



**FERRO**<sup>®</sup>  
**ELECTRONIC MATERIALS**

# ***MATERIAL SAFETY DATA SHEET***

## **CERAMIC RUTILE**

Ferro Product ID 54429

Revision No. 5

August, 2000

### **CHEMICAL PRODUCT/COMPANY IDENTIFICATION**

#### **Material Identification**

Ferro Electronic Materials Product Identification Number: 54429

#### **Tradenames and Synonyms**

Rutile, TiO<sub>2</sub>, titanium oxide, titanic anhydride, Titania

#### **Company Identification**

##### MANUFACTURER

**FERRO ELECTRONIC MATERIALS**

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

## COMPOSITION/INFORMATION ON INGREDIENTS

### Components

<u>Material</u>	<u>CAS Number</u>	<u>%</u>
TITANIUM DIOXIDE	13463-67-7	>94
MOISTURE		<1
CHROMIUM OXIDE	1308-38-9	<0.5

SARA SECTION 313 SUPPLIER NOTIFICATION: This product contains the following chemical subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372:

Chromium Compound

This information should be included in all MSDS's that are copied and distributed for this material.

## HAZARDS IDENTIFICATION

### Potential Health Effects

SUMMARY OF RISKS: Hazard with TiO<sub>2</sub> is that of a nuisance dust. It is inert, practically non-toxic, and chemically non-irritating. Skin contact with TiO<sub>2</sub> 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 TiO<sub>2</sub> 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  $150 \text{ mg/m}^3$ , use an approved dust respirator (MSA #66 CM 73053 type filter has been recommended). Above  $150 \text{ mg/m}^3$  use an air supplied or self-contained breathing apparatus. A full facepiece is needed above  $150 \text{ mg/m}^3$ , and a positive pressure air-supplied system is needed above  $750 \text{ mg/m}^3$ .

#### **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.

### **Contaminated 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/m<sup>3</sup> as total dust (titanium dioxide). [Current OSHA PEL. ACGIH (1983) TLV for nuisance particulate is 30 mppcf or 10 mg/m<sup>3</sup> of total dust, or 5 mg/m<sup>3</sup> of respirable dust; STEL 20 mg/m<sup>3</sup> (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.

**REGULATORY INFORMATION**

EPA TSCA Status: All ingredients in this product are listed on the EPA Toxic Substances Control Act Chemical Substance Inventory

**REGULATORY 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. Ferro Electronic Materials 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**