

<b>Section 1: Product and Company Identification</b>
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**SONO Ag Products**

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Business: 303-237-9034

**Product Name:** VIGRO Seed Inoculant**Generic Name:** *Rhizobium* bacterial culture**Synonyms:** NA**Product Description:** Bacterial culture for nitrogen fixation**CAS #** NA – mixture**Date of Revision:** 30 December 2009

<b>Section 2: Hazard Identification</b>
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**Emergency Overview:** Appearance: Cloudy yellow to brown liquid. Non-pathogenic bacterial cultures.

<b>HMI S HEALTH</b>	<b>0</b>
<b>HMI S FLAMMABILITY</b>	<b>0</b>
<b>HMI S REACTIVITY</b>	<b>0</b>
<b>PERSONAL PROTECTION</b>	<b>A</b>

**OSHA Regulatory Status:** This material is **not** considered hazardous under the OSHA standard.**Potential Health Effects:****Inhalation:** While low vapor pressure eliminates inhalation as a major route of exposure, misting of the liquid can lead to inhalation. Inhalation exposure may occasionally cause respiratory irritation.**Ingestion:** Ingestion of small amounts is not expected to be harmful. Larger amounts may cause gastric disturbances.**Skin Contact:** May cause mild irritation.**Eye Contact:** May cause eye irritation.**Chronic Exposure:** No chronic effects known.**Aggravation of Pre-existing Conditions:** No information available.**Target Organs:** No information available.

<b>Section 3: Composition / Information On Ingredients</b>
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Beneficial bacterial cultures of *Rhizobium* in a dilute nutrient medium.**Non-hazardous components may or may not be listed. Carcinogens are listed when present at 0.1% or more; components which are otherwise hazardous according to OSHA are listed when present at 1.0% or more. This is not intended to be complete compositional disclosure. See Section 15 for applicable states right to know and other regulatory information.**

<b>Section 4: First Aid Measures</b>
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**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.**Ingestion:** Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.**Skin:** Immediately flush skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops.**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.**Note to Physicians:** N/A

### Section 5: Fire Fighting Measures

**Fire:** Flash point: Does not burn.

**Explosion:** Not considered an explosion hazard.

**Extinguishing Media:** Use any appropriate media for the surrounding fire including, water, dry chemical, alcohol foam or carbon dioxide. Water spray may be used to keep fire-exposed containers cool.

**Special Precautions:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

**NFPA Rating:** Health - 0      Flammability - 0      Reactivity - 0      Other – NA

### Section 6: Accidental Release Measures

Spilled material may be hosed off to surrounding soil, sanitary sewer system or septic system.

### Section 7: Handling and Storage

This product contains living cultures, so store at temperatures between 60 and 85°F (16-29°C). Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Separate from incompatibles, combustibles, organic or other readily oxidizable materials.

### Section 8: Exposure Control / Personal Protection

**Exposure Guidelines:** No exposure guidelines established.

**Personal Protective Equipment:**

**Skin Contact:** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Contact:** Use chemical safety goggles and/or full face shield where misting or splashing of solutions is possible.

**Inhalation:** Avoid inhalation if misting of the liquid occurs.

**Engineering Controls:** A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### Section 9: Physical and Chemical Properties

Appearance	Yellow to brown liquid	Specific Gravity (g/mL)	1.01
Odor	Earthy, malt-like, yeasty	pH	7.2
Odor Threshold	ND	Solubility in water	Complete
Melting Point	ND	% Volatiles	> 80%
Boiling Point	101°C (214°F)	Evaporation Rate	ND
Flash Point	NA	Vapor Pressure	ND

### Section 10: Stability and Reactivity

**Chemical Stability:** This product is stable in closed containers at room temperature.

**Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>)

**Incompatibilities:** Strong acids and bases.

**Conditions to Avoid:** Heat, sparks, flames.

### Section 11: Toxicological Information

**Acute Dose Effects:** Eyes: Mild eye irritant

Inhalation: No data found.

Skin: LD50 >5000 mg/kg.

Oral: LD50 >5000 mg/kg.

### Section 12: Ecological Information

**Environmental Fate:** This product is not expected to bioaccumulate. When released into water or air its expected half-life is 1- 10 days.

**Ecotoxicity:** Not expected to be toxic to aquatic organisms.

### Section 13: Disposal Considerations

**As a waste, this material in its raw form IS NOT considered a HAZARDOUS WASTE under RCRA (29 CFR 261).**

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

### Section 14: Transport Information

**Proper Shipping Name:** Not regulated.

**DOT Hazard Class:** N/A

**UN Number:** N/A

**Packing Group:** N/A

**CERCLA Reportable Quantity (RQ):** N/A

Releases exceeding the reportable quantity (RQ) must be reported to the National Response Center (800) 424-8802. **This data provided for information only. The description shown may not apply to all shipping situations. Consult 49 CFR, or appropriate regulations to properly classify your shipment for transportation.**

### Section 15: Regulatory Information

**TSCA Chemical Inventory:** All of the components in this product are listed on the TSCA Inventory.

**TSCA Sec 4 Chemical Test Rule:** None of the components in this product are under a Chemical Test Rule.

**TSCA Sec 8(d):** None of the components in this product are on the Health and Safety Reporting List.

**TSCA Sec 12(b) Notices of Export:** None of the components in this product are on this list.

**TSCA Significant New Use Rule (SNUR):** None of the components in this product are on this list.

**SARA Sec 302 (EHS) TPQ:** None of the components in this product have a TPQ.

**SARA Sec 302 (EHS) RQ:** None of the components in this product have a RQ.

**SARA Sec 311/312:** NO; Chronic – NO; Fire – NO; Release of Pressure – NO; Reactivity – NO

**SARA 313 List:** None of the components in this product is reportable under Section 313 Title III and 40 CFR Part 372.

**CERCLA Hazardous Substances and corresponding RQs:** N/A

**RCRA:** None of the components in this product are on this list.

**Clean Air Act: Hazardous Air Pollutants?** NO **Class 1 Ozone Depletors?** NO **Class 2 Ozone Depletors?** NO

**Clean Water Act: Hazardous Substance?** NO **Priority Pollutant?** NO **Toxic Pollutant?** NO

**Chemical Weapons Convention:** None of the components in this product are on this list.

**Drug Enforcement Agency (DEA) CDTA:** None of the components in this product are on this list.

**Environmental Protection Agency:** None of the components of this product require registration with the EPA.

**OSHA:** None of the components in this product are considered Highly Hazardous by OSHA.

**State Right-to-Know Lists:** None of the components in this product are found on the Right-to-Know lists of California, Florida, Massachusetts, Minnesota, New Jersey or Pennsylvania.

### Section 16: Other Information

**Abbreviations and acronyms used:**

ACGIH	American Conference of Governmental Industrial Hygienists	NA	not applicable, not available
ANSI	American National Standards Institute	NIOSH	National Institute for Occupational Safety and Health
atm	atmosphere (pressure unit)	ND	not determined

BOD	biological oxygen demand	NFPA	National Fire Prevention Association
CAS	Chemical Abstracts Service	NTP	National Toxicology Program
CC	closed cup	OC	open cup
CDTA	Chemical Drug and Trafficking Act	OSHA	Occupational Safety and Health Administration
COC	Cleveland Open Cup	Part	partition
COD	chemical oxygen demand	PEL	permissible exposure limits
coeff.	coefficient	ppb	parts per billion
CFR	Code of Federal Regulations	PPE	personal protective equipment
CPR	cardio-pulmonary resuscitation	ppm	parts per million
DEA	Drug Enforcement Agency	psi	pounds per square inch
DOT	Department of Transportation	RCRA	Resource Conservation and Recovery Act
FDA	Food and Drug Administration	RQ	Reportable quantity
IARC	Internat'l Agency for Research on Cancer	RTK	Right to Know
IDLH	immediate danger to life and health	SARA	Superfund Amendments and Reauthorization Act
kg	kilogram	STEL	short-term exposure limit
L	liter	TCC	Tagliabue Closed Cup
LC50	median lethal concentration	TPQ	threshold planning quantity
LD50	median lethal dose	TQ	threshold quantity
LEL	lower explosive limit	TSCA	Toxic Substances Control Act
mg	milligram	TWA	time-weighted average
mL	milliliter	UEL	upper explosive limit

This document was prepared in accordance with 29 CFR 1910.1200 and ANSI Z400.1-2004.

Prepared by Douglas R. Chrisope on 30 December 2009.

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