

Frit 5301

10810

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 use this product, a copy of this MSDS should be given to the buyer.

ISSUE DATE: April, 1986

MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICATION: 5301 / 5301-2
(Common Name) 5301 Leadless 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, Coatings Division
MAIL: 4150 East 56th Street P.O. Box 6550 Cleveland, Ohio 44101
SHIP: 4150 East 56th Street Cleveland, Ohio 44105
EMERGENCY PHONE NO. (216) 641-8580
TELEX: 98-0165

SECTION II - HAZARDOUS COMPONENTS

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

COMPONENT	1% Or More Present(?)	Exposure Limit(Air), mg/m ³ ACGIH/TLV	FED-OSHA/PEL	8 Hour TWA CAL-OSHA/PEL
Barium, soluble compounds, as Ba	x	0.5	0.5	0.5
Fluorides, as F	Yes	2.5	2.5	2.5
Zirconium compounds, as Zr	x	5.	5.	5.
Nuisance particulates (total dust)	Yes	10.	15.	10.

(C) = Ceiling Limit Yes = present x = not present

SECTION III - PHYSICAL HAZARD DATA

SPECIFIC GRAVITY (H₂O = 1) approx. 2.42 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

03++++86

Page 1 - (Continued on Reverse Side)

N/A - NOT APPLICABLE

IMPORTANT: SEE REVERSE SIDE FOR DISCLAIMER

SECTION V - REACTIVITY DATA

STABILITY: Stable X Unstable (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 May Occur (Conditions To Avoid) N/A

SECTION VI - HEALTH HAZARD DATA

PRINCIPAL ROUTES OF ADSORPTION: Inhalation and Ingestion
EFFECTS OF OVEREXPOSURE: Excessive ingestion of barium containing frit may cause inflammation of the gastrointestinal tract, muscular paralysis, slow pulse rate, irregular heart contractions, and low blood potassium levels.
Metal fumes and/or fluoride containing vapors from firing may cause lung inflammation and injury in terms of hours with symptoms of chest pains, chills, cough, headache, and diarrhea.
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.
CARCINOGENICITY: N/A
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.
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.
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. Barium is listed in US-EPA Code of Federal Regulations 40, Part 261.24. If present, 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.

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.

Judgements as to the suitability of information herein or the purchaser's purposes are necessarily the purchaser's responsibility. Reasonable care has been taken in the preparation of this information, but FERRO EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF THIS INFORMATION FOR ANY PURCHASER'S USE OR FOR ANY CONSEQUENCE OF ITS USE.

Ferro