

# MATERIAL SAFETY DATA SHEET

GralNzyme Phytase

FILE NO.:

AGR-MSDS1 v0.03

MSDS DATE:

April 2017

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** GralNzyme Phytase  
**SYNONYMS:** Phytase corn flour, High phytase ground corn meal  
**PRODUCT CODES:** RD-AGR-GR0203

**MANUFACTURER:** Agrivida, Inc.  
**DIVISION:** Research & Development  
**ADDRESS:** 78E Olympia Ave, Woburn, MA 01801

**EMERGENCY PHONE:** 781-391-1262  
**FAX PHONE:** 781-391-4262

**PRODUCT USE:** In Approved Jurisdictions for Poultry Feed only.  
**PREPARED BY:** Agrivida, Inc.

**SECTION 1 NOTES:** Parties using this material assume all risks arising from the use of (including, but not limited to, transport, processing, maintenance, storage and disposition) the modified corn flour. **MODIFIED CORN FLOUR CONTAINING AT LEAST 3000 UNITS OF PHYTASE PER GRAM IS PROVIDED ON AN "AS-IS" BASIS;** Any user will be responsible for any claims or liabilities resulting from the use of the modified corn flour by it and agrees to indemnify Agrivida, Inc. and to hold harmless Agrivida, Inc. and to hold Arivida, Inc. harmless from claims or liabilities resulting from the use of the modified corn flour.

## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

**INGREDIENT:** Corn Flour – Milled corn grain. This corn has been modified to contain enzymes that hydrolyze phytate.

**CAS NO.** Not Available

**SECTION 2 NOTES:**

## SECTION 3: HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** This material should be limited to use by, or under the supervision of, a technically qualified person. Fine dust dispersed in air may ignite. Product dust may be irritating to eyes, skin, and respiratory system. Proper protective clothing and apparatus should be utilized while using this product.

**Appearance:** White-Yellow powder

**Physical State:** Solid

**Odor:** Organic/Corn Meal

**ROUTES OF ENTRY:** Inhalation, mouth contact, eye contact, skin contact

### POTENTIAL HEALTH EFFECTS

**EYES:** Contact with eyes may cause irritation

**SKIN:** May cause slight skin irritation

**INGESTION:** Not for human consumption. Ingestion may provoke the following symptoms: gastrointestinal disturbance.  
**INHALATION:** Mold spores may be present. Dust may cause irritation of the respiratory tract.

**CHRONIC HEALTH HAZARDS:** Repeated contact may cause allergic reactions in susceptible persons.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Respiratory disorders. Skin disorders.

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**Potential Environmental Effects:** There is no known ecological information for this product.

**Toxicological Information:** See Section 11 for additional toxicological information.

## SECTION 3 NOTES:

## SECTION 4: FIRST AID MEASURES

**GENERAL:** When symptoms persist or in all cases of doubt seek medical advice.

**EYES:** Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

**SKIN:** Rinse with water. If skin irritation persists, call a physician.

**INGESTION:** Clean mouth with water and afterwards drink plenty of water. If symptoms persist, call a physician.

**INHALATION:** Move to fresh air. If symptoms persist call a physician.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** Treat symptomatically.

## SECTION 4 NOTES:

## SECTION 5: FIRE-FIGHTING MEASURES

**FLAMMABLE PROPERTIES:** Fine dust dispersed in air may ignite. Risks of ignition followed by flame propagation or secondary explosions should be prevented by avoiding accumulation of dust, e.g., in air, on floors and ledges.

### EXPLOSION DATA:

**SENSITIVITY TO MECHANICAL IMPACT:** No information available  
**SENSITIVITY TO STATIC DISCHARGE:** Yes (as dust)

### NFPA HAZARD CLASSIFICATION

HEALTH: 0

FLAMMABILITY: 1

REACTIVITY: 0

OTHER: -

**EXTINGUISHING MEDIA:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**UNSUITABLE EXTINGUISHING MEDIA:** No information available.

**HAZARDOUS COMBUSTION PRODUCTS:** Carbon Monoxide (CO), Carbon Dioxide (CO<sub>2</sub>).

**SPECIAL HAZARDS ARISING FROM THE CHEMICAL:** None known.

**SPECIAL FIRE FIGHTING PROCEDURES:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## SECTION 5 NOTES:

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**ACCIDENTAL RELEASE MEASURES:** Avoid dust formation.

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**ENVIRONMENTAL PRECAUTIONS:** Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system.

**METHODS FOR CLEAN-UP:** Sweep up and shovel into suitable containers for discarding unwanted material. See also Section 7.

## SECTION 6 NOTES:

## SECTION 7: HANDLING AND STORAGE

**HANDLING:** Ensure adequate ventilation. Avoid dust formation in confined areas. Fine dust dispersed in air may ignite. Refer to NFPA 61, "Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities."

**STORAGE:** Store in well-ventilated, dry place. Store at ambient temperatures. If stored improperly, it is possible for grain products to undergo plant cell respiration and mesophilic bacteria growth which could result in heating, formation of "hot spots" and possible combustion. Ensure safe storage procedures, adequate ventilation, and avoid high-moisture, high-temperature conditions to reduce this risk.

## SECTION 7 NOTES:

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Ensure adequate ventilation, especially in confined areas.

**RESPIRATORY PROTECTION:** In case of insufficient ventilation wear suitable respiratory equipment. Dust mask may be used.

**EYE PROTECTION:** Safety glasses with side-shields.

**SKIN PROTECTION:** Long sleeved clothing. Protective gloves.

**WORK HYGIENIC PRACTICES:** Handle in accordance with good industrial hygiene and safety practice.

## EXPOSURE GUIDELINES:

| Chemical Name                        | ACGIH TLV   | OSHA PEL   | NIOSH      | MEXICO     | OHSA   |
|--------------------------------------|---|--|------------|------------|--|
| Particulates not otherwise regulated | TWA: 10 mg/ m <sup>3</sup> inhalable particles, recommended TWA: 3 mg/ m <sup>3</sup> respirable particles, recommended | TWA: 15 mg/ m <sup>3</sup> total dust<br>TWA: 5 mg/ m <sup>3</sup> respirable fraction | Not listed | Not listed | TWA: 10 mg/ m <sup>3</sup> inhalable particles<br>TWA: 3 mg/ m <sup>3</sup> respirable particles |

## SECTION 8 NOTES:

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** White-Yellow powder

**ODOR:** Organic/ Corn meal

**PHYSICAL STATE:** Solid

**pH AS SUPPLIED:** Approximately neutral

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**ODOR THRESHOLD:** No information available

**BOILING POINT:**

F: Not applicable  
C: Not applicable

**MELTING POINT:**

F: Not applicable  
C: Not applicable

**FREEZING POINT:**

F: Not applicable  
C: Not applicable

**VAPOR PRESSURE (mmHg):**

@

F: Not applicable  
C: Not applicable

**VAPOR DENSITY (AIR = 1):**

@

F: Not applicable  
C: Not applicable

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):**

@

F: Not applicable  
C: Not applicable

**EVAPORATION RATE:** Not applicable

**SOLUBILITY IN WATER:** Not applicable

**SECTION 9 NOTES:**

**SECTION 10: STABILITY AND REACTIVITY**

**STABILITY:** Stable

**CONDITIONS TO AVOID (STABILITY):** Avoid dust formation

**INCOMPATIBILITY (MATERIAL TO AVOID):** No materials to be especially mentioned

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** None under normal use

**HAZARDOUS POLYMERIZATION:** Hazardous polymerization does not occur

**SECTION 10 NOTES:**

**SECTION 11: TOXICOLOGICAL INFORMATION**

**TOXICOLOGICAL INFORMATION:**

**ACUTE TOXICITY:** No information available

**CARCINOGENICITY:** There are no known carcinogenic chemicals in this product

**CORROSIVITY:** No information available

**SENSITIZATION:** No information available

**NEUROLOGICAL EFFECTS:** No information available

**DEVELOPMENTAL EFFECTS:** No information available

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**TERATOGENICITY:** No information available

**TARGET ORGAN EFFECTS:** No information available

**REPRODUCTIVE EFFECTS:** No information available

**MUTAGENIC EFFECTS:** No information available

## SECTION 11 NOTES:

## SECTION 12: ECOLOGICAL INFORMATION

**ECOLOGICAL INFORMATION:** This product has no known eco-toxicological effects

**PERSISTENCE/ DEGRADABILITY:** No information available

**BIOACCUMULATION/ ACCUMULATION:** No information available

**MOBILITY:** No information available

## SECTION 12 NOTES:

## SECTION 13: DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL METHOD:** Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction.

**CONTAMINATED PACKAGING:** Empty containers can be rinsed with water and recycled or re-used, or can be disposed along with other refuse.

## SECTION 13 NOTES:

## SECTION 14: TRANSPORT INFORMATION

**DOMESTIC TRANSPORT REGULATIONS (USA):** Not regulated

**DOMESTIC TRANSPORT REGULATIONS (CANADA):** Not regulated

**DOMESTIC TRANSPORT REGULATIONS (MEXICO):** Not regulated

**INTERNATIONAL TRANSPORT REGULATIONS:** Not regulated

## SECTION 14 NOTES:

## SECTION 15: REGULATORY INFORMATION

### U.S. FEDERAL REGULATIONS

**OZONE DEPLETING SUBSTANCES:** No Class I or Class II material is known to be used in the manufacture of, or contained in, this product.

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## CLEAN AIR ACT, SECTION 112 HAZARDOUS AIR POLLUTANTS (HAPs) (see 40 CFR 61):

This product is not known to contain any HAPs.

## SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

311/312 HAZARD CATEGORIES:

None.

313 REPORTABLE INGREDIENTS:

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 372.

## STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

Proposition 65 chemicals are not expected to be found in this product above those naturally present in their agricultural source. Proposition 65 exempt's naturally occurring listed chemicals from an obligation to label.

STATE RIGHT-TO-KNOW:

No known components subject to "Right-to-Know" legislation.

## INTERNATIONAL REGULATIONS:

This product has not yet been fully evaluated and classified for Countries outside of the United States.

## SECTION 15 NOTES:

## SECTION 16: OTHER INFORMATION

### OTHER INFORMATION:

PREPARATION INFORMATION:

Agrivida, Inc.

PREPARATION DATE:

Nebraska, fall of 2017 grain production  
Nebraska, 2017 processing and packaging

REVISION NUMBER:

0.03

### DISCLAIMER:

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.