

## 1. Identification

|   |  |
|---|--|
| <b>Product identifier</b>                                     | <b>EP™ 2500 Flow Improver</b>  |
| <b>Other means of identification</b>                          | None.  |
| <b>Recommended use</b>  | Flow Improver.   |
| <b>Recommended restrictions</b>                               | Other uses are not recommended unless an assessment demonstrates potential exposures will be controlled. |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |  |
| <b>Manufacturer</b>   | LiquidPower Specialty Products Inc.  |
| <b>Address</b>  | 2103 CityWest Blvd.<br>Suite 1400<br>Houston, TX 77042   |
| <b>Telephone</b>  | 1.713.339.8703 or 1.800.897.2774   |
| <b>e-mail</b>   | SDS@LiquidPower.com  |
| <b>Website</b>  | www.LiquidPower.com  |
| <b>Emergency telephone</b>                                    | +1 703.527.3887<br>+1 800.424.9300   |

## 2. Hazard identification

|                              |  |                      |
|------------------------------|--|----------------------|
| <b>Physical hazards</b>      | Not classified.  |                      |
| <b>Health hazards</b>        | Specific target organ toxicity following repeated exposure | Category 2 (kidneys) |
| <b>Environmental hazards</b> | Hazardous to the aquatic environment, long-term hazard     | Category 3           |
| <b>Label elements</b>        |  |                      |



|                                 |   |
|---------------------------------|---|
| <b>Signal word</b>              | Warning   |
| <b>Hazard statement</b>         | May cause damage to organs (kidneys) through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects. |
| <b>Precautionary statement</b>  |   |
| <b>Prevention</b>               | Do not breathe mist or vapour. Avoid release to the environment.  |
| <b>Response</b>                 | Get medical advice/attention if you feel unwell.  |
| <b>Storage</b>                  | Store away from incompatible materials.   |
| <b>Disposal</b>                 | Dispose of contents/container in accordance with local/regional/national/international regulations.                             |
| <b>Supplemental information</b> | None.   |
| <b>Other hazards</b>            | None known.   |

## 3. Composition/information on ingredients

### Mixtures

| Chemical name                  | Common name and synonyms | CAS number  | %         |
|--------------------------------|--------------------------|-------------|-----------|
| Ethylene glycol                |                          | 107-21-1    | 10 - 20   |
| C11-C15 hydrocarbon solvent 1* |                          | Proprietary | 7 - 13    |
| C11-C15 hydrocarbon solvent 2* |                          | Proprietary | 7 - 13    |
| Sodium lauryl sulfate          |                          | 151-21-3    | 0.5 - 1.5 |

## Surfactant

| Chemical name                         | Common name and synonyms | CAS number  | %     |
|---------------------------------------|--------------------------|-------------|-------|
| Alcohol ethoxylate*                   |                          | Proprietary | 1 - 5 |
| C12-C14 secondary alcohol ethoxylate* |                          | 84133-50-6  | 1 - 5 |

\* See Section 15 for HMIRA status.

|                             |  |
|-----------------------------|--|
| <b>Composition comments</b> | Total hydrocarbon solvents concentration <13%.<br>Total alcohol ethoxylate concentration <6%.<br><br>All concentrations are in percent by weight. Components not listed are either non-hazardous or are below reportable limits. |
|-----------------------------|--|

## 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | Move to fresh air. Get medical attention if discomfort persists.  |
| <b>Skin contact</b>   | Wash off with soap and water. Get medical attention if irritation develops and persists.  |
| <b>Eye contact</b>  | Flush thoroughly with water. If irritation occurs, get medical assistance.  |
| <b>Ingestion</b>  | Rinse mouth. Get medical attention if symptoms occur.   |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Direct contact with eyes may cause temporary irritation. Prolonged exposure may cause chronic effects.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.  |
| <b>General information</b>  | If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

## 5. Fire-fighting measures

|  |   |
|--|---|
| <b>Suitable extinguishing media</b>                                  | Water fog. Alcohol resistant foam. Powder. Carbon dioxide (CO <sub>2</sub> ).                 |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.                        |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.   |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| <b>Fire fighting equipment/instructions</b>                          | Move containers from fire area if you can do so without risk.                                 |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.    |
| <b>General fire hazards</b>  | No unusual fire or explosion hazards noted.   |

## 6. Accidental release measures

|  |  |
|--|--|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapour. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.  |
| <b>Methods and materials for containment and cleaning up</b>               | Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.<br><br>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.<br><br>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. |
| <b>Environmental precautions</b>   | Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.   |

## 7. Handling and storage

|                                      |   |
|--------------------------------------|---|
| <b>Precautions for safe handling</b> | Do not breathe mist or vapour. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. |
|--------------------------------------|---|

**Conditions for safe storage, including any incompatibilities**

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

| Components                     | Type | Value     | Form                |
|--------------------------------|------|-----------|---------------------|
| C11-C15 hydrocarbon solvent 1* | TWA  | 200 mg/m3 | Non-aerosol.        |
| Ethylene glycol (CAS 107-21-1) | STEL | 10 mg/m3  | Aerosol, inhalable. |
|                                |      | 50 ppm    | Vapor fraction      |
|                                | TWA  | 25 ppm    | Vapor fraction      |

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

| Components                     | Type    | Value     | Form    |
|--------------------------------|---------|-----------|---------|
| C11-C15 hydrocarbon solvent 1* | TWA     | 200 mg/m3 | Vapour. |
| Ethylene glycol (CAS 107-21-1) | Ceiling | 100 mg/m3 |         |

#### Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

| Components                     | Type    | Value     | Form         |
|--------------------------------|---------|-----------|--------------|
| C11-C15 hydrocarbon solvent 1* | TWA     | 200 mg/m3 | Non-aerosol. |
| Ethylene glycol (CAS 107-21-1) | Ceiling | 100 mg/m3 | Aerosol      |
|                                |         | 50 ppm    | Vapour.      |
|                                | STEL    | 20 mg/m3  | Particulate. |
|                                | TWA     | 10 mg/m3  | Particulate. |

#### Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

| Components                     | Type | Value     | Form                |
|--------------------------------|------|-----------|---------------------|
| C11-C15 hydrocarbon solvent 1* | TWA  | 200 mg/m3 | Non-aerosol.        |
| Ethylene glycol (CAS 107-21-1) | STEL | 10 mg/m3  | Aerosol, inhalable. |
|                                |      | 50 ppm    | Vapor fraction      |
|                                | TWA  | 25 ppm    | Vapor fraction      |

#### Canada. New Brunswick OELs: Threshold Limit Values (TLVs) Based on the 1991 and 1997 ACGIH TLVs and BEIs Publication (New Brunswick Regulation 91-191)

| Components                     | Type    | Value     | Form    |
|--------------------------------|---------|-----------|---------|
| Ethylene glycol (CAS 107-21-1) | Ceiling | 100 mg/m3 | Aerosol |

#### Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

| Components                     | Type | Value     | Form                |
|--------------------------------|------|-----------|---------------------|
| C11-C15 hydrocarbon solvent 1* | TWA  | 200 mg/m3 | Non-aerosol.        |
| Ethylene glycol (CAS 107-21-1) | STEL | 10 mg/m3  | Aerosol, inhalable. |

#### Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

| Components                     | Type    | Value     | Form            |
|--------------------------------|---------|-----------|-----------------|
| Ethylene glycol (CAS 107-21-1) | Ceiling | 127 mg/m3 | Vapor and mist. |
|                                |         | 50 ppm    | Vapor and mist. |

**Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)**

| Components                     | Type      | Value     | Form    |
|--------------------------------|-----------|-----------|---------|
| C11-C15 hydrocarbon solvent 1* | 15 minute | 250 mg/m3 | Vapour. |
|                                | 8 hour    | 200 mg/m3 | Vapour. |
| Ethylene glycol (CAS 107-21-1) | Ceiling   | 100 mg/m3 | Aerosol |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines****Canada - Alberta OELs: Skin designation**

C11-C15 hydrocarbon solvent 1\* (CAS Proprietary)

Can be absorbed through the skin.

**Canada - British Columbia OELs: Skin designation**

C11-C15 hydrocarbon solvent 1\* (CAS Proprietary)

Can be absorbed through the skin.

**Canada - Manitoba OELs: Skin designation**

C11-C15 hydrocarbon solvent 1\* (CAS Proprietary)

Danger of cutaneous absorption

**Canada - Ontario OELs: Skin designation**

C11-C15 hydrocarbon solvent 1\* (CAS Proprietary)

Can be absorbed through the skin.

**Canada - Saskatchewan OELs: Skin designation**

C11-C15 hydrocarbon solvent 1\* (CAS Proprietary)

Can be absorbed through the skin.

**US ACGIH Threshold Limit Values: Skin designation**

C11-C15 hydrocarbon solvent 1\* (CAS Proprietary)

Danger of cutaneous absorption

**Appropriate engineering controls**

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

**Skin protection****Hand protection**

Wear appropriate chemical resistant gloves.

**Other**

Normal work clothing (long sleeved shirts and long pants) is recommended.

**Respiratory protection**

In case of accident and/or inadequate ventilation, use respiratory protection with organic vapour cartridge.

**Thermal hazards**

Not applicable.

**General hygiene considerations**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties****Appearance****Physical state**

Liquid.

**Form**

Liquid.

**Colour**

White.

**Odour**

Mild petroleum.

**Odour threshold**

Not available.

**pH**

6 - 9

**Melting point/freezing point**

-23 °C (-9.4 °F)

**Initial boiling point and boiling range**

106 °C (222.8 °F)

**Flash point**

>200 °F / >93.4 °C

**Evaporation rate**

Not available.

**Flammability (solid, gas)**

Not applicable.

**Upper/lower flammability or explosive limits**

**Explosive limit - lower (%)** Not available.

|  |  |
|--|--|
| <b>Explosive limit – upper (%)</b>             | Not available.                                   |
| <b>Vapour pressure</b>                         | 24 mmHg @ 25 °C                                  |
| <b>Vapour density</b>                          | < 1  |
| <b>Relative density</b>                        | 0.96 - 1.02 (25°C / 77°F)                        |
| <b>Solubility(ies)</b>                         |  |
| <b>Solubility (water)</b>                      | Not available.                                   |
| <b>Partition coefficient (n-octanol/water)</b> | Not available.                                   |
| <b>Auto-ignition temperature</b>               | Not available.                                   |
| <b>Decomposition temperature</b>               | Not available.                                   |
| <b>Viscosity</b>                               | 120 cP 511 s-1 (Non-Newtonian) @ 25 °C / @ 77 °F |
| <b>Other information</b>                       |  |
| <b>Explosive properties</b>                    | Not explosive.                                   |
| <b>Oxidising properties</b>                    | Not oxidising.                                   |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>Conditions to avoid</b>                | Contact with incompatible materials.  |
| <b>Incompatible materials</b>             | Strong oxidising agents.  |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.  |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Prolonged inhalation may be harmful.   |
| <b>Skin contact</b> | Prolonged skin contact may cause temporary irritation.   |
| <b>Eye contact</b>  | Direct contact with eyes may cause temporary irritation.   |
| <b>Ingestion</b>    | Under normal conditions of intended use, this material does not pose a risk to health. However: Ingestion of ethylene glycol may result in nausea, vomiting, abdominal cramps, blindness, liver damage, irritation, reproductive effects, nerve damage, convulsions, edema of the lung, cardiopulmonary effects (metabolic acidosis), pneumonia and kidney failure which could result in death. The single lethal dose of ethylene glycol for humans is about 100 ml. Inhalation of high levels of vapors or mists for prolonged periods of time may also result in toxic effects. |

|   |  |
|---|--|
| <b>Symptoms related to the physical, chemical and toxicological characteristics</b> | Direct contact with eyes may cause temporary irritation. Prolonged exposure may cause chronic effects. |
|---|--|

### Information on toxicological effects

|                       |                              |
|-----------------------|------------------------------|
| <b>Acute toxicity</b> | May be harmful if swallowed. |
|-----------------------|------------------------------|

| Components                               | Species  | Test Results |
|--|--|--------------|
| Ethylene glycol (CAS 107-21-1)           |  |              |
| <b>Acute</b>                             |  |              |
| <b>Dermal</b>                            |  |              |
| LD50                                     | Rabbit   | 9530 mg/kg   |
| <b>Oral</b>                              |  |              |
| LD50                                     | Rat  | 5.89 g/kg    |
| <b>Skin corrosion/irritation</b>         | Prolonged skin contact may cause temporary irritation.   |              |
| <b>Serious eye damage/eye irritation</b> | Direct contact with eyes may cause temporary irritation. |              |

## Respiratory or skin sensitisation

### Canada - Alberta OELs: Irritant

Ethylene glycol (CAS 107-21-1)

Irritant

**Respiratory sensitisation** No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

**Skin sensitisation** No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

**Germ cell mutagenicity** No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

**Carcinogenicity** No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

### ACGIH Carcinogens

C11-C15 hydrocarbon solvent 1\* (CAS Proprietary)

A3 Confirmed animal carcinogen with unknown relevance to humans.

Ethylene glycol (CAS 107-21-1)

A4 Not classifiable as a human carcinogen.

### Canada - Manitoba OELs: carcinogenicity

C11-C15 hydrocarbon solvent 1\* (CAS Proprietary)

Confirmed animal carcinogen with unknown relevance to humans.

Ethylene glycol (CAS 107-21-1)

Not classifiable as a human carcinogen.

**Reproductive toxicity** No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

**Specific target organ toxicity - single exposure** No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

**Specific target organ toxicity - repeated exposure** May cause damage to organs (kidneys) through prolonged or repeated exposure.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** Prolonged exposure may cause chronic effects.

**Further information** Ingestion of ethylene glycol may result in nausea, vomiting, abdominal cramps, blindness, liver damage, irritation, reproductive effects, nerve damage, convulsions, oedema of the lung, cardiopulmonary effects (metabolic acidosis), pneumonia and kidney failure which could result in death. The single lethal dose for humans is about 100 ml. Inhalation of high levels of vapour or mists for prolonged periods of time may also result in toxic effects.

## 12. Ecological information

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

| Components                           | Species |                            | Test Results            |
|--------------------------------------|---------|----------------------------|-------------------------|
| Sodium lauryl sulfate (CAS 151-21-3) |         |                            |                         |
| <b>Aquatic</b>                       |         |                            |                         |
| <i>Acute</i>                         |         |                            |                         |
| Crustacea                            | LC50    | Water flea (Daphnia magna) | 8.4 - 11 mg/l, 48 hours |

**Persistence and degradability** No data is available on the degradability of this product.

### Bioaccumulative potential

#### Partition coefficient n-octanol / water (log Kow)

Ethylene glycol (CAS 107-21-1) -1.36

Sodium lauryl sulfate (CAS 151-21-3) 1.6

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Waste material from this product should not be exposed to waste streams or sumps containing any concentration of hydrocarbon. This will cause formation of gelled substances that may plug pipes. |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | Dispose in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).  |
| <b>Contaminated packaging</b>                | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.   |

### 14. Transport information

|   |                                   |
|---|-----------------------------------|
| <b>TDG</b>  | Not regulated as dangerous goods. |
| <b>IATA</b>   | Not regulated as dangerous goods. |
| <b>IMDG</b>   | Not regulated as dangerous goods. |
| <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b> | Not established.                  |

### 15. Regulatory information

|  |  |                               |
|--|--|-------------------------------|
| <b>Canadian regulations</b>                        | This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR. |                               |
|  | HMIRA Registry Number 12207  |                               |
|  | WHMIS Trade Secret Registration Filing Date: 2018-07-30  |                               |
|  | WHMIS Trade Secret Decision Granted Date: 2023-03-16   |                               |
| <b>Controlled Drugs and Substances Act</b>         | Not regulated.   |                               |
| <b>Export Control List (CEPA 1999, Schedule 3)</b> | Not listed.  |                               |
| <b>Greenhouse Gases</b>                            | Not listed.  |                               |
| <b>Precursor Control Regulations</b>               | Not regulated.   |                               |
| <b>International regulations</b>                   |  |                               |
| <b>Stockholm Convention</b>                        | Not applicable.  |                               |
| <b>Rotterdam Convention</b>                        | Not applicable.  |                               |
| <b>Kyoto Protocol</b>                              | Not applicable.  |                               |
| <b>Montreal Protocol</b>                           | Not applicable.  |                               |
| <b>Basel Convention</b>                            | Not applicable.  |                               |
| <b>International Inventories</b>                   |  |                               |
| <b>Country(s) or region</b>                        | <b>Inventory name</b>  | <b>On inventory (yes/no)*</b> |
| Australia  | Australian Inventory of Industrial Chemicals (AICIS)   | Yes                           |

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | No                     |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| Taiwan                      | Taiwan Chemical Substance Inventory (TCSI)                             | No                     |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

**Issue date** 27-December-2021

**Revision date** 27 March 2023

**Version No.** 02

**List of abbreviations** LC50: Lethal Concentration, 50%.  
LD50: Lethal Dose, 50%.

**Disclaimer** LiquidPower Specialty Products Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.