

## SAFETY DATA SHEET

### Section 1: IDENTIFICATION

<b>Product Name:</b>	MicroSpark O
<b>Chemical Name:</b>	1% Manganese (Mn), 1% Zinc (Zn)
<b>Company:</b>	Terraform Ag, LLC 925 S. Beechtree St., Suite 1A Grand Haven, MI 49417
<b>Company Phone:</b>	(616) 414-7899
<b>Emergency Phone:</b>	(616) 212-5951
<b>Recommended Use/Restrictions:</b>	Liquid Microfertilizer

### Section 2: HAZARD(S) IDENTIFICATION

<b>Emergency Overview:</b>	Warning.
<b>Potential Health Effects:</b>	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
<b>Hazard Statements:</b>	N/A



### Section 3: COMPOSITION/INFORMATION on INGREDIENTS

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4: FIRST-AID MEASURES

<b>Inhalation:</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin Contact:</b>	Wash off with soap and water. Seek medical attention if irritation develops and persists.
<b>Eye Contact:</b>	Rinse with water. Seek medical attention if irritation develops and persists.
<b>Ingestion:</b>	Rinse mouth. If vomiting occurs, keep head low so that stomach content does not enter lungs. Seek medical attention if you feel unwell.

**Most important symptoms and effects, both acute and delayed:**

Direct contact with eyes may cause temporary irritation.

**Indication of immediate medical treatment and special treatment needed:**

Provide supportive measures and treat symptomatically.

## Section 5: FIRE-FIGHTING MEASURES

**Suitable extinguishing equipment:**

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing equipment:**

Do not use water jet as an extinguisher, as this will spread fire.

**Specific hazards arising from chemical:**

During fire, gases hazardous to health may form.

**Special protective equipment and precautions for firefighters:**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Firefighting equipment/instructions:**

Move containers from fire area if you can do so without risk.

**Specific methods:**

Use standard firefighting procedures and consider the hazards of others involved.

**General fire hazards:**

No unusual fire or explosion hazards noted.

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency procedures:**

Wear appropriate protective equipment and clothing during clean-up.

**Methods and materials for containment and clean-up:**

Large Spill: Stop the flow of material, if this is without risk. Dike the spilled material where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand, or earth and place into containers. Prevent entry into waterways, sewers, basements, or confined areas. Flush area with water following product recovery.

Small Spill: Wipe up with inert absorbent material. Clean surface thoroughly to remove residual contamination.

**Environmental precautions:**

Avoid discharge into drains.

## Section 7: HANDLING AND STORAGE

**Precautions for safe handling:**

Avoid prolonged exposure. Do not taste or swallow. Do not eat, drink, or smoke when using. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities:**

Store in a cool place in shade or out of direct sunlight and in a closed container.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Biological limit values:</b>	No biological exposure limits noted for ingredient(s).
<b>Appropriate engineering controls:</b>	Good general ventilation should be used.
<b>Personal protective measures:</b>	
<b>Eye/face protection</b>	Face shield is recommended. Wear safety glasses with side shields or goggles.
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Other</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal Hazards</b>	Wear appropriate thermal protective clothing if necessary.
<b>General hygiene considerations:</b>	Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## Section 9: PHYSICAL and CHEMICAL PROPERTIES

<b>Appearance:</b>	
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid. Granular.
<b>Color</b>	Yellow/green.
<b>Odor:</b>	Acidic.
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	4.6
<b>Melting point/freezing point:</b>	No data available.
<b>Initial boiling point and boiling range:</b>	No data available.
<b>Flash point:</b>	No data available.
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower flammability or explosive limits:</b>	
<b>Flammability limit - lower (%)</b>	No data available.
<b>Flammability limit - upper (%)</b>	No data available.
<b>Explosive limit - lower (%)</b>	No data available.
<b>Explosive limit - upper (%)</b>	No data available.
<b>Vapor pressure:</b>	No data available.
<b>Vapor density:</b>	No data available.
<b>Relative density:</b>	No data available.
<b>Solubility(ies):</b>	100%
<b>Solubility (water)</b>	100%
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.

## Section 10: STABILITY and REACTIVITY

<b>Reactivity:</b>	The product is stable and non-reactive under normal conditions of use, storage, and transport.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	No dangerous reaction known under normal use.
<b>Conditions to avoid:</b>	Do not store above 95 degrees F.
<b>Incompatible materials:</b>	No data available.
<b>Hazardous decomposition products:</b>	No data available.

## Section 11: TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

<b>Inhalation:</b>	Prolonged inhalation may be harmful.
<b>Skin contact:</b>	No adverse effects due to skin contact are expected.
<b>Eye contact:</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion:</b>	May be harmful if swallowed.

**Symptoms related to the physical, chemical, and toxicology characteristics:** Direct contact with eyes may cause temporary irritation.

### Information on toxicological effects

<b>Acute toxicity:</b>	No data available.
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## Section 12: ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
<b>Persistence and degradability:</b>	No data available.
<b>Bioaccumulation potential:</b>	No data available.
<b>Mobility in soil:</b>	No data available.
<b>Other adverse effects:</b>	None known.

## Section 13: DISPOSAL CONSIDERATIONS

<b>Disposal instructions:</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents and container in accordance with all applicable regulations.
<b>Local disposal regulations:</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code:</b>	The waste code should be assigned in discussion between the user, the producer, and the waste disposal company.
<b>Waste from residues/unused product:</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
<b>Contaminated packaging:</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## Section 14: TRANSPORT INFORMATION

<b>In accordance with DOT:</b>	Not regulated as dangerous goods.
<b>In accordance with IATA:</b>	Not regulated as dangerous goods.
<b>In accordance with IMDG:</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:</b>	Not established.

## Section 15: REGULATORY INFORMATION

<b>US federal regulations:</b>	Not regulated.
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt D):</b>	Not regulated.
<b>CERCLA Hazardous Substance List (40 CFR 302.4):</b>	Not regulated.
<b>SARA 304 Emergency release notification:</b>	Not regulated.
<b>OSHA specifically Regulated Substance (29 CFR 1910.1001-1050):</b>	Not regulated.
<b>Superfund Amendments and Reauthorization Act of 1986 (SARA)</b>	
<b>Hazard categories</b>	
<b>Immediate hazards:</b>	No.
<b>Delayed hazard:</b>	No.
<b>Fire hazard:</b>	No.
<b>Pressure hazard:</b>	No.
<b>Reactivity hazard:</b>	No.

**Sara 302 Extremely hazardous substance:** Not listed.

**SARA 311/312 Hazardous chemical:** No.

**SARA 313 (TRA reporting):** Not regulated

**Other federal regulations**

**Clean Air Act (CAA Section 112 Hazardous Air Pollutants (HAPs) List:** Not regulated.

**Clean Air Act (CAA) Section 112 (r) Accidental Release Prevention (40 CFR 68.130):** Not regulated.

**US state regulations**

**US California Controlled Substance. CA Department of Justice (California Health and Safety Code Section 11100):** Not listed.

**US Massachusetts RTK-Substance List:** Not listed.

**US New Jersey Worker and Community Right-to-know Law:** Not listed.

**US Pennsylvania and Community Right-to-know Law:** Not listed.

**US Rhode Island RTK:** Not listed.

**US California Proposition 65 California Safe Drinking Water And Toxic Enforcement Act of 1986:** Not listed.

**Section 16: OTHER INFORMATION**

**Other Precautions:** Read entire label before using.

**Revision Date:** 17 January 2018.

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