1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier
Product Description: Lifeline Herbicide

Other means of identification
Item#: 12U-901
Synonyms Not Available
Registration number(s) 70506-310

Recommended use of the chemical and restrictions on use
Recommended use Herbicide.
Uses advised against Activities contrary to label recommendation

Details of the Supplier of the Safety Data Sheet
Supplier Address
United Phosphorus Inc.
630 Freedom Business Center
Suite 402
King of Prussia, PA 19406

Emergency telephone number
Company Phone Number 1-800-438-6071
Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 673-6671 (24hrs)

2. Hazards Identification

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Dermal Category 4
Acute toxicity - Inhalation (Vapors) Category 4
Reproductive Toxicity Category 1B
Specific target organ toxicity (repeated exposure) Category 2

Label elements

EMERGENCY OVERVIEW

DANGER

hazard statements
Harmful in contact with skin
HARMFUL IF INHALED
May damage fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure
Precautionary Statements - Prevention
Do not handle until all safety precautions have been read and understood
Wear cold insulating gloves/face shield/eye protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor if you feel unwell
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Precautionary Statements - Storage
Store locked up

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

Hazards Not Otherwise Classified (HNOC)
OTHER INFORMATION
• Harmful to aquatic life with long lasting effects
• May be harmful in contact with skin

3. Composition/information on Ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Trade secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glufosinate ammonium</td>
<td>Proprietary</td>
<td>20 - 30%</td>
<td></td>
</tr>
<tr>
<td>Propylene glycol monomethyl ether</td>
<td>107-98-2</td>
<td>8.93</td>
<td></td>
</tr>
</tbody>
</table>

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. First aid measures

FIRST AID MEASURES

General advice
If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.

Eye contact
Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin contact
Wash off immediately with plenty of water for at least 15 minutes. Call poison control center or doctor for treatment advice.

Inhalation
Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison
control center immediately.

Ingestion
Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a physician or poison control center immediately.

Protection of First-aiders
Use personal protective equipment.

Most Important Symptoms and Effects, Both Acute and Delayed

Most Important Symptoms and Effects
No information available.

Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to physician
Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media
Use:. Dry chemical. Carbon dioxide (CO2). Water spray. alcohol-resistant foam.

Unsuitable extinguishing media
No information available.

Specific hazards arising from the chemical
In the event of fire and/or explosion do not breathe fumes. Risk of ignition. Combustible material.

Hazardous combustion products

Explosion data

Protective equipment and precautions for firefighters
Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Provide adequate ventilation. Avoid contact with skin, eyes and inhalation of vapors. Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Wash thoroughly after handling.

Environmental Precautions
Environmental precautions
Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for Clean-Up
Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

7. Handling and Storage

Precautions for safe handling
Handling
Wear personal protective equipment. Do not breathe vapours or spray mist. Avoid contact with skin and eyes. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities
Storage

Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat. Protect from light. Keep in properly labelled containers. Keep away from heat and sources of ignition. Keep out of the reach of children. Do not store near combustible materials. Store in an area where cross-contamination with pesticides, fertilizers, food or feed could not occur.

incompatible materials


8. Exposure Controls/Personal Protection

Exposure guidelines

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol monomethyl ether</td>
<td>STEL: 100 ppm</td>
<td>TWA: 100 ppm (vacated)</td>
</tr>
<tr>
<td></td>
<td>TWA: 50 ppm</td>
<td>STEL: 150 ppm (vacated)</td>
</tr>
<tr>
<td></td>
<td>TWA: 360 mg/m³ (vacated)</td>
<td>STEL: 540 mg/m³</td>
</tr>
</tbody>
</table>

Engineering controls

Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Personal protective equipment

Eye/Face Protection

Use eye protection to avoid eye contact. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.

Skin protection

Wear protective gloves/clothing. Socks and footwear.

Respiratory protection

Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR 1910.134.

General hygiene considerations

When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Wash hands and face before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>VALUES</th>
<th>Remarks/ • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>appearance</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>color</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>156 F / 69 C</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability limit in air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>vapor pressure</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.15 @20 C</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Solubility in Other Solvents</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>
10. Stability and Reactivity

Reactivity
no data available

Chemical stability
Stable under normal conditions. Hazardous polymerisation does not occur.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid
Keep away from open flames, hot surfaces and sources of ignition.

incompatible materials

Hazardous decomposition products

11. Toxicological Information

Information on Likely Routes of Exposure

Product information
Lifeline/Interline :
Acute oral LD50 (rat) - >5,000 mg/kg
Acute dermal LD50(rat/rabbit) = >2,000 mg/kg
Acute inhalation LC50 (rat) 4 hr = >3.133 mg/L  [>12.5 mg/L 1 hr]
Primary eye irritation (rabbit) = Not an irritant
Primary dermal irritation (rabbit)= Not an irritant
Dermal sensitization = Not a sensitizer

Inhalation
May cause irritation of respiratory tract. May be harmful if inhaled.

Eye contact
May cause temporary eye irritation.

Skin contact
May cause irritation.

Ingestion
HARMFUL IF SWALLOWED.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glufosinate ammonium</td>
<td>1514 mg/kg (rat)</td>
<td>&gt; 2000 mg/kg (rat)</td>
<td>2.164 mg/L (rat)</td>
</tr>
<tr>
<td>Propylene glycol monomethyl ether</td>
<td>= 5200 mg/kg (Rat)</td>
<td>= 13 g/kg (Rabbit)</td>
<td>= 54.6 mg/L (Rat) 4 h &gt; 24 mg/L (Rat) 1 h</td>
</tr>
<tr>
<td>107-98-2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information on Toxicological Effects

Symptoms
No information available.
Delayed and immediate effects as well as chronic effects from short and long-term exposure

sensitization  No information available.
Mutagenic effects  No information available.
Carcinogenicity  The information below indicates whether any agency has listed any ingredient as a carcinogen.
Reproductive effects  Not Available.
STOT - Single Exposure  No information available.
STOT - repeated exposure  No information available.
Chronic toxicity  Avoid repeated exposure.
Target organ effects  Respiratory System, EYES, skin, Central Nervous System (CNS).
Aspiration hazard  No information available.

Numerical Measures of Toxicity - Product information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol monomethyl ether</td>
<td>-0.437</td>
</tr>
</tbody>
</table>

ecotoxicity

Do not apply directly to water to areas where surface water is present or to intertidal areas below the mean high water mark. Do not clean equipment or dispose of equipment washwater in a manner that will contaminate water resources or areable land. Do not apply when weather conditions favor drift from treated areas.

61.07% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence/Degradability
No information available.

Bioaccumulation/ Accumulation
Bioaccumulative potential.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol monomethyl ether</td>
<td>-0.437</td>
</tr>
</tbody>
</table>

Other Adverse Effects
No information available

13. Disposal Considerations

Waste Treatment Methods

Waste Disposal Method
Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Contaminated packaging  Refer to product label.

14. Transport Information

DOT  NOT REGULATED
TDG  NOT REGULATED
15. Regulatory Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**signal word** CAUTION

**Ventilation Control** PESTICIDE APPLICATORS & WORKERS THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.

Harmful if absorbed through the skin. Keep out of Reach of Children.

**International Inventories**

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>USINV</td>
<td>Not determined</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Not determined</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>Complies</td>
</tr>
<tr>
<td>ENCS</td>
<td>Does not comply</td>
</tr>
<tr>
<td>China</td>
<td>Does not comply</td>
</tr>
<tr>
<td>KECL</td>
<td>Does not comply</td>
</tr>
<tr>
<td>PICCS</td>
<td>Does not comply</td>
</tr>
<tr>
<td>AICS</td>
<td>Does not comply</td>
</tr>
<tr>
<td>TSCA</td>
<td>Does not comply</td>
</tr>
</tbody>
</table>

**Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

**SARA 311/312 Hazardous**

<table>
<thead>
<tr>
<th>Categorization</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute health hazard</td>
<td>yes</td>
</tr>
<tr>
<td>Chronic health hazard</td>
<td>yes</td>
</tr>
<tr>
<td>Fire hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

**CERCLA**

SARA Product RQ 0
RCRA
Pesticide Information

<table>
<thead>
<tr>
<th>Component</th>
<th>FIFRA - Restricted Use</th>
<th>FIFRA - Pesticide Product Other Ingredients</th>
<th>FIFRA - Listing of Pesticide Chemicals</th>
<th>California Pesticides - Restricted Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol monomethyl ether 107-98-2 (8.93)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

State Right-to-Know

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol monomethyl ether</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

International regulations

U.S. EPA Label information
EPA Pesticide registration number 70506-310

16. Other Information

NFPA HEALTH 1 flammability 2 Instability 0 Physical hazard -

Preparation Date 29-Apr-2015
Revision date 06-Nov-2015
Revision Summary Update section 11

Disclaimer

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End of MSDS