Coburn Technologies, Inc.
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Safety Data Sheet
LC Cleaner Plus

1. IDENTIFICATION

Synonyms	**none**
CAS#	***see Part 3, below***
Material Use	**cleaner**

IN AN EMERGENCY CALL: INFOTRAC 1-800-535-5053

2. HAZARD IDENTIFICATION

GHS Class	***eye irritant***
(Category)	***(2B)***
Signal Words	***no Signal Word***
	no Pictogram
Hazard Statements	*causes eye irritation (H320)*

GHS Precautionary Statements for Labeling

P262	**Do not get in eyes.**
P264	**Wash thoroughly after handling.**
P270	**Do not eat, drink or smoke when using this product.**

3. COMPOSITION

	CAS NUMBER	%	TLV ppm / mg/m^3	LD_{50} (*mg/kg*) ORAL	LD_{50} (mg/kg) SKIN	LC_{50} ppm INHALATION
Nonionic Surfactant	on request	0-1%	not listed	>2000	not known	not known
Alcohol Ethoxylate, Phosphoric Acid Ester	68921-24-4	0-1%	not listed	3950	not known	not known
d-Limonene	138-86-3	0-1%	not listed	>4400	>5000	not known
Potassium Hydroxide	1310-58-3	0-1%	2mg/m^3	>205	>1260	not known
Glycol Ether DPM	34590-94-8	0-1%	100/605 (skin)	5130	>13,000	above 500
Tetrasodium Ethylenediaminetetraacetic Acid	64-02-8	0-1%	not listed	>1780	>5000	not known
Water	7732-18-5	balance	not toxic	90,000	not toxic	not toxic

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4. FIRST AID

SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.

EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if irritation is present.

INHALATION: Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If victim's breathing stops, administer artificial respiration and seek medical aid promptly.

INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity product. The stomach should only be emptied under medical supervision, after the installation of an airway to protect the lungs.

5. FLAMMABILITY & FIRE-FIGHTING

Flash Point	cannot burn
Autoignition Temperature	cannot burn
Flammable Limits	cannot burn
Combustion Products	carbon monoxide, nitrogen oxides, phosphorous oxides
Firefighting Precautions	as for materials sustaining fire; firefighters must wear SCBA
Static Discharge	cannot accumulate a static charge

6. ACCIDENTAL RELEASE MEASURES

Leak Precaution	dike to control spillage and prevent environmental contamination
Handling Spill	recover free liquid with suitable pumps; neutralize residue carefully with solid sodium bicarbonate; absorb residue on an inert sorbent, sweep, shovel & store in closed containers for disposal

7. HANDLING & STORAGE

No special storage requirements. An eye bath & safety shower should be available near the workplace.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Dipropylene Glycol Methyl Ether:

ACGIH TLV	100ppm / 606mg/m^3	ACGIH STEL	150ppm / 909mg/m^3
OSHA PEL	100ppm / 600mg/m^3	OSHA STEL	150ppm / 900mg/m^3

Potassium Hydroxide:

ACGIH TLV	2mg/m^3	ACGIH STEL	not listed
OSHA PEL	not listed	OSHA STEL	not listed

Ventilation	no special mechanical ventilation required
Hands	wear gauntlet-style neoprene gloves – *other types also protect; always confirm suitability with supplier*
Eyes	safety glasses with side shields or chemical goggles – *always protect eyes!*
Clothing	if splashing is possible, wear a neoprene apron & neoprene boots

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9. PHYSICAL AND CHEMICAL PROPERTIES

Odor & Appearance	slightly hazy, orange liquid with a citrus odor
Odor Threshold	1000ppm (*d-Limonene*)
Vapor Pressure	as for water
Evaporation Rate (*Butyl Acetate = 1*)	not known – *as for water*
Vapor Density (air = 1)	heavier than air
Boiling Point	100°C / 212°F
Freezing Point	below 0°C / 32°F
Specific Gravity	1.005-1.02 (20/20°C)
Water Solubility	complete
Viscosity	not known – *mobile liquid*
pH	6-8

10. REACTIVITY

Dangerously Reactive With	none known
Also Reactive With	none known
Chemical Stability	stable; will not polymerize
Decomposes in Presence of	not known
Decomposition Products	none apart from Hazardous Combustion Products
Mechanical Impact	not sensitive

11. TOXICITY INFORMATION

i. *ACUTE EXPOSURE*

Skin Contact	irritating; corrosive if contact is prolonged
Skin Absorption	yes, slowly; toxic effects unlikely by this route
Eye Contact	severely irritating; probably corrosive if not removed promptly
Inhalation	mist inhalation may irritate the respiratory system – *highly unlikely to occur in normal use*
Ingestion	highly irritating, possibly corrosive, to mouth, throat & stomach – *not a route of industrial exposure*

ii. *CHRONIC EXPOSURE*

General	prolonged or repeated exposure may cause dermatitis *through removal of protective skin oils*
Sensitizing	not a sensitizer
Carcinogen/Tumorigen	not known to be a tumorigen or a carcinogen in humans or animals (***please see NOTE, Part 15***)
Reproductive Effect	no known effect on humans or animals
Mutagen	not known to be a mutagen or teratogen in humans or animals
Synergistic With	not known
Calculated LD_{50} (oral)	7800mg/kg (rat)
Calculated LD_{50} (skin)	81,860mg/kg (rabbit)
LC_{50} (inhalation)	not known – *insufficient data to calculate*

12. ECOLOGICAL INFORMATION

Nonionic Surfactant:

Bioaccumulation	the surfactant does not bioaccumulate; ***however, breakdown product, unethoxylated nonylphenol, is poorly water soluble & may accumulate***
Biodegradation	34% in 20 days to di- & mono-ethoxylate; *these latter compounds resist further biodegradation (below)*
Abiotic Degradation	may react with atmospheric hydroxyl (OH) radicals; low volatility – a minor degradation route
Mobility in soil, water	sufficiently water soluble to move readily through soil and the water column

Aquatic Toxicity

LC_{50} (Fish, 96 hr)	2.1-2.6mg/liter (Pimephelas promelas), 13.9-19.5mg/liter (Poecilia reticulata – 48hr)
LC_{50} (Crustacea, 48hr)	3.8-6.2 & 18.2mg/liter (Daphnia magna), 20.9mg/liter (Gammarus pulex)
EC_{50} (Algae, 96hr)	15mg/liter (Lemna minor), 7mg/liter (Scenedesmus quadricauda)

NOTE: The Nonylphenol Ethoxylate class of compounds biodegrade to estrogenic hormone mimics in the environment & may lead to instances of reproductive failure in shore birds, amphibia & fish. (For further information, see Notes in Part XV, Regulations)

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12. ECOLOGICAL INFORMATION, cont'd

d-Limonene:

Bioaccumulation	probably not a bioaccumulator because it is metabolized by animal tissue
Biodegradation	biodegrades in the presence of oxygen; 48-100% in 2-3 weeks (various studies)
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 40 minutes
Mobility in soil, water	water insoluble; moves slowly in soil and water
Aquatic Toxicity	*d-Limonene is classified as a Marine Pollutant*
LC_{50} (Fish, 96hr)	34mg/liter (Leuciscus idus), 80mg/liter (Oncorhynchus mykiss), 0.7mg/liter (Pimephales promelas)
EC_{50} (Crustacea, 48hr)	0.031 & 0.75mg/liter (Daphnia magna)
NOEC – 96hr (Algæ)	4.1mg/liter ("*green algæ*") – *the algæ are not specifically identified*

Potassium Hydroxide:

Bioaccumulation	not a bioaccumulator
Biodegradation	cannot biodegrade
Abiotic Degradation	dilutes readily in water & neutralizes with dissolved CO_2 & atmospheric CO_2 to potassium carbonate;
Mobility in soil, water	product is water soluble & moves readily in soil and water
Aquatic Toxicity	
LC_{50} (Fish, 96hr)	178mg/liter – *for 45% product* (Gambusia affinis) – *the pH of the test medium is not reported . . .*
EC_{50} (Crustacea, 48hr)	*. . . no other ecotoxicity data available . . .*

Tetrasodium Ethylenediaminetetraacetic Acid:

Bioaccumulation	not a bioaccumulator
Biodegradation	various values reported from 1% in 72dy to 63% in 5dy (*major component CAS# 64-02-8, only*)
Abiotic Degradation	not known
Mobility in soil, water	highly water soluble; expected to bind to soil particles; may move slowly or not at all in soil & water
Aquatic Toxicity	(*for major component, CAS# 64-02-8, only*)
LC_{50} (Fish, 96hr)	41, 159, 486, 532, 1030 & 2070mg/liter (Lepomis macrochirus), 60mg/liter (Pimephelas promelas) & others *tested at 24 and 48 hours*
EC_{50} (Crustacea, 24hr)	610, 625 & 1030mg/liter (Daphnia magna), 4834mg/liter (Crangon crangon, 96hr) *& others*
EC_{50} (Algae)	>100mg/liter (Scenedesmus subspicatus)
EC_{10} (Bacteria)	55mg/liter (Pseudomonas putida), >1000mg/liter (*other bacteria*)
EC_5 (Microbes)	663mg/liter (Chilomonas paramecium)

Alcohol Ethoxylate, Phosphoric Acid Ester:
Canadian Categorization states: not bioaccumulative, not toxic to aquatic life & not persistent.
http://webnet.oecd.org/CCRWEB/ChemicalDetails.aspx?ChemicalID=33cc58b5-329b-4466-814b-5c0ff84043be

EC_{50} (Crustacea, 48hr)	>53mg/liter (Ceriodaphnia dubia)

13. DISPOSAL CONSIDERATIONS

Waste Disposal	**do not flush to sewer**; due to the presence of nonylphenol ethoxylate, waste material should be handled by a hazardous waste specialist
Containers	**Drums** should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. **Pails** must be vented and thoroughly dried prior to crushing and recycling. **IBCs** (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5 years). Steel containers must be inspected, pressure tested & recertified every 5 years. ***Warning: never cut, drill, weld or grind on or near this container, even if empty.***

14. TRANSPORT INFORMATION

USA 49 CFR & Canada/International TDG

Product Identification Number	**UN – not regulated for transport**
Shipping Name	**not regulated for transport**
Classification	**not regulated for transport**
Marine Pollution	***not a marine pollutant***
ERAP Required	***No***

PLEASE ENSURE THAT THIS SDS IS GIVEN TO, AND EXPLAINED TO PEOPLE USING THIS PRODUCT.

EMERGENCY INFORMATION: INFOTRAC 1-800-535-5053

15. REGULATIONS

Canada DSL **on inventory**
U.S.A. TSCA **on inventory**

U.S.A. Regulations:
In the USA, the EPA mounted (*August 18, 2010*) an "action plan" for nonylphenol ethoxylates: See the *Nonylphenol & Nonylphenol Ethoxylates Action Plan Summary*, http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/np-npe.html AND http://www.epa.gov/oppt/existingchemicals/pubs/actionplans/RIN2070-ZA09_NP-NPEs%20Action%20Plan_Final_2010-08-09.pdf

15. REGULATIONS, cont'd

Europe EINECS **all components on inventory** – *but see notes, below:*

It is prohibited to place on the market or use plant protection products containing nonylphenol ethoxylates (C2H4O)nC15H24O compounds because these active substances have not been included in Annex I to Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market (OJ L 230, 19.8.1991, p 1-32) pursuant to Commission Regulation (EC) No 2076/2002 of 20 November 2002 extending the time period referenced in Article 8(2) of Council Directive 91/414/EEC concerning the non-inclusion of certain active substances in Annex I to that Directive and the withdrawal of authorisations for plant protection products containing these substances (OJ L 319, 23.11.2002, p. 3-11).

Furthermore, in accordance with point 46 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration,Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, it is prohibited to place on the market or use nonylphenol ethoxylates (C2H4O)nC15H24O compounds, as substances or in mixtures in concentrations equal to or greater than 0,1 % by weight for several purposes (OJ L 396, 30.12.2006, p. 1-849) pursuant to Commission Regulation (EC) No 552/2009 of 22 June 2009 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards Annex XVII (OJ L 164, 26.6.2009, p. 7-31).

Nonylphenol ethoxylates (C_2H_4O)n$C_{15}H_{24}O$ compounds have therefore been added to Annex I to Regulation (EC) No 689/2008 of the European Parliament and of the Council concerning the export and import of dangerous chemicals (OJ L 204, 31.7.2008, p. 1-35).

European Regulations forbid the use of Nonylphenol Ethoxylates for dispersive uses, but allow their use in applications where there is little or no release to the environment. Read this brief summary from July 1997 (when Europe began to reduce nonylphenol ethoxylate use):
http://md1.csa.com/partners/viewrecord.php?requester=qs&collection=ENV&recid=4243335&q=http%3A%2F%2Fwww.csa.com%2Fpartners%2Fviewrecord.php%3Frequester%3Dqs%26collection%3DENV%26recid%3D4243335&uid=791557892&setcookie=yes

NOTE:	*EDTA (Tetrasodium Ethylenediaminetetraacetic Acid) is an animal carcinogen, but only on prolonged ingestion. Since ingestion is not a route of industrial exposure, this product cannot be classified as a carcinogen.*

16. OTHER INFORMATION

Date of Preparation **June 2015**
Date of Revision **-**
Prepared for Coburn Optical
With data from the Registry of Toxic Effects of Chemical Substances (RTECS), Hazardous Substance Data Base (HSDB), Cheminfo (CCOHS), OSHA, IUCLID Datasheets (European Chemical Substance Information System - ESIS), & others sources (below if used), as required/available

last page of SDS

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EMERGENCY INFORMATION: INFOTRAC 1-800-535-5053