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PROFESSIONAL SUMMIT

Safety Data Sheet
Liquiwash

1. IDENTIFICATION

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

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

2. HAZARD IDENTIFICATION

GHS Class (Category)	***skin irritant (2)***	***eye irritant (2A)***	***chronic aquatic (3)***
Signal Words	***WARNING***	***WARNING***	***no Signal Word* no Pictogram****
Hazard Statements	*causes skin irritation (H315)*	*causes serious eye irritation (H319)*	*harmful to aquatic life with long-lasting effects (H412)*

**This level of hazard does not require either a Pictogram or a Signal Word.*

GHS Precautionary Statements for Labeling

P262	**Do not get in eyes, on skin or on clothing.**
P264	**Wash thoroughly after handling.**
P270	**Do not eat, drink or smoke when using this product.**
P280	**Wear protective gloves and clothing of rubber.**
P273	**Avoid release to the environment.**
P391	**Collect spillage.**
P313 & P333	**If skin irritation or rash occurs, get medical advice/attention.**

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	127087-87-0	5-10%	not listed	>2000	not known	not known
Glycol Ether DPM	34590-94-8	5-10%	100/605 (skin)	5130	>13,000	above 500
Monoethanolamine (MEA)	141-43-5	1-5%	3 / 7.5	620	1025	>1212
Sodium Polyacrylate	9003-04-7	1-5%	not listed	40,000	not toxic	not toxic
Tetrasodium Ethylenediaminetetraacetic Acid	64-02-8	1-5%	not listed	>1780	>5000	not known
Alkylbenzenesulfonic Acid	85536-14-7	1-5%	not listed	above 500	not known	not known
Polyvinyl Pyrrolidone	9003-39-8	<1%	not listed	40,000	>10,000	not known
Optical Brightener (*stilbene derivative*)	not available	<1%	not listed	>10,000	>10,000	not known
Water	7732-18-5	balance	not toxic	90,000	not toxic	not toxic

NOTE: *Several other components are either present at 0.1% or less, or are non-toxic and present at 1% or less.*

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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	oxides of carbon, nitrogen, sulfur, smoke, part oxidized hydrocarbon fragments
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; absorb residue on an inert sorbent, sweep, shovel & store in closed containers for disposal

7. HANDLING & STORAGE

Avoid freezing. No other special storage requirements. Avoid skin contact & wash work clothes frequently. An eye bath should be available near the workplace.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Monoethanolamine:

ACGIH TLV	3ppm / 7.5mg/m^3	ACGIH STEL	6ppm / 15mg/m^3
OSHA PEL	3ppm / 8mg/m^3	OSHA STEL	not listed

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

Ventilation	no special mechanical ventilation required
Hands	natural rubber gloves – *other materials also protect; always confirm suitability with supplier*
Eyes	safety glasses with side shields or chemical goggles – *always protect eyes!*
Clothing	if contact with skin is possible; choose protective clothing as required to prevent contact: eg: apron, boots, long sleeves, hat – all of natural rubber or PVC, and face shield

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9. PHYSICAL AND CHEMICAL PROPERTIES

Odor & Appearance	clear, blue, moderately viscous liquid, may have a very faint amine odor
Odor Threshold	not known – *almost odorless*
Vapor Pressure	as for water
Evaporation Rate (*Butyl Acetate = 1*)	not known – *as for water*
Vapor Density (air = 1)	apart from water (0.6), all other components' vapor is considerably heavier than air
Boiling Point	slightly above 100°C / 212°F
Freezing Point	below 0°C / 32°F
Specific Gravity	1.030-1.042 (20/20°C)
Water Solubility	complete
Viscosity	not known – *moderately viscous liquid*
pH	10-11 – *sufficiently alkaline to irritate skin*

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	high surfactant concentration and alkalinity may be irritating
Skin Absorption	yes, slowly; toxic effects unlikely by this route
Eye Contact	surfactant & alkalinity severely irritating; may damage eyes if not rinsed off promptly
Inhalation	mist inhalation may irritate the respiratory system – *highly unlikely to occur in normal use*
Ingestion	likely to irritate mouth, throat – *not a route of industrial exposure & unlikely in normal use*
Calculated LD_{50} (oral)	7240mg/kg (rat)
Calculated LD_{50} (skin)	30,000mg/kg (rabbit)
LC_{50} (inhalation)	*insufficient data to calculate – unlikely to be toxic by inhalation*

ii. *CHRONIC EXPOSURE*

General	prolonged or repeated exposure may cause dermatitis *through removal of protective skin oils*
Sensitizing	not a sensitizer for most people
Carcinogen/Tumorigen	not known to be a tumorigen or a carcinogen in humans or animals (***see boxed 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

12. ECOLOGICAL INFORMATION

Nonionic Surfactant – nonylphenol ethoxylate NP-9:

Bioaccumulation	the surfactant does not bioaccumulate; ***however, the 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

Dipropylene Glycol Monoethyl Ether:

Bioaccumulation	water soluble – cannot bioaccumulate; *also rapid rate of elimination/metabolism*
Biodegradation	biodegrades readily in the presence of oxygen; 34% in 28 days, 73% in 28 days, 93% in 13 days
Abiotic Degradation	direct photolysis is reported to cause destruction with a ½-life of 3.4 hours
Mobility in soil, water	water soluble; moves readily in soil and water
Aquatic Toxicity	
LC_{50} (Fish, 96hr)	>10,000mg/liter (Pimephales promelas), 150mg/liter (Nothropis atherinoides – 72hr)
LC_{50} (Crustacea, 48hr)	1920mg/liter (Daphnia magna), >1000mg/liter (Crangon crangon – 96hr)
EC_{50} (Algae)	not known
EC_{10} (Bacteria)	4168mg/liter (Pseudomonas putida) – *this is an EC_{10} not an EC_{50}*

Sodium Polyacrylate:

Bioaccumulation	poorly absorbed and water soluble; will not bioaccumulate
Biodegradation	biodegrades slowly & incompletely; rate not known
Abiotic Degradation	not known
Mobility in soil, water	water soluble but, readily precipitated on contact with magnesium or calcium ions in soil or water
Aquatic Toxicity	
LC_{50} (Fish 96 hr)	56,000mg/liter (*species of fish not given*)
LC_{50} (Crustacea, 48hr)	6000mg/liter (Daphnia magna)
EC_{50} (Algae, 72hr)	>100mg/liter (*species not given*)
LC_{50} (Microorganisms)	not known

Monoethanolamine:

Bioaccumulation	highly water soluble & readily metabolized; cannot bioaccumulate
Biodegradation	biodegrades readily with oxygen: 97% in 4 days, 62% & 92% in 28 days, 80% in 19 days, 80-90% in 26 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 11 hours & 27hours (*2 tests*)
Mobility in soil, water	water soluble; mobile in soil & water; but expected to become a cation & adsorb strongly to soil
Aquatic Toxicity	
LC_{50} (Fish, 96hr)	227 & 2070mg/liter (Pimephales promelas); 3680 & 5000mg/liter (Brachydanio rerio), 170 & 190mg/liter (Carassius auratus), 337mg/liter (Gambusia affinis), 330mg/liter (Lepomis macrochirus), 150mg/liter (Oncorhynchus mykiss)
EC_{50} (Crustacea, 48hr)	65mg/liter (Daphnia magna), 120 & 140mg/liter (Daphnia magna, 24hr)
EC_{50} (Algae)	15mg/liter (Scenedesmus subspicatus), 70mg/liter ("*other algae*")
EC_{50} (Bacteria)	110mg/liter (Pseudomonas putida), 13.7mg/liter (Photobacterium phosphoreum)

Tetrasodium Ethylenediaminetetraacetic Acid:

Bioaccumulation	not a bioaccumulator
Biodegradation	various values reported from 1% in 72 days to 63% in 5 days
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	
LC_{50} (Fish, 96hr)	41, 159, 486, 532, 1030 & 2070mg/liter (Lepomis macrochirus), 60mg/liter (Pimephelas promelas) & others
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 (Microorganisms)	663mg/liter (Chilomonas paramecium)

Sodium Alkylbenzene Sulfonic Acid:

Bioaccumulation	does not bioaccumulate[1]
Biodegradation	readily biodegradable; 69% to 90% in 28 days (*various linear benzene sulfonates tested*)[1]
Abiotic Degradation	not known
Mobility in soil, water	water soluble; moves readily in soil and the water column
Aquatic Toxicity	
LC_{50} (Fish, 96 hr)	2.9-13mg/liter (*various species*)[1]
EC_{50} (Crustacea, 48 hr)	1.62mg/liter (Daphnia magna)[1]
EC_{50} (Algae, 72 hr)	29mg/liter (Selenastrum capricornutum)[1]

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12. ECOLOGICAL INFORMATION, cont'd

Polyvinyl Pyrrolidone:

Bioaccumulation	does not bioaccumulate
Biodegradation	biodegrades slowly; 20-30% in 15 days
Abiotic Degradation	not known
Mobility in soil, water	water soluble; moves readily in soil and the water column
Aquatic Toxicity	
LC_{50} (Fish, 96 hr)	10,000mg/liter (Brachydanio rerio)
EC_{50} (Crustacea, 48 hr)	>100mg/liter (Daphnia magna)
EC_{50} (Algae, 72 hr)	>100mg/liter (Selenastrum capricornutum)

Optical Brightener: *no data available*

13. DISPOSAL CONSIDERATIONS

Waste Disposal **do not flush undiluted 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***

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

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 & the Council on the Registration, Evaluation, Authorisation & 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

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15. REGULATIONS, cont'd

NOTE:	*EDTA (Tetrasodium Ethylenediaminetetraacetic Acid) is an animal carcinogen, but only on prolonged ingestion. Ingestion is not a route of industrial exposure, and Liquiwash is aversive in nature (irritating to mouth and throat), Liquiwash cannot be classified as a carcinogen.*

16. OTHER INFORMATION

Date of Preparation **January 2015**
Date of Revision **-**
Prepared for Tomco-Harwel, by **Peter Bursztyn**
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

(1) OECD SIDS Initial Assessment Report on "Linear Alkylbenzene Sulfonates", Paris, April 2005:
http://webnet.oecd.org/hpv/ui/handler.axd?id=5b837fb0-350c-4742-914e-5f6513df120a

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