FLOWER POWER
MATERIAL SAFETY DATA SHEET (Rev. 21/Sept/2012)

SECTION I - PRODUCT IDENTIFICATION

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 for Stoller Enterprises:
In the US and Canada call toll-free 1 (800) 424-9300
From all other countries call collect: +1 (703) 527-3887

Chemical Family: chelated metals
Chemical Name & Synonyms: chelated micronutrient solution
Formula: Proprietary
Tradename & Synonyms: FLOWER POWER

SECTION II - COMPOSITION / INFORMATION ON INGREDIENTS

ACTIVE INGREDIENTS: CAS #   Approx. %   TLV
Boric Acid   10043-35-3        17   Not Established (N/E)
Copper Chloride, dihydrate 10125-13-0     <0.5   1 mg/m^3 as Cu
Sodium Molybdate, dihydrate 10102-40-6     <0.1   10 mg/m^3 as Mo
Zinc Oxide     1314-13-2          5   1 mg/m^3 as Zn

SECTION III - HAZARD 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 = Severe)

SARA/TITLE III HAZARD CATEGORIES (See Section XV)
Immediate (Acute) Health: YES   Delayed (Chronic) Health: YES
Reactive Hazard: NO   Fire Hazard: NO   Sudden Release of Pressure: NO

EXPOSURE LIMITS
OSHA Permissible Exposure Limit (PEL): Not Established
ACGIH Threshold Limit Value (TLV): Not Established

EFFECTS OF OVEREXPOSURE
1.- 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 unconsciousness.
   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 specific to this product. Note: Copper is not metabolized by people affected with Wilson’s disease, so it may accumulate in various tissues and result in severe organ damage.
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 copious amounts of clear water for at least 15 minutes. Seek medical attention should severe irritation occurs.

**SKIN:** Wipe off excess product and immediately wash affected area with abundant of soap and water. Remove contaminated clothing taking care not to impregnate 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. Victim should drink milk, egg whites or large quantities of water and induce vomiting. 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, CO\(_2\), dry chemicals, etc.

**SPECIAL FIRE FIGHTING PROCEDURES:** None specific for this product, however, it is suggested that firefighters wear self-contained breathing apparatus and full protective equipment, such as chemical resistant clothing.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Toxic fumes under fire conditions.

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 contaminated, salvage for proper disposal as waste.

Absorb residual product onto dry carrier such as sawdust, sand or any other absorbent material, then put in covered labeled containers and dispose 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 do 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 it 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 doing 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 nor chew gum or tobacco when handling chemicals. Wash thoroughly after handling this product.
SECTION IX - PHYSICAL AND CHEMICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BOILING POINT</strong></td>
<td>&gt;248°F (&gt;120 °C)</td>
</tr>
<tr>
<td><strong>VAPOR PRESSURE (mm/Hg):</strong></td>
<td>Not known</td>
</tr>
<tr>
<td><strong>MELTING POINT</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>VAPOR DENSITY (air = 1):</strong></td>
<td>Similar to water</td>
</tr>
<tr>
<td><strong>SPECIFIC GRAVITY:</strong></td>
<td>1.22 – 1.24</td>
</tr>
<tr>
<td><strong>REACTIVITY IN WATER:</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>SOLUBILITY IN WATER:</strong></td>
<td>&gt;99%</td>
</tr>
<tr>
<td><strong>EVAPORATION RATE</strong></td>
<td>Similar to water</td>
</tr>
<tr>
<td><strong>APPEARANCE AND ODOR:</strong></td>
<td>Translucent liquid, blue color, with no odor.</td>
</tr>
<tr>
<td><strong>pH = 9</strong></td>
<td></td>
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</tbody>
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SECTION X - PHYSICAL HAZARDS (REACTIVITY DATA)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>STABILITY:</strong></td>
<td>Stable</td>
</tr>
<tr>
<td><strong>CONDITIONS TO AVOID:</strong></td>
<td>Stable under normal conditions, but avoid extreme heat and contact with incompatible materials.</td>
</tr>
<tr>
<td><strong>INCOMPATIBILITY, MATERIALS TO AVOID:</strong></td>
<td>Strong oxidizing agents.</td>
</tr>
<tr>
<td><strong>HAZARDOUS POLYMERIZATION:</strong></td>
<td>Will not occur</td>
</tr>
<tr>
<td><strong>HAZARDOUS DECOMPOSITION PRODUCTS:</strong></td>
<td>Toxic fumes under fire conditions.</td>
</tr>
</tbody>
</table>

SECTION XI - TOXICOLOGICAL INFORMATION

<table>
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<tr>
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<tbody>
<tr>
<td><strong>ORAL LD₅₀:</strong></td>
<td>Boric Acid (rat) 2660 mg/kg;</td>
</tr>
<tr>
<td><strong>DERMAL LD₅₀:</strong></td>
<td>ZnO (rabbits) &gt;500 mg/kg</td>
</tr>
<tr>
<td><strong>INHALATION TCLO:</strong></td>
<td>Sodium Molybdate &gt;2080 mg/m³/4 Hr; ZnO (humans) &gt;600 mg/m³</td>
</tr>
</tbody>
</table>

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

Mutagenicity: Boric acid, a component of this product, is being investigated as a mutagen.

Embryotoxicity: Boric acid, a component of this product, is being investigated as a potential embryotoxic effector in humans.

Teratogenicity: Boric acid, a component of this product, is being investigated as a potential teratogenic effector in humans.

Reproductive Toxicity: Boric Acid and Sodium Molybdate, components of this product, are being investigated as reproductive effectors. The rest of this product components are not reported to have reproductive toxicity effects in animals nor 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 III. 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 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.
FLOWER POWER

SECTION XIV - TRANSPORTATION DATA

DOT Proper Shipping Name and Hazard Class:
NOT REGULATED by DOT (49CFR 171.4) for packages of less than 361 gal. (1366.5 L). Trade name: FLOWER POWER
Containers 361 gallons and larger reach the threshold limit for Reportable Quantity (RQ) of 10 Lb for Copper Chloride, therefore should be shipped as:
RQ, UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Contains Copper Chloride) CLASS 9, PG III, Marine Pollutant

IATA Proper Shipping Name and Hazard Class:
FOR PACKAGES OF LESS THAN 361 GALLONS: NOT REGULATED; Trade name: "FLOWER POWER"
For packages 361 gal and larger: RQ, UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Contains Copper Chloride) 9, III, Marine Pollutant

IMO Proper Shipping Name and Hazard Class:
FOR PACKAGES OF LESS THAN 361 GALLONS: NOT REGULATED; Trade name: "FLOWER POWER"
For packages 361 gal and larger: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Contains Copper Chloride) 9, III, Marine Pollutant

Placards / Markings: Not required as per 49CFR§172.504(f)(9) for domestic transportation.
Miscellaneous 9 and Marine Pollutant for international transportation.

Emergency Response Guide Number: 171

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 substances subject to the reporting requirements of Section 313: copper compound and zinc compound.

U.S. SARA THRESHOLD PLANNING QUANTITY: NO
U.S. CERCLA REPORTABLE QUANTITY (RQ): YES, Copper Chloride = 10 Lb; this product: 361 gal (1366.5 L)
U.S. TSCA INVENTORY STATUS: The anhydrous components of this material are listed on the TSCA Inventory; however, the hydrates are exempted from being listed.

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, D.C. The NRC number is 1-800-424-8802, or 1 (202) 267-2675.

SECTION XVI - OTHER INFORMATION

Date of MSDS Revision: December 30, 2010. Supersedes all previous versions, including the one from September 2010.
Sections updated: I, III, IV, XI, XII

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