SAFETY DATA SHEET

CO00461
LIMOSOLVE

Preparation Date: 04/Dec/2019 Version: 1

1. IDENTIFICATION

Product identifier

Product Name LIMOSOLVE

Other means of identification

SDS Number CO00461

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Industrial degreaser.

Restricted Uses No information available

Initial Supplier Identifier
Relay Distributing
6005 50th Avenue
Lloydminister, Saskatchewan
S9V 2A4
Telephone: 1-306-825-4322

Emergency telephone number

24 Hour Emergency Phone Number (CANUTEC): 1-888-226-8832 (1-888-CAN-UTEC)

2. HAZARD IDENTIFICATION

Hazardous Classification of the substance or mixture

Flammable liquids	Category 4
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Aspiration toxicity	Category 1

Label elements

Hazard pictograms

Signal Word: Danger

Hazard statements
Combustible liquid
Causes serious eye irritation
May cause an allergic skin reaction
May be fatal if swallowed and enters airways

Precautionary Statements

Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Storage
Store locked up
Store in a well-ventilated place

Disposal
Dispose of contents/container to an approved waste disposal plant

Causes mild skin irritation Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable.

Mixture

Chemical Name	CAS No	Weight-% (W/W)	Synonyms
Distillates (petroleum), Hydrotreated Light	64742-47-8	40 - 70%	Distillates (petroleum), Hydrotreated Light
Butyl Carbitol	112-34-5	15 - 40%	Butyl Carbitol
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched	127087-87-0	5 - 10%	Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched
D-limonene	5989-27-5	1 - 5%	D-limonene
Polyethylene glycol	25322-68-3	0.1 - 1%	Polyethylene glycol
Dinonylphenyl polyoxyethylene	9014-93-1	0.1 - 1%	Dinonylphenyl polyoxyethylene

Notes:
The actual percentage concentration has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice
IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

Inhalation
Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

Ingestion
ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Self-protection of the first aider
Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed:
Prolonged or repeated contact may cause discomfort and local redness. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury. Swallowing larger amounts may cause injury. Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis). Causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of the conjunctiva. High vapor/aerosol concentrations (attainable at elevated temperatures well above ambient) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects.

Indication of any immediate medical attention and special treatment needed:

Note to physicians
Treatment based on sound judgment of physician and individual reactions of patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (e.g. gastric lavage after endotracheal intubation). Exposed person should be observed for 24 - 48 hours for delayed onset of pulmonary edema. First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water fog or fine spray, carbon dioxide, dry chemical, foam. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively. Do not use direct water stream, which will spread fire.

Specific hazards arising from the substance or mixture
Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode. Use water spray to cool fire-exposed containers and structures. Isolate and restrict area access. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Container may rupture from gas generation in a fire situation. Fight fire from a safe distance and from a protected location. Do not direct a solid stream of water or foam into hot, burning pools; this may cause frothing and increase fire intensity. Combustible liquid. This liquid is volatile and gives off invisible vapors. Shut off fuel to fire. This material may produce a floating fire hazard in extreme fire conditions.

Hazardous combustion products
Carbon monoxide. Carbon dioxide. Hazardous decomposition products depend upon temperature, air supply, and the presence of other materials. Hazardous decomposition products may include and are not limited to : aldehydes, ketones, organic acids.

Special protective equipment and precautions for fire-fighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.

Environmental precautions

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up

Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Combustible. For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. DO NOT handle or store near an open flame, heat, or other sources of ignition. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. DO NOT pressurize, cut, heat, or weld containers. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperature possibly resulting in spontaneous combustion.

Conditions for safe storage, including any incompatibilities

Store at ambient temperature. Store in a cool, dry, well ventilated area, away from heat and ignition sources. Place away from incompatible materials. Store in accordance with good industrial practices.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits .

Chemical Name	Alberta OEL	British Columbia OEL	Ontario	Quebec OEL	Exposure Limit - ACGIH	Immediately Dangerous to Life or Health - IDLH
Distillates (petroleum), Hydrotreated Light 64742-47-8	Not available	TWA: 200 mg/m³ Skin	Not available	Not available	Not available	Not available
Butyl Carbitol 112-34-5	Not available	Not available	TWA: 10 ppm	Not available	10 ppm TLV-TWA	Not available
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched 127087-87-0	Not available	Not available	Not available	Not available	Not available	Not available
D-limonene 5989-27-5	Not available	Not available	Not available	Not available	Not available	Not available
Polyethylene glycol 25322-68-3	Not available	Not available	Not available	Not available	Not available	Not available
Dinonylphenyl polyoxyethylene 9014-93-1	Not available	Not available	Not available	Not available	Not available	Not available

Consult local authorities for recommended exposure limits

Appropriate engineering controls

Engineering controls
Electrical and mechanical equipment should be explosion proof. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Individual protection measures, such as personal protective equipment

Eye/face protection
Chemical safety glasses with side shields or splash proof goggles.

Hand protection
Appropriate chemical resistant gloves should be worn. Butyl rubber gloves. Nitrile gloves. Neoprene gloves. Viton gloves. Ethyl Vinyl Alcohol Laminate (EVAL). Polyvinylchloride (PVC) gloves. Polyethylene gloves. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials as well as the instructions/specifications provided by the glove supplier.

Skin and body protection
Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Respiratory protection
If exposure exceeds occupational exposure limits, use an appropriate NIOSH-approved respirator.

General hygiene considerations
Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	Colorless
Odor	Mild petroleum.
Odor threshold	No information available

PROPERTIES	Values	Remarks • Method
pH	No data available	None known
Melting point / freezing point	>-50 °C / >-58 °F	
Initial boiling point/boiling range	> 149 °C / 300 °F	
Flash point	> 62 °C / 144 °F	Estimated
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit:	24.6	
Lower flammability limit:	0.85	
Vapor pressure	No data available	None known
Relative vapor density	No data available	None known
Specific Gravity	0.8560	
Water solubility	Slightly soluble in water.	
Solubility in other solvents	No data available	
Partition coefficient	No data available	
Autoignition temperature	>228 °C / >442 °F	
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available.	
Oxidizing properties	No information available.	

Molecular weight No information available

VOC Percentage Volatility	No information available
Liquid Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity/Chemical Stability
Stable

Possibility of hazardous reactions
No additional remark.

Hazardous polymerization
Will not occur.

Conditions to avoid
Avoid any source of ignition.

Incompatible materials
Strong bases. Strong oxidizing agents. Strong acids. Materials reactive with hydroxyl compounds.

Hazardous decomposition products
Carbon monoxide. Carbon dioxide. Hazardous decomposition products depend upon temperature, air supply, and the presence of other materials. Hazardous decomposition products may include and are not limited to : aldehydes, ketones, organic acids.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
High vapor/aerosol concentrations (attainable at elevated temperatures well above ambient) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects.

Eye contact
Causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of the conjunctiva.

Skin contact
Prolonged or repeated contact may cause discomfort and local redness. Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

Ingestion
Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. Swallowing larger amounts may cause injury.

Information on toxicological effects

Symptoms
Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized. Significant Data with Possible Relevance to Humans: In two-year feeding studies, the 4-mole ethoxylate of nonylphenol (NPE4) at doses of 200 mg/kg/day or 40 mg/kg/day in rats and dogs, respectively, produced no significant effects. The 9-mole ethoxylate (NPE9) at doses of 140 or 30 mg/kg/day in the diet of rats or dogs, respectively, produced no adverse effects. Parameters evaluated included body and organ weights and histopathology of 28 tissues. A dose of 1000

mg/kg/day of NPE9 resulted in reduced body weights and enlarged livers in rats and reduced weight, emesis, and minimal blood changes in dogs. A dose of 88 mg/kg/day NPE9 produced increased liver to body weight ratios in dogs which was attributed to decreased food consumption. Rats fed dietary concentrations of a related alkylphenol ethoxylate, the 40-mole ethoxylate of octylphenol (OPE40), up to 14000 ppm (700 mg/kg/day) for two years showed no adverse effects on growth or survival, feed consumption, hematologic values, urine measurements, organ weights or histopathologic lesions. In animals, effects have been reported on the following organs: Blood. Kidney. Liver. At very high oral doses, this product caused reversible damage to the stomach, liver, and kidney (male only) of rats. These effects are not relevant to humans at occupational levels of exposure.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 5,218.00 mg/kg
ATEmix (dermal) 2,481.00 mg/kg

Unknown acute toxicity No information available

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Distillates (petroleum), Hydrotreated Light 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Butyl Carbitol 112-34-5	= 5660 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	Not available
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched 127087-87-0	= 1310 mg/kg (Rat) = 2590 mg/kg (Rat)	= 1780 µL/kg (Rabbit) = 2 mL/kg (Rabbit)	Not available
D-limonene 5989-27-5	= 4400 mg/kg (Rat) = 5200 mg/kg (Rat) = 5300 mg/kg (Rat)	> 5 g/kg (Rabbit)	Not available
Polyethylene glycol 25322-68-3	= 22 g/kg (Rat) = 28 g/kg (Rat)	> 20 g/kg (Rabbit)	Not available
Dinonylphenyl polyoxyethylene 9014-93-1	Not available	Not available	Not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Prolonged or repeated contact may cause discomfort and local redness. Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

Serious eye damage/eye irritation
Causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of the conjunctiva.

Respiratory or skin sensitization
May cause sensitization by skin contact.

Germ cell mutagenicity
No information available.

Carcinogenicity
Classification based on data available for ingredients.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Distillates (petroleum), Hydrotreated Light 64742-47-8	Not available	Not available	Not available	Not available
Butyl Carbitol 112-34-5	Not available	Not available	Not available	Not available
Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-,branched 127087-87-0	Not available	Not available	Not available	Not available
D-limonene 5989-27-5	Not available	Group 3	Not available	X
Polyethylene glycol 25322-68-3	Not available	Not available	Not available	Not available
Dinonylphenyl polyoxyethylene 9014-93-1	Not available	Not available	Not available	Not available

Legend

IARC (International Agency for Research on Cancer)
Group 2A - Probably Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive toxicity
No information available.

Specific target organ systemic toxicity - single exposure
No information available.

Specific target organ systemic toxicity - repeated exposure
No information available.

Aspiration hazard
May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity
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Chemical Name	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Fish Species Data	Toxicity to microorganisms	Crustacea
Distillates (petroleum), Hydrotreated Light 64742-47-8	Not available	2.2 mg/L LC50 (Lepomis macrochirus) 96 h static 2.4 mg/L LC50 (Oncorhynchus mykiss) 96 h static 45 mg/L LC50 (Pimephales promelas) 96 h flow-through	Not available	LC50: =4720mg/L (96h, Den-dronereides heteropoda)
Butyl Carbitol 112-34-5	100 mg/L EC50 Desmodesmus subspicatus 96 h	1300 mg/L LC50 (Lepomis macrochirus) 96 h static	Not available	EC50: =2850mg/L (24h, Daphnia magna) EC50: >100mg/L (48h, Daphnia magna)
Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-,branched 127087-87-0	Not available	Not available	Not available	Not available
D-limonene	Not available	0.619 - 0.796 mg/L LC50	Not available	Not available

5989-27-5		(Pimephales promelas) 96 h flow-through 35 mg/L LC50 (Oncorhynchus mykiss) 96 h		
Polyethylene glycol 25322-68-3	Not available	5000 mg/L LC50 (Carassius auratus) 24 h	Not available	Not available
Dinonylphenyl polyoxyethylene 9014-93-1	Not available	Not available	Not available	Not available

Persistence and degradability No information available.

Bioaccumulation No information available.

Chemical Name	Partition coefficient
Distillates (petroleum), Hydrotreated Light 64742-47-8	Not available
Butyl Carbitol 112-34-5	Not available
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched 127087-87-0	Not available
D-limonene 5989-27-5	Not available
Polyethylene glycol 25322-68-3	Not available
Dinonylphenyl polyoxyethylene 9014-93-1	Not available

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Do not reuse empty containers.

14. TRANSPORT INFORMATION

TDG (Canada):

UN Number Not applicable
Shipping name Not regulated
Class Not applicable
Packing Group Not applicable
Marine pollutant Not available.

DOT (U.S.)

UN Number UN1268
Shipping name PETROLEUM DISTILLATES, N.O.S.
Class COMBUSTIBLE LIQUID
Packing Group III

Marine pollutant Not available

15. REGULATORY INFORMATION

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

U.S. Regulatory Rules

Chemical Name	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Distillates (petroleum), Hydrotreated Light - 64742-47-8	Not Listed	Not Listed	Not Listed
Butyl Carbitol - 112-34-5	Not Listed	Not Listed	Listed
Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy-,branched - 127087-87-0	Not Listed	Not Listed	Listed
D-limonene - 5989-27-5	Not Listed	Not Listed	Not Listed
Polyethylene glycol - 25322-68-3	Not Listed	Not Listed	Not Listed
Dinonylphenyl polyoxyethylene - 9014-93-1	Not Listed	Not Listed	Not Listed

International Inventories

TSCA All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

DSL/NDSL All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

16. OTHER INFORMATION

NFPA:	**Health hazards** 2	**Flammability** 2	**Instability** 0	**Physical and chemical properties** -
HMIS:	**Health hazards** 2 *	**Flammability** 2	**Physical hazards** 0	**Personal protection** X

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Prepared By: The Environment, Health and Safety Department of Relay Distributing.

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Revision Date: 04/Dec/2019

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End of Safety Data Sheet