen, including carbon monoxide.

**EXTINGUISHING MEDIA**

Carbon dioxide, water, water fog, dry chemical, chemical foam

**FIRE FIGHTING PROCEDURES**

Self - contained respiratory equipment; cool containers to prevent pressure buildup and possible explosion when exposed to extreme heat. Caution - material is flammable!

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers can explode due to buildup of pressure when exposed to extreme heat. Vapors may cause a flash fire or ignite explosively. Vapors may travel a considerable distance to a source of ignition and flash back.

**HAZARDOUS COMBUSTION PRODUCTS**

Smoke, fumes, oxides of carbon

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** CAUTION - FLAMMABLE - Evacuate and ventilate area; confine and absorb into absorbent; place material into approved containers for disposal; for spills in excess of allowable limits (RQ) notify the National Response Center (800) 424 - 8802; refer to CERCLA 40 CFR 302 and SARA Title III, Section 313 40 CFR 372 for detailed instructions concerning reporting requirements. Do not discharge into lakes, ponds, streams or public waters.

**SECTION 7 - HANDLING AND STORAGE**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Keep container closed when not in use; protect containers from abuse; protect from extreme temperatures. CAUTION - FLAMMABLE - keep away from all sources of ignition. "Empty" containers may contain residue which may form explosive vapors. Do not weld or cut near empty container that has not been professionally reconditioned. Use non-sparking tools when opening and closing containers. Maintain well ventilated work areas to minimize exposure when handling this material.

**SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

HAZARDOUS COMPONENTS	NIOSH				ACGIH			
	TWA ppm	TWA mg/m3	STEL ppm	STEL mg/m3	TWA ppm	TWA mg/m3	STEL ppm	STEL mg/m3
Ethanol	--	--	--	--	1000	1884	--	--
Methyl alcohol (a,b,c)	--	--	--	--	200	262	250	327
Methyl isobutyl ketone (a,b,c)	50	200	75	300	50	200	75	300

**PERSONAL PROTECTION:**

**RESPIRATORY PROTECTION (SPECIFY TYPE):** Not ordinarily required, however, NIOSH approved respirator recommended to prevent overexposure.. Refer to 29 CFR 1910.134 or European Standard EN 149 for complete regulations.

**PROTECTIVE GLOVES:** Recommended for general protection

**EYE PROTECTION:** Protective eyeglasses or chemical safety goggles. Refer to 29 CFR 1910.133 or European Standard EN166.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Safety eyebath nearby

**WORK / HYGIENIC PRACTICES:** Practice safe workplace habits. Minimize body contact with this, as well as all chemicals in general.

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<b>SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES</b>
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APPEARANCE AND ODOR Clear liquid, characteristic alcohol odor	VAPOR PRESSURE 40.4 mm Hg @ 20° C
pH Not applicable	SPECIFIC GRAVITY (WATER = 1) 0.84
BOILING POINT / BOILING RANGE 171° F (77.2° C)	SOLUBILITY IN WATER Complete
FLASH POINT 51° F ( 10.6° C) TCC	VISCOSITY Like that of water
FLAMMABLE LIMITS LEL: 3.3% UEL: 19%	VAPOR DENSITY (AIR = 1) 1.6
AUTOIGNITION TEMPERATURE 793° F (423° C)	EVAPORATION RATE (WATER = 1) < 1

<b>SECTION 10 - STABILITY AND REACTIVITY</b>
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STABILITY UNSTABLE: STABLE: XXX	CONDITIONS TO AVOID: Extreme temperatures, open flames, sparks
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, strong acids	
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Decomposition will not occur if handled and stored properly. In case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.	
HAZARDOUS POLYMERIZATION MAY OCCUR: WILL NOT OCCUR: XXX	CONDITIONS TO AVOID: None

<b>SECTION 11 - TOXICOLOGICAL INFORMATION</b>
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Hazardous Components	CAS # EINECS #	LD50 of Ingredient (Specify Species and Route)	LC50 of Ingredient (Specify Species)
Ethanol	64-17-5 200-578-6	3450 mg / kg Oral - mouse	20,000 ppm / 10H Inhalation - rat
Methyl alcohol (a,b,c)	67-56-1 200-659-6	9100 mg / kg Oral - rat	145,000 ppm / 4H Inhalation - rat
Methyl isobutyl ketone (a,b,c)	108-10-1 203-550-1	2080 mg / kg Oral - rat	4000 ppm / 4H Inhalation - rat

<b>SECTION 12 - ECOLOGICAL INFORMATION</b>
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No data are available on the adverse effects of this material on the environment. Neither COD nor BOD data are available. Based on the chemical composition of this product it is assumed that the mixture can be treated in an acclimatized biological waste treatment plant system in limited quantities. However, such treatment should be evaluated and approved for each specific biological system. None of the ingredients in this mixture are classified as a Marine Pollutant.

<b>SECTION 13 - DISPOSAL CONSIDERATIONS</b>
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WASTE DISPOSAL METHOD: According to the European Waste Catalogue, waste codes are application specific and should be assigned by the user based on the application for which the product is used. Dispose of in accordance with Local, State, and Federal Regulations. This product may produce hazardous vapors or fumes in a closed disposal container creating a dangerous environment. Refer to "40 CFR Protection of Environment Parts 260 - 299" for complete waste disposal regulations. Consult your local, state, or Federal Environmental Protection Agency before disposing of any chemicals. Do not flush to sanitary sewer or waterway.

<b>SECTION 14 - TRANSPORT INFORMATION</b>
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PROPER SHIPPING NAME: Ethyl alcohol mixture DOT HAZARD CLASS / Pack Group: 3 / II REFERENCE: 49 CFR 173.150, .202, .242 UN / NA IDENTIFICATION NUMBER: UN 1170 LABEL: FLAMMABLE LIQUID HAZARD SYMBOLS: F	IATA HAZARD CLASS / Pack Group: 3 / II IMDG HAZARD CLASS: 3 RID/ADR Dangerous Goods Code: 3 (3B) UN TDG Class / Pack Group: 3 / II
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Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, EU, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

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**SECTION 15 - REGULATORY INFORMATION**

**TSCA (USA - Toxic Substance Control Act)**

All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory) or are exempted from listing because a Low Volume Exemption has been granted in accordance with 40 CFR 723.50.

**SARA TITLE III (USA - Superfund Amendments and Reauthorization Act)**

311/312 Hazard Categories  
Immediate health, fire hazard

313 Reportable Ingredients:

(a) A "Yes" in the SARA TITLE III column in Section 2 indicates a toxic chemical subject to annual reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

**CERCLA (USA - Comprehensive Response Compensation and Liability Act)**

(c) The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) has notification requirements for releases or spills to the environment of the Reportable Quantity (RQ for this mixture > 24000 lbs) or greater amounts, according to 40 CFR 302.

**CPR (Canadian Controlled Products Regulations)**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**IDL (Canadian Ingredient Disclosure List)**

Components of this product identified by CAS number and listed on the Canadian Ingredient Disclosure List are shown in Section 2.

**DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List)**

Components of this product identified by CAS number are listed on the DSL or NDSL and may or may not be listed in Section 2 of this document. Only ingredients classified as "hazardous" are listed in Section 2 unless otherwise indicated.

**EINECS (European Inventory of Existing Commercial Chemical Substances)**

Components of this product identified by CAS numbers are on the European Inventory of Existing Commercial Chemical Substances.

WGK Water Quality Index: 1

**RISK PHRASES:**

R11 Highly flammable.  
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed

**SYMBOL(S) REQUIRED FOR LABEL**



**SAFETY PHRASES:**

S7 Keep container tightly closed.  
S16 Keep away from sources of ignition

**SECTION 16 - OTHER INFORMATION**

Notes & full R-Phrase text

R11 Highly flammable.  
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed  
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed  
R36/37 Irritating to eyes and respiratory system  
R39 Danger of very serious irreversible effects.  
R66 Repeated exposure may cause skin dryness or cracking.

HMIS HAZARD RATINGS

HEALTH	1	0 = INSIGNIFICANT	3 = HIGH
FLAMMABILITY	3	1 = SLIGHT	4 = EXTREME
REACTIVITY	0	2 = MODERATE	
PERSONAL PROTECTIVE EQUIPMENT	G	Safety Glasses, Gloves, Vapor Respirator	

**REVISION SUMMARY:**

This MSDS has been revised in the following sections: No revisions available

MSDS Prepared by: Chem-Tel, Inc.  
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The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.