



"...providing sulfide reagents for treatment of COPR and other metal-bearing wastes..."

# MATERIAL SAFETY DATA SHEET

## FerroBlack-Hybrid

<b>1. Product And Company Identification</b>	
<b>Supplier</b> Redox Solutions, LLC 11550 N. Meridian Street, Suite 180 Carmel, IN 46032  <b>Company Contact:</b> Tom McCullough <b>Telephone Number:</b> (317) 660-6867 <b>Web Site:</b> <a href="http://www.redoxsolutions.com">www.redoxsolutions.com</a>	<b>Manufacturer</b> Micronutrients, LLC 1550 Research Way Indianapolis, IN 46231  <b>Company Contact:</b> Ted Moore <b>Telephone Number:</b> (317) 486-5880
<b>Supplier Emergency Contacts &amp; Phone Number</b> CHEMTREC: (800) 424-9300 Micronutrients: (317) 660-6867	<b>Manufacturer Emergency Contacts &amp; Phone Number</b> CHEMTREC: (800) 424-9300 Micronutrients: (317) 486-5880
<b>Issue Date:</b> 01/05/12  <b>Product Name:</b> FerroBlack-Hybrid <b>CAS Number:</b> 1317-37-9 <b>Chemical Formula:</b> FeS <b>MSDS Number:</b> NA  <b>Synonyms</b>  IRON (II) SULFIDE FERROUS SULPHIDE IRON (II) SULPHIDE  <b>Product/Material Uses</b> Heavy metal stabilization / fixation. Chemical reducing agent for Cr+6 to Cr+3.	

<b>2. Composition/Information On Ingredients</b>			
Ingredient Name	CAS Number		Percent of Total Weight
Ferrous Sulfide	1317-37-9		7 - 8
Soluble Sulfide	16721-80-5		1 - 2
Water	7732-18-5		76 - 80
Other Inactive or Inerts	NA		Balance

<b>3. Hazards Identification</b>
<b>Eye Hazards</b> May be irritating to eyes and mucous membranes.
<b>Ingestion Hazards</b> LD/TD no data. PEL/TLV:TWA 1mg(Fe)/m3. No known carcinogenicity.
<b>Inhalation Hazards</b> Avoid inhalation of any fumes which may be given off when used or when bottle is opened. Consider toxic orally or by inhalation.

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### 4. First Aid Measures

#### Eye

Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to insure thorough flushing of the entire area of the eye and lids. Obtain immediate medical attention.

#### Skin

Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower.

#### Ingestion

If swallowed, give water or milk and induce vomiting. Call a physician.

#### Inhalation

NA

### 5. Fire Fighting Measures

#### Fire and Explosion Hazards

Material is not considered to be combustible.

#### Extinguishing Media

Fire extinguishing media must be compatible with material that is burning.

### 6. Accidental Release Measure

Confine and absorb small releases on sand, earth or other inert absorbent. Dispose in accordance with all applicable environmental regulations.

### 7. Handling And Storage

#### Handling And Storage Precautions

Use only with adequate ventilation. Use protective clothing to prevent contact with skin or eyes. Store in well ventilated areas. Do not store combustibles in the area of storage vessels. Keep away from any sources of heat or flame. Store tote and smaller containers out of direct sunlight at moderate temperatures [ $<80^{\circ}$  F ( $27^{\circ}$  C)]. (See addendum for materials of construction).

### 8. Exposure Controls/Personal Protection

#### Eye/Face Protection

Safety glasses with side-shield.

#### Skin Protection

Proper Gloves.

#### Respiratory Protection

None required if adequate ventilation is provided.

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### 9. Physical And Chemical Properties

<b>Appearance</b>	Black liquid with visible suspended solids
<b>Odor</b>	No appreciable odor
<b>Specific Gravity:</b>	1.21
<b>Vapor Density:</b>	Not determined
<b>Solubility:</b>	Insoluble (with partial soluble phase)
<b>pH</b>	10.5 – 12.3

### 10. Stability and Reactivity

**Stability** Stable

**Hazardous Polymerization**

Will not occur

**Conditions To Avoid (Stability)**

None known

**Incompatible Materials**

Acids will cause the release of highly toxic Hydrogen Sulfide. Reacts violently with diazonium salts. Sodium Hydrosulfide solution is not compatible with copper, zinc, aluminum or their **alloys** (i.e. bronze, brass, galvanized metals, etc.). Corrosive to steel above 150° F (65.5° C). These materials of construction should not be used in handling systems or storage containers for this product.

### 11. Toxicological Information

Not generally regarded as a health hazard.

### 12. Disposal Considerations

If released to the environment for other than its intended purpose, this product should be checked to see it meets the criteria of a reactive sulfide D003, Reactive waste.

### 13. Transport Information

**Proper Shipping Name:**

Non-hazardous, Non-Regulated Liquid (Ferrous Sulfide Slurry)

### 14. NFPA

Health – 0      Flammability – 0      Reactivity – 2

### 15. Disclaimer



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While the information and recommendations contained herein are based on data that is believed to be correct, Redox Solutions, LLC makes no guarantee or warranty of any kind, expressed or implied with respect to the information contained herein. We reserve the right to revise material safety data sheets periodically as new information becomes available. (MSDS Revised: 1/05/12)