



# MATERIAL SAFETY DATA SHEET

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

**Product Name:** PE RTU CC Wh Ti RM60-C 100LB BAG Date of Preparation: 01/02/2007  
**Chemical Name:** Frit mixture  
**Synonyms:** Glassy mixture of chemical substances made by smelting and quenching.  
**Formula:** TSCA Description: "Frit is a mixture of inorganic chemical substances produced by rapidly quenching a molten, complex combination of materials, confining the chemical substances thus manufactured as non-migratory components of glassy solid flakes or granules..."  
**CAS-No.:** Mixture  
**Product code:** 1016154

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

Caution

May cause eye/skin irritation. May cause irritation of respiratory tract. Do not breathe vapours/dust. Contains crystalline silica which causes silicosis and lung cancer.

NFPA 704

<b>Colour:</b>	White	<b>Health:</b>	2
<b>Physical state:</b>	Powder or flakes	<b>Fire:</b>	0
<b>Odour:</b>	Odorless	<b>Instability:</b>	0

### Potential Health Effects

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

**Eye contact:** Contact with eyes may cause irritation.

**Skin contact:** Prolonged skin contact may cause skin irritation.

**Inhalation:** Dust or fumes from firing irritating to respiratory tract. Fumes may cause lung inflammation. Metal fumes containing fluoride may cause lung inflammation. Symptoms may include chest pains, chills, cough, headache, and diarrhea.

**Ingestion:** May irritate digestive tract.

**Chronic toxicity:** Excessive inhalation of fumes or dust may cause chemical pneumonitis, cyanosis, and pulmonary edema. Chronic overexposure to fluoride may result in digestive disturbances, mottled tooth enamel, abnormal hardening of the bones and other bone changes, and damage to the liver and kidneys. Skin rashes and worker complaints related to bones, joints, and muscles have been reported. High doses of stannous fluoride have been reported to cause impaired reproductive performance in animals. Long term inhalation causes lung damage (silicosis and cancer). 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.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %
Frit	65997-18-4	90 - 95%
Fluoride compound		1 - 5%
Kaolin	1332-58-7	1 - 5%
Quartz silica	14808-60-7	1 - 5%
Zirconium Silicate	14940-68-2	1 - 5%

Frit is a fused metal oxide mixture.

This product contains trace quantities of naturally occurring radioactive uranium, thorium and radium (<0.01% 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

**Eye contact:** Rinse thoroughly 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. Get medical attention if irritation develops.

**Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.

**Ingestion:** Drink plenty of water. Do not induce vomiting without medical advice.

**Notes to physician:** Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

**Flash point (°C):** 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. Heavy metal compounds.

**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

**Exposure limits:**

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	OSHA	ACGIH
Frit	Not established	Not established
Zirconium compound	5 mg/m <sup>3</sup> TWA (as Zr)	10 mg/m <sup>3</sup> STEL (as Zr) 5 mg/m <sup>3</sup> TWA (as Zr)
Fluoride compound	2.5 mg/m <sup>3</sup> TWA (as F)	2.5 mg/m <sup>3</sup> TWA (as F)
Kaolin	15 mg/m <sup>3</sup> TWA (total dust) 5 mg/m <sup>3</sup> TWA (respirable)	2 mg/m <sup>3</sup> TWA (respirable fraction)
Quartz silica	30 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2) Total Dust 10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> + 2) Respirable	0.025 mg/m <sup>3</sup> TWA (respirable)
Zirconium Silicate	5 mg/m <sup>3</sup> TWA as Zr	10 mg/m <sup>3</sup> STEL as Zr 5 mg/m <sup>3</sup> TWA as Zr

**Engineering measures:** Provide appropriate exhaust ventilation at machinery and at places where dust or fumes can be generated.

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

**Skin and body protection:** Lightweight protective clothing. Keep working clothes separately. Remove and wash contaminated clothing before re-use.

**Hand protection:** Impervious gloves.

**Respiratory protection:** Use NIOSH approved respirator when ventilation is inadequate.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Colour:</b>	White	<b>Physical state:</b>	Powder or flakes
<b>Odour:</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>	> 1000	<b>Specific gravity (Water =1):</b>	1.600 - 3.000
<b>Vapor pressure (mmHg):</b>	No data available	<b>Evaporation rate (Water =1):</b>	No data available
<b>Water solubility (mg/l):</b>	Negligible	<b>VOC content (%)</b>	No data available

## 10. STABILITY AND REACTIVITY

**Stability:** Stable at normal conditions.

**Polymerization:** Will not occur.

**Hazardous decomposition products:** No decomposition if stored normally. Thermal decomposition can lead to release of irritating gases and vapours.

**Materials to avoid:** None known.

**Conditions to avoid:** None known.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:** No data is available on the product itself

**Chronic toxicity:** Contains crystalline silica which causes silicosis and lung cancer.

**Carcinogenic effects:** 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.

**Target Organ Effects:** Silica: Respiratory system.

### Quartz silica

**OSHA - Select Carcinogens:** Present

**NTP:** Known carcinogen

**IARC - Group 1:** Monograph 68, 1997 (inhaled in the form of quartz or cristobalite from occupational sources)

## 12. ECOLOGICAL INFORMATION

**Aquatic toxicity:** Not determined

**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. TRANSPORTATION INFORMATION

### DOT (U.S.)

**Proper shipping name:** Not regulated.

### TDG (Canada)

**Proper shipping name:** Not regulated.

## 15. REGULATORY INFORMATION

### U.S. Regulations:

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.

#### **Components** **State Regulations - NJ; PA; CA Prop65**

Zirconium compound	Radionuclides (Cal Prop 65)
Kaolin	Listed (PARTK)
Quartz silica	Listed (NJRTK) Carcinogen (Cal Prop 65) Listed (PARTK)

### Canadian WHMIS

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

### Canadian Ingredient Disclosure List (IDL):

#### **Components** **WHMIS Ingredient Disclosure:**

Zirconium compound	1%
Fluoride compound	1%
Quartz silica	1%

### International Inventories

TSCA 8(b): Listed or exempt.

Canadian DSL: Listed or exempt.

EINECS: Listed or exempt.

Phillipines (PICCS): Listed.

Japan (ENCS): Listed or exempt.

Korea (KECL): Listed.

China (IECS): Listed.

Australia (AICS): Listed.

## 16. OTHER INFORMATION

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**For Industrial Use Only.**

**HMIS**

**Health: \*2**

**Fire: 0**

**Physical hazard: 0**

**PPE: X**

**Prepared by:** Ferro Technical Center

Disclaimer: 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**

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