INGERSOLL RAND encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Ingersoll Rand Ultra Coolant

Recommended use of the chemical and restrictions on use
Identified uses: Selection of the appropriate polyglycol product for a specific application requires knowledge of the fluid requirements of the application, awareness of the most important of these requirements, and a match-up with the properties of the various polyglycol materials. Polyglycol products can be formulated for use in numerous industry applications such as hydraulic fluids, quenchants, compressor and refrigeration lubricants, heat transfer fluids, machinery lubricants, solder assist fluids, metalworking lubricants, textile finishing, etc.

COMPANY IDENTIFICATION
DISTRIBUTED BY
INGEROSLL RAND
800D BEATY ST
DAVIDSON, NC 28036
UNITED STATES

Customer Information Number: +01 704-655-4000

EMERGENCY TELEPHONE NUMBER
U.S. 24-Hour Emergency #: 800-424-9300
Outside U.S. Emergency #: +01 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>CASRN / EC-No. / Index-No.</th>
<th>Concentration</th>
<th>Component</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASRN Confidental EC-No.</td>
<td>&gt; 60.0 - &lt; 70.0 %</td>
<td>Polypropylene glycol</td>
<td>Not classified</td>
</tr>
<tr>
<td>Polymer Index-No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. HAZARDS IDENTIFICATION

Hazard classification
Not classified as hazardous according to regulatory criteria.

Other hazards
no data available

4. FIRST AID MEASURES

Description of first aid measures
General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

Environmental precautions: Material will float on water. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: No special precautions required. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines
could be formed. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

**Conditions for safe storage:** Store in the following material(s): 316 stainless steel. Carbon steel. Glass-lined container. Polypropylene. Polyethylene-lined container. Stainless steel. Teflon. This material may soften and lift certain paint and surface coatings. Use product promptly after opening. Store in original unopened container. Unopened containers of material stored beyond the recommended shelf life should be retested against the sales specifications before use. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

**Storage stability**

- **Shelf life:** Use within 24 Month

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

Exposure limits are listed below, if they exist.

None established

#### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

#### Individual protection measures

- **Eye/face protection:** Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Examples of acceptable glove barrier materials include: Natural rubber (“latex”). Neoprene. Nitrile/butadiene rubber (“nitrile” or “NBR”). Polyvinyl alcohol (“PVA”). Polyvinyl chloride (“PVC” or “vinyl”). Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular
application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.

**Respiratory protection:** Under intended handling conditions, no respiratory protection should be needed.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>Brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No test data available</td>
</tr>
<tr>
<td>pH</td>
<td>8 - 10 ASTM E70 (16% in water/methanol, 1:10)</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>Not applicable to liquids</td>
</tr>
<tr>
<td>Freezing point</td>
<td>See Pour Point</td>
</tr>
<tr>
<td>Boiling point (760 mmHg)</td>
<td>&gt; 200 °C <em>Calculated.</em></td>
</tr>
<tr>
<td>Flash point</td>
<td><strong>closed cup</strong> 210 °C ASTM D 93</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable to liquids</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No test data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No test data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>&lt; 0.01 mmHg at 20 °C ASTM E1719</td>
</tr>
<tr>
<td>Relative Vapor Density (air = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Relative Density (water = 1)</td>
<td>0.9901 at 25 °C / 25 °C ASTM D 891</td>
</tr>
<tr>
<td>Water solubility</td>
<td>&lt; 0.1 % at 20 °C <em>Measured</em></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>388 °C ASTM E659</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>49.7 - 56.4 cSt at 37.8 °C ASTM D 445</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>Liquid Density</td>
<td>0.9872 g/cm3 at 25 °C ASTM D 941</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No test data available</td>
</tr>
<tr>
<td>pour point</td>
<td>-28.9 °C ASTM D 97</td>
</tr>
</tbody>
</table>
NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.


11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

LD50, Rat, male, > 5,000 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity
At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. For respiratory irritation and narcotic effects: No relevant data found. As product: The LC50 has not been determined.

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin. Repeated contact may cause severe skin irritation with local redness and discomfort.

Serious eye damage/eye irritation
May cause slight temporary eye irritation. Corneal injury is unlikely.
Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures to small amounts are not anticipated to cause significant adverse effects.

Carcinogenicity
No specific, relevant data available for assessment.

Teratogenicity
No specific, relevant data available for assessment.

Reproductive toxicity
No specific, relevant data available for assessment.

Mutagenicity
No specific, relevant data available for assessment.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:

Polypropylene glycol
Acute inhalation toxicity
At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. For respiratory irritation and narcotic effects: No relevant data found.

As product: The LC50 has not been determined.

For similar material(s): Rat, 8 Hour, No deaths occurred following exposure to a saturated atmosphere.

Alkylated diphenylamine
Acute inhalation toxicity
As product: The LC50 has not been determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Ecotoxicity
Acute toxicity to fish
Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

LL50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EL50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

**Persistence and degradability**

**Biodegradability**: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

10-day Window: Pass

**Biodegradation**: 83 %

**Exposure time**: 29 d

**Method**: OECD Test Guideline 301A or Equivalent

10-day Window: Not applicable

**Biodegradation**: 81 %

**Exposure time**: 28 d

**Method**: OECD Test Guideline 302B or Equivalent

**Bioaccumulative potential**

**Bioaccumulation**: No data available for this product.

**Mobility in Soil**

No data available.

**Results of PBT and vPvB assessment**

This mixture has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**Other adverse effects**

No specific, relevant data available for assessment.

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**13. DISPOSAL CONSIDERATIONS**

**Disposal methods**: Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.

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**14. TRANSPORT INFORMATION**

**Classification for ROAD and Rail transport**: Not regulated for transport

**Classification for SEA transport (IMO-IMDG)**:

**Transport in bulk**: Consult IMO regulations before transporting ocean bulk
15. REGULATORY INFORMATION

Label
Classification and labeling have been performed according to regulations.

Hazard symbol and Indication of danger
Not classified as hazardous according to regulatory criteria.

Contains: Barium dinonyl-naphthalene sulfonate
May produce an allergic reaction.

Safety data sheet available for professional user on request.

16. OTHER INFORMATION

Full text of the R-phrases given in Section 2
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Revision
Identification Number: 101199624 / A146 / Issue Date: 30.03.2015 / Version: 6.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

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