



# MATERIAL SAFETY DATA SHEET

Ferro Corporation  
Performance Pigments & Colors  
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**Emergency telephone number**  
CHEMTREC: 1-800-424-9300  
CHEMTREC (outside U.S.): 1-703-527-3887  
Phone Number: 1-724-223-5900

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

**Product Name:** 41715A Turquoise Spersastain  
DRM100LB  
**Date of Preparation:** 09/14/2011

**Chemical Family:** Inorganic Pigment  
**CAS-No.:** Mixture  
**Product Code:** 1133476

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

Caution

May cause respiratory tract, eye and skin irritation. Avoid dust formation. May cause physical irritation. Contains crystalline silica which causes silicosis and lung cancer.

		<b>HMIS</b>	<b>NFPA 704</b>
<b>Color:</b>	Blue-green	1*	1
<b>Physical state:</b>	Powder	0	0
<b>Odor:</b>	Odorless	0	0
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### 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 and/or dermatitis.

**Inhalation:** May cause irritation of respiratory tract.

**Ingestion:** May irritate digestive tract.

**Chronic toxicity:** No known effects under normal conditions of use. Excessive inhalation of dust may cause chemical pneumonitis, cyanosis, and pulmonary edema. Respirable crystalline silica has been classified as a Group I (sufficient evidence in humans for carcinogenicity) carcinogenic by IARC and is listed by NTP as a substance which may reasonably be anticipated to be a carcinogen. Long term inhalation causes lung damage (silicosis and cancer).

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %
Zirconium vanadium blue zircon	68186-95-8	80 - 90%
Quartz silica	14808-60-7	5 - 10%
Silica, fumed	112945-52-5	1 - 5%

This product contains trace quantities of naturally occurring radioactive uranium, thorium and radium (<0.02% total). Overexposure by inhalation to respirable dusts containing uranium, thorium and radium may cause cancer, however, observance of the OSHA limit for respirable dusts of 5 mg/m<sup>3</sup> will ensure the use of this product to be well below the regulatory limits established for these components.

#### 4. FIRST AID MEASURES

<b>Eye contact:</b>	Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops.
<b>Skin contact:</b>	Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. If symptoms persist, call a physician.
<b>Inhalation:</b>	Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.
<b>Ingestion:</b>	Drink plenty of water. Do not induce vomiting. Consult a physician if necessary.
<b>Notes to physician:</b>	Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

<b>Flash point (°C):</b>	Non combustible
<b>Suitable extinguishing media:</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. The product itself does not burn.
<b>Hazardous decomposition products:</b>	Metal fumes.
<b>Special protective equipment for firefighters:</b>	As in any fire, wear self-contained breathing apparatus (pressure-demand, NIOSH approved or equivalent) and full protective gear.

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Avoid dust formation. Evacuate area of all unnecessary personnel. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Ensure adequate ventilation.
<b>Environmental precautions:</b>	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. Prevent product from entering drains.
<b>Methods for cleaning up:</b>	Wear personal protective equipment. Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly. Dispose of promptly.

#### 7. HANDLING AND STORAGE

<b>Handling:</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Avoid contact with skin, eyes and clothing. Wash hands thoroughly before eating, drinking or smoking. In case of insufficient ventilation, wear suitable respiratory equipment. Provide appropriate exhaust ventilation at places where dust is formed.
<b>Storage:</b>	Keep container tightly closed in a dry and well-ventilated place. Store in original container.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

##### Exposure limits

Minimize exposure in accordance with good hygiene practice.

Components	OSHA	ACGIH
Zirconium vanadium blue zircon	5 mg/m <sup>3</sup> TWA Zr	10 mg/m <sup>3</sup> STEL Zr 5 mg/m <sup>3</sup> TWA Zr
Quartz silica	Listed	0.025 mg/m <sup>3</sup> TWA respirable fraction

<b>Engineering measures:</b>	Provide appropriate exhaust ventilation at machinery and at places where dust or fumes can be generated. Ensure adequate ventilation, especially in confined areas.
<b>Eye protection:</b>	Safety glasses with side-shields.

<b>Skin and body protection:</b>	Lightweight protective clothing.
<b>Hand protection:</b>	Impervious gloves.
<b>Respiratory protection:</b>	Use NIOSH approved respirator when ventilation is inadequate. In case of insufficient ventilation wear suitable respiratory equipment . Seek professional advise prior to respirator selection and use. NIOSH-approved respirators should be worn where engineering controls and work practices do not reduce exposure to or below the PEL.
<b>Hygiene measures:</b>	Wash hands before breaks and at the end of workday. Contaminated work clothing should not be allowed out of the workplace. Ensure that eyewash stations and safety showers are proximal to the work-station location.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	Blue-green	<b>Physical state:</b>	Powder
<b>Odor:</b>	Odorless	<b>Molecular weight:</b>	No data available
<b>Boiling point/range (°C):</b>	No data available	<b>pH:</b>	No data available
<b>Melting point/range (°C):</b>	No data available	<b>Specific gravity (Water =1):</b>	No data available
<b>Vapor density:</b>	Non-volatile	<b>Vapor pressure :</b>	No data available
<b>Evaporation Rate (Water = 1)</b>	Non-volatile	<b>Water solubility:</b>	Insoluble
<b>VOC content (%)</b>	0		

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable at normal conditions.
<b>Polymerization</b>	Will not occur.
<b>Hazardous decomposition products:</b>	None under normal use.
<b>Materials to avoid:</b>	None known.
<b>Conditions to avoid</b>	None known.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute toxicity:</b>	Information given is based on data on the components and the toxicology of similar products
<b>Chronic Toxicity:</b>	Contains crystalline silica which causes silicosis and lung cancer.
<b>Carcinogenic Effects:</b>	Respirable crystalline silica has been classified as a Group I (sufficient evidence in humans for carcinogenicity) carcinogenic by IARC and is listed by NTP as a substance which may reasonably be anticipated to be a carcinogen. Crystalline silica is also a known cause of silicosis, a non-cancerous lung disease caused by excessive exposure to crystalline silica.
<b>Target Organ Effects:</b>	Silica: Respiratory system. Vanadium: Eyes, respiratory system.

### Component information, if any, is listed below

#### Quartz silica

<b>LD50s and LC50s:</b>	Oral LD50 (Rat) = 500 mg/kg
<b>OSHA - Select Carcinogens:</b>	Present
<b>NTP:</b>	Known Human Carcinogen
<b>IARC - Group 1:</b>	Listed

#### Silica, fumed

<b>LD50s and LC50s:</b>	Oral LD50 (Rat) = 3160 mg/kg
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## 12. ECOLOGICAL INFORMATION

**Aquatic toxicity:** No data is available on the product itself. Information given is based on data on the components and the ecotoxicology of similar products.

**Persistence and degradability:** Not determined

## 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 (U.S.)

**Proper shipping name:** Not regulated.

### TDG (Canada)

**Proper shipping name:** Not regulated.

## 15. REGULATORY INFORMATION

### U.S. Regulations:

**TSCA:** Not subject to TSCA 12(b) Export Notification

### SARA 313:

Components	U.S. - CERCLA/SARA - Section 313 - Emission Reporting
Vanadium compounds (1 - 5%)	1.0 % de minimis concentration

### 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.

Components	PARTK:
Vanadium compounds	Listed (PARTK)

Components	NJRTK:
Quartz silica	Listed (NJRTK)
Vanadium compounds	Listed (NJRTK)

Components	State Regulation - CA Prop65
Quartz silica	Carcinogen

### Canadian WHMIS

**WHMIS hazard class:** D2B Toxic materials D2A Very toxic materials

### Canadian Ingredient Disclosure List (IDL):

Components	Canada - WHMIS Ingredient Disclosure:
Quartz silica	1
Vanadium compounds	1

### International Inventories

<b>TSCA 8(b):</b>	Listed or exempt.
<b>Canadian DSL/NDSL list</b>	All ingredient(s) are listed on the DSL or NDSL
<b>EC-No.</b>	Listed or exempt.
<b>Philippines (PICCS):</b>	Listed.
<b>Japan (ENCS):</b>	Listed or exempt.
<b>Korea (KECL):</b>	Listed.
<b>China (IECS):</b>	Listed.
<b>Australia (AICS):</b>	Listed.
<b>New Zealand (NZIoC):</b>	Listed.

## 16. OTHER INFORMATION

### For Industrial Use Only.

**Prepared by:** Ferro Technical Center

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**