

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name LUBRHOPHOS LB-400

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance / Mixture****Industry sector**

- Manufacture of chemical products

Specific use(s)

- Additive for lubricants
- Emulsifier

1.3 Details of the supplier of the safety data sheet**Company**

CYTEC CANADA INC.
9061 Garner Road, Niagara Falls,
Ontario, Canada L2H 0Y2
Tel: +1-905-356-9000

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): +1-800-424-9300 within the United States and Canada, or +1-703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although WHMIS has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects

2.1 Classification of the substance or mixture**Hazardous Products Regulations (WHMIS 2015)**

Skin irritation, Category 2
Serious eye damage, Category 1

H315: Causes skin irritation.
H318: Causes serious eye damage.

2.2 Label elements**Hazardous Products Regulations (WHMIS 2015)****Pictogram****Signal Word**

- Danger

Hazard Statements

- H315 Causes skin irritation.

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- H318 Causes serious eye damage.

Precautionary StatementsPrevention

- P264 Wash skin thoroughly after handling.
- P280 Wear protective gloves/ eye protection/ face protection.

Response

- P302 + P352 IF ON SKIN: Wash with plenty of water.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P332 + P313 If skin irritation occurs: Get medical advice/ attention.
- P362 + P364 Take off contaminated clothing and wash it before reuse.

2.3 Other hazards which do not result in classification

- H412: Harmful to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients**3.1 Substance**

- Chemical nature POLYOXYETHYLENE OLEYL ETHER PHOSPHATE

WHMIS Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [% wt/wt or V/V]
Polyethylene Glycol Monooleyl Ether Phosphate	39464-69-2	>= 80 - < 90
Polyethylene Glycol Monooleyl Ether	9004-98-2	>= 5 - < 10
Phosphoric acid	7664-38-2	>= 1 - < 5

WHMIS Non Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [% wt/wt or V/V]
Water	7732-18-5	< 2

3.2 Mixture

Not applicable, this product is a substance.

SECTION 4: First aid measures**4.1 Description of first-aid measures****General advice**

- First responder needs to protect himself.
- Show this material safety data sheet to the doctor in attendance.
- Place affected apparel in a sealed bag for subsequent decontamination.
- When symptoms persist or in all cases of doubt seek medical advice.

In case of inhalation

- Move to fresh air.
- Keep at rest.

- Consult a physician if necessary.

In case of skin contact

- Take off contaminated clothing and shoes immediately.
- Wash off immediately with soap and plenty of water.
- Use a mild soap if available.
- If skin irritation occurs, seek medical advice/attention.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids.
- Take victim immediately to hospital.
- Continue rinsing eyes during transport to hospital.

In case of ingestion

- Do not induce vomiting without medical advice.
- Rinse mouth with water.
- Do not give anything to drink.
- Keep at rest.
- Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

- no data available

4.3 Indication of any immediate medical attention and special treatment needed**Notes to physician**

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

- Extinguishing media - small fires
- Water spray
- Multipurpose powders
- Carbon dioxide (CO₂)
- Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)
- Extinguishing media - large fires
- Water spray
- Multipurpose powders
- Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)

Unsuitable extinguishing media

- Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture**Specific hazards during fire fighting**

- In the presence of water, forms corrosive solutions.

- The pressure in sealed containers can increase under the influence of heat.
- Combustible. However, does not present any particular risk in the event of a fire.
- Hazardous decomposition products formed under fire conditions.
- High concentrations of toxic or harmful products may remain in the residual liquid once the fire has been extinguished.

Hazardous combustion products:

- Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
- Oxides of phosphorus

5.3 Advice for firefighters**Special protective equipment for fire-fighters**

- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.
- Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Specific fire fighting methods

- Stay upwind.
- Fight fire with normal precautions from a reasonable distance.
- Do not use a solid water stream as it may scatter and spread fire.
- Cool down the containers / equipment exposed to heat with a water spray. Ensure that there is NO direct contact between the water and the product.
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information

- Evacuate personnel to safe areas.
- Intervention only by capable personnel who are trained and aware of the hazards of the product.
- Never approach containers which have been exposed to fire, without cooling them sufficiently.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Avoid inhalation, ingestion and contact with skin and eyes.
- Wear chemical resistant personal protective equipment
- Wear suitable gloves.
- Wear suitable protective clothing.
- Wear as appropriate:
 - Face-shield
 - Tightly fitting safety goggles
- In the case of dust or aerosol formation use respirator with an approved filter.
- In the case of vapor formation use a respirator with an approved filter.
- Stop leak if safe to do so.

- For further information refer to section 8 "Exposure controls / personal protection."

6.2 Environmental precautions

- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
- Prevent further leakage or spillage if safe to do so.
- Contain the spilled material by diking.
- The product should not be allowed to enter drains, water courses or the soil.

6.3 Methods and materials for containment and cleaning up

- Stop leak if safe to do so.
- Dam up with sand or inert earth (do not use combustible materials).
- Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).
- Shovel or sweep up.
- Keep in suitable, closed containers for disposal.
- Never return spills in original containers for re-use.
- Wash with plenty of water and detergent.
- Clean contaminated surface thoroughly.
- Recover the cleaning water for subsequent disposal.
- Decontaminate tools, equipment and personal protective equipment in a segregated area.
- Dispose of in accordance with local regulations.

Additional advice

- Material can create slippery conditions.

6.4 Reference to other sections

- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Handle in accordance with good industrial hygiene and safety practice.
- Wear personal protective equipment.
- Wear suitable protective clothing.
- Avoid inhalation, ingestion and contact with skin and eyes.
- Avoid splashes.
- Avoid formation of aerosol.
- Ethylene oxide may collect in container head space.
- Provide adequate ventilation.
- For personal protection see section 8.

Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
- The user is responsible for monitoring the working environment in accordance with local laws and regulations.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

- Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
- Keep containers tightly closed in a dry, cool and well-ventilated place.
- Keep away from open flames, hot surfaces and sources of ignition.
- Keep away from incompatible materials to be indicated by the manufacturer
- Keep away from: Strong bases, Strong oxidizing agents, Strong reducing agents., Hazardous reactions may occur on contact with certain chemicals. (Refer to the list of incompatible materials section 10: "Stability-Reactivity").

Packaging material**Suitable material**

- Plastic materials.

Remarks

- Store in original container.

7.3 Specific end use(s)

- no data available

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters**Components with workplace occupational exposure limits**

Consult local authorities for acceptable exposure limits.

Components	Value type	Value	Basis
Phosphoric acid	TWA	1 mg/m ³	American Conference of Governmental Industrial Hygienists
Phosphoric acid	STEL	3 mg/m ³	American Conference of Governmental Industrial Hygienists

8.2 Exposure controls

Control measures

Engineering measures

- Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures :
- Effective exhaust ventilation system
- Ensure adequate ventilation.
- Extract at emission point.
- Ensure that extracted air cannot be returned to the workplace through the ventilation system.
- Avoid splashes.
- Avoid formation of aerosol.

Individual protection measures

Respiratory protection

- Recommended Filter type: Combined particulates and acidic gas/vapor type
- This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation.
- When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.
- Use a respirator with an approved filter if a risk assessment indicates this is necessary.

Hand protection

- Where there is a risk of contact with hands, use appropriate gloves
- Gloves must be inspected prior to use.
- Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Suitable material

- Neoprene
- Nitrile rubber
- butyl-rubber
- PVC

Eye protection

- Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.
- Eye contact should be prevented through the use of:
 - Tightly fitting safety goggles
 - Face-shield

Skin and body protection

- Full protective suit
- Footwear protecting against chemicals
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
 - 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
 - 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
 - 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
- The user is responsible for monitoring the working environment in accordance with local laws and regulations.

Protective measures

- Emergency equipment immediately accessible, with instructions for use.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.
- The protective equipment must be selected in accordance with current local regulations and in cooperation with the supplier of the protective equipment.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

<u>Physical state</u>	liquid
<u>Form</u>	viscous
<u>Color</u>	clear to opaque
<u>Odor</u>	characteristic
<u>Odor Threshold</u>	No data available
<u>Melting point/freezing point</u>	<u>Pour point</u> : 59 °F (15 °C)
<u>Initial boiling point and boiling range</u>	No data available
<u>Flammability (solid, gas)</u>	No data available
<u>Flammability (liquids)</u>	No data available
<u>Flammability / Explosive limit</u>	No data available
<u>Flash point</u>	> 212 °F (100 °C) closed cup Flammability class: Will burn
<u>Autoignition temperature</u>	No data available
<u>Decomposition temperature</u>	No data available
<u>pH</u>	< 1.5 (10 % (m/v))

<u>Viscosity</u>	<u>Viscosity, dynamic</u> : ca. 3,000 mPa.s (68 °F (20 °C))
<u>Solubility</u>	<u>Water solubility</u> : dispersible <u>Solubility in other solvents</u> : organic polar solvents: soluble Aromatic hydrocarbons: soluble
<u>Partition coefficient: n-octanol/water</u>	No data available
<u>Vapor pressure</u>	No data available
<u>Density</u>	1.03 - 1.04 g/cm3 (77 °F (25 °C))
<u>Relative density</u>	No data available
<u>Relative vapor density</u>	No data available
<u>Particle characteristics</u>	No data available
<u>Evaporation rate (Butylacetate = 1)</u>	No data available

9.2 Other information

Oxidizing properties Not considered as oxidizing., Structure-activity relationship (SAR)

SECTION 10: Stability and reactivity**10.1 Reactivity**

- No hazards to be specially mentioned.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- Corrosive in contact with metals, In the presence of water, forms corrosive solutions.
- Attacks many metals releasing highly flammable gas (hydrogen) which generates fire or explosion hazards.

10.4 Conditions to avoid

- Keep away from open flames, hot surfaces and sources of ignition.
- Avoid excessive heat for prolonged periods of time.

10.5 Incompatible materials

- Strong oxidizing agents
- Strong bases
- reactive metals (Al, K, Zn ...).
- products which release a dangerous gas when in an acid medium (chlorites, hypochlorites, sulfites, sulfides ...).

10.6 Hazardous decomposition products

- On combustion or on thermal decomposition (pyrolysis), releases:
- Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
- Oxides of phosphorus

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity LD50 : > 2,000 mg/kg - Rat
No mortality observed at this dose.
Unpublished internal reports

Acute inhalation toxicity No data available

Acute dermal toxicity No data available

Acute toxicity (other routes of administration) No data available

Skin corrosion/irritation Rabbit
Irritating to skin.
Unpublished internal reports

Serious eye damage/eye irritation Rabbit
Risk of serious damage to eyes.
Severe eye irritation
Unpublished internal reports

Respiratory or skin sensitization Magnusson and Kligman method - Guinea pig
not sensitizing
Unpublished internal reports

Mutagenicity

Genotoxicity in vitro

Polyethylene Glycol Monooleyl Ether
Phosphate Information given is based on data obtained from similar substances.
Not mutagenic in Ames Test.
Unpublished internal reports

Genotoxicity in vivo No data available

Carcinogenicity No data available

Toxicity for reproduction and development

Toxicity to reproduction / fertility No data available

Developmental Toxicity/Teratogenicity No data available

STOT

STOT-single exposure No data available

STOT-repeated exposure No data available

Experience with human exposure No data available

Aspiration toxicity No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish LC50 - 96 h : > 100 mg/l - Oncorhynchus mykiss (rainbow trout)
Unpublished internal reports

Acute toxicity to daphnia and other aquatic invertebrates No data available

Toxicity to aquatic plants No data available
Toxicity to microorganisms No data available

Chronic toxicity to fish No data available

Chronic toxicity to daphnia and other aquatic invertebrates No data available

12.2 Persistence and degradability

Abiotic degradation No data available

Physical- and photo-chemical elimination No data available

Biodegradation

Biodegradability Ultimate aerobic biodegradability
Readily biodegradable.

Ultimate aerobic biodegradability
Method: According to ISO 14593 method
84 % - 28 d
Unpublished internal reports

Ultimate aerobic biodegradability
Method: OECD Test Guideline 302
98 % - 28 d
Unpublished internal reports

Degradability assessment

Polyethylene Glycol Monooleyl Ether Phosphate The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water No data available

Bioconcentration factor (BCF)

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Polyethylene Glycol Monooleyl Ether
Phosphate

No information available.

12.4 Mobility in soil**Adsorption potential (Koc)**

No data available

**Known distribution to
environmental compartments**

Ultimate destination of the product: Water

Ultimate destination of the product: Sediment

12.5 Results of PBT and vPvB assessmentSubstance is not persistent, bioaccumulative, and toxic (PBT).
Substance is not very persistent and very bioaccumulative (vPvB).**12.6 Other adverse effects****Ecotoxicity assessment****Short-term (acute) aquatic hazard**Polyethylene Glycol Monooleyl Ether
PhosphateThis product has no known ecotoxicological effects.
Expert judgment**Long-term (chronic) aquatic hazard**Polyethylene Glycol Monooleyl Ether
PhosphateThis product has no known ecotoxicological effects.
Expert judgment**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Product Disposal*****Prohibition***

- Do not discharge directly into the environment.
- Dispose of in accordance with local regulations.
- Waste Management options should first consider possible re-use or recycling opportunities. Some provinces have active "Waste Exchange" networks for re-use and recycling of wastes. Contact your local waste management companies to explore available options. All waste management activities must obey local, provincial and federal regulations. Possible disposal methods include the following:
- Can be incinerated, when in compliance with local regulations.

Advice on cleaning and disposal of packaging***Prohibition***

- Do NOT dispose of untreated packaging with industrial waste.
- Do not dispose of with domestic refuse.
- Empty remaining contents.
- Clean using steam.
- Clean with the help of detergent. Avoid using any solvent.
- Monitor the residual vapors.
- Dispose of rinse water in accordance with local and national regulations.
- Containers that cannot be cleaned must be treated as waste.

- Dispose of contents/ container to an approved waste disposal plant.
- Dispose of in accordance with local regulations.
- Where possible recycling is preferred to disposal or incineration.
- The recycled material must be completely dry and free of pollutants.

Measure for waste avoidance or recovery

- Do not dispose of the product at a dump.

SECTION 14: Transport information**TDG**

not regulated

49 CFR

not regulated

NOM

not regulated

IMDG

not regulated

IATA

not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information**15.1 Notification status**

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australian Inventory of Industrial Chemicals (AIIC)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory

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Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIoC inventory. Additional HSNO obligations may apply. Please refer to Section 15 of SDS for New Zealand.
EU. European Registration, Evaluation, Authorization and Restriction of Chemical (REACH)	- When purchased from a Syensqo legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.
Korea. Act on Registration and Evaluation of Chemicals	- When purchased from a Syensqo legal entity based in Korea, this product is compliant with "Act on Registration and Evaluation of Chemicals" (AREC or K-REACH, Article 10) as all its components are either excluded, exempt, and/or (pre)registered. When purchased from a legal entity outside of Korea, please contact your local representative for additional information.

15.2 National Regulations**Canada. CEPA 1999 Significant New Activity (SNAc) List:**

- No substances are subject to a Significant New Activity Notification.

SECTION 16: Other information**Revision Date:**

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NFPA (National Fire Protection Association) - Classification

Health	2 moderate
Flammability	1 slight
Instability or Reactivity	0 minimal

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

Health	2 moderate
Flammability	1 slight
Reactivity	0 minimal

PPE

Determined by User; dependent on local conditions

Further information

- Distribute new edition to clients

Key or legend to abbreviations and acronyms used in the safety data sheet

- PEL: Permissible exposure limit
- ST: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
- STEL: Short term exposure limit
- TWA: 8-hour, time-weighted average
- ACGIH: American Conference of Governmental Industrial Hygienists
- OSHA: Occupational Safety and Health Administration
- NTP: National Toxicology Program
- IARC: International Agency for Research on Cancer
- NIOSH: National Institute for Occupational Safety and Health
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland

Waterways.

- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Specification for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.