SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Optiray® Ioversol Injection

Synonyms:
- Optiray® 160 Ioversol Injection 34%;
- Optiray® 240 Ioversol Injection 51%;
- Optiray® 300 Ioversol Injection 64%;
- Optiray® 320 Ioversol Injection 68%;
- Optiray® 350 Ioversol Injection 74%;
- N,N’-bis(2,3-dihydroxypropyl)-5-[N-(2-hydroxyethyl)glycolamido]-2,4,6-triiodoisophthalamide

Manufacturer: Mallinckrodt, Inc.
P.O. Box 5840
St. Louis, MO 63134

Revision Date: January 18, 2007

Information Telephone Number: (888) 744-1414
Emergency Telephone Number: 314-654-1600
CHEMTREC: 1-800-424-9300
CANUTEC: 613-996-6666

SECTION 2. COMPOSITION. INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Wt%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ioversol</td>
<td>87771-40-2</td>
<td>34-74%</td>
</tr>
<tr>
<td>Edetate calcium disodium</td>
<td>63-33-9</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td>Tris (hydroxymethyl) aminomethane</td>
<td>77-86-1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Proprietary Components</td>
<td>-</td>
<td>22-66%</td>
</tr>
</tbody>
</table>

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Read package insert prior to use.
Ensure prompt removal from skin, eyes and clothing. As part of good laboratory and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance.

POTENTIAL HEALTH EFFECTS

Inhalation: Not expected to be a health hazard via inhalation

Eye Contact: No adverse effects expected, but splashes may cause mechanical irritation.

Ingestion: Excessive oral doses may produce gastrointestinal disturbances.

Chronic Exposure: No adverse effects expected from chronic exposure

Skin Contact: No adverse effects expected

Aggravation of Pre-existing Conditions: May provoke an allergic reaction in people allergic to iodine or iodinated substances.
SECTION 4. FIRST AID MEASURES

Inhalation:  Not expected to require first aid measures.

Skin Exposure:  Wash exposed area with soap and water. Get medical advice if irritation develops.

Ingestion:  If large amounts were swallowed, give water to drink and get medical advice.

Eye Exposure:  In case of eye contact, immediately flush eyes with water for at least 15 minutes. Call a physician if irritation develops.

SECTION 5. FIRE FIGHTING MEASURES

Flammability:  Not a flammable material.

Fire / Explosion Hazards:  Not considered to be a fire or explosion hazard.

Fire Extinguishing Media:  Use any means suitable for extinguishing surrounding fire.

Special Instructions:  In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full faceplate operated in the pressure demand or other positive pressure mode.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Small spills may be mopped up or flushed to sewer. Large spills may be collected for disposal or absorbed with an inert material and containerized for disposal. Flush any residue with copious amounts of water.

Ensure compliance with local, state and federal regulations.

SECTION 7. HANDLING AND STORAGE

Store at 25° C (77° F); excursions permitted to 15-30° (59-86° F) and protect from light.

SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Airborne Exposure Limits:  None established.

Skin Protection:  Wear protective gloves and clean body-covering clothing.

Engineering Controls:  Not expected to require any special ventilation.

Eye/Face Protection:  Safety glasses. Maintain eye wash fountain and quick-drench facilities in area.

Respiratory Protection:  (NIOSH Approved):  Not expected to require personal respirator usage.
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, colorless to pale yellow solution.
Odor: Odorless.
Solubility: Very soluble in water.
Boiling Point: ca. 100°C (212°F)

Melting Point: ca. 0°C (32°F)
Specific Gravity: 1.188 – 1.405

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under specified conditions of use and storage. Sensitive to light.
Hazardous Decomposition Products: May emit toxic fumes of nitrous oxides and iodine when heated to decomposition.
Hazardous Polymerization: This substance does not polymerize.
Incompatibilities: No Information found.

SECTION 11. TOXICOLOGICAL INFORMATION

Intravenous rat LD50: 15 gm/kg (68% injection); No teratogenic or mutagenic activity.

For detailed toxicological information on specific components, write to the address listed in Section 1 - Attn: Corporate Product Monitoring Department.

SECTION 12. ECOLOGICAL INFORMATION

Because this product is intended for use by hospital or clinic patients, it is expected to be treated by wastewater treatment facilities with no adverse environmental impacts.

SECTION 13. DISPOSAL CONSIDERATIONS

Collected spills may be flushed to the sewer with large amounts of water. Containerized material may be disposed in an approved waste facility.

If medical waste is involved, such as blood, blood products or sharps, the waste must be handled as a biohazard and disposed of accordingly.

If not a biohazard, waste Optiray® Ioversol is considered non-hazardous. Consult local, state and federal regulations for proper disposal.

SECTION 14. TRANSPORT INFORMATION

Not regulated as a Hazardous Material by the Department of Transportation.
SECTION 15. REGULATORY INFORMATION

OSHA Hazard Communications:
This product is not considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

CERCLA Reportable Quantities: Not Applicable.

SARA Title III:
302 Extremely Hazardous Substances: None
311 / 312 Hazard Categories: None
313 Toxic substances subject to annual release reporting requirements: None

RCRA Hazardous Waste Status: Non-hazardous (See Section 13 for details).

California Proposition 65 Warning: Not applicable.

Australian Hazchem Code: None allocated.
Australian Poison Schedule: None allocated.

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

NFPA Ratings: Health: 0 Fire: 0 Instability: 0

Product Use: Diagnostic Imaging Agent.

Revision Information: No changes.

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