

# Safety Data Sheet

## LIMOF



# AEROCHEM

### 1. Identification

<b>Product identifier</b>	LIMOF
<b>Product code</b>	FLLIMOF20LT ; FLLIMOF205LT
<b>Other means of identification</b>	N.Av.
<b>Recommended use of the chemical and restrictions on use</b>	Lime, scale, tartar and stain remover. Not recommended for any other use not detailed on product data sheet or label.
<b>Manufacturer</b>	AEROCHEM Inc. 5977 Trans Canada Highway Pointe-Claire, QC H9R 1C1 Canada  General Information: 1-888-592-5837  <a href="http://www.aerochem.ca">www.aerochem.ca</a> <a href="mailto:info@aerochem.ca">info@aerochem.ca</a>
<b>Emergency phone number</b>	INFOTRAC®: 1-800-535-5053 International call collect: 1-352-323-3500 24 hours/day, 7 days/week

### 2. Hazard identification

<b>Summary</b>	Avoid all contact with the skin, eyes and clothing. Do not breathe vapours, mists or aerosols. Do not ingest. If medical advice is needed, have this SDS or label at hand. Wear eye protection, gloves and other protective clothing that are adapted to the task being performed and the risks involved.
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#### WHMIS 2015/GHS/OSHA HCS 2012



Acute toxicity, inhalation (Category 4)  
Skin corrosion/irritation (Category 1)  
Serious eye damage/eye irritation (Category 1)  
Health hazards not otherwise classified (HHNOC)

#### DANGER

H314: Causes severe skin burns and eye damage

H3xx: May cause burns and serious injury to the respiratory tract

H332: Harmful if inhaled

P260: Do not breathe vapours and spray.

P264: Wash face, hands and any exposed skin thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves, protective clothing and eye protection.

P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+361+353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water and soap or take a shower if necessary.

P363: Wash contaminated clothing before reuse.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER or a doctor.

P403+233: Store in a well ventilated place. Keep container tightly closed.

P405: Store locked up.

P501: Dispose of contents and container to a licensed chemical disposal agency in accordance with local, regional and national regulations.

### 3. Composition/information on ingredients

Common name	CAS	Weight % content
Phosphoric acid	7664-38-2	30 - 60 %
2-Butoxyethanol	111-76-2	10 - 30 %
Polyethylene glycol mono(branched p-nonylphenyl) ether	127087-87-0	1 - 5 %

**Note:** The manufacturer withholds the actual concentration range of the ingredients as a trade secret.

### 4. First-aid measures

<b>Inhalation</b>	Move person to fresh air. If breathing is difficult, give oxygen by trained personnel. If not breathing, give artificial respiration. If a problem develops or persists, seek medical attention.
<b>Skin contact</b>	Flush with water for at least 15 minutes. Remove contaminated clothing and wash before reuse. If a problem develops or persists, seek medical attention.
<b>Eye contact</b>	IMMEDIATELY flush with plenty of water. Remove contact lenses if easy to do. Flush with water for at least 20 minutes. Hold eyelids apart to rinse properly. Seek medical attention immediately. Have an ophthalmologist make an evaluation of eye injury.
<b>Ingestion</b>	DO NOT induce vomiting, unless recommended by medical personnel. Never give anything by mouth if victim is unconscious or convulsing. If victim is conscious wash out mouth with water and give 1-2 glasses of water to drink. If spontaneous vomiting occurs, keep head below hip level to prevent aspiration into the lungs. Seek medical attention or contact a Poison Centre immediately.
<b>Other</b>	No information available.
<b>Symptoms</b>	May cause severe eye irritation or eye damage. May cause skin irritation and burns. May cause irritation and burns to the respiratory tract.
<b>Notes to the physician</b>	Treat according to person's condition and specifics of exposure. If gastric lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Dry chemicals, water spray, chemical foam, carbon dioxide (CO <sub>2</sub> ). Do not use a heavy water jet.
<b>Specific hazards arising from the chemical</b>	Emits toxic and corrosive fumes under fire conditions.
<b>Special protective equipment</b>	Firefighters must wear self contained breathing apparatus with full face mask. Firefighting suit may not be efficient against chemicals.
<b>Special protective actions for fire-fighters</b>	Use water spray to cool fire-exposed containers. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Do not touch damaged containers or spilled material. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet.
<b>Environmental precautions</b>	Prevent product from entering drains and release to the environment. For a large spill, consult the Department of Environment or the relevant authorities.
<b>Methods and materials for containment and cleaning up</b>	Ventilate the area well. Stop leak, if it's possible to do so without risk. Absorb with inert material (soil, sand, vermiculite) and place in an appropriate waste disposal clearly identified. Finish cleaning by rinsing with water contaminated surface. Dispose via a licensed waste disposal contractor.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Use only in well ventilated area. Avoid all contact with the skin, eyes and clothing. Do not breathe vapours, mists or aerosols. Wear eye protection, gloves, respiratory protection and other protective clothing that are adapted to the task being performed and the risks involved. Never add water directly in this product. Add this product instead in small quantities to stirring water to avoid splashing. Do not spray or aerosolize the undiluted form of the product. Full personal protective equipment (including skin covering and full-face SCBA respirator) is required for dilutions or mixtures of the product used in a spray application. Keep containers tightly closed when not in use. Do not eat, do not drink and do not smoke during use. After use, wash hands with soap and water. Wash contaminated clothing before reuse.
<b>Conditions for safe storage, including any incompatibilities</b>	Store tightly closed and in properly labelled containers in a cool, dry and well ventilated place. Store away from bases and incompatible materials (see section 10). Keep away from direct sunlight and heat. Keep away from freezing.
<b>Storage temperature</b>	10 to 40°C (50 to 104°F)

## 8. Exposure controls/personal protection

<b>Immediately Dangerous to Life or Health</b>	Phosphoric acid: 1000 mg/m <sup>3</sup> . 2-Butoxyethanol: 700 ppm.		
Phosphoric acid	STEL TWA (8h)	3 mg/m <sup>3</sup> 1 mg/m <sup>3</sup>	ACGIH , BC, ON, RSST ACGIH , BC, ON, RSST
2-Butoxyethanol	TWA (8h)	20 ppm 20 ppm	ACGIH , BC, ON RSST
<b>Appropriate engineering controls</b>	Provide sufficient mechanical ventilation (general or local exhaust) to keep the airborne concentrations of vapours, mists, aerosols or dust below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation.		
<b>Individual protection measures</b>			
<b>Eye</b>	Wear chemical splash goggles. Wear a face shield.		
<b>Hands</b>	Chemical-resistant, impervious gloves should be worn at all times when handling this chemical product. Wear nitrile or neoprene gloves. Before using, user should confirm impermeability. Discard gloves with tears, pinholes, or signs of wear. Gloves must only be worn on clean hands. Wash gloves with water before removing them. After using gloves, hands should be washed and dried thoroughly.		
<b>Skin</b>	Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Wear appropriate chemical impervious clothing. Wear an apron or long-sleeve protective coverall suit.		
<b>Respiratory</b>			

Respiratory protection is not required for normal use. Where the conditions in the workplace require a respirator, it is necessary to follow a respiratory protection program. Moreover, respiratory protection equipment (RPE) must be selected, fitted, maintained and inspected in accordance with regulations and standard 29 CFR 1910.134 (OSHA), ANSI Z88.2 or CSA Z 94.11 (Canada) and approved by NIOSH/MSHA. In case of insufficient ventilation or in enclosed area wear half mask respirator or a full face respirator mask with acidic vapors and organic vapors cartridges and P100 filters.

**Feet**

Wear rubber boots as needed.



Apron



Goggles



Face shield



Nitrile gloves

## 9. Physical and chemical properties

<b>Physical state</b>	Liquid	<b>Flammability</b>	Non-flammable
<b>Colour</b>	Colourless	<b>Flammability limits</b>	N/Av.
<b>Odour</b>	Odourless	<b>Flash point</b>	N/Av.
<b>Odour threshold</b>	N/Av.	<b>Auto-ignition temperature</b>	N/Av.
<b>pH</b>	<1.5	<b>Sensibility to electrostatic charges</b>	N/Av.
<b>Melting point</b>	N/Av.	<b>Sensibility to sparks and/or friction</b>	N.Det.
<b>Freezing point</b>	N/Av.	<b>Vapour density</b>	<1 (Air = 1)
<b>Boiling point</b>	100°C (212°F)	<b>Relative density</b>	1.27 kg/L (Water = 1)
<b>Solubility</b>	Fully soluble in water.	<b>Partition coefficient n-octanol/water</b>	N/Av.
<b>Evaporation rate</b>	< Butyl Acetate	<b>Decomposition temperature</b>	N/Av.
<b>Vapour pressure</b>	N/Av.	<b>Viscosity</b>	N/Av.
<b>Percent Volatile</b>	73%	<b>Molecular mass</b>	N/Av.

N/Av.: Not Available

N/Av.: Not Available

Und.: Undetermined

N/E: Not Established

## 10. Stability and reactivity

<b>Reactivity</b>	Violent reaction with bases. Corrosive for metals.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions (including polymerizations)</b>	Hazardous polymerization will not occur.
<b>Conditions to avoid</b>	Avoid contact with incompatible materials.
<b>Incompatible materials</b>	Strong bases (e.g. hydroxides, solutions of ammonia, amines, carbonates), strong reducing agents, strong oxidants.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. Toxicological information


<b>Numerical measures of toxicity</b>	<p>Phosphoric acid</p> <p>Ingestion 1530 mg/kg Rat LD50 Inhalation &gt;0.42 mg/l/4h Rat LC50 Skin 2740 mg/kg Rabbit LD50</p> <p>2-Butoxyethanol</p> <p>Ingestion 560 mg/kg Rat LD50 1414 mg/kg Guinea pig LD50 Inhalation 2.21 mg/l/4h Rat LC50 Skin 400 mg/kg Rabbit LD50 &gt;2000 mg/kg Rat LD50 &gt;2000 mg/kg Guinea pig LD50</p> <p>Polyethylene glycol mono(branched p-nonylphenyl) ether</p> <p>Ingestion &gt;2000 mg/kg Rat LD50 Inhalation 1.15 mg/l/4h Rat LC50 Skin 2573 mg/kg Rabbit LD50</p>
<b>Likely routes of exposure</b>	<p>Skin, eyes, inhalation, ingestion.</p>
<b>Delayed, immediate and chronic effects</b>	<p><b>Eye contact</b> May cause burns and damages to eyes. The product is considered to be corrosive based on the pH (&lt;1.5) of the solution.</p> <p><b>Skin contact</b> May cause skin irritation and burns. The product is considered to be corrosive based on the pH (&lt;1.5) of the solution.</p> <p><b>Inhalation</b> May cause irritation and burns to the respiratory tract. The severity of symptoms may vary depending on exposure conditions.</p> <p><b>Ingestion</b> May cause gastro-intestinal irritation and burns to mouth, throat and stomach.</p> <p><b>IARC/NTP Classification</b> No ingredients listed.</p> <p><b>Carcinogenicity</b> Ingredients present at levels greater than or equal to 0.1% of this product are not listed as a carcinogen by IARC, ACGIH, NIOSH, NTP or OSHA.</p> <p><b>Mutagenicity</b> Ingredients in this product present at levels greater than or equal to 0.1% are not known to cause mutagenic effects.</p> <p><b>Reproductive toxicity</b> Ingredients in this product present at levels greater than or equal to 0.1% are not known to cause reproduction effects.</p> <p><b>Specific target organ toxicity - single exposure</b> Respiratory system.</p> <p><b>Specific target organ toxicity - repeated exposure</b> No target organ is listed.</p>
<b>Interactive effects</b>	<p>No information available.</p>
<b>Other information</b>	<p>The oral and skin acute toxicity estimates (ATE) of the mixture were calculated to be greater than 2000 mg/kg. These values are not classified according to WHMIS 2015 and OSHA HCS 2012. The acute toxicity estimate (ATE) by inhalation (mists/aerosols) of the mixture was calculated to be greater than 1 mg/L/4h but lower than 5 mg/L/4h. This value is classified according to GHS: Acute toxicity, inhalation (Category 4).</p>

## 12. Ecological information


<b>Ecological toxicity</b>	<p>Fish - Oncorhynchus mykiss - Rainbow trout LC50 1474 mg/L; 96 h (CAS no 111-76-2)</p> <p>Aquatic invertebrates - Daphnia magna EC50 1550 mg/L; 48 h (CAS no 111-76-2)</p> <p>Algae, Pseudokirchneriella subcapitata EC50 1840 mg/L; 72 h (CAS no 111-76-2)</p> <p>Fish - Pimephales promelas (fathead minnow) LC50 1.2-9.3 mg/L; 96h (CAS no 127087-87-0)</p> <p>Aquatic Invertebrate - Daphnia magna (Water flea) EC50 9.3-21.4 mg/L; 48h (CAS no 127087-87-0)</p>
<b>Persistence</b>	<p>Not persistent in environment.</p>

<b>Degradability</b>	The product is a mixture whose ingredients are readily biodegradable (> 60% in 28 days).
<b>Bioaccumulative potential</b>	The product is a mixture of which all ingredients have a low bioaccumulation potential (Log Kow of <3 and / or BCF <500).
<b>Mobility in soil</b>	The product is a mixture of which some ingredients have a high mobility in the soil, while other ingredients have a moderate mobility in the soil.
<b>Other adverse effects</b>	This chemical does not deplete the ozone layer. The observed ecological toxicity presented by this product for the environment was considered a result of pH effects.

### 13. Disposal considerations

<b>Container</b> 	Important! Prevent waste generation. Use in full. DO NOT dispose residue in sewers, streams or drinking water supply. Dispose residues as a hazardous waste. Empty containers can be treated (recycled) where there is a recovery program. Dispose via a licensed waste disposal contractor. Observe all federal, state/provincial and municipal regulations. If necessary consult the Department of Environment or the relevant authorities.
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### 14. Transport information

<b>UN Number</b>	UN 3264
<b>UN Proper Shipping Name</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (phosphoric acid)
<b>Environmental hazards</b>	This material does not contain marine pollutant.
<b>Special precautions for user</b>	Permit required for transportation with proper DANGER placards displayed on vehicle. Exemption available: LTD QTY according to TDG Canada - art. 1.17; Mode of transportation: rail, sea and road, applicable for Canadian domestic shipments. Quantitative limits: applicable for domestic containers (plastic bottles, glass or metal) containing =< 5 L each.
<b>TDG - Transportation of Dangerous Goods (Canada)</b>	
<b>Transport hazard class(es)</b>	 Class 8
<b>Packing group</b>	III
<b>Emergency response guidebook 2016</b>	<u>154</u>
<b>IMO/IMDG - International Maritime Transport</b>	
<b>Classification</b>	UN 3264. CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (phosphoric acid). Class 8, PG III. Emergency schedules (EmS-No) F-A, S-B
<b>IATA - International Air Transport Association</b>	
<b>Classification</b>	UN 3264. CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (phosphoric acid). Class 8, PG III.
These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. In addition, if a domestic exemption exists, it is the responsibility of the shipper to define the application of it.	

## 15. Regulatory information

### CANADA

Common name	CAS	CEPA	DSL	NDSL	NPRI
Phosphoric acid	7664-38-2		X		
2-Butoxyethanol	111-76-2	X	X		X
Polyethylene glycol mono(branched p-nonylphenyl) ether	127087-87-0	X	X		X

- CEPA: List of Toxic Substances Managed Under Canadian Environmental Protection Act

- DSL: Domestic Substances List Inventory

- NDSL: Non-Domestic Substances List Inventory

- NPRI: National Pollutant Release Inventory Substances

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### UNITED STATE OF AMERICA

Common name	CAS	TSCA	CER CLA	EPCRA 313	EPCRA 302/304	CAA 112(b) HON	CAA 112(b) HAP	CAA 112(r)	CWA 311	CWA Prio.
Phosphoric acid	7664-38-2	X	X	X						
2-Butoxyethanol	111-76-2	X								
Polyethylene glycol mono(branched p-nonylphenyl) ether	127087-87-0	X								

- TSCA: Toxic Substance Control Act

- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act list of hazardous substances

- EPCRA 313: Emergency Planning and Community Right-to-Know Act, Section 313 Toxic Chemicals

- EPCRA 302/304: Emergency Planning and Community Right-to-Know Act, Section 302/304 Extremely Hazardous Substances

- CAA 112(b) HON: Clean Air Act - Hazardous Organic National Emission Standard for Hazardous Air Pollutant

- CAA 112(b) HAP: Clean Air Act - Hazardous Air Pollutants lists pollutants

- CAA 112(r): Clean Air Act - Regulated Chemicals for Accidental Release Prevention

- CWA 311: Clean Water Act - List of Hazardous Substances

- CWA Priority: Clean Water Act - Priority Pollutant list

### California Proposition 65

No ingredients listed.

### Other regulations

**HMIS**

3	Health
1	Flamability
0	Reactivity

(X) Protective Equipment

**NFPA**

3	1
0	0

## 16. Other information

<b>Date</b> (YYYY-MM-DD)	AEROCHEM Inc. 2020-03-03
<b>Version</b>	03
<b>Other information</b>	<p>REFERENCES:</p> <ul style="list-style-type: none"> <li>- Haz-Map, Information on Hazardous Chemicals and Occupational Diseases, <a href="https://haz-map.com/">https://haz-map.com/</a></li> <li>- Service du répertoire toxicologique de la Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST), <a href="http://www.reptox.csst.qc.ca">http://www.reptox.csst.qc.ca</a></li> <li>- The National Center for Biotechnology Information, National Institutes of Health (NIH), U.S. National</li> </ul>

Library of Medicine, <https://pubchem.ncbi.nlm.nih.gov/>

DATE OF FIRST VERSION OF SDS:

2017-09-25.

CHANGES MADE IN THE VERSION 02:

section 3.

DATE OF SECOND VERSION OF SDS:

2019-07-31.

CHANGES MADE IN THE VERSION 03:

section 1.

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

HMIS: Hazardous Materials Identification System

NFPA: National Fire Protection Association

OSHA: Occupational Safety and Health Administration (USA)

NIOSH: National Institute for Occupational Safety and Health

NTP: National Toxicology Program

RSST: Règlement sur la santé et la sécurité du travail (Québec)

GHS: Globally Harmonized System

IARC: International Agency for Research on Cancer

IDLH: Immediately Dangerous to Life or Health

STEL: Short Term Exposure Limit (15 min)

TWA: Time Weighted Averages

WHMIS: Workplace Hazardous Materials Information System

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prevention

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