

MATERIAL SAFETY DATA SHEET:- May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910. 1200. Standard must be consulted for specific requirements.

Product Name: Vitalus

Product ID#: 442

Section I MANUFACTURER'S INFORMATION

Manufacturer's Name And Address

Northwest Ag Emergency Telephone Number: 509-545-9329

821 S. Chesnut Ave. Number for Information: 509-545-9329

Pasco, WA. 99301 Date Prepared: July 16, 2004

Section II HAZARDOUS INGREDIENTS

MATERIAL COMPONENT % EXPOSURE LIMITS IN AIR HAZARD DATA

ACGIH TLV OSHA PEL

Zinc sulfate* 0.4 N/A N/A Health

(CAS No. 7733-02-0)

Ferrous sulfate 0.1 1 mg/m3 1 (TWA) Health

(CAS No. 7720-78-7)

Manganese sulfate* 0.3 5 mg/m3 2 (c) Health

(CAS No. 7785-87-7)

Copper sulfate .67 1mg/m3 1mg/m3 Health

(CAS No. 7758-99-8)

Toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and re

authorization Act of 1986 and 40 CFR Part 372.

***WARNING*:**

This product contains a small amount of crystalline silica which may cause delayed respiratory disease if inhaled over a prolonged

period of time. Avoid breathing dust. Use NIOSH/MSHA approved Respirator where TLV for crystalline silica may be exceeded. IARC

Monographs on the evaluation of the "Carcinogenic Risk of Humans"(volume 42,1987) concludes that there is "limited evidence" of the

carcinogenicity of Crystalline silica to humans. IARC classification 2A.

Dot Class: Not Regulated

(1) As Fe (2) As Mn (3) Ceiling

Section III PHYSICAL DATA

Boiling Point , 760 MM HG - 100 Melting Point - N/A

Specific Gravity (H2 O=1) - 1.22 Vapor Pressure - Not known

Vapor Density (AIR=1) - Not known Solubility in H2 O, % by wt. - Approx. 98%

% Volatile by and Odor - Not known Evaporation Rate (Butyl Acetate=1) - Not known

Appearance and Odor - Dark Brown Liquid, Sweet

Section IV FIRE AND EXPLOSION DATA

Flash Point Auto Ignition

(Test Method) N/A Temperature N/A

Flammable limits in Air, % by vol.: Lower N/A Upper N/A

Extinguishing Media N/A

Special Fire

Fighting Procedures N/A

Unusual Fire and Explosion Hazard N/A

Section V HEALTH AND HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE

INHALATION: May cause respiratory tract irritation, nausea, vomiting , weakness, fever, chills and loss of appetite.

Chronic exposure may cause pneumonia, liver damage, and neuralgic damage.

SKIN CONTACT: May cause skin irritation.

SKIN ABSORPTION: None Known .

EYE CONTACT: May cause eye irritation .

INGESTION: Ingestion may result in nausea, vomiting, diarrhea, blood in vomits and stools, burning pain in mouth and

throat, abdominal pain, lethargy, confusion , edema, leukocytosis, hyperglycemia, acidosis, shock, liver and kidney damage, and

other gastrointestinal and neuralgic symptoms and damage. Ingestion by a child of more than 60 ml. (2 ounces) or by an adult of

more than 150 ml. (5 ounces) may be fatal.

EMERGENCY AND FIRST AID PROCEDURES

EYES: Immediately flush with water for 15 minutes, lifting eyelids to flush thoroughly.

SKIN : Wash thoroughly with water.

INHALATION : Remove to fresh air. If breathing is difficult, contact a physician.

INGESTION: Drink large quantities of water or milk. Follow with milk of magnesia, beaten eggs or vegetable oil. Do not

induce vomiting. Contact a physician.

SUSPECTED CANCER AGENT?

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____ NO: This product's ingredients are not found in the list below.

____ YES: ____ Federal OSHA ____ NTP ____ IARC ____ Cal/ OSHA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Hemochromatosis.

NOTES TO A PHYSICIAN: Contains citric acid (6.8 %) ; pH 1.7. Ingestion of more than 0.5 ml of product per kg body weight may result in iron toxicity.

Section VI REACTIVITY DATA

STABILITY X Stable ____ Unstable

INCOMPATIBILITY (Material to avoid) Avoid contact with strong alkaline materials such as caustic potash (sodium hydroxide) . Mildly

corrosive to common metals.

HAZARDOUS DECOMPOSITION/COMBUSTION PRODUCTS: Oxides of sulfur and zinc.

HAZARDOUS POLYMERIZATION: N/A

Section VII SPILL, LEAK AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Neutralize with dilute alkaline solution and wash down

sewer if federal , state, and local regulations permit.

NEUTRALIZING CHEMICALS: Baking soda (sodium bicarbonate) , soda , ash or lime.

WASTE DISPOSAL METHOD: Follow all applicable federal, state and local regulations.

Section VIII EQUIPMENT

VENTILATION REQUIREMENTS:

Use general or local exhaust ventilation to meet TLV requirements.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY: None required where appropriate ventilation conditions exist. If the TLV is exceeded, a self-contained

breathing apparatus is advised.

EYE: Safety goggles.

GLOVES: Acid- resistant gloves such as rubber or neoprene.

OTHER CLOTHING AND EQUIPMENT: Coats, coveralls or aprons are recommended.

Section IX SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS:

Avoid contact with skin, eyes or clothing. Do not ingest. Avoid inhalation of mists.

OTHER HANDLING AND STORAGE REQUIREMENTS:

Keep lid tightly closed. Store in a dry area, above freezing and below 105°F, out of direct sunlight and way from strong alkalis.

Keep out of reach of children.

Prepared By: David W. Bergevin

Date: July 16, 2004

All information, recommendations and suggestions appearing herein concerning our products are based upon tests and data

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