**SAFETY DATA SHEET**

**SECTION 1. IDENTIFICATION**

GHS Product Identifier: Ruflux® 61 Milled Rutile, Ceramic Rutile  
Chemical Name: TiO₂ - Rutile  
Recommended Applications: Used singularly or as a component in plastics, ceramics, welding or friction industries.  
Synonyms: Rutile, Rutile Titanium Dioxide

Manufacturer Information:  
TAM Ceramics, LLC (#220821)  
4511 Hyde Park Blvd Niagara Falls, NY 14305  
Phone Number: 716-278-9400  
Website: www.tamceramics.com

**CHEMICAL EMERGENCY**  
CHEMTREC 24 HOUR EMERGENCY TELEPHONE  
Spill, Leak, Fire, Exposure  
DOMESTIC NORTH AMERICA 800-424-9300  
INTERNATIONAL CALL: 703-527-3887  
Collect Calls Accepted

**GHS Pictogram:**  
![GHS Pictogram]

**SECTION 2. HAZARDS IDENTIFICATION**

**Signal word:** WARNING  
**GHS classification:**  
- Eye irritation, Category 2  
- Skin irritation, Category 2  
**Hazard Statement:**  
Inert particles can be slightly, mechanically irritating to the eyes. Prolonged skin contact may cause skin irritation or dermatitis. Overexposure by inhalation may cause respiratory irritation.  
**Precautionary Statement:**  
Wash hands thoroughly after handling. Minimize exposure by wearing protective gloves, clothing, eye protection and respiratory masks. Have a clean change of works clothes readily available. Avoid dust formation and utilize good housekeeping practices.  
**Route of Exposure:**  
Eyes, skin, inhalation and ingestion.  
**Potential Health Effects:**  
- **Eye:** May cause a slight irritation.  
- **Skin:** May cause a slight irritation.  
- **Inhalation:** Prolonged inhalation may cause respiratory tract irritations.  
- **Ingestion:** May irritate digestive tract if swallowed.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>EC Number</th>
<th>Weight %</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rutile</td>
<td>1317-80-2</td>
<td>215-282-2</td>
<td>95 - 99%</td>
<td>15 mg/m³ TWA</td>
<td>10 mg/m³ TWA</td>
</tr>
<tr>
<td>Zircon</td>
<td>149040-68-2</td>
<td>239-019-6</td>
<td>1 - 1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 4. FIRST AID MEASURES**

**Eye contact:** Rinse eyes immediately with plenty of water on eye surfaces and under eyelids. Get medical attention if irritation develops.  
**Skin contact:** Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. If symptoms persist, call a physician.  
**Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, call a physician.  
**Ingestion:** Drink plenty of water. Consult a physician if necessary. Do not induce vomiting without medical advice.  
**Notes to physician:** Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES**

Non combustible.\n
**Suitable extinguishing media:** The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
**Hazardous decomposition products:** Thermal decomposition can lead to release of irritating gases and vapors.  
**Special protective equipment for firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.  
**Unusual hazards:** None known

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions:** Avoid dust formation. Do not breathe vapors/dust. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation.  
**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.  
**Methods for cleaning up:** Wear personal protective equipment. Use approved industrial vacuum cleaner for removal. Dispose of promptly.
SECTION 7. HANDLING AND STORAGE
Handling: Handle in accordance with good industrial hygiene and safety practice. Use only in area provided with appropriate exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink, or smoke in areas of use or storage.
Storage: Keep in a dry, cool and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION
Engineering measures: Provide appropriate exhaust ventilation at machinery and at places where dust or fumes can be generated.
Respiratory protection: Use NIOSH approved respirator when ventilation is inadequate.
Hand protection: Impervious gloves.
Skin and body protection: Lightweight protective clothing. Keep working clothes separately. Remove and wash contaminated clothing before re-use.
Eye protection: Safety glasses with side-shields

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Brown, reddish brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Boiling point/range (°C)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/range (°C)</td>
<td>1560 - 1840</td>
</tr>
<tr>
<td>Vapor pressure (mmHg)</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Water solubility (mg/l)</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Physical state</td>
<td>Powder</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific gravity (Water =1)</td>
<td>3.8 - 4.3</td>
</tr>
<tr>
<td>Evaporation rate (Water =1)</td>
<td>No data available</td>
</tr>
<tr>
<td>VOC content (%)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

SECTION 10. STABILITY AND REACTIVITY
Stability: Stable at normal conditions.
Polymerization: Will not occur.
Materials to avoid: None known.
Conditions to avoid: None known.

SECTION 11. TOXICOLOGICAL INFORMATION
Acute toxicity: Information given is based on data on the components and the toxicology of similar products.
Chronic toxicity: In lifetime inhalation studies of rats, airborne respirable size titanium dioxide particles have been shown to cause lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. However, other laboratory animals such as mice and hamsters did not develop lung tumors under similar testing with titanium dioxide. Human epidemiology studies do not suggest an association between occupational exposure to titanium dioxide and risk for cancer.
Target Organ Effects: Titanium dioxide: Respiratory system.

SECTION 12. ECOLOGICAL INFORMATION
Aquatic toxicity: No information available
Persistence and degradability: No information available

SECTION 13. DISPOSAL CONSIDERATIONS
Waste from residues / unused products: Waste must be disposed of in accordance with federal, state and local environmental control regulations. Where possible, recycling is preferred to disposal or incineration.

SECTION 14. TRANSPORT INFORMATION
DOT:
Proper shipping name: Not regulated.

TDG (Canada):
Proper shipping name: Not regulated.

SECTION 15. REGULATORY INFORMATION
U.S. Regulations:
Not subject to the provisions of SARA 313 Title III
Not subject to TSCA 12(b) Export Notification

State Regulations
This product or its ingredients have been evaluated for New Jersey, Pennsylvania, and California Prop 65 supplier notification requirements. Substances that are subject to notification requirements, if any, are listed below.

Titanium Dioxide

NURT: sn 1861
PART: Listed (NURT)

Canadian WHMIS
WHMIS hazard class: D2A Very toxic materials.

International Inventories
TSCA 8(b): All the ingredients are on the TSCA list.
Canadian DSL: All the ingredients are on the DSL.
EINECS: All the ingredients are on the EINECS list.
Philippines (PICCS): Listed.
Japan (ENCS): Listed.
Korea (KECL): Listed.
China (IECS): Listed.
Australia (AICS): Listed.
End of Safety Data Sheet