

Material Safety Data Sheet

PRODUCT NAME: BATTALION PRO

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Battalion Pro
Synonyms: Battalion Pro
Active Ingredient: ACK55 strain of *Pseudomonas fluorescens*
EPA Registration No.: 91213-3

Produced for: USDA Agricultural Research Service (USDA-ARS):

Beltsville, MD 20705

Produced by: BioWest Ag Solutions:

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EPA Pesticide Establishment No.: 91744-ID-001

Date of Issue: Sept. 30, 2020

Supersedes: None

Sections Revised: Not applicable

This product is a naturally occurring *Pseudomonas* bacterium from soil, which selectively reduces or suppresses the growth of the weeds cheatgrass/downy brome (*Bromus tectorum* L.), medusahead (*Taeniatherum caput-medusae* [L.] Nevski), and jointed goatgrass (*Aegilops cylindrica* L.) and does not hurt crops, or rangeland plants. It is a preemergent bioherbicide.

2. HAZARDS IDENTIFICATION

Emergency Overview: Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. May cause eye irritation. May cause irritation of respiratory tract. Avoid contact with skin, eyes and clothing. Avoid breathing dust or spray mist.

Appearance and Odor: Light beige to orange tan liquid with mildly pungent odor.

Warning Statement: Keep Out of Reach of Children.

CAUTION: Avoid contact with eyes, skin or clothing.

Potential Health Effects:

- Likely Routes of Exposure: Eye and skin contact.
- Eye Contact: Avoid contact with eyes.
- Skin Contact: Avoid contact with skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.
- Ingestion: This product is a liquid not known to be an irritant; avoid ingestion.
- Inhalation: Avoid breathing. May cause slight discomfort to lungs when exposed to high concentrations of liquid, especially during mixing. Symptoms may include nasal discharge and difficulty breathing. Inhalation: Mists may cause respiratory tract irritation.
- Medical Conditions Aggravated by Exposure: Pre-existing respiratory disorders may be aggravated by inhalation exposure.

Potential Environmental Effects:

This product is a naturally occurring bacterium and is not expected to harm the environment, including non-target plants, birds, mammals, plants, aquatic organisms, honeybees or humans.

- This bacterium grows only in the soil at temperatures less than 60°F (16°C), and only harms the growth of the weeds cheatgrass or downy brome, medusahead, and jointed goatgrass.
- Do not contaminate water when cleaning equipment or disposing of equipment wash waters.
- Do not apply when weather conditions favor drift or runoff from treated areas.
- Dispose of excess material by sanitizing with a 1:10 solution of bleach or caustic material to water to kill any remaining active bacteria. Rinse thoroughly with water. Excess material can also be destroyed by autoclaving or steaming.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT CAS NO. % BY WEIGHT

MINIMUM GUARANTEED ANALYSIS

ACTIVE INGREDIENT(S)

ACK55 strain of *Pseudomonas fluorescens** 100%

*Contains a minimum of 5×10^8 colony forming units (CFU) of *Pseudomonas fluorescens* strain ACK55 per mL, or a minimum of 500 million CFU/mL.

EPA Reg. No. 91213-3

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,

Call CHEMTREC Day or Night: 1-800-424-9300.

For Medical Emergencies Only, Call 1-877-325-1840.

4. FIRST AID

General: When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, and then continue rinsing.

If on skin:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.

If inhaled or swallowed:

- Move person to fresh air.
- Have person sip a glass of water if able to swallow.
- Call a poison control center or doctor for further treatment advice.
- Have the product container or label with you when calling a poison control center or doctor or going for treatment.
- For emergency information on [product, use, etc.] call the **National Pesticides Information Center** at 1-800-858-7378, 6:30 AM to 4:30 PM Pacific Time (PT), seven days a week. During other times, call the **Poison Control Center** 1-800-222-1222.

5. FIRE FIGHTING MEASURES

Flash Point: None

Auto ignition Temperature: Minimal Flammability Limits: Minimal

Extinguishing Media: Not applicable

Special Fire Fighting Procedures: None needed for product. Firefighters should wear NIOSH/MSHA 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): None.

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 0; Flammability: 0; Reactivity: 0

Hazards Scale: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information under, 8. Exposure Controls / Personal Protection. Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

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, steamed or autoclaved, and placed in an appropriate container for disposal.

Methods for Containment: Contain spill, scoop up liquid and place in container for autoclaving or land application according to label directions or for proper disposal.

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Collect washings for autoclaving and disposal. Decontaminate tools and equipment following cleanup by bleach or ethanol with thorough rinsing or autoclaving.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and state and/or local agencies.

7. HANDLING AND STORAGE

Handling: Ensure adequate ventilation. Handle and open container in a manner as to prevent spillage. Avoid contact with eyes, skin or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing 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: Always use original container to store product in a dry secured storage area. Store in a dry area inaccessible to children. Store in original containers only. Keep container tightly sealed when not in use. Keep away from direct sunlight. Do not contaminate water, food, or feed by storage or disposal.

Expiration Date: Material is stable, and the bacteria populations are viable up to 6 months after Batch Date if stored at equal to or less than 70°F. Sell or Use Before 6 months after Batch Date.

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.

Personal Protective Equipment (PPE): There are no known hazards associated with this product when used according to the label directions. Follow manufacturer's instructions for cleaning/maintaining PPE. If no instructions are available then use detergent and warm water for washables. Keep and wash PPE separately from other laundry.

Mixers, loaders and applicators should wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Avoid contact with skin and eyes.

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet, or applying cosmetics.

Eye/Face Protection:

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 avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes, and waterproof gloves. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection:

No dusts or vapors. If acceptable levels are exceeded and for applicators using low pressure hand wand application equipment, wear a NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approved prefix TC-21C or a NIOSH-approved respirator with any N, R, P or HE filter.

Particulate Respirators:

If dust is present, it is recommended to wear particulate respirators, or "air purifying respirators." These respirators only protect against particles (e.g., dust). Particulate Respirators are intended only for low hazard levels, and do not protect against chemicals, gases, or vapors. The commonly known "N-95" filtering facepiece respirator or "dust mask" is one type of particulate respirator.

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; and 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.

Exposure Guidelines:

- Component
- OSHA
- TWA: Not established
- STEL: Not established
- ACGIH
- TWA: Not established
- STEL: Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Light beige to orange tan liquid with mildly pungent odor.

Boiling Point: 100°C (212°F)

Solubility in Water: Soluble

Density: 1.0 g/cc

Specific Gravity: 1.0 g/cc

Evaporation Rate: None

Vapor Density: 0.62 (Air = 1)

Freezing Point: 0°C (32°F)

Vapor Pressure: 2.3 kPa (@ 20°C)

pH: 3.8 to 8.5

Viscosity: 1.985 mPAC @ 20°C; 0.836 mPAC @ 40°C

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

Chemical Stability: This material is stable under normal handling and storage conditions.

Conditions to Avoid: Direct sunlight; Temperatures above 70°F (21°C) will reduce viability of bacteria.

Incompatible Materials: Biocides, including toluene and similar chemicals, will kill the bacteria.

Hazardous Decomposition Products: None.

Hazardous Reactions: None. Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data: Acute Oral Toxicity RAT Nonpathogenic LD₅₀ >5000 mg/kg

Dermal: None

Inhalation: None

Eye Irritation: None

Skin Irritation: None

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Does not survive in natural waters; however, do not contaminate water when disposing of equipment wash waters.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Liquid waste resulting from the use of this product that cannot be used may be disposed of on-site soil or autoclaved. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law.

Container Handling and Disposal: Completely empty container into application equipment. Then dispose of empty container in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay away from smoke.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

DOT: Non Regulated – See 49 CFR 173.132(b)(3)

IMDG: Non Regulated – See IMDG 2.6.2.1.3

IATA: Non Regulated – See IATA 3.6.1.5.3

15. REGULATORY INFORMATION

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): Not determined

Section 313 Toxic Chemical(s): None

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

RCRA Waste Code: None

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not listed

16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product). This MSDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Bioherbicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label. Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, BioWest Ag Solutions makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will BioWest Ag Solutions be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

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