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Material Safety Data Sheet

24 HOUR EMERGENCY TELEPHONE NUMBERS: INFOTRAC 1-800-535-5053

SECTION 1 IDENTIFICATION OF THE SUBSTANCE

PRODUCT NAME: CL-FES Ethanol Cleaner

SECTION 2 HAZARDS IDENTIFICATION

Emergency Overview

Danger	Highly flammable.
State of matter	Liquid colorless
Odor	Alcoholic

Potential environmental effects

Environmental precautions: Should not be released into the environment. Prevent further leakage or spillage if safe to do so.

Potential health effects

Acute effects

Eyes	Causes eye irritation.
Skin	Prolonged or repeated contact may dry skin and cause irritation
Inhalation	May cause respiratory tract irritation
Ingestion	Aspiration hazard if swallowed - can enter lungs and cause damage

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Ethanol; ethyl alcohol	64-17-5	85
Propan-2-ol; isolpropyl; isopropanol	67-63-0	9
Methanol	67-56-1	4
4-methypentan-2-one; isolbutyl methyl ketone	108-10-1	1

SECTION 4 FIRST AID MEASURES

Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.
Ingestion	If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE-FIGHTING MEASURES

Flammability	
Auto ignition temperature	400°C
Explosion limits	**Lower explosion limit:** 4 %(V) **Upper explosion limit:** 20 %(V)
Fire/explosion	Flash back possible over considerable distance
Hazardous combustion products	Carbon oxides
Suitable extinguishing media	Water spray Alcohol-resistant foam Dry chemical Carbon dioxide (CO_2)
Protection measures and instructions	Wear self-contained breathing apparatus and protective suit.
Further information	Cool containers / tanks with water spray.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Keep people away from and upwind of spill/leak. Remove all sources of ignition. Do not breathe vapors or spray mist.
Environmental precautions	Should not be released into the environment. Prevent further leakage or spillage if safe to do so
Methods for cleaning up	Soak up with inert absorbent material and dispose of as hazardous waste.

SECTION 7 HANDLING AND STORAGE

Safe handling advice Provide sufficient air exchange and/or exhaust in work rooms. Wear personal protective equipment. Take precautionary measures against static discharges. Ensure all equipment is electrically grounded before

beginning transfer operations.

Advice on protection against fire and explosion Keep away from heat and sources of ignition. Use explosion-proof equipment

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures Provide sufficient air exchange and/or exhaust in work rooms.

Personal protective equipment

Eyes Safety glasses with side-shields

Skin Protective suit and safety shoes

Inhalation In case of insufficient ventilation, wear suitable respiratory equipment

Hand protection Gloves suitable for permanent contact:

Hygiene measures Wash hands before breaks and immediately after handling the product.

Protective measures Wear suitable protective equipment

Exposure Guidelines

Components Exposure limit(s)

Ethanol

US. ACGIH Threshold Limit Values time weighted average 1,000 ppm
US. NIOSH: Pocket Guide to Chemical Hazards Recommended exposure limit (REL): 1,000 ppm (1,900 mg/m3)
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Permissible exposure limit 1,000 ppm (1,900 mg/m3)
US. OSHA Table Z-1-A (29 CFR 1910.1000) time weighted average 1,000 ppm (1,900 mg/m3)
US. OSHA Table Z-1-A (29 CFR 1910.1000) Short term exposure limit 300 ppm (885 mg/m3)

Isopropyl Alcohol

US. ACGIH Threshold Limit Values time weighted average 200 ppm
US. ACGIH Threshold Limit Values Short term time exposure limit 400 ppm
US. NIOSH: Pocket Guide to Chemical Hazards Recommended exposure limit (REL): 400 ppm (980 mg/m3)
US. NIOSH: Pocket Guide to Chemical Hazards Short term exposure limit (REL): 500 ppm (1,225 mg/m3) US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Permissible exposure limit 400 ppm (980 mg/m3)
US. OSHA Table Z-1-A (29 CFR 1910.1000) time weighted average 400 ppm (980 mg/m3)
US. OSHA Table Z-1-A (29 CFR 1910.1000) Short term exposure limit 500 ppm (1,2255 mg/m3)

Methyl Alcohol

US. ACGIH Threshold Limit Values time weighted average 200 ppm
US. ACGIH Threshold Limit Values Short term time exposure limit 250 ppm
US. NIOSH: Pocket Guide to Chemical Hazards Recommended exposure limit (REL): 200 ppm (260 mg/m3)
US. NIOSH: Pocket Guide to Chemical Hazards Short term exposure limit (REL): 250 ppm (325 mg/m3)

Methyl Isobutyl Ketone

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Permissible exposure limit 100 ppm (410 mg/m3)
US. OSHA Table Z-1-A (29 CFR 1910.1000) time weighted average 50 ppm
US. OSHA Table Z-1-A (29 CFR 1910.1000) Short term exposure limit 750 ppm

PEL= Permissible Exposure Limits
TLV= Threshold Limit Value
EL= Excursion Limit

TW Time Weighted Average (8 hr.)
STEL= Short Term Exposure Limit (15 min.)
WEEL= Workplace Environmental Exposure Level

SECTION 9 Physical and chemical properties

Odor	alcoholic
Form	liquid
Boiling point/boiling range	74-80 °C
Flash point	13 °C
Lower explosion limit	4 %(V)
Upper explosion limit	20 %(V)
Vapor pressure	ca. 66.661 hPa at 25 °C

Solubility	miscible
Viscosity	0.51 mm2/s
Melting point/range	-114 °C
Density	0.79 g/cm3

SECTION 10 STABILITY AND REACTIVITY

Conditions to avoid	Heat, flames and sparks
Hazardous decomposition products	Carbon oxides
Incompatible products	Strong oxidizing agents Incompatible with acids. Halogenated compounds
Hazardous reactions	Hazardous polymerization does not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute oral toxicity	**Ethanol**	LD50 rat: 7,060 mg/kg; literature value
	Methyl Isobutyl Ketone	LD50 rat: 2,080 mg/kg; literature value
	Methanol	LD50 rat: 5,628 mg/kg
Acute inhalation toxicity	**Ethanol**	LC50 rabbit: 66,000 mg/l; literature; 4 h
	Isopropyl alcohol	LC50 rabbit: 16,000 mg/l; literature; 8 h
	Methanol	LC50 rat: 100 g/m3; literature
Acute dermal toxicity	**Ethanol**	LDLo rabbit: 20,000 mg/kg literature value
	Methyl Isobutyl Ketone	LDLo rabbit: 1,600 mg/kg literature value
	Methanol	LDLo rabbit: 15,800 mg/kg literature value
Skin irritation	**Isopropyl alcohol**	rabbit: mild skin irritation; literature value
	Methyl Isobutyl Ketone	rabbit: mild skin irritation; literature value
Eye irritation	**Isopropyl alcohol**	rabbit: moderate eye irritation; literature value
	Methyl Isobutyl Ketone	rabbit: moderate eye irritation; literature value

SECTION 12 DISPOSAL CONSIDERATIONS

Waste Classification US. EPA Resource Conservation and Recovery Act: (RCRA) D List of Characteristic Hazardous Wastes (40 CFR 261.21-24): D001

Waste from residues / unused products In accordance with local and national regulations. .Do not contaminate ponds, waterways or ditches with chemical or used container. The product should not be allowed to enter drains, water courses or the soil.

Uncleaned empty packaging: Do not burn, or use a cutting torch on, the empty drum. Triple rinse containers., Can be offered for recycling, re-conditioning or puncture.

SECTION 13 TRANSPORT INFORMATION

DOT/49CFR	UN 1987 Alcohols, N.O.S. (ethanol, iso-propanol), 3, II
ADR	UN 1987 Alcohols, N.O.S. (ethanol, iso-propanol), 3, II
RID	UN 1987 Alcohols, N.O.S. (ethanol, iso-propanol), 3, II
ADNR	UN 1987 Alcohols, N.O.S. (ethanol, iso-propanol), 3, II
IMDG	UN 1987 Alcohols, N.O.S. (ethanol, iso-propanol), 3, II, EmS F-E, S-D
ICAO/IATA	UN 1987 Alcohols, N.O.S. (ethanol, iso-propanol), 3, II

SECTION 14 REGULATORY INFORMATION

U.S. Federal Classifications:

OSHA Hazards Flammable Liquid, Mild eye irritant, Mild respiratory irritant

SARA 311/312 Fire Hazard, Acute Health Hazard

U.S. Regulated Ingredients:

Hazard information reporting

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313

Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

Components	CAS-No.
Methanol	67-56-1
4-methypentan-2-one; isolbutyl methyl ketone	108-10-1

Inventories

EU list of existing chemical substances	All chemical constituents are listed in: EU list of existing chemical substances
US TSCA Inventory	All chemical constituents are listed in: US TSCA Inventory \
Australian Inv. of Chem. Substances AICS	All chemical constituents are listed in: Australian Inv. of Chem. Substances AICS
Canadian Domestic Substances List DSL	All chemical constituents are listed in: Canadian Domestic Substances List DSL
Jap. Inv. of Exist. & New Chemicals ENCS	All chemical constituents are listed in: Jap. Inv. of Exist. & New Chemicals ENCS
Korean Exist. Chemicals List ECL	All chemical constituents are listed in: Korean Exist. Chemicals List ECL
Philippines Inv. of Chem. Subst. PICCS	All chemical constituents are listed in: Philippines Inv. of Chem.Subst. PICCS
Inv. of Exist. Chem. Substances in China	All chemical constituents are listed in: Inv. of Exist. Chem. Substances in China

Other international regulations

WHMIS Classification	B2: Flammable Liquid	D2B: Toxic Material Causing Other Toxic Effects

SECTION 16 OTHER INFORMATION

Hazard Ratings

	Health	Fire	Reactivity Hazard
HMIS	1	3	0
NFPA	1	3	0

Disclaimer of Liability

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