



# 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:** 41378A Brown Spersastain  
DRM100LB  
**Date of Preparation:** 12/21/2010

**Chemical Family:** Inorganic Pigment  
**CAS-No.:** Mixture  
**Product Code:** 1133446

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

Caution  
May cause respiratory tract, eye and skin irritation. Avoid dust formation.

		<b>HMIS</b>	<b>NFPA 704</b>
<b>Color:</b>	Brown	1	1
<b>Physical state:</b>	Powder	0	0
<b>Odor:</b>	Odorless	0	0
		E	

### Potential Health Effects

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

**Eye contact:** May cause 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.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %
Zinc Oxide	1314-13-2	40 - 50%
Chromium(III) oxide	1308-38-9	30 - 40%
Aluminum hydroxide	21645-51-2	10 - 20%
Iron oxide	1332-37-2	5 - 10%
Silica, fumed	112945-52-5	1 - 5%

The mixed metal oxide pigment in this product is made by high temperature fusion. Due to resulting unique structure, the fired pigment will not necessarily exhibit the same properties as the component oxides or metals in their pure state.

## 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 symptoms persist, call a physician.

**Ingestion:** Drink plenty of water. Do not induce vomiting. Consult a physician if necessary.

**Notes to physician:** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Flash point (°C):** Non combustible

**Suitable extinguishing media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. The product itself does not burn.

**Hazardous decomposition products:** Metal fumes.

**Special protective equipment for firefighters:** As in any fire, wear self-contained breathing apparatus (pressure-demand, NIOSH approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid dust formation. Evacuate area of all unnecessary personnel. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Ensure adequate ventilation.

**Environmental precautions:** 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.

**Methods for cleaning up:** Wear personal protective equipment. Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly. Dispose of promptly.

## 7. HANDLING AND STORAGE

**Handling:** 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.

**Storage:** 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
Zinc Oxide	15 mg/m <sup>3</sup> TWA	10 mg/m <sup>3</sup> STEL respirable fraction 2 mg/m <sup>3</sup> TWA respirable fraction
Chromium(III) oxide	0.5 mg/m <sup>3</sup> TWA Cr	0.5 mg/m <sup>3</sup> TWA Cr
Aluminum hydroxide	Not established	1 mg/m <sup>3</sup> TWA respirable fraction

**Engineering measures:** Provide appropriate exhaust ventilation at machinery and at places where dust or fumes can be generated. Ensure adequate ventilation, especially in confined areas.

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

**Skin and body protection:** Lightweight protective clothing.

**Hand protection:** Impervious gloves.

**Respiratory protection:** NIOSH-approved respirators should be worn where engineering controls and work practices do not reduce exposure to or below the PEL. In case of insufficient ventilation wear suitable respiratory equipment . Seek professional advise prior to respirator selection and use.

**Hygiene measures:** 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>	Brown	<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 (Air=1):</b>	Non-volatile	<b>Vapor pressure (mmHg):</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

**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

**Carcinogenic Effects:** Not listed by IARC, NTP or OSHA as a carcinogen.

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

### Chromium(III) oxide

**LD50s and LC50s:** Oral LD50 Rat:>1000 mg/kg;  
Dermal LD50 Rat:>2000 mg/kg;  
Inhalation LC50 Rat: >2.01 mg/L/4H;

## 12. ECOLOGICAL INFORMATION

**Aquatic toxicity:** 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.

## 14. TRANSPORT INFORMATION

### 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	SARA 313:
Zinc Oxide (40 - 50%)	1.0 % de minimis concentration (Chemical Category N982)
Chromium(III) oxide (30 - 40%)	0.1 % de minimis concentration (Chemical Category N090)
	1.0 % de minimis concentration (Chemical Category N090)

### 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
Zinc Oxide	Listed (NJRTK) Listed (PARTK)
Chromium(III) oxide	Listed (NJRTK) Listed (PARTK)

### Canadian WHMIS

WHMIS hazard class: D2B Toxic materials

### Canadian Ingredient Disclosure List (IDL):

Components	Canada - WHMIS Ingredient Disclosure:
Zinc Oxide	1
Chromium(III) oxide	1
Aluminum hydroxide	1

### International Inventories

TSCA 8(b): Listed or exempt.  
Canadian DSL/NDSL list: All ingredient(s) are listed on the DSL or NDSL  
EC-No. Listed or exempt.  
Philippines (PICCS): Listed.  
Japan (ENCS): One or more ingredient(s) are not on the ENCS list.  
Korea (KECL): Listed.  
China (IECS): Listed.  
Australia (AICS): Listed.  
New Zealand (NZIoC): 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**