



STOLLER USA, INC.

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REZIST

MATERIAL SAFETY DATA SHEET (rev. 01/16/07)

SECTION I - PRODUCT IDENTIFICATION

NFPA HAZARD RATINGS

HEALTH HAZARD 2 FIRE HAZARD 0 REACTIVITY 0

Based on the National Fire Protection Association rating system
(0 = Minimal; 1 = Slight; 2 = Moderate; 3 = High; 4 = Extreme)

SARA/TITLE III HAZARD CATEGORIES (See Section XV)

Immediate (ACUTE) Health: YES Delayed (Chronic) Health: Not Known
Reactive Hazard: NO Fire Hazard: NO Sudden Release of Pressure: NO

Company Name: STOLLER USA, INC.

Address: 4001 W Sam Houston Parkway N, Suite 100 • Houston, TX 77043 USA

Phone Number for Information: 1 (800) 539-5283 or 1 (713) 461-1493

Emergency Phone Number: **CHEMTREC** **In the US and Canada call toll-free 1 (800) 424-9300**
From other countries call collect: +1 (703) 527-3887

Chemical Family: chelated metals

Chemical Name & Synonyms: chelated micronutrient solution

Formula: Proprietary

Tradename & Synonyms: **REZIST**

SECTION II - COMPOSITION / INFORMATION ON INGREDIENTS

ACTIVE INGREDIENTS:	CAS #	Approx. %	TLV
Zinc Oxide	1314-13-2	2 – 3	5 mg/m ³ as Zn
Manganese Oxide	1344-43-0	2 – 3	5 mg/m ³ as Mn
Copper Sulfate, Basic	1344-73-6	3 – 4	1 mg/m ³ as Cu

SECTION III - HAZARD IDENTIFICATION

EXPOSURE LIMITS

OSHA Permissible Exposure Limit (PEL): Not Established

ACGIH Threshold Limit Value (TLV): Not Established

EFFECTS OF OVEREXPOSURE

ACUTE Depending on the duration of contact, overexposures can irritate the eyes, skin, mucous membranes and any other exposed tissue.

EYES: Contact with product may cause redness, slight to severe irritation.

SKIN: May cause discomfort, skin irritation or rash unless treated promptly.

INHALATION: Prolonged exposure to low concentrations of vapors may cause sore throat and headache, nausea and dizziness, and even dismay.

INGESTION: May cause malaise, nausea, burning sensation in stomach, gastrointestinal damage. Large doses may cause liver and kidney damage or even death.

2 CHRONIC: Not known. Expected toxicity hazard: slight.

SECTION IV - FIRST-AID MEASURES**EMERGENCY FIRST AID PROCEDURES**

Victims of severe exposure to chemicals must be taken to health providing centers for medical attention. Always bring with victim a copy of label and MSDS of product to health professional.

EYES: Immediately, holding eyelids apart, flush eyes with plenty of water for at least 15 minutes. Seek medical attention should severe irritation occurs.

SKIN: Remove product & immediately flush affected area with water for 15 minutes. Remove contaminated clothing, taking care not to contaminate eyes. Seek medical attention if irritations occur.

INHALATION: Move patient to fresh air. Supplemental oxygen may be indicated. Assure mucous does not obstruct airway. Seek medical attention if victim's breathing is difficult.

INGESTION: Immediately contact a physician or poison control center for treatment advice. Do not induce vomiting. Victim should drink milk, egg whites or large quantities of water. Never give anything by mouth to someone who is unconscious, having convulsions or unable to swallow.

ADDITIONAL INFORMATION: Note to Physician: Symptomatic treatment.

SECTION V - FIRE AND EXPLOSION DATA

FLASH POINT: Not Applicable; product is non-flammable.

FLAMMABLE LIMITS: LEL: Not Applicable **UEL:** Not Applicable

EXTINGUISHER MEDIA: Use all means adequate to fight surrounding fire, water, foam, CO₂, dry chemicals, etc.

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters must wear self-contained breathing apparatus and full protective equipment, like chemical resistant clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes under fire conditions, like NH₃, NO, NO₂, CO, CO₂, etc.

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED: In case of a large spill, clear the affected area, and protect people. Such releases should be responded to by trained personnel using pre-planned procedures.

In the event of an incidental release, minimum Personal Protective Equipment must be worn: latex or rubber gloves and rubber boots, goggles or full faceshield, and coveralls.

It is necessary to contain spill into the smallest area possible by diking, scooping, etc., and place liquid into an appropriate container, labeling it accordingly. If product is clean, use it as intended following original label directions; should it get dirty or contaminated, salvage for proper disposal as waste.

Absorb residual product onto dry carrier such as dirt, sand or any other absorbent material, then put in covered labeled containers and disposed of as a dry waste in accordance with Federal, State and Local waste disposal regulations.

SECTION VII - HANDLING AND STORAGE

All personnel who handle this material should be trained to handle it safely. Avoid breathing vapors or mists; use in a well-ventilated location. Empty containers may contain residual liquid or vapors therefore, should be handled also with care.

Store in a cool, dry place, away from direct sunlight, sources of intense heat or where freezing is possible. Store away from food, feed, clothing materials and living quarters.

Whenever possible, place chemicals on secondary containers or diked area. Inspect all incoming containers before storage, to ensure all are properly labeled and not damaged. Keep containers tightly closed when not in use.

SECTION VIII - SPECIAL PROTECTION / CONTROL MEASURES

RESPIRATORY PROTECTION: Wear a NIOSH / OSHA approved respirator if working conditions require to do so.

VENTILATION: General ventilation is usually adequate. Local exhaust should be used if needed for safe, comfortable working conditions.

SKIN AND EYE PROTECTION: Safety glasses should be worn in any type of operation with chemicals. Protective gloves, long sleeved shirt and long pants, as well as protective shoes should be worn as a good safety practice.

OTHER CONTROL MEASURES: An eye bath and washing facilities should be readily available. Remove all dirty or contaminated clothing and wash it before reusing.

WORK/HYGIENIC PRACTICES: As a general rule, do not eat, drink, smoke, chew gum or tobacco when handling chemicals. Wash thoroughly after handling this product.

SECTION IX - PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT: >240°F (>116 °C)	VAPOR PRESSURE (mm/Hg): Not known
MELTING POINT: Not Applicable	VAPOR DENSITY (air = 1): Similar to water
SPECIFIC GRAVITY: 1.23 – 1.25	REACTIVITY IN WATER: Not Applicable
SOLUBILITY IN WATER: >99%	EVAPORATION RATE: Similar to water
APPEARANCE AND ODOR: Liquid, dark blue color, with a pleasant characteristic odor.	
OTHER: pH = 10.2 – 10.5	

SECTION X - PHYSICAL HAZARDS (REACTIVITY DATA)

STABILITY: Stable

CONDITIONS TO AVOID: Stable under normal conditions, but avoid extreme heat and contact with incompatible materials.

INCOMPATIBILITY, MATERIALS TO AVOID: Strong oxidizing agents.

HAZARDOUS POLYMERIZATION: Will not occur

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes under fire conditions, like NH₃, NO, NO₂, CO, CO₂, etc.

SECTION XI - TOXICOLOGICAL INFORMATION**TOXICITY DATA**

ORAL LD₅₀: Basic copper sulfate (rat) 1000 mg/kg; MnO (mus) 1000 mg/kg

DERMAL LD₅₀: Basic copper sulfate (rabbits) >2000 mg/kg; ZnO (rabbits) >500 mg/kg

INHALATION TCLO: ZnO (humans) >600 mg/m³

CARCINOGENICITY

No component listed as a carcinogenic by CPDB, IARC, NTP, OSHA, CAL/OSHA and ACGIH.

REPRODUCTIVE TOXICITY: this product components are not reported to produce reproductive toxicity effects in humans.

SECTION XII - ENVIRONMENTAL EFFECTS DATA

The available data on this material does not indicate any undue hazard to the environment under anticipated use and storage. All work practices must be aimed at preventing environmental contamination. Any waste due to spillage or leakage should be contained and disposed of accordingly (see above under Accidental Release Measures). Because of its nutritional nature, may cause eutrophication if discharged in bodies of water. May be toxic to fish due to its copper component. To aid our customers in complying with regulatory requirements, SARA Title III hazard categories for this product are indicated in Section I. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40 CFR Part 370. Please consult those regulations for details

SECTION XIII - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS: Waste disposal must be done following all Federal, State and Local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local waste regulatory authority.

SECTION XIV - TRANSPORTATION DATA

DOT Proper Shipping Name and Hazard Class: Not Regulated
(Trade name: REZIST)

IATA Proper Shipping Name And Hazard Class: Not Regulated
(Trade name: REZIST)

IMO Proper Shipping Name And Hazard Class:
UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Contains Tribasic Copper Sulfate) CLASS 9, PG III, Marine Pollutant

Placards / Markings: Miscellaneous and Marine Pollutant

Emergency Response Guide Number: N/A

SECTION XV - REGULATORY INFORMATION

U. S. SARA REPORTING REQUIREMENTS: This product may be subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act:

U.S. SARA 302 (40 CFR 355, Appendix A): NO

U.S. SARA 304 (40 CFR Table 302.4): NO

U.S. SARA 313 (40 CFR 372.65): This product contains the following substance subject to the reporting requirements of Section 313: copper compound.

U.S. SARA THRESHOLD PLANNING QUANTITY: NO

U.S. CERCLA REPORTABLE QUANTITY (RQ): NO

U.S. TSCA INVENTORY STATUS: The components of this material are listed on the TSCA Inventory.

CANADIAN DSL INVENTORY: The components of this material are listed on the DSL Inventory.

If this product contains components designated as CERCLA Reportable Quantity (RQ) Substance, Section 103 of CERCLA requires the "person in charge" of a facility or vessel, as soon as he or she has knowledge of a release of a hazardous substance in an amount equal to or greater than an RQ, to report the release immediately to the National Response Center in Washington, DC. The NRC number is 1-800-424-8802, or 1 (202) 267-2675.

SECTION XVI - OTHER INFORMATION

Date of MSDS Revision: Jan. 16, 2007. Supersedes all previous versions, including the one for Oct. 29, 2006.

Stoller USA, Inc., believes the information contained in this Material Safety Data Sheet is accurate, based on the information supplied by reputable suppliers of our raw materials. However, Stoller USA does not guarantee their accuracy or completeness. The information contained herein is furnished without warranty of any kind, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for any particular purpose. Users should consider these data only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers. Stoller USA assumes no responsibility for results obtained or for incidental or consequential damages arising from the use of goods and data.