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

1.1. Product identifier
Product name: PENRAY SYNTHETIC DOT 4 BRAKE FLUID
Product code: 6432

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: DOT 4 brake fluid.

1.3. Details of the supplier of the safety data sheet
The Penray Companies, Inc.
440 Denniston Ct.
Wheeling, IL 60090
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number
Emergency number: (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
GHS-US classification
Eye irritation 2A

2.2. Label elements
GHS-US labelling
Hazard pictograms (GHS-US): GHS07

Signal word (GHS-US): Warning
Hazard statements (GHS-US): Causes serious eye irritation.
Precautionary statements (GHS-US): Wash hands thoroughly after handling. Wear eye protection/face protection. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US)
27 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol</td>
<td>(CAS No) 111-46-6</td>
<td>1 - 5</td>
<td>Acute Tox. 4 (Oral)</td>
</tr>
<tr>
<td>Triethylene glycol monobutyl ether</td>
<td>(CAS No) 143-22-6</td>
<td>1 - 5</td>
<td>Eye Dam. 1</td>
</tr>
<tr>
<td>3,6,9,12-Tetraoxahexadecan-1-ol</td>
<td>(CAS No) 1559-34-8</td>
<td>0.5 - 1.5</td>
<td>Eye Irrit. 2A</td>
</tr>
</tbody>
</table>

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.

First-aid measures after eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
PENRAY SYNTHETIC DOT 4 BRAKE FLUID
Safety Data Sheet
according to

First-aid measures after ingestion: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation: May cause respiratory irritation.
Symptoms/injuries after skin contact: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
Symptoms/injuries after eye contact: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed
Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures
5.1. Extinguishing media
Suitable extinguishing media: Powder, water spray, foam, carbon dioxide.
Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters
Protection during firefighting: Keep upwind of fire. Wear full fire fighting turnout gear (full Bunker gear) and respiratory protection (SCBA). Use water spray to keep fire-exposed containers cool.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
General measures: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up
For containment: Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Methods for cleaning up: Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections
See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Avoid contact with skin and eyes. Do not swallow. Avoid breathing gas/fumes/vapor/spray. Handle and open container with care. When using do not eat, drink or smoke.
Hygiene measures: Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep out of the reach of children. Keep container tightly closed. Store in a well-ventilated place

7.3. Specific end use(s)
Not available.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
Diethylene glycol (111-46-6)
USA ACGIH ACGIH TWA Not applicable.
USA OSHA OSHA PEL Not applicable.

Triethylene glycol monobutyl ether (143-22-6)
USA ACGIH ACGIH TWA Not applicable.
USA OSHA OSHA PEL Not applicable.

3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)
USA ACGIH ACGIH TWA Not applicable.
USA OSHA OSHA PEL Not applicable.
8.2. Exposure controls

Appropriate engineering controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Personal protective equipment: Avoid all unnecessary exposure.

Hand protection: Wear suitable gloves.

Eye protection: Safety glasses or goggles are recommended when using product.

Skin and body protection: Wear suitable protective clothing.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls: Maintain levels below Community environmental protection thresholds.

Other information: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid.
Appearance: No data available.
Colour: Amber.
Odour: Mild.
Odour threshold: No data available.
pH: 8.6
Relative evaporation rate (butylacetate=1): No data available.
Melting point: No data available.
Freezing point: < -50 °C (< -58 °F)
Boiling point: > 232 °C (> 560 °F) @ 760 mm Hg
Flash point: > 121 °C (> 250 °F)
Self ignition temperature: 310 °C (590 °F)
Decomposition temperature: No data available.
Flammability (solid, gas): Not flammable.
Vapour pressure: No data available.
Relative vapour density at 20 °C: No data available.
Relative density: 1.06
Solubility: Soluble in water.
Log Pow: No data available.
Log Kow: No data available.
Viscosity, kinematic: No data available.
Viscosity, dynamic: No data available.
 Explosive properties: No data available.
Oxidising properties: No data available.
Explosive limits: No data available.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No dangerous reaction known under conditions of normal use.

10.2. Chemical stability
Stable under normal storage conditions.

10.3. Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid
Incompatible materials. Sources of ignition.

10.5. Incompatible materials
Oxidizers.

10.6. Hazardous decomposition products
May include, and are not limited to: oxides of carbon.
# SECTION 11: Toxicological information

## 11.1. Information on toxicological effects

### Acute toxicity

**LD50** oral rat: Not classified

**LD50** dermal rabbit: Not classified

**LC50** inhalation rat (mg/l): No data available.

### Diethylene glycol (111-46-6)

- **LD50** oral rat: 12565 mg/kg
- **LD50** dermal rabbit: 11890 mg/kg

### Triethylene glycol monobutyl ether (143-22-6)

- **LD50** oral rat: 5300 mg/kg
- **LD50** dermal rabbit: 3480 mg/kg

### 3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)

- **LD50** oral rat: 5175 mg/kg
- **LD50** dermal rat: > 4000 mg/kg

### Skin corrosion/irritation

Based on available data, the classification criteria are not met.

### Serious eye damage/irritation

Causes serious eye irritation.

### Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

### Germ cell mutagenicity

Based on available data, the classification criteria are not met.

### Carcinogenicity

Based on available data, the classification criteria are not met.

### Reproductive toxicity

Based on available data, the classification criteria are not met.

### Specific target organ toxicity (single exposure)

Based on available data, the classification criteria are not met.

### Specific target organ toxicity (repeated exposure)

Based on available data, the classification criteria are not met.

### Aspiration hazard

Based on available data, the classification criteria are not met.

### Symptoms/injuries after inhalation

May cause respiratory irritation.

### Symptoms/injuries after skin contact

May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

### Symptoms/injuries after eye contact

Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

### Symptoms/injuries after ingestion

May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

# SECTION 12: Ecological information

## 12.1. Toxicity

Ecology - general: May cause long-term adverse effects in the aquatic environment.

## 12.2. Persistence and degradability

### Diethylene glycol (111-46-6)

Persistence and degradability: Not established.

### Triethylene glycol monobutyl ether (143-22-6)

 Persistence and degradability: Not established.

### 3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)

 Persistence and degradability: Not established.

## 12.4. Mobility in soil

No additional information available.

## 12.5. Other adverse effects

No additional information available.

# SECTION 13: Disposal considerations

## 13.1. Waste treatment methods

Waste disposal recommendations: This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

# SECTION 14: Transport information

In accordance with DOT

## 14.1. UN number

Not applicable

## 14.2. UN proper shipping name

Not applicable
14.3. Additional information

Other information : No supplementary information available.
Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>EPA TSCA Regulatory Flag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol (111-46-6)</td>
<td>Y2 - Y2</td>
<td>indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.</td>
</tr>
<tr>
<td>Triethylene glycol monobutyl ether (143-22-6)</td>
<td>T</td>
<td>T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.</td>
</tr>
<tr>
<td>3,6,9,12-Tetraoxahexadecan-1-ol (1559-34-8)</td>
<td></td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

15.2. US State regulations

6432
State or local regulations : This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC</td>
<td>1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.</td>
</tr>
<tr>
<td>NTP</td>
<td>1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

Indication of changes : None.
Date of issue : 05/28/2014
Other information : None.
NFPA health hazard : 2
NFPA fire hazard : 1
NFPA reactivity : 0

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.