MATERIAL SAFETY DATA SHEET OF
BISMUTH OXIDE

SECTION 1. PRODUCT IDENTIFICATION

MSDS Name: Bismuth oxide
Chemical Formula: Bi2O3
Synonym: _
Company Identification: Omkar Speciality Chemicals Ltd
B-34, Unit-III, M.I.D.C. Badlapur (E),
Dist. Thane, 421 503.

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1304-76-3</td>
<td>Bismuth oxide</td>
<td>100</td>
</tr>
</tbody>
</table>

SECTION 3. HAZARD IDENTIFICATION

Potential Acute Health Effects: Slightly hazardous in case of eye contact (irritant), of ingestion, of inhalation.
Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

SECTION 4. FIRST AID

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Not available.
Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

**SECTION 5. FIRE AND EXPLOSION**

Flammability of the Product: Non-flammable.
Auto-Ignition Temperature: Not applicable.
Flash Points: Not applicable.
Flammable Limits: Not applicable.
Products of Combustion: Not available.
Fire Hazards in Presence of Various Substances: Not applicable.
Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions: Not applicable.
Special Remarks on Fire Hazards: Not available.
Special Remarks on Explosion Hazards: Not available.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

**SECTION 7. HANDLING AND STORAGE**

Precautions:
Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.
SECTION 8. PERSONAL PROTECTION/EXPOSURE CONTROLS

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Solid. (Crystalline solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 466 g/mole

Color: Yellowish.

pH (1% soln/water): Not applicable.

Boiling Point: 1890°C (3434°F)

Melting Point: 824°C (1515.2°F)

Critical Temperature: Not available.

Specific Gravity: 9.32 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatile: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.
**SECTION 10. REACTIVITY/STABILITY**

- **Stability:** The product is stable.
- **Instability Temperature:** Not available.
- **Conditions of Instability:** Not available.
- **Incompatibility with various substances:** Not available.
- **Corrosivity:** Non-corrosive in presence of glass.
- **Special Remarks on Reactivity:** Not available.
- **Special Remarks on Corrosivity:** Not available.
- **Polymerization:** Will not occur.

**SECTION 11. TOXICOLOGICAL INFORMATION**

- **Routes of Entry:** Not available.
- **Toxicity to Animals:** Acute oral toxicity (LD50): 5000 mg/kg [Rat].
- **Chronic Effects on Humans:** Not available.
- **Other Toxic Effects on Humans:** Slightly hazardous in case of ingestion, of inhalation.
- **Special Remarks on Toxicity to Animals:** Not available.
- **Special Remarks on Chronic Effects on Humans:** Due to the presence of dark line on gums, chronic bismuth toxicity may complicate diagnosis of chronic lead toxicity.
- **Special Remarks on other Toxic Effects on Humans:** Not available.

**SECTION 12. ECOLOGICAL INFORMATION**

- **Ecotoxicity:** Not available.
- **BOD5 and COD:** Not available.
- **Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
- **Toxicity of the Products of Biodegradation:** The products of degradation are as toxic as the original product.
- **Special Remarks on the Products of Biodegradation:** Not available.
SECTION 13. DISPOSAL

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

SECTION 14. TRANSPORTATION

DOT Classification: Not a DOT controlled material (United States).
Identification: Not applicable.
Special Provisions for Transport: Not applicable.

SECTION 15. REGULATORY INFORMATION

Federal and State Regulations: TSCA 8(b) inventory: Bismuth trioxide
Other Regulations: Not available.
Other Classifications:
WHMIS (Canada): Not controlled under WHMIS (Canada).
DSCL (EEC):
This product is not classified according to the EU regulations.
HMIS (U.S.A.):
Health Hazard: 1
Fire Hazard: 0
Reactivity: 0
Personal Protection: a
National Fire Protection Association (U.S.A.):
Health: 1
Flammability: 0
Reactivity: 0
Specific hazard:
Protective Equipment:
Not applicable. Lab coat. Not applicable. Safety glasses.
This document is intended only as a guide to the appropriate precautionary handling of material by a person trained in chemical handling. The user is responsible for determining the precautions & dangers of this chemical for his or her particular application depending on usage. Adequate protective clothing, including eye / face guards, approved respirators must be used to avoid contact with the material or breathing chemical vapours / fumes. Exposure to this product may cause adverse health effects.

This chemical may interact with other substances. Since the potential uses are so varied, M/s. Omkar Speciality Chemicals ltd. cannot warn of all of the potential dangers of use or interaction with chemicals of materials. M/s. Omkar Speciality Chemicals ltd. warrants that, the chemical meets the specifications set forth on the test report.

M/s. Omkar Speciality Chemicals ltd. Disclaims any other warranties expressed or implied with regard to the product supplied hereunder its merchantability or its fitness for a particular purpose. The user should recognize that, this product can cause severe injury, especially if improperly handled or the known dangers of use are not heeded.

READ ALL PRECAUTIONARY INFORMATIONS