SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance/preparation: LP™ 111 Flow Improver
Version No.: 03
CAS No.: Mixture
Manufacturer: LiquidPower Specialty Products Inc.
Address: One BriarLake Plaza
2000 W Sam Houston Pkwy S
Suite 400
Houston, TX 77042
Telephone: 1.713.339.8703 or 1.800.897.2774
e-mail: SDS@LiquidPower.com
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+1 800.424.9300

2. HAZARDS IDENTIFICATION

This preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Physical hazards: Not classified as a physical hazard.
Health hazards: Not classified as a health hazard.
Environmental hazards: Not classified as an environmental hazard.
Specific hazards: Direct contact with eyes may cause temporary irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The components are not hazardous or are below required disclosure limits.

4. FIRST-AID MEASURES

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact: Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact: Rinse with water. Get medical attention if irritation develops and persists.
Ingestion: Rinse mouth. Get medical attention if symptoms occur.
General advice: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media which must not be used for safety reasons: Do not use water jet as an extinguisher, as this will spread the fire.
Unusual fire & explosion hazards: None known.
Specific hazards: During fire, gases hazardous to health may be formed.
Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions: Move containers from fire area if you can do so without risk.
Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.
6. ACCIDENTAL RELEASE MEASURES

**Containment procedures**  
Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

**Personal precautions**  
Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

**Environmental precautions**  
Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**Methods for cleaning up**  
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.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE

**Handling**  

**Storage**  
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**  
No exposure limits noted for ingredient(s).

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

**Recommended monitoring procedures**  
Follow standard monitoring procedures. No exposure standards allocated.

**Engineering measures**  
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Personal protective equipment**  
In case of inadequate ventilation, use respiratory protection.

**Hand protection**  
Use suitable protective gloves if risk of skin contact. Suitable gloves can be recommended by the glove supplier.

**Eye protection**  
Risk of contact: Wear approved safety goggles.

**Skin and body protection**  
If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**General**  
Use personal protective equipment as required. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Environmental exposure controls**  
Environmental manager must be informed of all major releases.

**Hygiene measures**  
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. Discard contaminated clothing and footwear that cannot be cleaned.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**  
White liquid.

**Physical state**  
Liquid.

**Form**  
Liquid.

**Colour**  
White.

**Odour**  
Mild.

**pH**  
10 - 12.3

**Melting point/freezing point**  
0 °C (32 °F)

**Boiling point, initial boiling point, and boiling range**  
100 °C (212 °F)

**Flash point**  
Not applicable.

**Auto-ignition temperature**  
Not available.

**Flammability limit - lower (%)**  
Not applicable.

**Flammability limit - upper (%)**  
Not applicable.

**Vapour pressure**  
23.8 mmHg (25°C)

**Vapour density**  
< 1 (Air = 1)

**Evaporation rate**  
Same as water.
Solubility(ies)
  Solubility (water) Disperses completely.
Partition coefficient (n-octanol/water) Not available.
Decomposition temperature Not available.
Viscosity 50 - 200 cP 511s-1 (Non-Newtonian) (25°C)
Other data
  Relative density 0.84 - 0.97 (15.6°C)

10. STABILITY AND REACTIVITY

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Conditions to avoid Contact with incompatible materials.
Hazardous decomposition products No hazardous decomposition products are known.
Stability Material is stable under normal conditions.
Materials to avoid Strong oxidising agents.
Hazardous polymerisation No dangerous reaction known under conditions of normal use.

11. TOXICOLOGICAL INFORMATION

Acute toxicity Not expected to be acutely toxic.
Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.
Toxicological information No adverse effects are expected.
Chronic toxicity None known.
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).
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).
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).
Reproductivity 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).
Epidemiology No epidemiological data is available for this product.
Local effects May irritate eyes and skin.
Symptoms and target organs Direct contact with eyes may cause temporary irritation.
Human experience No data available.
Further information None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Environmental effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability No data available.
Bioaccumulation No data available.
Mobility This product is miscible in water.
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

Disposal instructions 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. Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Waste from residues / unused products Dispose of 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).
Contaminated packaging 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

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

15. REGULATORY INFORMATION

Labelling
R-phrase(s) None.
S-phrase(s) None.

16. OTHER INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies 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).

Recommended use
Use in accordance with supplier's recommendations.

Recommended restrictions
Other uses are not recommended unless an assessment demonstrates potential exposures will be controlled.

Bibliography
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

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.

Prepared by
LiquidPower Specialty Products Inc.

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