

# MATERIAL SAFETY DATA SHEET

**Taminco, Inc.**  
1900 Lake Park Drive  
Smyrna, Georgia 30080

For Emergencies Involving a Spill, Leak, Fire,  
Exposure or Accident Contact:  
CHEMTREC (800) 424-9300

## SECTION 1 IDENTIFICATION

### FERBAM GRANUFLO?

Ferric Dimethyldithiocarbamate  
(syn: Tris (Dimethyldithiocarbamate) iron)

CHEMICAL FAMILY: Dithiocarbamate  
FORMULA:  $C_9H_{18}N_3S_6Fe$   
MOLECULAR WT: 416.5 (Ferbam)  
EPA REG NO.: 45728-7

**Product Code: 245035**

HMIS HAZARD RATINGS  
Health 2  
Flammability 1  
Reactivity 0  
0=Least; 1=Slight  
2=Moderate; 3=High  
4=Extreme

## SECTION 2 PRODUCT COMPONENTS

INGREDIENTS	CAS#.	WT. %	EXPOSURE LIMITS
Ferbam	14484-64-1	76	15 mg/m3 PEL-TWA (total dust) 10 mg/m3 TLV-TWA

## SECTION 3: HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** This product is a black, granular solid with no odor. It is not defined as flammable or combustible but will burn under fire conditions. Very high concentrations of dust in the air may present a dust explosion hazard.

Direct contact with the eyes or skin may cause irritation. May cause allergic skin reaction. Inhalation of dust may cause mucous membrane and respiratory irritation, congestion and lethargy. Ingestion may cause systemic poisoning with symptoms of nausea, vomiting, dizziness, kidney damage and coma.

## SECTION 4 EMERGENCY and FIRST AID PROCEDURES

**EYE CONTACT:** Immediately flush eye with water for at least 15 minutes while lifting the upper and lower lids. Get immediate medical attention.

**SKIN CONTACT:** Wash contact area thoroughly with soap and water until no traces of the chemical remain. Remove contaminated clothing immediately and launder before reuse. Get medical attention if irritation develops or if person feels unwell.

**INHALATION:** Remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, have qualified personnel administer oxygen. Get immediate medical attention.

**INGESTION:** If conscious, wash out mouth and give patient plenty of water. Do not give anything by mouth to or induce vomiting in a person who is unconscious or convulsing. Get immediate medical attention. If medical aid is not readily available, induce vomiting and repeat until vomit fluid is clear.

## SECTION 5 FIRE and EXPLOSION HAZARD DATA

**FLASH POINT:** None

**METHOD:** Not applicable

**FLAMMABLE LIMITS:** Not available

**AUTOIGNITION TEMPERATURE:** Not available

**EXTINGUISHING MEDIA:** Use any media that is appropriate for the surrounding fire.

**SPECIAL FIRE FIGHTING PROCEDURES:** Evacuate area of all non-emergency personnel. Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus. Fight fire from upwind, and cool exposed intact containers and structures with water spray or stream at maximum range. Decontaminate all protective equipment after use, prevent skin contact. This product is toxic to fish. Contain all water run-off with diking.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Fire or intense heat may generate toxic decomposition products. Do not breathe smoke, gases or vapors generated. Very high concentrations of this product suspended in air may present an explosion hazard.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

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**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Wear appropriate protective clothing as described in Section VII to prevent eye and skin contact and appropriate respirator to prevent overexposure. Stop leak at source. Isolate area and keep out animals and unprotected persons. Carefully sweep up dry spilled material and collect into labeled containers for proper disposal. If liquid, dike and absorb with inert material. This material is toxic to fish. Prevent runoff to storm sewers and ditches leading to natural waterways. Report spill as required by local and federal regulations.

## SECTION 7 HANDLING and STORAGE

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** Protect containers from physical damage. Store in a cool, well-ventilated area away from excessive heat, fire and sparks, and oxidizers. Store in original container only. Do not put concentrate or dilute material into food or drink containers. Keep away from food and feed. Do not contaminate water. Avoid contact with eyes, skin and clothing. Do not breathe dusts, mists or aerosols. Use only with adequate ventilation and appropriate protective equipment. Carefully open containers. Immediately remove and launder contaminated clothing before re-use. Wash thoroughly after handling and before eating, drinking, chewing gum, using tobacco, or using toilet facilities. Remove personal protective equipment (PPE) immediately after handling product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Keep out of reach of children and animals.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state, province or Tribe, consult the agency responsible for pesticide regulation. Use this product only in accordance with its labeling and the Worker Protection Standard, 40CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard is described in Section 8 of this MSDS. Notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas.

**OTHER PRECAUTIONS:** Keep containers tightly closed. Empty containers retain product residues and are hazardous. Follow all MSDS precautions in handling empty containers. This product is toxic to fish. Do not apply directly to water, or to areas where surface water is present or to intertidal area below the mean high water mark. Do not apply where run-off is likely to occur. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwaters. Apply this product only as specified on the product label.

## SECTION 8 EXPOSURE CONTROLS and PERSONAL PROTECTION

**RESPIRATORY PROTECTION:** Use a properly fit-tested NIOSH approved full-facepiece respirator with pesticide cartridge or half-face respirator with non-venting chemical goggles required for applicators and other handlers and when performing any operation where exposure to Ferbam is likely. Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with OSHA 1910.134 and good Industrial Hygiene practice.

**ENGINEERING CONTROLS:** When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard for agricultural pesticides [40CFR 170.240(d)], the handler PPE requirements may be reduced or modified as specified in the Worker Protection Standard.

**PROTECTIVE CLOTHING:** Applicators and other handlers must wear rubber or other chemical resistant, waterproof gloves, long sleeved shirt and long pants, shoes plus socks, protective eyewear (see below) and chemical resistant headgear for overhead exposure. Early entry to treated areas that is permitted under the Worker Protection Standard requires the wearing of coveralls, rubber or other chemical resistant, waterproof gloves, shoes plus socks, protective eye wear (see below) and chemical resistant headgear for overhead exposure. Remove personal protective equipment (PPE) immediately after handling product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**EYE PROTECTION:** Non-venting chemical safety goggles are required if full face-piece respirator is not worn. Do not wear contact lenses.

**OTHER PROTECTIVE EQUIPMENT:** For operations where contact can occur, a safety shower and an eye wash facility should be immediately available.

**Note:** Follow the manufacturer's instructions for cleaning and maintaining Personal Protective Equipment (PPE). If no specific instructions for decontamination are available, use detergent and hot water. Keep and wash (launder) PPE separately from other laundry.

## SECTION 9 PHYSICAL and CHEMICAL PROPERTIES

**BOILING POINT (@760 mmHg):** Decomposes  
**SPECIFIC GRAVITY (H<sub>2</sub>O=1):** 0.53 g/cc (bulk density)  
**VOLATILE:** 0%  
**EVAPORATION RATE:** Not applicable

**MELTING POINT:** Decomposes above 180°C  
**VAPOR PRESSURE (@ 20°C mmHg):** Not applicable  
**VAPOR DENSITY (Air=1):** Not applicable  
**SOLUBILITY IN WATER:** Negligible

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**COEFFICIENT OF WATER/OIL:** Not applicable

**APPEARANCE AND ODOR:** Black granules, no odor.

## SECTION 10 STABILITY and REACTIVITY

**STABILITY:** This material is stable

**CONDITIONS TO AVOID:** Excessive heat and moisture

**INCOMPATIBILITY:** Oxidizers

**HAZARDOUS POLYMERIZATION:** Will not occur.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition may yield oxides of carbon, nitrogen, and sulfur, as well as hydrogen sulfide and carbon disulfide.

## SECTION 11 TOXICOLOGICAL INFORMATION

**EYE CONTACT:** May cause eye irritation and injury which may persist for several days based on animal studies.

**SKIN CONTACT:** May cause skin irritation and rarely skin sensitization.

**INHALATION:** Dust may cause respiratory and mucous membrane irritation, respiratory congestion and lethargy. May be toxic by inhalation based on animal studies.

**INGESTION:** The oral toxic dose in laboratory animals is reported to be ? 5000 mg/kg. Ingestion in humans has been reported to result in nausea, vomiting, diarrhea, headache, dizziness, emotional lability, kidney damage and coma.

**OTHER TOXIC EFFECTS:** The consumption of alcoholic beverages increases the toxic effects of Ferbam. An antabuse-like reaction (flushing, sweating, headache, hypotension) may be noted when alcohol is ingested following exposure to a large amount of Ferbam.

**CARCINOGENICITY:** None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. IARC has classified Ferbam as Group 3 (not classifiable as to its carcinogenicity in humans).

**CHRONIC EFFECTS OF OVER EXPOSURE:** Ferbam has been reported to cause adverse reproductive effects on the newborn in laboratory studies with rats and mice.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** There are no medical conditions known to be aggravated by exposure to this material.

### TOXICOLOGY DATA:

	<u>LD50**</u>	<u>LC50**</u>
Ferbam 76% WDG	?5000 mg/kg oral rat	0.53 mg/L/4 hr (rat)
	?4000 mg/kg dermal rabbit	(calculated)

\*\*UCB proprietary studies

(Inhalation toxicity studies were done with powdered technical grade and resulted in a LC50 in rats of 0.4 mg/L/4 hr. The granular form is not respirable, therefore, this product is not toxic by inhalation in its present form.)

## SECTION 12: ECOLOGICAL INFORMATION

**ENVIRONMENTAL PRECAUTIONS:** This product is toxic to fish. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Keep out of lakes, streams, ponds, tidal marshes and estuaries. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwaters. Apply this product only as specified on this label.

**ECOTOXICITY VALUES FOR FERBAM:** No data available

## SECTION 13: DISPOSAL INFORMATION

**WASTE DISPOSAL METHOD:** Pesticide wastes are toxic. Dispose of in accordance with all local, state and federal regulations. Completely empty container into application equipment then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke.

## SECTION 14: TRANSPORTATION INFORMATION

**DOT SHIPPING NAME:** Environmentally Hazardous Substance, Solid, n.o.s. (Ferbam), 9, UN3077, PG III

**DOT HAZARD CLASSIFICATION:** Class 9 (Miscellaneous Hazardous Material)

**DOT LABELS REQUIRED (49CFR 172.101):** Class 9

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UN NUMBER: UN3077

REPORTABLE QUANTITY: Not Applicable

## SECTION 15: REGULATORY INFORMATION

OSHA HAZARD CLASSIFICATION: Irritant, toxic

EPA SARA 311 HAZARD CLASSIFICATION: Acute health

SARA TITLE 111 SECTION 313 INFORMATION: The following components are regulated under SARA Title 313

COMPONENT	CAS#	WT%
Ferbam	14484-64-1	76

EPA/TSCA INVENTORY STATUS: Excluded from listing requirements as product is registered under EPA/FIFRA regulations.

CERCLA HAZARDOUS SUBSTANCE (40CFR 116): Not applicable

REPORTABLE QUANTITY: Not applicable

## SECTION 15: REGULATORY INFORMATION (continued)

### STATE R-T-K COMPOSITION INFORMATION

COMPONENT	CAS #	WT%	PA	NJ
Ferbam	14484-64-1	76	Y	Y

CALIFORNIA PROPOSITION 65 INFORMATION: This product contains no California Proposition 65 regulated chemicals.

## SECTION 16: OTHER INFORMATION

DISCLAIMER: The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Taminco makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards and regulations.

Approved By: \_\_\_\_\_



**Product Stewardship Manager**

Date: April 24, 2003