1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Phostrol® Fungicide**
Product Control No.: **30449**
Product Type: Fungicide

Company Name:
Engage Agro Corporation
1030 Gordon St.
Guelph, ON
N1G 4X5
www.engageagro.com
(519) 826-7878

Telephone Numbers: **For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call: 1-866-336-2983**

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

Eye Irritation	Category 2B

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 2
Hazardous to aquatic environment, chronic	Category 2

SIGNAL WORD:
WARNING

HAZARD STATEMENTS:
Causes eye irritation. Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS
Wash thoroughly after handling. Avoid release to the environment.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Collect spillage.

Dispose of contents in accordance with local, provincial, and federal regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Mono- and dibasic sodium, potassium, and ammonium phosphites	Not applicable	53.6
Other Ingredients		46.4

Synonyms: Phosphorous Acid; Ammonium, Sodium, and Potassium Salts
Neutralized Phosphorous Acid

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water for several minutes. Remove contact lenses, if present, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If Swallowed: Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for several minutes. Call a poison control center or doctor for treatment advice.
If Inhaled: Move person to fresh air. Call a poison control center or doctor for further treatment advice.
Most Important symptoms/effects, acute and delayed: Causes eye irritation.
Indication of Immediate medical attention and special treatment if needed, if necessary: Immediate medical attention should not be necessary.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.
Special Fire Fighting Procedures: Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.
Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.
Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.
Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.
Methods for Cleanup and Disposal: Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into container for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

7. HANDLING AND STORAGE

HANDLING: Do not get in eyes or on clothing or skin. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE: This product should be stored in its original container in a cool, dry locked place out of reach of children and out of direct sunlight. Do not use or store near open flame. Do not contaminate water, food, or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:
Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.
Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.
Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.
Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.
General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

	OSHA		ACGIH		
Component	**TWA**	**STEL**	**TWA**	**STEL**	**Unit**
Mono- and dibasic sodium, potassium, and ammonium phosphites	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless liquid
Odor:	No distinct odor
Odor threshold:	No data available
pH:	7.16
Melting point/freezing point:	Similar to water
Initial boiling point and boiling range	Similar to water
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.43 g/cm (@ 22℃) 1.105 g/cm (@ 54℃)
Solubility(ies):	Soluble in water
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	2.18 cSt (@ 25° C) 7.9 cSt (@ 54℃)

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not expected to be reactive.
Chemical Stability: This material is stable under normal handling and storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur
Conditions to Avoid: Excessive heat. Do not store near heat or flame.
Incompatible Materials: Strong oxidizing agents, strong reducers, and water-reactive materials.
Hazardous Decomposition Products: Under fire conditions may produce gases such as phosphine and oxides of phosphorous.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Dermal, inhalation
Eye Contact: Slightly irritating based on toxicity studies.
Skin Contact: Slightly toxic and slightly irritating based on toxicity studies.
Ingestion: Slightly toxic if ingested based on toxicity studies.
Inhalation: Low inhalation toxicity based on toxicity studies.
Delayed, immediate and chronic effects of exposure: None reported.

Toxicological Data:
Data from laboratory studies conducted are summarized below:
Oral: Rat LD50: > 5,000 mg/kg
Dermal: Rat LD50: >5,000 mg/kg
Inhalation: Rat 4-hr LC50: >2.06 mg/L (no mortalities at highest dose)
Eye Irritation: Rabbit: Minimally irritating (MMTS = 0.7)
Skin Irritation: Rabbit: Slightly irritating (PDII = 0.1)
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to inorganic phosphates may disrupt the body's calcium-phosphorus balance and cause increased bone demineralization, dental problems and kidney stones.
Carcinogenicity / Chronic Health Effects: Prolonged overexposure to inorganic phosphates can affect the kidneys, particularly calcification of the kidney. No known carcinogenicity risks are associated with phosphorous acid or inorganic phosphates.
Reproductive Toxicity: Results from several studies in rats with monovalent inorganic phosphates (ortho and condensed) indicate they are not reproductive toxicants. Based on this data, it is not expected that other inorganic phosphates would cause reproductive toxicity.
Developmental Toxicity: Results from multiple studies in rats, mice, rabbits and hamsters indicate that monovalent and divalent ortho and condensed inorganic phosphates did not cause developmental effects. Based on these results, it is not expected that other inorganic phosphates would cause developmental effects.
Genotoxicity: In both in vitro and in vivo tests, inorganic phosphates have not demonstrated mutagenic or genotoxic effects.
Assessment Carcinogenicity:
This product contains substances that are considered to be probable or suspected human carcinogens as follows:

	Regulatory Agency Listing As Carcinogen			
Component	**ACGIH**	**IARC**	**NTP**	**OSHA**
Mono- and dibasic sodium, potassium, and ammonium phosphites	No	No	No	No

12. ECOLOGICAL INFORMATION

Ecotoxicity: Studies show that phosphorous acid is not harmful to most non-target organisms, but toxic to fish and aquatic invertebrates.
Environmental Fate: Phosphorous acid and its salts are rapidly dissociated in the environment to yield hydrogen and phosphate ions. Over time, the phosphate ions can be taken up by plants as various salts, transformed to different oxidation states such as phosphate, or bound up with other substances in soil.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.
Container Handling and Disposal: Nonrefillable Containers 20 Litres or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by Provincial and local authorities. Plastic containers are also disposable by incineration. Do not burn unless allowed by provincial and local ordinance. If burned stay out of smoke.
Nonrefillable containers larger than 20 litres: Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by Provincial and local authorities. Plastic containers are also disposable by incineration. Do not burn unless allowed by Provincial and local ordinance. If burned stay out of smoke.
Refillable containers larger than 20 litres: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by Provincial and local authorities. Plastic containers are also disposable by incineration. Do not burn unless allowed by Provincial and local ordinance. If burned stay out of smoke.

14. TRANSPORTATION INFORMATION

Canadian Transportation of Dangerous Goods (TDG): Not regulated as a dangerous good.

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the SDS contains all the information required by the *Controlled Products Regulations*.

WHMIS Classification: (for workplace exposures) Not controlled

Registration: Pesticide product registered and subject to the regulations under the Pest Control Products Act.

EPA FIFRA INFORMATION
This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or spray mist.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use. SARA Hazard Notification/Reporting:
Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):
Acute Health

Section 313 Toxic Chemical(s):
None

Reportable Quantity (RQ) under U.S. CERCLA:
None

RCRA Waste Code:
Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:
Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not Listed.

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:
Rating for this product: Health: 1 **Flammability:** 0 **Reactivity:** 0
Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

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