1. PRODUCT AND COMPANY INFORMATION

Identification of the substance/preparation  Sentinel X500
Use of the substance/preparation  Inhibited antifreeze for central heating systems
Company Identification  Sentinel Performance Solutions Ltd.
Manufactured by  Douglas Products and Packaging
Address and Telephone No.  1550 East Old 210 Highway
Liberty
Missouri, 64068
USA
Telephone for further information:  (816)-781-4250 (8am – 5pm)
Emergency Phone No.  Chemtrec (800) 424-9300 (24/7)
Fax:  (816)-781-1043

2. HAZARDS IDENTIFICATION

Emergency Overview
Appearance and odour:
Appearance  Clear colourless liquid
Odour  Mild slightly sweet odour

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Statements of Hazard
CAUTION: May cause eye, skin, and respiratory tract irritation.

Potential Health Effects
Target Organs: Central nervous system.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical description
Propylene glycol inhibited with inorganic and organic corrosion and scale inhibitors and salts.

Hazardous component(s)

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>% by weight</th>
<th>Symbol</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol</td>
<td>57-55-6</td>
<td>200-338-0</td>
<td>&gt; 60</td>
<td>None</td>
<td>None, but has USA WEEL</td>
</tr>
</tbody>
</table>
4. FIRST-AID MEASURES

Inhalation
Remove patient to fresh air, allow to rest and keep warm. Seek medical attention if symptoms develop.

Skin contact
Wash with plenty of water. Remove any contaminated clothing and launder before reuse. Seek medical attention if symptoms develop.

Eye contact
Flush immediately with plenty of water for at least 15 minutes, keeping eyelids open. Seek medical attention if symptoms develop.

Ingestion
DO NOT induce vomiting! Rinse mouth out with water, but do not give anything to drink. Seek medical attention if symptoms develop.

Personal precautions
Ensure that those giving first aid treatment do not get contaminated by product spills, etc. Wear suitable protective clothing, gloves and eye protection. See also Section 8.

5. FIRE-FIGHTING MEASURES

- Suitable Water, foam, carbon dioxide, dry powder.
- Not to be used None.
Special exposure hazards Oxides of carbon and nitrogen evolved in fire.
Special protective equipment for fire fighters Protective clothing and self-contained breathing apparatus.

Flash point > 100°C (> 212°F) Combustible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Wear suitable protective clothing, gloves and eye protection. See Section 8 for details. Keep unnecessary personnel away.

Environmental precautions Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms. In case of large spill, inform local authorities.

Methods for cleaning up
- on soil Absorb onto inert material such as earth, soil or specialist absorbent. Collect and place into sealed container for safe disposal (see Section 13).
- on water None known.
7. HANDLING AND STORAGE

Handling
Avoid contact with skin and eyes. Do not ingest or inhale vapours or spray.

Storage
Keep in original containers. Keep container tightly closed. Store in cool, well ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Recommended engineering controls
Ensure good ventilation. Arrange for eye wash possibility.

Control parameters:
Propylene glycol
WEEL - 10 mg/m³ 8 hr TWA

Monitoring procedures
Not required

Personal protection
Always check applicability with your supplier of protective equipment.

- Respiratory protection
  In case of insufficient ventilation, wear full face or half face mask fitted with filter suitable for liquid particulates.
- Skin protection
  Laboratory coat or overalls if splashing or repeated contact with product is likely.
- Eye protection
  Chemical goggles or full face visor.
- Hand protection
  Plastic, impervious gloves for protection against unintentional short-term contact. However, since glove performance is governed by many variables, it is strongly recommend that specialist advice on the selection and use of protective gloves is sought.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Clear colourless liquid

Odour
Mild slightly sweet

pH (5% aqueous solution)
Approx 7.2

Melting point (°C)
-58 [-72°F]

Boiling point/range (°C)
188 [370°F]

Flash point (Pensky Martens) (°C)
>100 [> 212°F]

Explosive properties
None

Oxidising properties
None

Density at 20°C (kg/m³)
1030-1045

Solubility in water (% by weight)
Completely miscible

Viscosity at 20°C (mPas)
60

Note: These are typical values and do not constitute a specification.
10. STABILITY AND REACTIVITY

- **Stability**: Stable under normal conditions of use.
- **Conditions to avoid**: None known.
- **Materials to avoid**: None known.
- **Hazardous decomposition products**: Oxides of carbon, nitrogen and phosphorus evolved in fire.

11. TOXICOLOGICAL INFORMATION

**Test data:**

- **Oral LD$_{50}$ rat (mg/kg)**: $> 5000$ Not considered hazardous.

**Exposure hazard:**

- **Inhalation**: Prolonged or repeated exposure may cause transient irritation.
- **Skin contact**: Prolonged or repeated exposure may cause transient irritation.
- **Eye contact**: Prolonged or repeated exposure may cause transient irritation.
- **Ingestion**: Likely symptoms are slight gastrointestinal irritation on ingestion of large amounts ($> 100$ml).

**Other data**: None available.

12. ECOLOGICAL INFORMATION

**Aquatic toxicity:**

- **Fathead minnow (mg/l) LC$_{50}$ 96 Hr**: $> 10000$
- **Daphnia Magna (mg/l) LC$_{50}$ 48 Hr**: $> 10000$

**Persistence and degradability**

Readily biodegradable except for some minor inorganic components

**Bioaccumulative potential**

- **Bioaccumulation**: Not bioaccumulating

**Summary**

Environmental effects: Not classified as hazardous to the environment under the EU classification system.
13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

14. TRANSPORTATION INFORMATION

Not classified as dangerous for transport.

15. REGULATORY INFORMATION

The label shows CAUTION. May cause eye, skin, and respiratory tract irritation. Keep out of reach of children. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.

Names of the ingredients given on the label: Propylene Glycol.

R phrases: None.

S phrases: S2, Keep out of the reach of children; S24/25, Avoid contact with skin and eyes; S26, In case of contact with eyes, rinse immediately with plenty of water and seek medical advice; S28, After contact with skin, wash immediately with plenty of water.

Inventory Status
TSCA All ingredients of this product are listed unless specifically exempted.

California Proposition 65 Does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

EU All ingredients of this product are listed in EINECS or ELINCS, unless specifically exempted under EU Directive 67/548/EEC (as amended).

Right to know classification: None are listed in CA, PA, MN, MA, MI, FL and NJ.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions, which complete these regulations. Refer to all applicable national, international and local regulations or provisions.
16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>Hazardous Material Information (HMIS)</th>
<th>National Fire Protection Association (NFPA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>0</td>
</tr>
<tr>
<td>Fire</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Personal Protection</td>
<td>G</td>
</tr>
</tbody>
</table>

Health
4  Deadly  3  Extreme Danger  2  Dangerous  1  Slight hazard  0  No hazard
Fire
4  < 73 °C  3  < 100 °C  2  < 200 °C  1  >200 °C  0  Will not burn
Reactivity/Instability
4  May detonate  3  Explosive  2  Unstable  1  Normally stable  0  Stable

EU labelling information

- Symbol(s)  None required
- R-Phrase(s) None assigned
- S-Phrase(s) 2  Keep out of the reach of children
             24/25 Avoid contact with skin and eyes
             26  In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
             28  After contact with skin, wash immediately with plenty of water

Version number 2
Date prepared January 2011
Supersedes Version 1 dated October 2009
Nature of revision Updated to 2010 ANSI standard.
R-phrases used in Section 3 None

Based on ANSI Z400.1/Z129.1-2010 and EU Regulation 1907/2006