

MATERIAL SAFETY DATA SHEET



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TO THE PURCHASER: This MSDS contains important environmental, safety, and health information for your employees. Federal regulations require that this information be made available to them. If you resell this product, a copy of this MSDS should be given to the buyer.

PRODUCT IDENTIFICATION: 3304 / 3304-2
(Common Name) 3304 lead bearing frit

CHEMICAL FAMILY: Frits; TSCA Inventory CAS # 65997-18-4*

SYNONYM: Chemical substances manufactured in the production of frit

(From US-EPA/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 nonmigratory components of glassy solid flakes or granules. - - - "

SECTION I

MANUFACTURERS NAME: Ferro Corporation, Frit Division

MAIL: 4150 East 56th Street
P.O. Box 6550
Cleveland, OH 44101

SHIP: 4150 East 56th Street
Cleveland, OH 44105

TELEPHONE: For Ferro Emergency Response System; (216) 641-5324
For Chemical Emergencies Call Chemtrec; 1-800-424-9300
For Information Call Ferro Corporation; (216) 641-8580

TELEX: 98-0165

SECTION IIa - HAZARDOUS COMPONENTS

Frit is a fused silicate glass substance. The components of this glass product listed below are from the inventory of potentially hazardous substances referenced by FED/OSHA in 29 CFR 1910.1200.

COMPONENT	Exposure Limit (Air), mg/M ³ , 8 Hour TWA		
	ACGIH/TLV	FED-OSHA/PEL	CAL-OSHA/PEL
Lead compounds, as Pb	0.15	0.05	0.05

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SECTION IIb - "SARA III" DATA

This product contains the following component(s) that require reporting under Section 313 of the Emergency Planning and Community Right-to-Know Act, also known as Title III of SARA (the Superfund Amendments and Reauthorization Act), and 40 CFR Part 372:

<u>COMPONENT</u>	<u>PERCENT PRESENT</u> ^(a)
Lead compounds	54.4% (as PbO)

(a) The percent reported is based on the theoretical composition of this frit. While existing in theory, the component(s) mentioned are only present as part of FRIT (CAS # 65997-18-4*).

SECTION III - PHYSICAL HAZARD DATA

SPECIFIC GRAVITY (H₂O = 1) approx. 3.89 MELTING POINT (°F) above 1200
SOLUBILITY IN WATER Negligible
APPEARANCE AND ODOR Frit flake, or milled glass powder / Odorless
Boiling Point / Vapor Pressure / Vapor Density / % Volatile By Volume / Evaporation Rate - - - All N/A

SECTION IV - FIRE & EXPLOSION HAZARD DATA

FLASH POINT (method used): N/A FLAMMABLE LIMITS: N/A
EXTINGUISHING MEDIA: None required - not combustible
SPECIAL FIRE FIGHTING PROCEDURES: None UNUSUAL FIRE & EXPLOSION HAZARDS: None

SECTION V - REACTIVITY DATA

STABILITY: Stable X Unstable N/A (Conditions To Avoid) N/A
INCOMPATIBILITY: (Materials To Avoid) N/A
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Avoid fumes from firing
HAZARDOUS POLYMERIZATION: Will Not Occur X (Conditions To Avoid) N/A

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SECTION VI - HEALTH HAZARD DATA

PRINCIPAL ROUTES OF ABSORPTION: Inhalation and Ingestion

EFFECTS OF OVEREXPOSURE: Of primary concern is the chronic overexposure to lead. Initial warning properties are poor. Prolonged or repeated inhalation and/or ingestion of lead containing frit dust may result in lead poisoning, with symptoms of weight loss, stomach cramps, loss of coordination and joint and muscle pain. Lead can cause kidney damage and delayed effects involving the blood, gastrointestinal, nervous and reproductive systems. Excessive exposure to lead dusts during pregnancy can result in neurological disorders in infants. For additional information consult OSHA lead standard, 29 CFR 1910.1025.

Prolonged contact with frit dust can be very irritating to the eyes and/or skin. High dust levels can be irritating to the respiratory tract.

WITH adequate ventilation, dust control, and good personal hygiene, symptoms of overexposure should not occur. Advise regular medical monitoring of employees by a physician competent in industrial health.

CARCINOGENICITY: In IARC Supplement 7, inorganic lead compounds are given a 2B rating which indicates "sufficient evidence" for carcinogenicity to animals and "inadequate evidence" for carcinogenicity to humans.

EMERGENCY AND FIRST AID PROCEDURES: If overexposure is suspected move employee to fresh air; if breathing is difficult give oxygen. Call a physician. For dust in eyes; flush immediately with clean water and call a physician.

SOURCE OF HEALTH HAZARD DATA: This MSDS was developed from information on the constituent substances of this fritted compound, not from test data on the frit itself.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Uncontaminated material may be recovered and re-used. If contaminated scoop, vacuum, or wash into a receptacle for disposal.

WASTE DISPOSAL METHOD: Follow Federal or State and Local regulations for disposal. Lead is listed in US-EPA Code of Federal Regulations 40, Part 261.24. Testing of the waste may be required to determine status under the hazardous waste regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Protect containers against physical damage; store in dry area away from feed and food products.

OTHER PRECAUTIONS: Employees should wash and change into clean clothes before going home. Consult OSHA lead standard (29 CFR 1910.1025) for full requirements, some of which may not be covered in this MSDS.

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SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION: (Specify Type) Use a NIOSH approved dust and/or fume respirator as necessary.

VENTILATION: Local Exhaust - Recommended for dust control; vent dust to collector.

PROTECTIVE GLOVES: Use judgment - work gloves recommended.

EYE PROTECTION: Use judgment - safety glasses recommended.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Wear appropriate clean, protective clothing such as, but not limited to, coveralls, smocks, aprons, gloves, shoes, and hats.

WORK / HYGIENIC PRACTICES: Food, beverages, and smoking materials should NOT be in the work area. Hygiene is VERY important; employees should wash thoroughly before eating, drinking, smoking, or applying cosmetics.

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Non-Standard Abbreviations Used On Material Safety Data Sheets

- ACGIH - American Conference of Governmental Industrial Hygienists
- CAL/OSHA - California Occupational Safety and Health Administration
- CAS # - Chemical Abstract Service Number
- CFR - Code of Federal Regulations
- FED/OSHA - Federal Occupational Safety and Health Administration
- IARC - International Agency for Research on Cancer
- MSDS - Material Safety Data Sheet
- N/A - Not Applicable
- NIOSH - National Institute for Occupational Safety and Health
- PEL - Permissible Exposure Limit
- TSCA - Toxic Substances Control Act
- TLV - Threshold Limit Value (registered terminology of ACGIH)
- TWA - Time Weighted Average
- US-EPA - United States Environmental Protection Agency
