2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a CFL bulb and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured CFL bulb.

Acute toxicity - Oral

<table>
<thead>
<tr>
<th>Category</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Category 4</td>
</tr>
</tbody>
</table>
GHS Label elements, including precautionary statements

**Emergency Overview**

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hazard Statements**

Harmful if swallowed

![Warning Symbol]

This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a CFL bulb. In case of rupture: the above hazards exist.

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical state</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Solid</td>
<td>Odorless</td>
</tr>
</tbody>
</table>

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

**Precautionary Statements - Response**

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

**Precautionary Statements - Storage**

None

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Unknown Toxicity**

96.6% of the mixture consists of ingredient(s) of unknown toxicity

**Other information**

Causes mild skin irritation

Harmful to aquatic life with long lasting effects

**Interactions with Other Chemicals**

No information available.
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis[2-(diphenylphosphino)phenyl] ether</td>
<td>166330-10-5</td>
<td>1 - 5</td>
<td>*</td>
</tr>
<tr>
<td>Yttrium oxide (Y2O3)</td>
<td>1314-36-9</td>
<td>0.1 - 1</td>
<td>*</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice
First aid is upon rupture of sealed CFL bulb.

Eye contact
Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin contact
Wash with soap and water.

Inhalation
Remove to fresh air.

Ingestion
Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects
No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
No information available.

Explosion Data
Sensitivity to Mechanical Impact
None.

Sensitivity to Static Discharge
None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental precautions

Environmental precautions
See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling
In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

Incompatible Products
None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yttrium oxide (Y2O3)</td>
<td>TWA: 1 mg/m³ Y</td>
<td>-</td>
<td>IDLH: 500 mg/m³ Y</td>
</tr>
<tr>
<td>1314-36-9</td>
<td></td>
<td></td>
<td>TWA: 1 mg/m³ Y</td>
</tr>
</tbody>
</table>

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Measures
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment
Eye/face protection
No special protective equipment required.

Skin and body protection
No special protective equipment required.

Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
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<td>None known</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
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<td>None known</td>
<td></td>
</tr>
<tr>
<td>Water Solubility</td>
<td>incompatible</td>
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<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
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<tr>
<td>Kinematic viscosity</td>
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</tr>
<tr>
<td>Dynamic viscosity</td>
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<td>None known</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
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<td>None known</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
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<td>None known</td>
<td></td>
</tr>
<tr>
<td>Softening Point</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particle Size</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particle Size Distribution</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other Information

Softening Point
No data available

VOC Content (%)
No data available

Particle Size
No data available

Particle Size Distribution
No data available
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

**Product Information**
Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:

- **Inhalation**
  Specific test data for the substance or mixture is not available.

- **Eye contact**
  Specific test data for the substance or mixture is not available.

- **Skin contact**
  Specific test data for the substance or mixture is not available.

- **Ingestion**
  Specific test data for the substance or mixture is not available. Harmful if swallowed. (based on components).

**Component Information**
No information available

Information on toxicological effects

- **Symptoms**
  No information available.

- **Delayed and immediate effects as well as chronic effects from short and long-term exposure**

  - **Sensitization**
    No information available.

  - **Mutagenic Effects**
    No information available.

  - **Carcinogenicity**
    Contains no ingredient listed as a carcinogen.

- **Reproductive toxicity**
  No information available.

- **STOT - single exposure**
  No information available.

- **STOT - repeated exposure**
  No information available.

- **Target Organ Effects**
  None known.
Aspiration Hazard

No information available.

Numerical measures of toxicity  Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)
680.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity
Harmful to aquatic life with long lasting effects.

Persistence and Degradability
No information available.

Bioaccumulation
No information available

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods
This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated Packaging
Dispose of contents/containers in accordance with local regulations.

US EPA Waste Number
D009

California Hazardous Waste Codes M003

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>DOT</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NOT REGULATED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NON REGULATED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TDG</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not regulated</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEX</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not regulated</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICAO</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not regulated</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IATA</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not regulated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NON REGULATED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
15. REGULATORY INFORMATION

International Inventories

TSCA                Complies
DSL                All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury - 7439-97-6</td>
<td>Developmental</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
<th>Rhode Island</th>
<th>Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium carbonate</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>513-77-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese carbonate</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>598-62-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7440-31-5</td>
<td></td>
<td></td>
<td></td>
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</table>

Revision Date: 21-Aug-2013
International Regulations

Canada
WHMIS Hazard Class
Non-controlled

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and Chemical Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>Health Hazards</td>
<td>Flammability</td>
<td>Physical Hazard</td>
<td></td>
</tr>
</tbody>
</table>

Prepared By: Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date: 21-Aug-2013
Revision Note: No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet