



Material Safety Data Sheet

United Phosphorus, Inc.

NFPA	PPE		
			

Issued Date 14-Dec-2007

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Revision Number: 8

1. PRODUCT AND COMPANY IDENTIFICATION

UPI
 630 Freedom Business Center
 Suite 402
 King of Prussia, PA 19406

Emergency Telephone Number
 Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
 Medical: Rocky Mountain Poison Control Center
 (866) 673-6671 (24hrs)

Company Information
 UPI

Contact Information
 Customer Service
 R&D Technical Service

Phone Number
 1-800-438-6071
 610-878-6100

Available Hrs
 8:00 am to 5:00 pm EST
 8:00 am - 5:00 pm (EST)

Product Name BnB Plus Herbicide
EPA Reg # 264-632-70506
Recommended Use Sugar beet herbicide
Product Code 12U-141

2. HAZARDS IDENTIFICATION

Emergency Overview

Causes irreversible eye damage
 Harmful if swallowed
 Harmful if absorbed through skin
 Prolonged skin contact may cause local redness. May cause an allergic reaction in sensitive individuals.
 Corrosive

DANGER!

Appearance Yellow.

Physical State Liquid.

Odor Pungent. (Ketone).

Potential Health Effects

Eyes	Causes irreversible eye damage..
Skin	May cause skin irritation.
Inhalation	Harmful by inhalation. Prolonged inhalation of concentrate vapor may cause headache, dizziness, nausea, and faintness. .
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients Name

Chemical Name	CAS-No	Weight %	OSHA PEL
Desmidipham	13684-56-5	7	N/A
Phenmidipham technical	13684-63-4	7	N/A
Ethofumesate	26225-79-6	7	N/A
Isophorone	78-59-1	0-5	23 mg/m ³ 4 ppm

4. FIRST AID MEASURES

Eye Contact	Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.
Inhalation	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration. Call a poison control center or doctor for further treatment advice.
Ingestion	Call a physician or Poison Control Center immediately Have person sip a glass of water if able to swallow Do not induce vomiting unless told to do so by a poison control center or doctor Never give anything by mouth to an unconscious person

Engineering Controls

Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems. .

PESTICIDE APPLICATORS & WORKERS. THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170..

Personal Protective Equipment

Eye/face Protection

Where there is potential for eye contact have eye flushing equipment available.. Use eye protection to avoid eye contact. .

Skin Protection

Long sleeved clothing. Long pants. Socks and footwear. Chemical resistant gloves.

Respiratory Protection

Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134. .

General Hygiene Considerations

Do not eat, drink or smoke when using this product. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Yellow	Odor	Pungent (Ketone)
Physical State	Liquid	pH	4.2
Boiling Point/Range	215°C	Melting Point/Range	Not available
Specific Gravity	1.015 @20 C	Solubility	Miscible
Evaporation Rate	Not available	Vapor Pressure	Not available
Vapor Density	Not available	VOC Content	Not available
Viscosity	Not available	Molecular Weight	No data available
Bulk Density	8.5 lb/gal	Percent Solids	Not available
Percent Volatiles	Not available		

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions
Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating gases and vapours.
Possibility of Hazardous Polymerization	Hazardous polymerisation does not occur

11. TOXICOLOGICAL INFORMATION

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Acute Toxicity

Product Information

BnBPlus:

Acute oral LD50 (rat): male 4,556 mg/kg female 6,156 mg/kg

Acute dermal LD50 (rabbit) : >5,000 mg/kg

Acute Inhalation LC50 (rat): > 4.18 mg/L - 4 hr (Highest attainable concentration)

Eye irritation: Corrosive - causes irreversible eye damage

Skin irritation: A slight skin irritant

Chronic Toxicity

Carcinogenicity

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).

Reproductive and developmental toxicity: 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.

Teratogenicity: 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.

Mutagenicity: Was not mutagenic or genotoxic when tested in Ames gene mutation assay and seven other mutagenesis systems. 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, 350-1500 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 erythropoieses was the main effect noted, with a threshold level of 300 ppm.

Reproductive and developmental toxicity: 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.

Teratogenicity: 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 (10-100 ppm). However, no teratogenic or embryonic effects were observed on 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.

Mutagenicity: 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: 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).

Reproductive and developmental toxicity: Demonstrated no adverse effects on reproduction in a three generation rat reproduction study.

Teratogenicity: No teratogenic effects were seen in rats at dose levels up to 8-0 mg/kg/day. In rabbits, no adverse effects of biological significance were observed at the low dose (30 mg/kg/day) slight embryolethal effects were noted at 300 mg/kg/day; severe maternal toxicity and moderate embryolethal effects were observed at the highest dose. 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 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.

Chemical Name	ACGIH	IARC	NTP	OSHA
Isophorone	A3			

12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not clean equipment or dispose of equipment washwaters in a manner that will contaminate water resources or arable land. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water by cleaning equipment or disposal of waste. . Extremely toxic to fish and other aquatic organisms..

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. . Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. Do not apply directly to wetlands or water..

Contaminated Packaging

Non refillable container. Do not reuse this container. . Clean container promptly after emptying. .
[For containers smaller than 5 gallons] Triple rinse as follows: Empty the contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 3/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or 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. .
[For containers larger than 5 gallons] Triple rinse or pressure rinse as follows:
Triple rinse: Empty the remaining contents into application equipment or a mix tank. Fill container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll back and forth, ensuring at least one complete revolution, for 30 seconds. Stand container on its end and tip back and forth several times. Empty rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.
Pressure rinse: Empty 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 flow begins to drip.
The offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities. .

14. TRANSPORT INFORMATION

<u>DOT</u>	Not regulated as per 173.150(f) when shipped by highway in non-bulk (below 119 gallon) containers. When shipped in bulk the following description must be used:
Proper Shipping Name	Combustible liquid, n.o.s. (Isophorone)
Hazard Class	Comb Liq
UN-No	NA1993
Packing Group	PG III
Special Provisions	IB3, T1, T4, TP1

<u>ICAO</u>	Not regulated
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14. TRANSPORT INFORMATION

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

Desmidipham		
EINECS/ELINCS	Listed	
Phenmidipham technical		
EINECS/ELINCS	Listed	
ENCS	Listed	
Ethofumesate		
EINECS/ELINCS	Listed	
Isophorone		
DSL	Listed	
EINECS/ELINCS	Listed	
ENCS	Listed	
CHINA	Listed	
KECL	Listed	

USA

Federal Regulations

SARA 313
Y

Chemical Name	CAS-No	Weight %
Desmidipham	13684-56-5	7

SARA 311/312 Hazardous Categorization

Chronic Health Hazard	No
Acute Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Isophorone		Listed.		

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

12U-141 - BnB Plus Herbicide

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Isophorone	78-59-1	0-5	Listed.	Listed.		

CERCLA

Chemical Name	RQ
Isophorone	Listed.

RCRA

Pesticide Information

State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Isophorone	Listed.	Substance no. 1066 Listed.	Listed.	Listed.	Listed.

International Regulations

Mexico - Grade

Mexico - Grade

Chemical Name	Category	Carcinogen Status	Exposure Limits
Isophorone		A3	

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION

Revision Date

22-Dec-2010

Revision Summary

Update section 2 Update section 8 Update section 13

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End of MSDS