SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

GHS Product Identifier: Ruflux® P Potassium Titanate
Chemical Name: Mixture (Potassium Titanate)
Recommended Applications: Used singularly or as a component in plastics, welding or friction industries.
Other Names: Potassium Titanate, dipotassium titanium trioxide, PT-FR

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 or Accident DOMESTIC NORTH AMERICA 800-424-9300
INTERNATIONAL CALL: 703-527-3887
Collect Calls Accepted

SECTION 2. HAZARD(S) IDENTIFICATION

GHS Pictogram:
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>Potassium Titanate</td>
<td>12030-97-6</td>
<td>234-748-6</td>
<td>100%</td>
<td>Not established</td>
<td>Not established</td>
</tr>
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</table>

SECTION 4. FIRST AID MEASURES

Eye contact: Rinse immediately with plenty of water, also under the 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

Flash point: No data available
Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Hazardous decomposition products: Thermal decomposition
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: Dust may form explosive mixture in air.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid dust formation. Evacuate area of all unnecessary personnel. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Fine dust dispersed in air may ignite.
Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not flush into surface water or sanitary sewer system.
Methods for cleaning up: Use approved industrial vacuum cleaner for removal. Wear personal protective equipment. Dispose of promptly.
**SECTION 7. HANDLING AND STORAGE**

**Handling:** Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Avoid contact with skin, eyes and clothing. In case of insufficient

**Storage:** Keep container tightly closed in a dry and well-ventilated place

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering measures:** Ensure adequate ventilation, especially in confined areas. **Respiratory protection:** Use NIOSH approved respirator when ventilation is inadequate. **Hand protection:** Impervious gloves.

**Skin and body protection:** Lightweight protective clothing.

**Eye protection:** Safety glasses with side-shields.

**Exposure limits:** See Section 2.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
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<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
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<td>Melting point/range (°C)</td>
<td>1560 - 1840</td>
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<tr>
<td>Water solubility (mg/l)</td>
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<td>Physical state</td>
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<tr>
<td>Odor threshold</td>
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<tr>
<td>Vapor pressure</td>
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<tr>
<td>Flash point</td>
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</tr>
<tr>
<td>Flammability (solid, gas)</td>
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<tr>
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<td>Relative density</td>
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<td>Partition coefficient</td>
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<tr>
<td>Auto-ignition temperature</td>
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<tr>
<td>Decomposition temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No Data Available</td>
</tr>
</tbody>
</table>

**SECTION 10. STABILITY AND REACTIVITY**

**Stability:** Stable at normal conditions.

**Polymerization:** Will not occur.

**Hazardous decomposition products:** None under normal use.

**Materials to avoid:** None known.

**Conditions to avoid:** Avoid dust formation.

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Acute toxicity:** To the best of our knowledge the acute and chronic toxicity of the substance is not fully known. Skin contact: May cause allergic skin reaction.

**Chronic toxicity:** To the best of our knowledge the acute and chronic toxicity of the substance is not fully known.

**Inhalation:** This product contains one or more non-asbestos fibers or other manmade fibers. Although relatively little is known about the long term health effects from exposure to dust from friction materials, studies of respirable fibers, which are physically similar to asbestos, suggest the potential for chronic lung disease, including fibrosis, with overexposure.

**Carcinogenic effects:** Titanium Dioxide is listed by IARC as possibly carcinogenic to humans (Group 2B). This listing is based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals.

**SECTION 12. ECOLOGICAL INFORMATION**

**Aquatic toxicity:** No information available

**Persistence and degradability:** No information available

**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 13. DISPOSAL CONSIDERATIONS**

**DOT Classification (U.S.)** Not a DOT controlled material (United States).

**Proper shipping name:** Not regulated

**TDG (Canada)**

**Proper shipping name:** Not regulated

**SECTION 14. TRANSPORT 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**

**NJRTK:** sn 1863

**PARTK:** Listed (NJRTK)

**Canadian WHMIS**

WHMIS hazard class for this product or ingredients: 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.

**SECTION 15. REGULATORY INFORMATION**

**Japanese List:**

- Listed.

**Korean List:**

- Listed.

**Chinese List:**

- Listed.

**Australian List:**

- Listed.
For Industrial Use Only
National Fire Protection Association (U.S.A.):

| Health | 1 |
| Fire   | 0 |
| Physical Hazard | 0 |
| PPE | X |

**Prepared by:** Product Manufacturer, TAM Ceramics Group of NY, LLC

**Protective Equipment:** Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

The information and recommendations contained in this Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the SDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

Last Updated: May 2015

End of Safety Data Sheet