

MATERIAL SAFETY DATA SHEET

BnB Plus Herbicide

Version: 1

Date Issued: 3/31/04

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company: United Phosphorus, Inc.
423 Riverview Plaza
Trenton, NJ 08611
Product Information: (609) 392-8200 or www.upi-usa.com
Product Name: **BnB Plus Herbicide**
Product use: Sugar Beet Herbicide

**FOR MEDICAL EMERGENCIES, CONTACT THE NATIONAL PESTICIDE INFORMATION CENTER AT 1-800-858-7378.
FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.**

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

Component Name:	CAS No.	Weight % , Nominal
Phenmedipham	13684-63-4	7.0000
Desmedipham	13684-56-5	7.0000
Ethofumesate	26225-79-6	7.0000
Inert Ingredients, including: Isophorone	78-59-1	79.0000

INERT INGREDIENTS (79%): Only the regulated ingredients are listed above. For additional information, refer to Section 15 (Regulatory Information).

SECTION 3 HAZARDS IDENTIFICATION

Note: Please refer to Section 11 for detailed toxicological information.

EMERGENCY OVERVIEW DANGER: Corrosive – causes irreversible eye damage. Harmful if inhaled or swallowed. A slight skin irritant. This product is a combustible liquid.

Physical State	Liquid
Odor	Pungent (ketone odor)
Appearance	Yellow
Immediate Effects	
Eye	Corrosive – causes irreversible eye damage.
Skin	A slight skin irritant. Not known to cause skin sensitization.
Ingestion	Harmful if swallowed.
Inhalation	Harmful if inhaled. Avoid breathing vapors and spray mist.

Chronic or Delayed Long-Term No component of this product is listed as a carcinogenic by NTP, IARC, or OSHA.

Signs and Symptoms Prolonged inhalation of concentrated vapor (>5 ppm) may cause irritation of the eyes, nose and throat. Extremely high concentrations (> 200 ppm) may cause headache, dizziness, nausea, and faintness. Ingestion of unlikely high doses may cause abdominal discomfort, vomiting and diarrhea.

SECTION 4 FIRST AID MEASURES

IF SWALLOWED Call a Poison Control Center or doctor immediately 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 15-20 minutes.
Call a Poison Control Center or doctor for treatment advice.

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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, then continue rinsing eye. Get medical attention if irritation develops or persists.

NOTE TO PHYSICIAN: This product contains aromatic and other organic solvents which, if aspirated into the lungs during induced vomiting, may cause chemical pneumonitis and pulmonary edema. Ingested material should be removed by gastric lavage with an endotracheal tube in place. However, please be aware that the solvents are corrosive to eyes and probable mucosal damage (by contact) contraindicate the use of gastric lavage.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT 90°C/194°F (Setaflash Closed Cup; Flammability Class IIIA)
EXTINGUISHING MEDIA Foam, sand, earth, dry powder, dry chemical, carbon dioxide (CO₂), water spray.

FIRE/EXPLOSION HAZARDS Combustible liquid. This product can form combustible mixtures at temperatures at or above the flash point. It may produce a floating fire hazard in extreme fire conditions. When heated to decomposition or upon burning, this product will give off toxic fumes which include aldehyde, oxides of carbon, nitrogen, and sulfur.

FIRE FIGHTING INSTRUCTIONS Wear self-contained breathing apparatus and protective clothing. Use water spray to cool fire exposed surfaces but avoid spraying water directly into storage containers due to danger of boilover.

SECTION 6 ACCIDENTAL RELEASE MEASURES

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800 424-9300

GENERAL AND DISPOSAL: Use proper protective equipment to minimize personal exposure (See Section 8). Take all necessary action to prevent and to remedy the effects of the spill. Ensure that the disposal is in compliance with Federal or local disposal regulations. Notify the appropriate authorities immediately. See Section 13 for any applicable Reportable Quantity (RQ) and other federal regulatory information.

LAND SPILLS OR LEAKS: Eliminate sources of ignition and shut off leak if possible. Take up with sand or other non-combustible material and place into a clean container for later disposal. Wear impervious gloves when removing spillages and cleaning up contaminated areas. Report immediately to authorities if liquid enters watercourse or sewer.

SECTION 7 HANDLING AND STORAGE

Handling Procedures: Danger! Corrosive. Can cause irreversible eye damage. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. Harmful if inhaled. Avoid breathing vapors and spray mist.

Storing Procedures: Store in original container. Keep tightly closed. Keep in a dry, cool place. Do not use or store near heat or open flame.

Work/Hygienic: 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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Isophorone	78-59-1	ACGIH	Ceiling		5 ppm
		NIOSH	REL	4 ppm	23 mg/m ³
		OSHA Z1	PEL	25 ppm	140 mg/m ³
		OSHA Z1A	TWA	4 ppm	23 mg/m ³
		US CA OEL	TWA PEL	4 ppm	23 mg/m ³

ENGINEERING CONTROLS: Control airborne concentrations below the exposure guidelines. Use with adequate ventilation. Local exhaust ventilation may be necessary when used in a confined area.

EYE/FACE PROTECTION Splash goggles.
CLOTHING Wear long-sleeved shirt and long pants, shoes plus socks.
GLOVES PVC or rubber gloves.
RESPIRATOR Use only in well ventilated areas. Use NIOSH/MSHA approved vapor respirators if ventilation is inadequate.

NOTE TO APPLICATORS AND HANDLERS OF AGRICULTURAL PRODUCTS: For agricultural products which are within the scope of the EPA Worker Protection Standards (WPS) (40 CFR Part 170), all users must refer to the statement below or the Product Label for WPS-specified Personal Protective Equipment (PPE), Restricted Entry Level (REI), and other Precautionary Statements.

PERSONAL PROTECTIVE EQUIPMENT FOR APPLICATORS AND HANDLERS: Applicators and Handlers Must Wear: long-sleeved shirts and long pants; shoes plus socks; protective eyewear.

PERSONAL PROTECTIVE EQUIPMENT REQUIRED FOR EARLY ENTRY INTO TREATED AREAS: For entry into treated area during the restricted entry anything that has been treated such as plants, soil, or water, the PPE required is: coveralls, waterproof gloves, shoes plus sock; protective eyewear.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Yellow
ODOR	Pungent (ketone odor)
PHYSICAL STATE	Liquid
BULK DENSITY	8.5 lbs/gallon
SOLUBILITY (in water)	Miscible in water Not miscible in Spray Oil Concentrate
VAPOR PRESSURE	< 1.0 mmHg (Estimate)
pH	4.2
SPECIFIC GRAVITY	1.015 at 20°C
DENSITY	1.0152 mg/ml
BOILING POINT	215°C
VISCOSITY	35.68 mPa.s

SECTION 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY	Stable
INCOMPATIBILITY	Strong oxidizing agents
HAZARDOUS POLYMERIZATIONS	Will not occur

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Oral Toxicity	Male Rate: LD ₅₀ : 4,665 mg/kg (low toxicity) Female Rat: LD ₅₀ : 6,156 mg/kg (low toxicity)
Acute Dermal Toxicity	Rabbit: LD ₅₀ >5,000 mg/kg (low toxicity)

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Acute Inhalation Toxicity

Rat: LC₅₀ > 4.18 mg/l (highest attainable concentration) (4 h) (moderately toxic)

Eye Irritation

Corrosive – causes irreversible eye damage

Skin Irritation

Rabbit: A slight skin irritant

Chronic Toxicity

Phenmedipham: In two-year feeding studies with rats, mice and dogs, no organotoxic effects were observed; the only effects noted at the high experimental doses (500-1000 ppm) were reduced weight gain (rats) and increased kidney weight (mice).

Desmedipham: In two-year feeding studies with mice and rats, adverse effects were observed only in animals receiving high doses (750-1500 ppm). These include increased spleen weight, toxic hemolytic anemia (both species) and elevated methemoglobin levels (rats only, 300-1500 ppm). However, there were no significant increases in mortality rate in both species even at high dose levels. In a similar one-year study with dogs (up to 5,000 ppm), toxic hemolytic anemia associated with compensatory erythropoiesis was the main effect noted, with a threshold level of 300 ppm.

Ethofumesate: In two-year feeding studies with animals, adverse effects were only observed at very high doses. These include: a reduced weight gain in males and increased liver weight in females (rats, 5,000 ppm); an increase of liver weight in females (hamsters, 2,000 ppm); an increased liver weight in both males and females (dogs, 20,000 ppm).

Isophorone: When administered by stomach tube in corn oil at dosage levels of 250 or 500 mg/kg of body weight, isophorone was found to associate with a slightly increased incidence of renal and preputial tumors in male rats and of liver tumors in male mice. However, isophorone did not exhibit similar potential in either female rats or female mice. Thus, under the conditions of this bioassay, isophorone appeared to exhibit weak carcinogenic activity. The significance of this data with regard to potential human hazard under realistic exposure conditions (inhalation or dermal) is uncertain.

Assessment Carcinogenicity

ACGIH	Isophorone	78059-1	Group A3
NTP	None		
IARC	None		
OSHA	None		

Reproductive & Developmental Toxicity

Phenmedipham: Showed no adverse effects on fertility or reproduction in a three-generation rat reproduction study at dose levels up to 1,250 mg/kg/day.

Desmedipham: Showed no adverse effects on fertility or reproduction in a two-generation rat reproduction study at dose levels up to 1,250 mg/kg/day.

Ethofumesate: Demonstrated no adverse effects on reproduction in a three-generation rat reproduction study.

Teratogenicity

Phenmedipham: Demonstrated no embryotoxic or teratogenic effects in a rabbit or rat teratology study at dose levels up to 500 and 1,250 mg/kg/day.

Desmedipham: No teratogenic effects were observed in fetuses of rabbit given up to 450 mg/kg/day during gestation. In rats, ingredient 2 induced methemoglobin formation in dams at all doses tested (10-1000 ppm). However, no teratogenic or embryotoxic effects were observed in the offspring from dams administered at the high doses (100-1000 mg/kg/day), the dose dependent, elevated methemoglobin levels were found to be maternally toxic, leading to an increased frequency of malformation.

Ethofumesate: No teratogenic effects were seen in rats at dose levels up to 80 mg/kg/day. In rabbits, no adverse effects of biological significance were observed at the low dose (30 mg/kg/day); slight embryo-lethal effects were noted at 300 mg/kg/day; severe maternal toxicity and moderate embryo-lethal effects were observed at the highest dose.

Mutagenicity

Phenmedipham: Was not mutagenic or genotoxic when tested in Ames gene mutation

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assay and in seven other mutagenesis systems.

Desmedipham: Was not mutagenic or genotoxic when tested in Ames assay and chromosomal aberration tests using human lymphocytes or mouse micronucleus. It was mutagenic only in mouse lymphoma cells when tested at high doses which extended into the toxic range (50-100 mg/ml).

Ethofumesate: Was not mutagenic or genotoxic when tested in Ames gene mutation assay and in four other mutagensis systems.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Precautions This product is extremely toxic to fish and other aquatic organisms. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated sites may be hazardous to fish in adjacent waters. Do not contaminate water when disposing of equipment washwaters.

SECTION 13 DISPOSAL CONSIDERATIONS

General Disposal Guidance Handling and disposal of pesticide wastes must be in accordance with Federal requirements under the resource conservation and recovery act (RCRA) and applicable State and local procedures. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Container Disposal Do not reuse this container. Destroy when empty.

SVR CONTAINER SYSTEM: Return the SVR container clean (outside only) and empty to the place of business from which the BnB Plus was purchased.

RCRA Classification Not regulated under this Statute

SECTION 14 TRANSPORT INFORMATION

PROPER SHIPPING NAME

(When Shipped in Bulk Containers)

Combustible liquid, n.o.s., (Isophorone), NA 1993, PG III*

D.O.T. SHIPPING CLASS:

None

ADDITIONAL INFORMATION:

Excepted from DOT Regulations when shipped in non-bulk packaged product via domestic ground transport only. (Non-bulk = Each container containing equal or less than 119 gallons.) Placard Required: None

Note: For transportation purposes (49 CFR Part 173, 132), the calculated LC₅₀ (rat-1 hr) is >16.72 mg/l

* Inert net volume

SECTION 15 REGULATORY INFORMATION

REGULATIONS UNDER FIFRA: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

U.S. FEDERAL REGULATIONS:

TSCA list Isophorone 78-59-1

TSCA 12B export notification None

SARA TITLE III: section 302 – notification and information None

Sara Tile III section 313 – toxic chemical release reporting

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Desmedipham 13684-56-5 1.0%

U.S. States Regulatory
CA Prop 65
This product does not contain any substances known to the State of California to cause cancer.
This product does not contain any substances known to the State of California to cause reproductive harm.

U.S. State Right-To-Know Ingredients
Desmedipham 13684-56-5 NJ
Isophorone 78-59-1 CA, CT, IL, MN, NJ, PA, RI

Environmental

CERCLA
Isophorone 78-59-1 5,000 lbs.
Clean Water Section 307 Priority Pollutants
Isophorone 78-59-1
Safe Drinking Water Act Maximum Contaminant Levels
None

STATE REGULATIONS: Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities.

SECTION 16 OTHER INFORMATION

	HEALTH	FLAMMABILITY	REACTIVITY	OTHERS
NFPA RATING	3	2	0	None
HMIS	3	2	0	G,H

Least – 0, Slight – 1, Moderate – 2, High – 3, Extreme – 4. These values are obtained using professional judgment and were not available in the guidelines or published evaluations prepared by the National Fire Protection Association.

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