**CHEMICAL IDENTITY**

<table>
<thead>
<tr>
<th>LABEL IDENTITY</th>
<th>FORMULA</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISMUTH LANTHANUM TITANIUM OXIDE</td>
<td>Bi$\text{LaTiO}_3$</td>
</tr>
</tbody>
</table>

**HAZARDOUS INGREDIENTS**

NONE LISTED

**COLOR, FORM AND ODOR**

Odorless, white powder

**BOILING POINT**

ND

**VAPOR DENSITY**

No information

**VAPOR PRESSURE**

No information

**% VOLATILE BY VOLUME (%)**

NA

**SPECIFIC GRAVITY**

ND

**EVAPORATION RATE (H$_2$O=1)**

NA

**SOLUBILITY IN WATER**

Mineral acids

**FIRE AND EXPLOSION HAZARD DATA**

**FLASH POINT**

None

**FLAMMABLE LIMITS**

Non-flammable

**EXTINGUISHING MEDIA**

Use suitable means for extinguishing surrounding fire

**SPECIAL FIRE FIGHTING PROCEDURES**

Use full protective clothing and NIOSH approved self-contained breathing apparatus

**UNUSUAL FIRE & EXPLOSION HAZARDS**

None

**HEALTH HAZARD INFORMATION**

**TOXICITY DATA**

<table>
<thead>
<tr>
<th></th>
<th>Oral Toxicity (LD$50$)</th>
<th>OSHA PEL</th>
<th>TLV</th>
<th>Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi$\text{O}_3$</td>
<td>67.7</td>
<td>5.0 g/Kg</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>La$_2$O$_3$</td>
<td>10.9</td>
<td>NR</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Ti$\text{O}_2$</td>
<td>21.4</td>
<td>NL</td>
<td>10.0 mg/m$^3$</td>
<td>10.0 mg/m$^3$</td>
</tr>
</tbody>
</table>

**EFFECTS OF OVEREXPOSURE (acute and chronic):**

R&D material, effects not established.
BISMUTH LANTHANUM TITANIUM OXIDE
MATERIAL SAFETY DATA SHEET

CARCINOGENICITY: None  NTP: No  IARC MONOGRAPHS: NO  OSHA REGULATE: NO

EMERGENCY FIRST AID PROCEDURES:
INGESTION: Seek immediate medical attention.
INHALATION: Remove to fresh air.
SKIN CONTACT: Wash thoroughly with soap and water.
Seek immediate medical attention in all cases.

REACTIVITY DATA

STABILITY Stable
CONDITIONS TO AVOID Damp and hot
INCOMPATIBILITY (MATERIALS TO AVOID) Mineral acids
HAZARDOUS DECOMPOSITION PRODUCTS None
HAZARDOUS POLYMERIZATION None

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Pick up and place in a Suitable container for reclamation or disposal in a method that does not generate dust.
WASTE DISPOSAL METHOD: Dispose of in accordance with local, state and federal regulations.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION NIOSH Approved
LOCAL EXHAUST Preferred
OTHER Lab coat or apron, gloves and safety glasses

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:
Keep in tightly closed container, store in cool dry ventilated area, isolate from incompatible substances.

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL. ANGSTROM SCIENCES MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA = NOT APPLICABLE  ND = NO DATA  NC = NOT CLASSIFIED  NL=NOT LISTED