MATERIAL SAFETY DATA SHEET

ZIRCONIUM DIBORIDE NANOPOWDER
Stock #: NS6130-12-000412

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY
Product Name : Zirconium Diboride Nanopowder
Use : Research and Development
Address : Nanoshel LLC
3422 Old Capitol Suit 1305
Willmington DE – 19808
United States
Emergency : +1.532.253.9878

2. COMPOSITION & INFORMATION ON INGREDIENTS
Chemical Characterisation : ZrB₂
Hazardous Ingredients : Nil

3. HAZARD IDENTIFICATION
Toxicity : No Data Available
Eye Contact : Dust may cause irritation

4. FIRST AID MEASURES
Skin : Wash skin with soap and copious amounts of water
Eyes : Immediate and prolonged irritation treat with copious amounts of water.
Ingestion : Wash out mouth with water provided person Is Conscious.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

5. FIREFIGHTING MEASURES

Extinguishing Data: Water Spray
Unsuitable Extinguishing Data: Carbon Dioxide, Dry Chemical Powder, Polymer Foam

Unusual Firefighting Hazards: Capable of creating a dust explosion
Special Firefighting Procedures: Use normal procedures which include wearing self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear respirator, chemical safety goggles, rubber boots and gloves.

Precautions to the Environment: Sweep up, place in a bag and hold for waste disposal.

Cleanup Procedures: Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

Handling Precautions: Chemical Safety Goggles. Compatible with Chemical-resistant Gloves
Storage: Store in a cool dry place.
Unusable Packaging Materials: Wash thoroughly after handling. Irritating dust, Keep tightly closed.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Exposure Controls**

**Personal Protective Equipment**

Respiratory: Self-contained breathing apparatus
Hand: Chemical-resistant Gloves
Eye: Avoid contact with eyes
Skin: Wash thoroughly after handling
# 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Powder</td>
</tr>
<tr>
<td>Colour</td>
<td>N/A</td>
</tr>
<tr>
<td>Odour</td>
<td>No Odour</td>
</tr>
</tbody>
</table>

**Safety Related Information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Melting Point</td>
<td>3246°C</td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
</tbody>
</table>

# 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Completely Stable</td>
</tr>
<tr>
<td>Reactivity</td>
<td>Non Reactive/ Non Soluble</td>
</tr>
</tbody>
</table>

# 11. TOXICOLOGICAL INFORMATION

**Possible Health Effects**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>No effect</td>
</tr>
<tr>
<td>Eyes</td>
<td>Irritation</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No Chocking Hazard</td>
</tr>
<tr>
<td>Toxicity</td>
<td>Non-Toxic</td>
</tr>
</tbody>
</table>

# 12. ECOLOGICAL IMPACT

Avoid raising dust. Ventilate area and wash spill site after material pickup is complete. No Negative Ecological Impact, Data not Available

# 13. WASTE DISPOSAL

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator, equipped with an afterburner and scrubber

# 14. TRANSPORT INFORMATION (UN ORNEK OLARAK VERİLMİŞTİR)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS Code</td>
<td>2850000090</td>
</tr>
<tr>
<td>CAS</td>
<td>12045-64-4</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>Zirconium Diboride Nanopowder</td>
</tr>
<tr>
<td>Air Transport (ICAO &amp; IATA)</td>
<td>Speciality Chemical</td>
</tr>
<tr>
<td>Class</td>
<td>Non Hazardous</td>
</tr>
<tr>
<td>Packing group</td>
<td>Normal Packing</td>
</tr>
<tr>
<td>Transport information</td>
<td>Not regulated for IATA (AIR)</td>
</tr>
</tbody>
</table>
15. OTHER REGULATORY INFORMATION

Federal and State Regulations: TSCA 8(b) inventory: Zirconium Diboride Nanopowder

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada)

DSCL (EEC):
   R36- Irritating to eyes
   S2- Keep out of the reach of children
   S46- If swallowed, seek medical advice immediately & show container or label

HMIS (U.S.A.):
   Health Hazard: 1
   Fire Hazard: 0
   Reactivity: 0
   Personal Protection: E

National Fire Protection Association (U.S.A.):
   Health: 1
   Flammability: 0
   Reactivity: 0
   Specific hazard:

Protective Equipment:
   Gloves.
   Lab coat.
   Dust respirator. Be sure to use an approved/certified respirator or equivalent.
   Splash goggles.

16. OTHER INFORMATION

References: Not available
Other Special Considerations: Not available