Bonide KleenUp Weed & Grass Killer 41% Super Concentrate
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name: Bonide KleenUp Weed & Grass Killer 41% Super Concentrate
Product code: 4484

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Herbicide

1.3. Details of the supplier of the safety data sheet
Bonide Products, Inc.
6301 Sutliff Road
Oriskany, NY 13424
T (315) 736-8231
www.bonide.com

1.4. Emergency telephone number
Emergency number: CHEMTREC - 1 (800) 424-9300 and/or 1 (703) 527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (GHS-US)
Eye Dam. 1 H318

2.2. Label elements
GHS-US labeling
Hazard pictograms (GHS-US)

Signal word (GHS-US): Danger
Hazard statements (GHS-US): H318 - Causes serious eye damage
Precautionary statements (GHS-US):
P280 - Wear gloves/protective clothing/eye protection
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier (CAS No)</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glyphosate</td>
<td>1071-83-6</td>
<td>41</td>
<td>Eye Dam. 1, H318 Aquatic Chronic 2, H411</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Assure fresh air breathing. Allow the person to rest.
### First-aid measures after skin contact
Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

### First-aid measures after eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

### First-aid measures after ingestion
Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

### Most important symptoms and effects, both acute and delayed
**Symptoms/injuries after eye contact**
Causes serious eye damage. Note: No cases of irreversible eye effects could be attributed to glyphosate formulation in an extensive epidemiological survey or reported accidental eye contact with these formulations.

### Indication of any immediate medical attention and special treatment needed
No additional information available

## SECTION 5: Firefighting measures

### Extinguishing media
**Suitable extinguishing media**

**Unsuitable extinguishing media**
Do not use a heavy water stream.

### Special hazards arising from the substance or mixture
**Fire hazard**
This material does not burn.

### Advice for firefighters
**Firefighting instructions**
Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

**Protection during firefighting**
Smoke from fires involving this material may present unusual hazards. Avoid breathing smoke and mists. Avoid contact with fallout and runoff.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel
**Emergency procedures**
Evacuate unnecessary personnel.

#### For emergency responders
**Protective equipment**
Equip cleanup crew with proper protection.

**Emergency procedures**
Ventilate area.

### Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### Methods and material for containment and cleaning up
**Methods for cleaning up**
Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

### Reference to other sections
See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### Precautions for safe handling
**Precautions for safe handling**
Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

**Hygiene measures**
Wash hands thoroughly after handling.

### Conditions for safe storage, including any incompatibilities
**Storage conditions**
Store in original container. Keep container closed when not in use.

**Incompatible products**
Strong bases. Strong acids.

**Incompatible materials**
Combustible materials.

### Specific end use(s)
No additional information available
### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Bonide KleenUp Weed &amp; Grass Killer 41% Super Concentrate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DNEL</strong></td>
</tr>
</tbody>
</table>

#### 8.2. Exposure controls

- **Personal protective equipment**: Avoid all unnecessary exposure.
- **Hand protection**: Wear protective gloves.
- **Eye protection**: Chemical goggles or safety glasses.
- **Respiratory protection**: Wear approved mask.
- **Other information**: When using, do not eat, drink or smoke.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Amber or light brown liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>Amber or light brown.</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>4.5 - 5</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Self ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.172</td>
</tr>
<tr>
<td>Solubility</td>
<td>Completely miscible.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

Not established.

#### 10.4. Conditions to avoid

Extremely high or low temperatures.
10.5. Incompatible materials
Strong acids. Strong bases.

10.6. Hazardous decomposition products
Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

**Glyphosate (1071-83-6)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>4873 mg/kg (Rat)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 5000 mg/kg (Rabbit)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 12.2 mg/l/4h (Rat)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified

pH: 4.5 - 5

Serious eye damage/irritation: Causes serious eye damage.

pH: 4.5 - 5

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive toxicity: Not classified

Specific target organ toxicity (single exposure): Not classified

Specific target organ toxicity (repeated exposure): Not classified

Aspiration hazard: Not classified

Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met.

Symptoms/injuries after eye contact: Causes serious eye damage. Note: No cases of irreversible eye effects could be attributed to glyphosate formulation in an extensive epidemiological survey or reported accidental eye contact with these formulations.

SECTION 12: Ecological information

12.1. Toxicity

**Glyphosate (1071-83-6)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>52 - 240 mg/l (96 h; Oncorhynchus mykiss; Soft water)</td>
</tr>
<tr>
<td>EC50 other aquatic organisms 1</td>
<td>3.32 mg/l (Algae)</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>97 mg/l (96 h; Pimephales promelas)</td>
</tr>
<tr>
<td>TLM other aquatic organisms 1</td>
<td>281 mg/l (96 h; Palaemonetes sp.)</td>
</tr>
<tr>
<td>Threshold limit other aquatic organisms 1</td>
<td>50 mg/l (504 h; Daphnia magna)</td>
</tr>
<tr>
<td>Threshold limit algae 2</td>
<td>45 mg/l (72 h; Selenastrum capricornutum)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

**Bonide KleenUp Weed & Grass Killer 41% Super Concentrate**

Persistence and degradability: Not established.

**Glyphosate (1071-83-6)**


Biochemical oxygen demand (BOD): < 0.0057 g O²/g substance

Chemical oxygen demand (COD): 0.53 g O²/g substance

12.3. Bioaccumulative potential

**Bonide KleenUp Weed & Grass Killer 41% Super Concentrate**

Bioaccumulative potential: Not established.
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Glyphosate (1071-83-6)

| BCF fish 1 | 0.03 (336 h; Oncorhynchus mykiss) |
| BCF fish 2 | 0.63 (840 h; Lepomis macrochirus) |
| BCF other aquatic organisms 1 | 9.6 (840 h; Lamellibranchiata; GLP) |
| BCF other aquatic organisms 2 | 8 (672 h; Procambarus sp.) |
| Log Pow | -3.4 - 1.7 |
| Bioaccumulative potential | Bioaccumulation: not applicable. |

12.4. Mobility in soil

Glyphosate (1071-83-6)

| Ecology - soil | May be harmful to plant growth, blooming and fruit formation. |

12.5. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
No dangerous good in sense of transport regulations

Additional information
Other information: No supplementary information available.

SECTION 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:

WARNING: Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear safety glasses. Harmful if inhaled. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. People and pets may enter treated areas after spray has dried.

15.1. US Federal regulations
No additional information available

15.2. International regulations
No additional information available

15.3. US State regulations
No additional information available

SECTION 16: Other information

Other information: None.

Full text of H-phrases: see section 16:

| Aquatic Chronic 2 | Hazardous to the aquatic environment - Chronic Hazard Category 2 |
| Eye Dam. 1 | Serious eye damage/eye irritation Category 1 |
| H318 | Causes serious eye damage |
| H411 | Toxic to aquatic life with long lasting effects |

SDS US (GHS HazCom 2012) - Pesticides

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.