MATERIAL SAFETY DATA SHEET

Ferro Corporation, Polymer Additives Division
Cleveland Operation
1000 Wayside Road
Cleveland, Ohio 44110 USA

Emergency telephone number:
CHEMTREC: 1-800-424-9300

Plant Number: 1-216-531-6010

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

Product name: **Therm-Chek® SP1606 100 Lb Drm**

Date of Preparation: 05/12/2003

Chemical Family: Polymer Additive

Chemical Name: PVC Powder Stabilizer

CAS-No.: Mixture

2. COMPOSITION/INFORMATION ON INGREDIENTS

Exposure limits

Components	CAS-No	Weight %	OSHA	ACGIH
Pentaerythritol	115-77-5	20 - 30%	15 mg/m³ TWA (total dust) 5 mg/m³ TWA (respirable fraction)	10 mg/m³ TWA
Butylated hydroxytoluene	128-37-0	10 - 20%	Not applicable	2 mg/m³ TWA (inhalable fraction, vapor and aerosol)
Zinc Oxide	1314-13-2	1 - 5%	15 mg/m³ TWA (total dust) 5 mg/m³ TWA (fume) 5 mg/m³ TWA (respirable fraction)	10 mg/m³ STEL (fume) 10 mg/m³ TWA (dust) 5 mg/m³ TWA (fume)
Zinc Compound	RR-00578-7	40 - 50%	Not applicable	Not applicable
Zinc compounds, as Zn	7440-66-6	5 - 10%	Not applicable	Not applicable

The specific chemical identities are being withheld as a trade secret (29CFR1910.1200).

3. HAZARDS IDENTIFICATION

Emergency Overview

Caution

NFPA 704

Color: White
Physical state: Powder
Odor: Mild

Health: 1
Fire: 1
Instability: 0

May cause irritation of respiratory tract. May cause eye/skin irritation.

Potential health effects

Principle routes of exposure: Skin contact, Eye contact, Inhalation.

Eye contact: Contact with eyes may cause irritation.

Skin contact: Prolonged skin contact may cause skin irritation.

Inhalation:	Over-exposure by inhalation may cause respiratory irritation.
Ingestion:	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic toxicity:	Prolonged skin contact may cause skin irritation and/or dermatitis.

HMIS
Health: 1
Fire: 1
Physical hazard: 0
PPE: E

4. FIRST AID MEASURES

Eye contact:	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, consult a specialist.
Skin contact:	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. Call a physician immediately.
Ingestion:	Drink 1 or 2 glasses of water. Consult a physician if necessary.
Notes to physician:	Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flash point:	260 °C (500°F) Method: PMCC
Suitable extinguishing media:	Use dry chemical, CO2, water spray or "alcohol" foam. Do not use a solid water stream as it may scatter and spread fire.
Hazardous decomposition products:	Carbon oxides. ZnO. CaO.
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:	Avoid dust formation. Dust may form explosive mixture in air.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.
Methods for cleaning up:	Shovel into suitable container for disposal. Wear personal protective equipment.

7. HANDLING AND STORAGE

Handling:	Use only in area provided with appropriate exhaust ventilation. Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe vapours/dust.
Storage:	Keep containers tightly closed in a cool, well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures:	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Respiratory protection:	In case of insufficient ventilation wear suitable respiratory equipment.
Hand protection:	Impervious gloves.
Skin and body protection:	Long sleeved clothing.
Eye protection:	Safety glasses with side-shields.
Exposure limits:	See Section 2.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Powder
Color:	White
Odor:	Mild
pH:	No data available
Molecular weight:	No data available
Boiling point/range (°C):	No data available
Specific gravity (Water =1):	> 1.000
Vapor density (Air=1):	No data available
Vapor pressure (mmHg):	No data available
Evaporation rate (Water =1):	No data available
Water solubility:	Negligible
VOC content (%):	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	None under normal processing.
Hazardous decomposition products:	Carbon oxides. Heavy metal compounds.
Materials to avoid:	Strong acids and oxidizing agents.
Conditions to avoid:	Heat, flames and sparks. Dust may form explosive mixture in air.

11. TOXICOLOGICAL INFORMATION

No data is available on the product itself.

Acute toxicity

Eye irritation:	May cause eye irritation with susceptible persons.

Skin irritation: May cause skin irritation in susceptible persons..

Chronic toxicity Prolonged skin contact may cause skin irritation and/or dermatitis..

Pentaerythritol

NIOSH - LD50s and LC50s:
= 19500 mg/kg Oral LD50 Rat
= 25500 mg/kg Oral LD50 Mouse

Butylated hydroxytoluene

NIOSH - LD50s and LC50s:
= 650 mg/kg Oral LD50 Mouse
= 890 mg/kg Oral LD50 Rat

Zinc Oxide

NIOSH - LD50s and LC50s:
= 2500 mg/m³ Inhalation LC50 Mouse
= 7950 mg/kg Oral LD50 Mouse

12. ECOLOGICAL INFORMATION

No data is available on the product itself.

Butylated hydroxytoluene

Ecotoxicity - Fish Species Data:	= 2.5 mg/L 48 Hr LC50 killifish
Ecotoxicity - Microtox Data:	= 7.82 mg/L 5 min EC50 Photobacterium phosphoreum
	= 8.57 mg/L 15 min EC50 Photobacterium phosphoreum
	= 8.98 mg/L 30 min EC50 Photobacterium phosphoreum

Zinc Oxide

Ecotoxicity - Fish Species Data:	= 6.4 mg/L 96 Hr LC50 fathead minnow
Ecotoxicity - Water Flea Data:	= 5 ug/L 72 Hr LC50 water flea
Ecotoxicity - Freshwater Algae Data:	= 30 ug/L 96 Hr EC50 freshwater algae (Selenastrum capricornutum)

Aquatic toxicity: No information available.

Persistence and degradability: No information available.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: In accordance with local and national regulations. Where possible recycling is preferred to disposal or incineration.

14. TRANSPORT INFORMATION

DOT:

Proper shipping name: Not regulated.

TDG (Canada):

Proper shipping name: Not regulated.

15. REGULATORY INFORMATION

U.S. Regulations:

Zinc Oxide (1 - 5%)

SARA 313 - 1.0 percent
1.0 percent

Zinc Compound (40 - 50%)
SARA 313 - 1.0 percent

Zinc compounds, as Zn (5 - 10%)
SARA 313 - form R reporting required for 1.0% de minimis concentration (only fume or dust); Chemical Category N982

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.

Pentaerythritol
PARTK: [present]

Butylated hydroxytoluene
NJRTK: sn 0814
PARTK: [present]

Zinc Oxide
NJRTK: sn 2021 (dust and fume)
sn 2037; sn 2055 (fume)
PARTK: environmental hazard
environmental hazard (any compound of this substance is also an environmental hazard)

Canada

WHMIS hazard class: D2B Toxic materials .

Components	WHMIS: Ingredient Disclosure:
Butylated hydroxytoluene	1%; English Item 238; French Item 1007
Zinc Oxide	1%; English Item 1717; French Item 1326

International Inventories

TSCA 8(b): All the ingredients are on the TSCA list.
DSL: All the ingredients are on the DSL.
EINECS: All the ingredients are on the EINECS list.
PICCS: Listed.
ENCS: Listed.
KECL: Listed.
CHINA: Listed.
AICS: Listed.

16. OTHER INFORMATION

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