

PRODUCT: OptiPhos® Plus 2500 G**DATE:** October, 2020**PAGE:** 1/12**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY /UNDERTAKING****1.1. PRODUCT IDENTIFIER**

Trade name: OptiPhos® Plus 2500 G
Common name: 6-phytase
IUB Number 3.1.3.26
CAS Number: [9001-89-2]

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED

Identified uses: Zootechnical feed additive
(digestibility enhancer; enzyme).

Uses advised against: None known.

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Supplier:
Huvepharma, Inc.
525 Westpark Drive, Suite 230
Peachtree City, GA 30269
Telephone: 1-770-486-7212
Emergency Telephone: 1-877-994-4833
Chemtrec Emergency Assistance Telephone: 1-800-424-9300
Contact e-mail: customerservice@huvepharma.us

Manufacturer:
ADM Animal Nutrition
1877 NE 58th Ave.
Des Moines, IA 50313
Telephone: 515-262-9763

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2. HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE MIXTURE

This preparation has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Health hazards

Respiratory sensitization	Category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization:	Category 1	H317: May cause an allergic skin reaction.

2.2. LABEL ELEMENTS

Labeling according to Regulation (EC) No 1272/2008 of December 2008 as amended

Signal words:



Danger

Hazard statements:

H317: May cause an allergic skin reaction.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P284 In case of inadequate ventilation wear respiratory protection.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P321 Specific treatment (see heading "Skin exposure" in item 4).
P362 + P364 Take off contaminated clothing and wash it before reuse.

2.3 OTHER HAZARDS

None.

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Chemical Name	Content in OptiPhos® Plus 2500 G (%)	CAS No/EC no	REACH registration No	INDEX No	CLP classification
6-phytase	10 – 20	9001-89-2	-	-	H334; H317
Starch	< 10	9005-25-8	-	-	H315
Grain dust	> 60	-	-	-	H334

Remaining components are non-hazardous and/or below required reporting limits.

Composition comments:

The full text for H-phrases is displayed in section 16.

Excipients may include: Wheat meal.

4. FIRST AID MEASURES**4.1. DESCRIPTION OF FIRST AID MEASURES****General information**

Change soaked clothing.

Remove clothing where dust collected.

After inhalation

When spray fog inhaled, seek medical advice and show the physician the packing or the packing label.

After contact with skin

In case of contact with skin wash off with water.

After contact with eyes

In case of contact with eyes rinse immediately for at least 15 minutes with plenty of water.

After ingestion

No special measures necessary.

Rinse mouth thoroughly with water.

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4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

In sensitive and allergized individuals may cause allergy or asthma symptoms or breathing difficulties if inhaled.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

NDA.

5. FIREFIGHTING MEASURES**5.1. EXTINGUISHING MEDIA**

Water spray or appropriate foam. Use extinguishing media suitable for surrounding fire.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

May emit toxic fumes under fire conditions. They are: carbon monoxide, carbon dioxide, nitrogen oxides, and sulphur oxides.

5.3. ADVICE FOR FIREFIGHTERS

As with all fires, evacuate personnel to safe area. Fire fighters should use self-contained breathing equipment and protective clothing.

6. ACCIDENTAL RELEASE MEASURES**6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES**

Persons with a history of allergies, contact dermatitis, chronic rashes or respiratory problems should use special precautions to avoid skin contact or exposure to dust. Wear suitable protective equipment and a self-contained breathing apparatus.

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6.2. ENVIRONMENTAL PRECAUTIONS

Prevent spilled material from flowing onto adjacent land or into streams, ponds or lakes.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Carefully sweep the powder up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water.

6.4. REFERENCE TO OTHER SECTIONS

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

7. HANDLING AND STORAGE**7.1. PRECAUTIONS FOR SAFE HANDLING**

Avoid the formation and deposition of dust.
Provide exhaust ventilation if dust is formed.
Avoid formulation of aerosols.

7.2. CONDITIONS FOR SAFE STORAGE INCLUDING ANY INCOMPATIBILITIES

Take precautionary measures against electrostatic discharging.
Avoid formation of dust.
Observe the general rules of industrial fire protection.

7.3. SPECIFIC USE(S)

For detailed information about the use of OptiPhos® Plus 2500 G see identified use(s) referred to in Subsection 1.2.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

Recommended monitoring procedures: None.

Occupational Exposure Limits:

Ireland Components	Type	Value	Form
Excipient: Grain Dust (CAS NA)	TWA	10 mg/m ³	Grain dust
Spain Components	Type	Value	Form
Excipient: Grain Dust (CAS NA)	STEL (VLA-ED)	4 mg/m ³	Grain dust
United Kingdom Components	Type	Value	Form
Excipient: Grain Dust (CAS NA)	STEL	30 mg/m ³	Inhalable fraction (Grain dust)
	TWA	10 mg/m ³	Inhalable fraction (Grain dust)

Biological Limit Values: No biological exposure limits noted for the ingredients.

Derived no-effect level (DNEL): Not available.

Predicted no-effect concentrations (PNECs): Not available.

8.2. EXPOSURE CONTROLS

Ventilation: Local exhaust hood: Recommended.
General exchange: Recommended.

Occupational exposure controls

Do not eat, drink and smoke when handling the product.
Wash the hands with soap after use. Do not inhale, avoid contact with skin and eyes.
In case of accidental ingestion or contact, seek medical advice immediately and show the label to the physician.

Respiratory protection Particle filter half mask, filter P1

Hand protection Protective gloves.

Eye protection Safety goggles.

Skin protection Do not wear ophthalmic lenses.
Suitable clothing to prevent skin contact.

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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

a) Appearance:	Beige granules.
b) Odour:	Characteristic.
c) Odour threshold:	NDA
d) pH:	NDA
e) Melting point/freezing point:	NDA
f) Initial boiling point and boiling range:	NDA
g) Flash point:	NDA
h) Evaporation rate:	NDA
i) Flammability (solid, gas):	NDA
j) Upper/lower flammability or explosive limits:	NDA
k) Vapour pressure:	NDA
l) Vapour density:	NDA
m) Relative density:	NDA
n) Solubility:	NDA
o) Partition coefficient n-octanol/water:	NDA
p) Auto-ignition temperature:	NDA
q) Decomposition temperature:	NDA
r) Viscosity:	NDA
s) Explosive properties:	NDA
t) Oxidising properties:	NDA

9.2. OTHER INFORMATION NDA

10. STABILITY AND REACTIVITY

10.1. REACTIVITY

OptiPhos® Plus 2500 G is a non-reactive dry product in granular form.

10.2. CHEMICAL STABILITY

OptiPhos® Plus 2500 G is a stable dry product in granular form.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

NDA.

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10.4. CONDITIONS TO AVOID

Elevated moisture and temperatures, direct sunlight.

10.5. INCOMPATIBLE MATERIALS

NDA.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

NDA.

11. TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

a) acute toxicity:

Components		Species	Test results
6-phytase (CAS 9001-89-2)	Acute Oral LD ₅₀	NDA	NDA
Starch (CAS 9005-25-8)	Acute IP LD ₅₀	Mouse	6.6 g/kg b.w.

b) skin corrosion/irritation:

6-phytase does not cause skin irritation in an *in vitro* skin irritation test using the EPISKIN model.

c) serious eye damage/irritation:

6-phytase does not cause eye irritation in an *in vitro* eye irritation test in isolated chicken eyes.

d) respiratory or skin sensitization:

6-phytase was established to have skin sensitization potential (skin sensitizater) in the Local Lymph Node Assay in mice.

e) germ cell mutagenicity (6-phytase):

Bacterial Reverse Mutation Test (Ames)	<i>Salmonella</i> , <i>E. coli</i>	Negative
Bone marrow micronucleus test	Mouse	Negative

f) carcinogenicity:

NDA

g) reproductive toxicity:

Based on the experience that the strain is safe and the other toxicological studies did not raise any concern, no reproduction toxicity studies were performed.

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|----------------------------|-----|
| h) STOT-single exposure: | NDA |
| i) STOT-repeated exposure: | NDA |
| j) aspiration hazard: | NDA |

12. ECOLOGICAL INFORMATION

12.1. TOXICITY

OptiPhos® Plus 2500 G is enzyme which is degraded in the gastro-intestinal tract, and as it is of proteinaceous material any remaining material will further degrade in nature. It has no adverse environmental effects.

12.2. PERSISTENCE AND DEGRADABILITY

OptiPhos® Plus 2500 G is enzyme which is degraded in the gastro-intestinal tract, and as it is of proteinaceous material any remaining material will further degrade in nature.

12.3. BIOACCUMULATIVE POTENTIAL

OptiPhos® Plus 2500 G is enzyme which is degraded in the gastro-intestinal tract, and as it is of proteinaceous material any remaining material will further degrade in nature, hence it does not persist in the environment and degrades rapidly through biodegradation.

12.4. MOBILITY IN SOIL

Not applicable.

12.5. RESULTS OF PBT AND VPVB ASSESSMENT

Not applicable.

12.6. OTHER ADVERSE EFFECTS

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.

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13. DISPOSAL CONSIDERATIONS**13.1. WASTE TREATMENT METHODS**

Dispose of contents/container in accordance with local/regional/national/international regulations.

14. TRANSPORT INFORMATION**14.1. UN NUMBER**

Not applicable as this product is not regulated by IMDG/IMO, ADR/RID, IATA/ICAO.

14.2. UN PROPER SHIPPING NAME

Not applicable as this product is not regulated by IMDG/IMO, ADR/RID, IATA/ICAO.

14.3. TRANSPORT HAZARD CLASS(ES)

Not applicable as this product is not regulated by IMDG/IMO, ADR/RID, IATA/ICAO.

14.4. PACKING GROUP

Not applicable as this product is not regulated by IMDG/IMO, ADR/RID, IATA/ICAO.

14.5. ENVIRONMENTAL HAZARDS

Not applicable as this product is not regulated by IMDG/IMO, ADR/RID, IATA/ICAO.

14.6. SPECIAL PRECAUTIONS FOR USER

Not applicable as this product is not regulated by IMDG/IMO, ADR/RID, IATA/ICAO.

14.7. TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL73/78 AND THE IBC CODE

Not applicable as this product is not regulated by IMDG/IMO, ADR/RID, IATA/ICAO.

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15. REGULATORY INFORMATION**15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE****EU regulations**

- **Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I**
Not listed.
- **Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II**
Not listed.
- **Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**
Not listed.
- **Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA**
Not listed.

Authorisations

- **Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**
Not listed.

Restrictions on use

- **Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**
Not listed.
- **Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**
Not listed.

Other EU regulations

- **Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances**
Not listed.
- **Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**
Not listed.

Other regulations

- The product is classified and labelled in accordance with EC directives or respective national laws.
- This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

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- Young people under 18 years old are not allowed to work with this product according to the EU Directive 94/33/EC on the protection of young people at work.

15.2. CHEMICAL SAFETY ASSESSMENT

A chemical safety assessment according to REACH-regulation has not been carried out.

16. OTHER INFORMATION

The data and information reported in this Safety Data Sheet are based on information and studies made by HUVEPHARMA with OptiPhos® Plus 2500 G and 6-phytase purified product, and are only a guide for the user. They respect the actual level of the scientific and technical state of the art. In any case they cannot involve a responsibility of HUVEPHARMA if they are not respected, in particular for the aspects not considered.

LIST OF ABBREVIATIONS USED IN THE SDS

ADR	International Carriage of Dangerous Goods by Road;
CAS Number	Chemical Abstract Service Registry Number;
EU	European Union;
ICAO/IATA	International Civil Aviation Organization/International Air Transport Association;
IMDG	International Maritime Dangerous Goods;
IUB Number	Identification Number in the International Union of Biochemistry
LD₅₀	Lethal dose 50;
NA	Not applicable;
NDA	No Data Available;
RID	International Carriage of Dangerous Goods by Rail.

FULL TEXT OF H STATEMENTS UNDER SECTION 3

H315:	Causes skin irritation.
H317:	May cause an allergic skin reaction.
H334:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.