

PRO-LINE ENGINE FLUSH 500ml

Liqui Moly GmbH

Chemwatch: 48-0004

Version No: 2.1.1.1

Safety Data Sheet

Chemwatch Hazard Alert Code: 2

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S.GHS.CAN.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	PRO-LINE ENGINE FLUSH 500ml
Synonyms	Item No. 2037
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Use according to manufacturer's directions. Cleaner.
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Details of the manufacturer/importer

Registered company name	Liqui Moly GmbH
Address	Jerg-Wieland-Strasse 4 Ulm D-89081 Germany
Telephone	+49 731 1420 0
Fax	+49 731 1420 82
Website	Not Available
Email	Not Available

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	2
Toxicity	2	3
Body Contact	2	3
Reactivity	1	2
Chronic	2	3

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme



CANADIAN WHMIS SYMBOLS



CANADIAN WHMIS CLASSIFICATION

Ingredient	CAS number	Classification Description	Classification Code
naphtha, petroleum, hydrodesulfurised heavy	8032-32-4	Combustible liquid, Flammable Liquid, Toxic Material Causing Other Toxic Effects	B3, B2, D2B

GHS Classification	Flammable Liquid Category 4, Eye Irritation Category 2A, Skin Sensitizer Category 1, STOT - SE (Narcosis) Category 3, Aspiration Hazard Category 1, Chronic Aquatic Hazard Category 4
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Label elements

PRO-LINE ENGINE FLUSH 500ml

GHS label elements



SIGNAL WORD

DANGER

Hazard statement(s)

H227	Combustible liquid
H319	Causes serious eye irritation
H317	May cause an allergic skin reaction
H336	May cause drowsiness or dizziness
H304	May be fatal if swallowed and enters airways
H413	May cause long lasting harmful effects to aquatic life

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use... to extinguish.
P302+P352	IF ON SKIN: Wash with plenty of water and soap

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
8032-32-4	70-95	naphtha, petroleum, hydrodesulfurised heavy
68610-84-4	1-5	calcium alkylaryl sulfonate
90194-27-7		(C10-60)alkylbenzenesulfonic acid, calcium salt
84605-20-9	1-5	polyethylenepolyamines/succinic anhydride/isobutenyl deriv
69011-36-5	1-5	tridecanol, branched, ethoxylated
Not Available	1-2.5	Not Available

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Inhalation	<ul style="list-style-type: none"> If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if

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	<ul style="list-style-type: none"> ▶ necessary. ▶ Transport to hospital, or doctor.
Ingestion	<ul style="list-style-type: none"> ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice. ▶ Avoid giving milk or oils. ▶ Avoid giving alcohol. ▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- ▶ Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- ▶ Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ 50 mm Hg) should be intubated.
- ▶ Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- ▶ A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- ▶ Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- ▶ Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

SECTION 5 FIREFIGHTING MEASURES**Extinguishing media**

	<ul style="list-style-type: none"> ▶ Foam. ▶ Dry chemical powder. ▶ BCF (where regulations permit). ▶ Carbon dioxide.
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Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Combustible. ▶ Slight fire hazard when exposed to heat or flame. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO).

SECTION 6 ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Minor Spills	<ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment.
Major Spills	<p>Moderate hazard.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE**Precautions for safe handling**

Safe handling	<p>62elco</p> <ul style="list-style-type: none"> ▶ Containers, even those that have been emptied, may contain explosive vapours. ▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▶ DO NOT allow clothing wet with material to stay in contact with skin ▶ Electrostatic discharge may be generated during pumping - this may result in fire. ▶ Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Other information	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ No smoking, naked lights or ignition sources. ▶ Store in a cool, dry, well-ventilated area.

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Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Metal can or drum ▶ Packaging as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<ul style="list-style-type: none"> ▶ Avoid reaction with oxidising agents

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	naphtha, petroleum, hydrodesulfurised heavy	Naphtha (coal tar) / Rubber solvent (Naphtha)	1,800 mg/m3 / 400 ppm	2,250 mg/m3 / 500 ppm	Not Available	Not Available
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent	575 mg/m3 / 100 ppm	720 mg/m3 / 150 ppm	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	naphtha, petroleum, hydrodesulfurised heavy	Rubber solvent (Naphtha)	400 ppm	500 ppm	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	naphtha, petroleum, hydrodesulfurised heavy	VM and P Naphtha	300 ppm	375 ppm	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent	100 ppm	125 ppm	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Designated Chemical Substances	naphtha, petroleum, hydrodesulfurised heavy	Mineral oils, untreated and mildly treated	Not Available	Not Available	Not Available	Not Available
Canada - Northwest Territories Occupational Exposure Limits (English)	naphtha, petroleum, hydrodesulfurised heavy	Rubber solvent (naphtha)	1600 mg/m3 / 400 ppm	2000 mg/m3 / 500 ppm	Not Available	Not Available
Canada - Northwest Territories Occupational Exposure Limits (English)	naphtha, petroleum, hydrodesulfurised heavy	VM & P Naphtha	1350 mg/m3 / 300 ppm	1800 mg/m3 / 400 ppm	Not Available	Not Available
Canada - Northwest Territories Occupational Exposure Limits (English)	naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent	575 mg/m3 / 100 ppm	720 mg/m3 / 125 ppm	Not Available	Not Available
Canada - Nova Scotia Occupational Exposure Limits	naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent	100 ppm	Not Available	Not Available	TLV Basis: eye, skin & skidney damage; nausea; central nervous system impairment
Canada - Prince Edward Island Occupational Exposure Limits	naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent	100 ppm	Not Available	Not Available	TLV® Basis: Eye, skin, & kidney dam; nausea; CNS impair
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	naphtha, petroleum, hydrodesulfurised heavy	Petroleum distillates	Not Available	Not Available	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	naphtha, petroleum, hydrodesulfurised heavy	Rubber solvent (Naphtha) / Naphtha	1590 mg/m3 / 400 ppm	Not Available	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	naphtha, petroleum, hydrodesulfurised heavy	VM&P Naphtha	1370 mg/m3 / 300 ppm	Not Available	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent	525 mg/m3 / 100 ppm	Not Available	Not Available	Not Available
Canada - Alberta Occupational Exposure Limits	naphtha, petroleum, hydrodesulfurised heavy	Naphtha (Rubber solvent)	1590 mg/m3 / 400 ppm	Not Available	Not Available	Not Available
Canada - Alberta Occupational Exposure Limits	naphtha, petroleum, hydrodesulfurised heavy	VM & P Naphtha	1400 mg/m3 / 300 ppm	Not Available	Not Available	Not Available
Canada - Alberta Occupational Exposure Limits	naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent	572 mg/m3 / 100 ppm	Not Available	Not Available	Not Available
Canada - British Columbia Occupational Exposure Limits	naphtha, petroleum, hydrodesulfurised heavy	Rubber solvent (Naphtha)	Not Available	Not Available	Not Available	(H) - reciprocal calculation method, see OHS Guideline G5.48-12.

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Canada - British Columbia Occupational Exposure Limits	naphtha, petroleum, hydrodesulfurised heavy	VM & P Naphtha Revised 2009	Not Available	Not Available	Not Available	(H) - reciprocal calculation method, see OHS Guideline G5.48-12.
Canada - British Columbia Occupational Exposure Limits	naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent (mineral spirits)	290 mg/m3 mg/m3	580 mg/m3 mg/m3	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
naphtha, petroleum, hydrodesulfurised heavy	Naphtha, hydrotreated heavy; (Isopar L-rev 2)	171 ppm	171 ppm	570 ppm
naphtha, petroleum, hydrodesulfurised heavy	Solvent naphtha, petroleum, medium aliphatic; (Mineral spirits, naphtha)	0.32 mg/m3	3.5 mg/m3	21 mg/m3
naphtha, petroleum, hydrodesulfurised heavy	Rubber solvent; (Naphtha (petroleum) light aliphatic)	264 ppm	1700 ppm	10000 ppm
naphtha, petroleum, hydrodesulfurised heavy	Petroleum distillates; (Petroleum crude oil)	87.5 ppm	450 ppm	10000 ppm
naphtha, petroleum, hydrodesulfurised heavy	Naphtha (coal tar); (Naphtha [petroleum] light aliphatic; Aliphatic naphtha)	300 ppm	1700 ppm	10000 ppm
naphtha, petroleum, hydrodesulfurised heavy	Petroleum spirits; (VM & P Naphtha, Ligroine, Paint solvent)	75 ppm	400 ppm	400 ppm
naphtha, petroleum, hydrodesulfurised heavy	Stoddard solvent; (Mineral spirits, 85% nonane and 15% trimethyl benzene)	100 ppm	350 ppm	29500 ppm

Ingredient	Original IDLH	Revised IDLH
naphtha, petroleum, hydrodesulfurised heavy	29,500 mg/m3 / 10,000 ppm / 10,000 [LEL] ppm	20,000 mg/m3 / 1,100 [LEL] ppm / 1,000 [LEL] ppm
calcium alkylaryl sulfonate	Not Available	Not Available
(C10-60)alkylbenzenesulfonic acid, calcium salt	Not Available	Not Available
polyethylenepolyamines/succinic anhydride/isobutenyl deriv	Not Available	Not Available
tridecanol, branched, ethoxylated	Not Available	Not Available

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber <p>NOTE:</p> <ul style="list-style-type: none"> The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> Overalls. P.V.C. apron. Barrier cream.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

PRO-LINE ENGINE FLUSH 500ml Not Available

Material	CPI
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* CPI - Chemwatch Performance Index

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
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A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

up to 10 x ES	Air-line*	A-2 P2	A-PAPR-2 P2 ^
up to 20 x ES	-	A-3 P2	-
20+ x ES	-	Air-line**	-

* - Continuous-flow; ** - Continuous-flow or positive pressure demand

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Yellow, brown colour liquid with characteristic odour; not miscible with water.		
Physical state	Liquid	Relative density (Water = 1)	0.81
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	230
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	<7
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	63	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Combustible.	Oxidising properties	Not Available
Upper Explosive Limit (%)	6.1	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	0.6	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution	Not Available
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
Ingestion	Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Accidental ingestion of the material may be damaging to the health of the individual. Ingestion of petroleum hydrocarbons can irritate the pharynx, oesophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.
Skin Contact	Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Open cuts, abraded or irritated skin should not be exposed to this material The material may accentuate any pre-existing dermatitis condition Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Eye	This material can cause eye irritation and damage in some persons.

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Chronic

Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function.

PRO-LINE ENGINE FLUSH 500ml	TOXICITY	IRRITATION
	Not Available	Not Available
naphtha, petroleum, hydrodesulfurised heavy	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1900 mg/kg ^[1]	Not Available
	Inhalation (rat) LC50: >1400 ppm/8H ^[2]	
	Inhalation (rat) LC50: 3400 ppm/4H ^[2]	
calcium alkylaryl sulfonate	TOXICITY	IRRITATION
	dermal (rat) LD50: >5000 mg/kg ^[1]	Not Available
	Oral (rat) LD50: >5000 mg/kg ^[1]	
(C10-60)alkylbenzenesulfonic acid, calcium salt	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Not Available
	Oral (rat) LD50: >2000 mg/kg ^[1]	
polyethylenepolyamines/succinic anhydride/isobutenyl deriv	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[2]	Not Available
	Oral (rat) LD50: >5000 mg/kg ^[2]	
tridecanol, branched, ethoxylated	TOXICITY	IRRITATION
	Oral (rat) LD50: 1080 mg/kg ^[2]	Eye (rabbit): irritant *
		Skin (rabbit): non-irritating *
PRO-LINE ENGINE FLUSH 500ml	TOXICITY	IRRITATION
	Not Available	Not Available

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's msds Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

NAPHTHA, PETROLEUM, HYDRODESULFURISED HEAVY	No significant acute toxicological data identified in literature search.
CALCIUM ALKYLARYL SULFONATE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.
(C10-60)ALKYLBENZENESULFONIC ACID, CALCIUM SALT	for alkaryl sulfonate petroleum additives: Mammalian Toxicology - Acute. Existing data on acute mammalian toxicity indicates a low concern for acute toxicity. Acute oral toxicity: In all but one studies, there were no deaths that could be attributed to treatment with the test material when administered at the limit dose of 2000 or 5000 mg/kg. In some studies, the primary clinical observations were diarrhea and reduced food consumption (without a change in body weight).
POLYETHYLENEPOLYAMINES/SUCCINIC ANHYDRIDE/ISOBUTENYL DERIV	For succinimide dispersants: Animal testing shows that these are of low concern with respect to acute toxicity or mutations. They have not been shown to cause reproductive or developmental toxicity. * HPV Challenge program Final Submission for Succinimide Dispersants December 2006
TRIDECANOL, BRANCHED, ETHOXYLATED	Both laboratory and animal testing has shown that there is no evidence for alcohol ethoxylates (AEs) causing genetic damage, mutations or cancer. No adverse reproductive or developmental effects were observed. * [BASF Canada]

Acute Toxicity	☐	Carcinogenicity	☐
Skin Irritation/Corrosion	☐	Reproductivity	☐
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	☐
Mutagenicity	☐	Aspiration Hazard	✓

Legend: ✓ – Data required to make classification available

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✗ – Data available but does not fill the criteria for classification
 ⓘ – Data Not Available to make classification

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	
	<ul style="list-style-type: none"> Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
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Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	naphtha, petroleum, hydrodesulfurised heavy	Y

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

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.

naphtha, petroleum, hydrodesulfurised heavy(8032-32-4) is found on the following regulatory lists	"Canada Domestic Substances List (DSL)", "Canada - British Columbia Occupational Exposure Limits", "Canada Forensic Identification Services Chemical Carcinogenicity Evaluation - Table 1 - Chemicals Considered for Assessment (French)", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Saskatchewan Occupational Health and Safety Regulations - Designated Chemical Substances", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Canada - Northwest Territories Occupational Exposure Limits (English)", "Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances", "International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft", "Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits", "Canada - Nova Scotia Occupational Exposure Limits", "Canada Categorization decisions for all DSL substances", "Canada Forensic Identification Services Chemical Carcinogenicity Evaluation - Table 1 - Chemicals Considered for Assessment (English)", "Canada - Quebec Permissible Exposure Values for Airborne Contaminants (French)", "Canada - Alberta Occupational Exposure Limits"
calcium alkylaryl sulfonate(68610-84-4) is found on the following regulatory lists	"Canada Domestic Substances List (DSL)", "Canada Categorization decisions for all DSL substances"
(C10-60)alkylbenzenesulfonic acid, calcium salt(90194-27-7) is found on the following	"Canada Domestic Substances List (DSL)", "Canada Categorization decisions for all DSL substances"

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PRO-LINE ENGINE FLUSH 500ml

regulatory lists	
polyethylenepolyamines/succinic anhydride/isobutenyl deriv(84605-20-9) is found on the following regulatory lists	"Canada Domestic Substances List (DSL)", "Canada Categorization decisions for all DSL substances"
tridecanol, branched, ethoxylated(69011-36-5) is found on the following regulatory lists	"Canada Domestic Substances List (DSL)", "Canada Categorization decisions for all DSL substances"

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
naphtha, petroleum, hydrosulfurised heavy	101795-02-2., 1030262-12-4., 121448-83-7., 50813-73-5., 54847-97-1., 61789-95-5., 64741-92-0., 64742-48-9., 64742-82-1., 64742-88-7., 64742-89-8., 8002-05-9., 8030-30-6., 8030-31-7., 8031-06-9., 8031-38-7., 8031-39-8., 8032-32-4., 8052-41-3.

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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