



MATERIAL SAFETY DATA SHEET

Ferro Corporation, Polymer Additives Division
 Walton Hills Operation
 7050 Krick Road
 Walton Hills, Ohio 44146-4494 USA

Emergency telephone number
 CHEMTREC: 1-800-424-9300
 Plant Number: 1-216-750-6708

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

Product Name: Therm-Chek® SP1503 **Date of Preparation:** 08/26/2004
Chemical Family: Polymer Additive
Chemical Name: Barium, Cadmium, Zinc Complex Mixture
CAS-No.: Mixture
Product code: 1035602

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Exposure limits | | | | |
|-----------------------------|----------|----------|-----------------------------------------------------------------------------|-----------------------------------------------------------|
| Components | CAS-No | Weight % | OSHA | ACGIH |
| Petroleum based hydrocarbon | | 30 - 40% | 5 mg/m ³ TWA (oil mist) | 10 mg/m ³ TWA (oil mist) |
| Triphenyl phosphite | 101-02-0 | 1 - 5% | Not established | Not established |
| Phenol | 108-95-2 | 1 - 5% | 19 mg/m ³ TWA 5 ppm TWA prevent or reduce skin absorption | 5 ppm TWA skin - potential for cutaneous absorption |
| Cadmium compounds, as Cd | | 5 - 10% | 2.5 ug/m ³ action level (as Cd); 5 ug/m ³ TWA (as Cd) | 0.002 mg/m ³ TWA 0.01 mg/m ³ TWA |
| Barium compounds, as Ba | | 1 - 5% | 0.5 mg/m ³ TWA | 0.5 mg/m ³ TWA |

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

3. HAZARDS IDENTIFICATION

Emergency Overview

Caution

NFPA 704

| | |
|-------------------------------|-----------------------|
| Color: Amber | Health: 2 |
| Physical state: Liquid | Fire: 1 |
| Odour: Solvent-like | Instability: 0 |

May cause eye/skin irritation. Avoid contact with the skin and the eyes. May cause cancer. May be harmful if absorbed through skin.

Potential Health Effects

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

Eye contact: May cause slight irritation.

Skin contact: Prolonged skin contact may cause skin irritation and/or dermatitis. May be harmful if absorbed through skin.

Inhalation: May cause irritation of respiratory tract. The effects of overexposure to cadmium may include decreased stamina, fatigue, sleep disturbance, headaches, aching bones and muscles, constipation, abdominal pains and decreased appetite. Existing lung or pulmonary conditions may be aggravated by exposure.

Ingestion: May irritate digestive tract.

Chronic toxicity: Prolonged skin contact may cause skin irritation and/or dermatitis. Cadmium is a cumulative poison and can build up in the body over time to toxic levels. Cadmium causes lung damage and kidney disfunction and may cause lung or prostate cancer.

HMIS

Health: *2

Product name: Therm-Chek® SP1503

MARKETED BY
HARWICK STANDARD
DISTRIBUTION CORPORATION
 60 S. Seiberling Street • Akron, Ohio 44305

Fire: 1
Physical hazard: 0
PPE: X

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 not breathing, give artificial respiration. If symptoms persist, call a physician.

Ingestion: Drink plenty of water. Consult a physician if necessary. Do not induce vomiting without medical advice.

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point: 102 °C (216°F) Method: PMCC

Suitable extinguishing media: Use dry chemical, CO₂, water spray or "alcohol" foam.

Hazardous decomposition products: Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides. CdO. BaO.

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: Flash back possible over considerable distance. Heavy metals may be released in hazardous concentrations in the form of dusts or fumes (see sections 2 & 10). Material may change or decompose on exposure to moisture.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate area of all unnecessary personnel. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

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.

Methods for cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labelled containers. Dispose of promptly. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. In case of insufficient ventilation, wear suitable respiratory equipment.

Storage: Keep container tightly closed in a dry and well-ventilated place. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

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

Hand protection: Impervious gloves.

Skin and body protection: Lightweight protective clothing.

Eye protection: Safety glasses with side-shields.

Exposure limits: See Section 2.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------------------|-------------------|-------------------------------------|-------------------|
| Color: | Amber | Appearance: | Clear |
| Physical state: | Liquid | Odour: | Solvent-like |
| Molecular weight: | No data available | Boiling point/range (°C): | No data available |
| pH: | No data available | Specific gravity (Water =1): | 1.030 |
| Vapor pressure (mmHg): | No data available | Evaporation rate (Water =1): | < 1.00 |
| Water solubility (mg/l): | Insoluble | VOC content (%) | No data available |

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Polymerization: Will not occur.

Hazardous decomposition products: none under normal use. Possible decomposition products from hydrolysis: phenol, aliphatic alcohol, phosphoric acid.

Materials to avoid: Strong oxidizing agents. Strong acids and strong bases. Water.

Conditions to avoid: Heat, flames and sparks. Exposure to moisture.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

No data is available on the product itself.

Carcinogenic effects: Cadmium and cadmium compounds (as respirable dust/aerosols) have proven to be carcinogenic. Listed by IARC, NTP and OSHA as a carcinogen.

Target Organ Effects: Liver. Barium compound: Heart, gastrointestinal tract. Kidney.

Component Information

Component information, if any, is listed below

Phenol

NIOSH - LD50s and LC50s: = 270 mg/kg Oral LD50 Mouse
= 317 mg/kg Oral LD50 Rat
= 630 mg/kg Dermal LD50 Rabbit

ACGIH - Carcinogens: A4 - Not Classifiable as a Human Carcinogen

Cadmium compound

ACGIH - Carcinogens: A2 - Suspected Human Carcinogen (as Cd)
OSHA - Specifically Regulated Chemicals: 2.5 ug/m³ action level (as Cd); 5 ug/m³ TWA (as Cd)
OSHA - Select Carcinogens: Present
IARC - Group 1: Monograph 58, 1993 (Evaluated as a group)

Triphenyl phosphite

NIOSH - LD50s and LC50s: = 1080 mg/kg Oral LD50 Mouse
= 444 mg/kg Oral LD50 Rat

Barium carbonate

NIOSH - LD50s and LC50s: = 200 mg/kg Oral LD50 Mouse
= 418 mg/kg Oral LD50 Rat
ACGIH - Carcinogens: A4 - Not Classifiable as a Human Carcinogen
A4 - Not Classifiable as a Human Carcinogen (as Ba)

12. ECOLOGICAL INFORMATION

Aquatic toxicity: No information available

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. TRANSPORT INFORMATION

DOT:

UN/ID No: UN3082

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s (Cadmium compounds)

U.S. DOT - Hazard Class: 9 Marine pollutant

Packing group: III

Other shipping information: This material meets the definition of a marine pollutant. Applies to containers for shipments in bulk or via water transportation.

Cadmium compound (20 - 30%)

DOT regulated severe marine pollutant

Phenol (1 - 5%)

CERCLA/DOT RQ: 1000 lb 454 kg

TDG (Canada):

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s (Cadmium compounds)

Hazard class: 9 Marine pollutant

Packing group: III

15. REGULATORY INFORMATION

U.S. Regulations:

Not subject to TSCA 12(b) Export Notification

Cadmium compounds, as Cd (5 - 10%)

SARA 313: form R reporting required for 0.1% de minimis concentration; Chemical Category N078

Cadmium compound (20 - 30%)

SARA 313: 0.1 percent de minimis concentration (Chemical Category N078)

Barium compounds, as Ba (1 - 5%)

SARA 313: form R reporting required for 1.0% de minimis concentration; Chemical Category N040

Barium Compound (5 - 10%)

SARA 313: form R reporting required for 1.0% de minimis concentration; Chemical Category N040

Zinc compounds, as Zn (0.1 - 0.5%)

SARA 313: form R reporting required for 1.0% de minimis concentration (only fume or dust); Chemical Category N982

Zinc Compound (1 - 5%)

SARA 313: 1.0 percent de minimis concentration (Chemical Category N982)

Phenol (1 - 5%)

SARA 313: 1.0 percent 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.

Phenol (1 - 5%)

NJRTK: sn 1487

PARTK: Listed

Zinc Compound (1 - 5%)

NJRTK: 3012
PARTK: Listed

Barium Compound (5 - 10%)
NJRTK: 2146 (1.0%)
PARTK: Listed

Cadmium compound (20 - 30%)
NJRTK: 2199 (0.1%)
PARTK: Listed
Cal Prop65: carcinogen; developmental toxicity.

Barium carbonate (1 - 5%)
NJRTK: sn 0180
PARTK: Listed

Canadian WHMIS

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

| Components | WHMIS Ingredient Disclosure: |
|------------------------------|-------------------------------------|
| Phenol (1 - 5%) | 1% |
| Cadmium compound (20 - 30%) | 1% |
| Triphenyl phosphite (1 - 5%) | 1% |
| Barium carbonate (1 - 5%) | 0.1% |

International Inventories

TSCA 8(b): All the ingredients are on the TSCA list.
Canadian DSL: All the ingredients are on the DSL.
EINECS: All the ingredients are on the EINECS list.
Phillipines (PICCS): Listed.
Japan (ENCS): Not listed.
Korea (KECL): Listed.
China (IECS): Listed.
Australia (AICS): 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 abne 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