Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product name: BIG ORANGE
Product use: Industrial Solvent Degreaser
Product code: 0415
Date of issue: 09/16/14  Supersedes 05/24/12

Emergency Telephone Numbers
For MSDS Information:
Technical Services Group
Telephone (780) 453-8100
(Business Hours 8:00am - 5:00pm)

For Medical or Transportation Emergency
CANUTEC (24 Hours)
(613) 996-6666 - Call Collect

Prepared By
Technical Services Group
11627 178th Street
Edmonton, Alberta T5S 1N6

Section 2. Hazards Identification

Emergency overview
WARNING!
COMBUSTIBLE.
Keep away from heat, sparks and flame. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing.

NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse effects are lessened by following all prescribed safety precautions, including the use of proper personal protective equipment.

Acute Effects

<table>
<thead>
<tr>
<th>Routes of Entry</th>
<th>Dermal contact. Eye contact. Inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>May cause eye irritation.</td>
</tr>
<tr>
<td>Skin</td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
</tbody>
</table>

Chronic effects

Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms, such as redness, blistering, dermatitis etc.

Additional Information: See Toxicological Information (Section 11)

Section 3. Composition/Information on Ingredients

Name of Hazardous Ingredients

<table>
<thead>
<tr>
<th>Name of Hazardous Ingredients</th>
<th>CAS number</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-LIMONENE; orange distillate; citrus terpene; cyclohexene, 1-methyl-4-(1-methylethenyl), (R)-</td>
<td>5989-27-5</td>
<td>60 - 100</td>
</tr>
<tr>
<td>ALCOHOLS, C11-15, ETHOXYLATED</td>
<td>68131-40-8</td>
<td>1 - 5</td>
</tr>
<tr>
<td>ISOCTYLPHENOXY POLY(ETHYLENEOXY) ETHANOL; ipe; poly(oxy-1,2-ethanediyl), 9004-87-9</td>
<td>1 - 5</td>
<td></td>
</tr>
<tr>
<td>alpha-(isoctylphenyl) omega-hydroxy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

Eye Contact
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention immediately.

Skin Contact
Flush affected skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhalation
If inhaled, remove to fresh air. If irritation persists, get medical attention.

Ingestion
If swallowed, do not induce vomiting. If affected person is conscious, give plenty of water to drink. Get medical attention immediately.
**Section 5. Fire Fighting Measures**

**Flash Point**
Closed cup: 49.4°C (120.9°F) [Tagliabue.]

**Flammable Limits**
Not determined.

**Flammability**
COMBUSTIBLE.

**Auto-ignition Temperature**

**Fire-Fighting Procedures**
Use dry chemical, CO₂, water spray (fog) or foam.

**Fire hazard**
COMBUSTIBLE LIQUID AND VAPOR. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

**Products of Combustion**
Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- metal oxide/oxides

**Explosion hazard**
Not available.

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**Section 6. Accidental Release Measures**

**Spill Clean up**
Stop leak if without risk. Eliminate all ignition sources. Absorb with an inert material and place in an appropriate waste disposal container. Wash affected area with soap or mild detergent and water.

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**Section 7. Handling and Storage**

**Handling**
Put on appropriate personal protective equipment (see section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation.

**Storage**
Store and use away from heat, sparks, open flame or any other ignition source. 40°F - 120°F (4.4°C - 49°C). Keep container tightly closed in a cool, well-ventilated place. Keep out of the reach of children.

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**Section 8. Exposure Controls/Personal Protection**

**Product name**

**Exposure limits**
No exposure limit value known.

**Personal Protective Equipment (PPE)**

**Eyes**
splash goggles

**Hands and Body**
Chemical-resistant gloves. Neoprene, Nitrile or Rubber gloves.

**Respiratory**
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Use with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

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**Section 9. Physical and Chemical Properties**

**Physical State**
Liquid.

**pH**
Not applicable.

**Boiling Point**
170°C (338°F)

**Specific Gravity**
0.85

**Solubility**
<1 (Water = 1)

**Freezing Point**
789.37 (g/l). 6.59 lbs/gal 92.70%

**Color**
Clear. Orange.

**Odor**
Orange. [Strong]

**Vapor Pressure**
0.25 kPa (1.9 mm Hg) [20°C]

**Vapor Density**
4.7 [Air = 1]

**Evaporation Rate**
<1 (Water = 1)

**VOC (Consumer)**
789.37 (g/l).

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**Section 10. Stability and Reactivity**

**Stability and Reactivity**
The product is stable.

**Incompatibility**
Reactive or incompatible with the following materials: oxidizing materials. Incompatible with some strong acids. Keep away from heat, sparks and flame.

**Hazardous Polymerization**
Under normal conditions of storage and use, hazardous polymerization will not occur.

**Hazardous Decomposition Products**
Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Section 11. Toxicological Information

Carcinogenicity No known significant effects or critical hazards.

Acute Toxicity

Section 12. Ecological Information

Environmental Effects No known significant effects or critical hazards.

Aquatic Ecotoxicity

(R)-p-mentha-1,8-diene - Acute EC50 421 ug/L Fresh water
Daphnia - Water flea - Daphnia magna - <24 hours
- Acute EC50 688 ug/L Fresh water
Fish - Fathead minnow - Pimephales promelas - 48 hours
34 days - 19.1 mm - 96 hours
0.085 g

Section 13. Disposal Considerations

Waste Information
Waste must be disposed of in accordance with applicable regulations. Consult your local or regional authorities for additional information.

Waste Stream Code: D001
Classification: - [Hazardous waste.]
Origin: - [RCRA waste.]

Section 14. Transport Information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IMDG Class</td>
<td></td>
<td></td>
<td></td>
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<td>-</td>
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</tbody>
</table>

NOTE: DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment. Limited Quantity: Small quantities of controlled goods are not regulated as Dangerous Goods according to TDG regulations.

Section 15. Regulatory Information

Canada

WHMIS (Canada) Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution.
Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.