MATERIAL SAFETY DATA SHEET

TAM Ceramics, LLC (#220821)
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For Chemical Emergency
Spill, Leak, Fire, Exposure or Accident
Call CHEMTREC Day or Night
DOMESTIC NORTH AMERICA 800-424-9300
INTERNATIONAL CALL: 703-527-3887 (collect calls accepted)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name: **Ruflux® 61 Milled Rutile, Ceramic Rutile**

Other Names: **Rutile, Rutile Titanium Dioxide**

2. HAZARDS IDENTIFICATION

Emergency Overview
Caution

		NFPA 704	
Color:	Brown, reddish brown	**Health:**	1
Physical state:	Powder	**Fire:**	0
Odor:	Odorless	**Instability:**	0

Avoid dust formation. May cause physical irritation.

Potential Health Effects

Principle routes of exposure: Inhalation, ingestion, skin and eye contact.

Eye contact: May cause slight irritation.

Skin contact: Prolonged skin contact may cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Inhalation: Product dust may be irritating to eyes, skin and respiratory system. Over-exposure by inhalation may cause respiratory irritation including sore throat, coughing and shortness of breath.

Ingestion: May irritate digestive tract.

Chronic toxicity: 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. In common with many naturally occurring mineral products, Rutile contains very low levels of naturally occurring radioactive elements of uranium and thorium. The main radiological hazard from the product is internal exposure to alpha particles given off in small amounts by inhaled dust. Low level gamma radiation from bulk or bagged stockpiles of Rutile may present a lesser, external hazard.

HMIS
Health: 1
Fire: 0
Physical hazard: 0
PPE: X

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No	Weight %	OSHA	ACGIH
Rutile / Leucoxene	1317-80-2 / 103170-28-1	95 - 99%	15 mg/m^3 TWA	10 mg/m^3 TWA
Zircon	149040-68-2	~1%		

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.

5. FIRE-FIGHTING MEASURES

Flash point: Non combustible.

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

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.

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.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Brown, reddish brown	**Physical state:**	Powder
Odor:	Odorless	**Molecular weight:**	No data available
Boiling point/range (°C):	No data available	**pH:**	No data available
Melting point/range (°C):	1560 - 1840	**Specific gravity (Water =1):**	3.8 - 4.3
Vapor pressure (mmHg):	No data available	**Evaporation rate (Water =1):**	No data available
Water solubility (mg/l):	Insoluble	**VOC content (%)**	No data available

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: None known.

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.

Titanium Dioxide
OSHA - Select Carcinogens: Listed
IARC - Group 2B: Listed

12. ECOLOGICAL INFORMATION

Aquatic toxicity: No information available

Persistence and degradability: No information available

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.

14. TRANSPORT INFORMATION

DOT:

Proper shipping name: Not regulated.

TDG (Canada):

Proper shipping name: Not regulated.

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
NJRTK: sn 1861
PARTK: Listed (NJRTK)

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.

16. OTHER INFORMATION

For Industrial Use Only

Prepared by: Product Manufacturer, TAM Ceramics, LLC

The information and recommendations contained in this Material 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 MSDS 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.

End of Safety Data Sheet