



## Safety Data Sheet

### ZVI Micrometal Suspension

SDS Revision Date:

09/26/2016

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#### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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##### 1.1. Product identifier

Product Identity ZVI Micrometal Suspension  
Alternate Names ZVI Micrometal

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use See Technical Data Sheet.  
Application Method See Technical Data Sheet.

##### 1.3. Details of the supplier of the safety data sheet

Company Name Tersus Environmental, LLC  
1116 Colonial Club Rd.  
Wake Forest, NC 27587

##### Emergency

CHEMTREC (USA) (800) 424-9300  
24 hour Emergency Telephone No. 1-703-527-3887  
Customer Service: Tersus Environmental, LLC (919) 453-5577  
info@tersusenv.com

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#### SECTION 2: HAZARDS IDENTIFICATION

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##### EMERGENCY OVERVIEW:

##### ROUTES OF ENTRY:

ABSORPTION (SKIN) (EYES): YES

INGESTION: YES

INJECTION: NO

INHALATION: NO

ACUTE HEALTH HAZARDS: None Known – Not believed to have harmful health effects

##### INGESTION/SWALLOWED: (Unknown)

- Accidental ingestion of the material may be damaging to the health of the individual.
- No harmful effects expected in amounts likely to be ingested by accident.
- Overexposure is unlikely in this form.
- Nonionic surfactants may produce localized irritation of the oral or gastrointestinal lining and induce vomiting and mild diarrhea.

EYE: (Unknown)



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- Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals.
- Prolonged eye contact may cause inflammation characterized by a temporary redness of the conjunctiva (similar to windburn).
- Non-ionic surfactants can cause numbing of the cornea, which masks discomfort normally caused by other agents and leads to corneal injury. Irritation varies depending on the duration of contact, the nature and concentration of the surfactant.

### SKIN: (Unknown)

- The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering.
- Prolonged contact may cause dryness of the skin.
- Skin contact is not thought to have harmful health effects, however the material may still produce health damage following entry through wounds, lesions or abrasions.
- Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
- Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

### INHALATION: (Unknown)

- The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified using animal models). Nevertheless, adverse effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
- In high concentrations, vapors may be irritating to the respiratory system.

### CHRONIC HEALTH HAZARDS: None Known – Not believed to have harmful chronic health effects

- Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified using animal models); nevertheless, exposure by all routes should be minimized as a matter of course. Prolonged or repeated skin contact may cause degreasing with drying, cracking and dermatitis following.

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

OSHA Regulatory Status: Some ingredients of this product are hazardous according to OSHA 29CFR 1910.1200.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None Known

### CARCINOGENICITY

OSHA:  
NA

ACGIH:  
NA

NTP:  
NA

IARC:  
NA

OTHER:  
NA

### SECTION 2 NOTES:



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#### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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PRODUCT NAME: ZVI Micrometal – Electron Donor Suspension  
CASE NO.: None Known  
SYNONYMS: None Known  
PRODUCT CODES: None Known

<u>INGREDIENT:</u>	<u>CAS NO.</u>	<u>% WT</u>	<u>% VOL</u>	<u>SARA 313 REPORTABLE</u>
Zero Valent Iron	7439-89-6	10 - 40	NA	NA
Glycerol	8001-22-7	40 - 80	NA	NA
Calcium carbonate	471-34-1	<10%	NA	NA

<u>ZVI Micrometal</u>	<u>ppm</u>	<u>mg/m3</u>
OSHA PEL-TWA:	NA	NA
OSHA PEL STEL :	NA	NA
OSHA PEL CEILING:	NA	NA
ACGIH TLV-TWA:	NA	NA
ACGIH TLV STEL:	NA	NA
ACGIH TLV CEILING:	NA	NA

IMPURITIES: NONE

STABILIZING ADDITIVES: NONE

SECTION 3 NOTES:

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#### SECTION 4: FIRST AID MEASURES

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**EYES:**

- In case of eye contact, rinse opened eye for 15 minutes then consult a doctor.

**SKIN:**

- Remove contaminated clothing. Wash contaminated clothing before reuse.
- In case of skin contact, immediately wash with water and soap, then rinse thoroughly.
- Seek medical assistance if redness, itching or a burning sensation develops.

**INGESTION:**

- In case of ingestion, after swallowing seek immediate medical advice.
- Make doctor aware that the following symptoms may occur: nausea, cramps, gastric or intestinal disorders.
- Drink 2 to 3 glasses of whole milk.

**INHALATION:**

- Move individual to fresh air. Not an expected route of exposure.
- If cough or other respiratory symptoms develop, consult medical personnel.



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SECTION 4 NOTES:

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#### SECTION 5: FIRE-FIGHTING MEASURES

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FLAMMABLE LIMITS IN AIR, UPPER: NA  
(% BY VOLUME) LOWER: NA

FLASH POINT:  
F: >482°F  
C: >250°C

METHOD USED: Closed Cup

AUTOIGNITION TEMPERATURE:  
F: >760°F  
C: >404°C

NFPA HAZARD CLASSIFICATION \*SCALE: 4-extreme, 3-High, 2-Moderate, 1-Low, 0- Insignificant

HEALTH: 1	FLAMMABILITY: 2	REACTIVITY: 1
OTHER: None		

HMIS HAZARD CLASSIFICATION

HEALTH: 1	FLAMMABILITY: 2	REACTIVITY: 1
PROTECTION:		

EXTINGUISHING MEDIA: Extinguishing Powder – Class D Fire Extinguisher

SPECIAL FIRE FIGHTING PROCEDURES: Do NOT use water, carbon dioxide, or halogenated extinguishers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NA

HAZARDOUS DECOMPOSITION PRODUCTS: NA

SECTION 5 NOTES:

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#### SECTION 6: ACCIDENTAL RELEASE MEASURES

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ACCIDENTAL RELEASE MEASURES:

Person Related Safety Measures: Wear protective equipment, keep unprotected persons away, ensure adequate ventilation

Environmental Safety Measures: NA

Measures for cleaning/collecting: Dispose of contaminated material as waste according to section 7

SECTION 6 NOTES:



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#### SECTION 7: HANDLING AND STORAGE

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##### HANDLING AND STORAGE:

- Contain spilled material and recover into drums. Plastic drums are recommended.
- All drums should be placed out of direct sunlight.
- Ensure good ventilation at the workplace.
- Keep ignition sources away.
- Do not store together with oxidizing and acidic materials.
- Store away from halogens.

##### SECTION 7 NOTES:

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#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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ENGINEERING CONTROLS: Block off area from unprotected persons

VENTILATION : Ensure adequate ventilation

RESPIRATORY PROTECTION: NA

EYE PROTECTION: Safety Goggles

PROTECTIVE GLOVES: Rubberized gloves (neoprene or pvc)

PROTECTIVE FOOTWEAR: Slip resistant footwear

SKIN PROTECTION: Outer clothing to minimize dermal contact.

WORK HYGIENIC PRACTICES: Surfaces covered with EZVI are very slick. Exercise care in handling or clean up to avoid injury due to falls.

##### SECTION 8 NOTES:

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#### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE: Grey to black, viscous liquid

ODOR: Soybean Oil (cooking oil) odor

PHYSICAL STATE: Liquid

pH AS SUPPLIED:

pH (Other):

BOILING POINT:

F: >572 °F

C: >300 °C





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SECTION 10 NOTES:

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#### SECTION 11: TOXICOLOGICAL INFORMATION

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TOXICOLOGICAL INFORMATION: NA

IRON Toxicity to Animals: Acute oral toxicity (LD50): 30000 mg/kg [Rat].

Routes of Entry: Eye contact, inhalation, ingestion, and absorption.

LD50: Not available.

LC50: Not available.

Possible Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

SECTION 11 NOTES:

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#### SECTION 12: ECOLOGICAL INFORMATION

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ECOLOGICAL INFORMATION: NA

SECTION 12 NOTES:

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#### SECTION 13: DISPOSAL CONSIDERATIONS

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WASTE DISPOSAL METHOD: Store waste materials in appropriately labeled drums out of direct sunlight. Moist conditions are preferred. Waste materials should be doused with water while in drums.

RCRA HAZARD CLASS: NA

SECTION 13 NOTES:

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#### SECTION 14: TRANSPORT INFORMATION

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U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME: Emulsified Zero Valent Iron

HAZARD CLASS: NA

ID NUMBER: NA

PACKING GROUP: None

LABEL STATEMENT:

WATER TRANSPORTATION

PROPER SHIPPING NAME: Emulsified Zero Valent Iron

HAZARD CLASS: NA

ID NUMBER: NA

PACKING GROUP: None



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LABEL STATEMENTS:

AIR TRANSPORTATION

PROPER SHIPPING NAME: Emulsified Zero Valent Iron

HAZARD CLASS: NA

ID NUMBER: NA

PACKING GROUP: None

LABEL STATEMENTS:

OTHER AGENCIES:

SECTION 14 NOTES:

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SECTION 15: REGULATORY INFORMATION

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U.S. FEDERAL REGULATIONS (No known regulations are in place for this product)

TSCA (TOXIC SUBSTANCE CONTROL ACT): NA

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): NA

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): NA

311/312 HAZARD CATEGORIES: NA

313 REPORTABLE INGREDIENTS: NA

STATE REGULATIONS: NA

INTERNATIONAL REGULATIONS: NA

OSHA Regulatory Status: Some ingredients of this product are hazardous according to OSHA 29CFR 1910.1200. These specific ingredients are in lower amounts than the OSHA Permissible Exposure Limits and ACGIH Time Weighted Average.

IMPORTANT: The information contained herein relates only to the specific material identified. RemQuest believes that such information is accurate and reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, express or implied, is made as to the accuracy, reliability, or completeness of the information. RemQuest urges persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.

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SECTION 16: OTHER INFORMATION

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The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is: Not applicable





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This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

We suggest that containers be either professionally reconditioned for re-use by certified firms or properly disposed of by certified firms to help reduce the possibility of an accident. Disposal of containers should be in accordance with applicable federal, state and local laws and regulations. "Empty" drums should not be given to individuals.

The conditions of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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