



High Purity Engineered Powders

MSDS

MATERIAL SAFETY DATA SHEET

CERAMIC RUTILE

TAM Product ID 54429

Revision No. 2

April, 1996

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

TAM Ceramics Product Identification Number: 54429

Tradenames and Synonyms

Rutile, TiO₂, titanium oxide, titanic anhydride, Titania GE Material D4C9, ASTM D476, TIPURE (DuPont), TRONOX (Kerr-McGee)

Company Identification

MANUFACTURER

TAM CERAMICS, INC.

4511 Hyde Park Blvd.

Niagara Falls, NY 14305-0067

PHONE NUMBERS

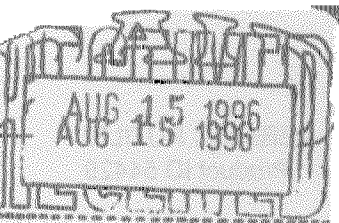
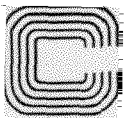
Product Information 1-716-278-9400

Transport Emergency **CHEMTREC:**

1-800-424-9300

Safety/Health Information 1-716-278-9423

Cookson



COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
TITANIUM DIOXIDE	13463-67-7	>94
MOISTURE		<

HAZARDS IDENTIFICATION

Potential Health Effects

SUMMARY OF RISKS: Hazard with TiO_2 is that of a nuisance dust. It is inert, practically non-toxic, and chemically non-irritating. Skin contact with TiO_2 has shown no adverse effects (other than drying and possible particulate abrasion). Eye contact with pure material has shown no specific effects other than general particulate irritation in the eye. Not absorbed by the body. Ingestion of 16 oz. has caused no apparent harm or distress. (Readily eliminated within 24 hours.) Excessive exposure above the TLV can give mild pulmonary irritation.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY CONTACT:

Consider pre-placement screening with emphasis on chronic respiratory problems. (Afflicted workers are at an increased risk from severe, prolonged exposure.)

Target Organs

None identified.

Primary Entry Route

None identified.

Carcinogenicity Information

This product is not considered a carcinogen by IARC.

FIRST AID MEASURES

Inhalation

If inhaled, immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin Contact

Wash affected area with soap and water. Get medical help.

Eye Contact

Immediately flush eyes, including under the eyelids, gently but thoroughly with plenty of running water for at least 15 minutes. Get medical help if irritation persists..

Ingestion

Contact physician if large amount ingested.

SEEK MEDICAL ASSISTANCE FOR FURTHER TREATMENT, OBSERVATION, AND SUPPORT AFTER FIRST AID.

FIRE FIGHTING MEASURES

Flammable Properties

Noncombustible.

Extinguishing Media

Use that which is suitable for surrounding fire. Does not burn or support combustion. No fire or explosion hazard with material itself.

Unusual Fire or Explosion Hazards

None.

Fire Fighting Instructions

Firefighters should wear self-contained breathing apparatus where TiO₂ dust can be released.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Accidental Release Measures

Clean-up personnel to wear NIOSH-approved respiratory protection. Spills can be removed by vacuuming up or wet sweeping, keeping airborne dust at a minimum. Pick up and place in a closed container for disposal or reclamation.

HANDLING AND STORAGE

Handling (Personnel)

Practice good housekeeping to prevent accumulation of dust. Avoid excessive dusting during cleanup and handling. Practice good personal hygiene. Keep material off of your clothes and equipment. Avoid transferring material from hands to mouth while eating, drinking, or smoking.

Storage

Store in closed containers in a cool, dry, well-ventilated area.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Provide adequate general and local exhaust ventilation in the workplace to keep airborne particulate at a minimum.

Personal Protective Equipment

Eye/Face Protection

Wear dust resistant goggles when handling this material.

Respirators

Under dusty conditions above the TLV but below 150 mg/m^3 , use an approved dust respirator (MSA #66 CM 73053 type filter has been recommended). Above 150 mg/m^3 use an air supplied or self-contained breathing apparatus. A full facepiece is needed above 150 mg/m^3 , and a positive pressure air-supplied system is needed above 750 mg/m^3 .

Protective Clothing

Wear gloves, aprons, coveralls, etc. as required to prevent prolonged or repeated contact with skin. (Use of lotions and barrier creams may be desirable).

Workplace Considerations

Ventilation

Use local exhaust ventilation where dust is generated to maintain airborne levels below the TLV. (Exhaust filter system may be required to avoid environmental contamination.)

Safety Stations

Make eyewash stations available in areas of use and handling.

Contact Lenses and Equipment

Contact lenses pose a special hazard; soft lenses may absorb irritants, and all lenses concentrate them. Particles can adhere to contact lenses and cause corneal damage.

Exposure Guidelines

8-hr. TWA 15 mg/m³ as total dust (titanium dioxide). [Current OSHA PEL. ACGIH (1983) TLV for nuisance particulate is 30 mppcf or 10 mg/m³ of total dust, or 5 mg/m³ of respirable dust; STEL 20 mg/m³ (15 minute period).]

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Vapor Pressure	Not volatile
Vapor Density	Not volatile
Melting Point	~1560 C, ~1840 C
Evaporation Rate	Not found
Solubility in Water	Insoluble
Odor	Odorless
Form	Crystals or powder
Color	White (Natural materials may be colored by impurities.)
Specific Gravity	~3.8, ~4.3

Stability and Reactivity

Chemical Stability

Material is stable in closed containers at room temperature under normal storage and handling conditions.

Incompatibility with Other Materials

Violent reaction with lithium around 200° C.

Reduction of oxide by heating with aluminum, calcium, magnesium, potassium, sodium, or zinc is accompanied by incandescence.

Decomposition

None.

Polymerization

Polymerization will not occur.

DISPOSAL CONSIDERATIONS

Waste Disposal

Unsalvageable waste may be buried as inert solid in an approved landfill. Follow federal, state, and local regulations. AQUATIC TOXICITY TLM 96: Over 1000 ppm.

OTHER INFORMATION

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. Component percentages are typical based on historical production performance. TAM Ceramics does not make any expressed or implied warranty that future production will continue to possess these typical properties.

Responsibility for MSDS

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End of MSDS