

MATERIAL SAFETY DATA SHEET

ALPHANEX Herbicide

Version: 1

Date Issued: 9/24/02

SECTION 1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Company: United Phosphorus, Inc.
423 Riverview Plaza
Trenton, NJ 08611

Product Use Information: (609) 392-8200 or www.upi-usa.com

Product Name: ALPHANEX HERBICIDE

Chemical Name: 3-ethoxycarbonylamino phenyl carbanilate (active ingredient desmedipham)

Product Use Description: Sugar beet herbicide

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

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component Name</u>	<u>CAS No.</u>	<u>Concentration % by Weight</u>	
		<u>Minimum</u>	<u>Maximum</u>
Desmedipham	13684-56-5	16.0000	
Inert Ingredients, including:		84.0000	
Isobutyl alcohol	78-83-1		< 10.0000
Isophorone	78-59-1		< 50.0000
Trimethylbenzene	25551-13-7		
AROMATIC HYDROCARBONS	64742-95-6		
Xylene	1330-20-7		< 1.0000

INERT INGREDIENTS (84%): Only the regulated ingredients are listed above. For additional information, refer to Section 15 (Regulatory Information).

SECTION 3 HAZARDS IDENTIFICATION

Emergency Overview Warning! Combustible liquid. Harmful if swallowed. May produce severe irritation of eyes and irritation of the skin.

Physical State Amber-colored liquid with faint organic solvent odor

Routes of Exposure Skin contact, vapor or mist inhalation.

Immediate Effects

Eye May produce severe eye irritation, especially under conditions of prolonged eye contact. The liquid is a moderate eye irritant and the vapor is a mild to moderate eye irritant. Not known to be corrosive to eyes.

Skin Can cause moderate skin irritation. The liquid is a mild skin irritant. The vapor is a mild to moderate skin irritant. Not known to be a skin sensitizer in animal study.

Ingestion Harmful if swallowed. Ingestion of significant amounts of liquid may cause increased salivation, general ataxia (confusion and lack of muscular coordination), weakness and tremors.

Inhalation Prolonged inhalation of solvent vapor may cause respiratory tract irritation, narcosis (a state of feeling drunken), headache, and nausea.

Chronic or Delayed

Long-Term Isophorone has shown some evidence of carcinogenicity in male rats and equivocal evidence of carcinogenicity in male mice in NTP studies.

TARGET ORGAN EFFECTS: Results from 90-day animal studies suggest no target organ effects under conditions of normal handling and use.

Medical Conditions

Aggravated by Exposure Prolonged exposure and inhalation may aggravate pre-existing conditions of the respiratory system.

Signs and Symptoms Solvent vapor may cause respiratory tract irritation, narcosis, headache, nausea. Ingestion and prolonged inhalation may cause increased salivation, general ataxia (confusion and lack of muscle coordination), weakness and tremors.

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SECTION 4 FIRST AID MEASURE

EYE	Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or physician for treatment advice.
SKIN	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or physician for treatment advice.
INGESTION	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 by a poison control center or physician.
INHALATION	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN	EMPTY STOMACH CONTENTS BY GASTRIC LAVAGE. AVOID ASPIRATION.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT	147°F/64°C (Combustible) T.C.C. Flammability Class III (Classified by NFPA/OSHA criteria)
FIRE AND EXPLOSION EXTINGUISHING MEDIA	Evolution of toxic fumes including nitrogen oxides. Foam, dry chemical, carbon dioxide (CO ₂), water.
FIRE FIGHTING INSTRUCTIONS	Persons fighting fire should wear self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES

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 15 for any applicable Reportable Quantity (RQ) and other federal regulatory information.
LAND SPILLS OR LEAKS	Keep people away. Contain and absorb spillage with absorptive material. Wash area with water containing detergent and ammonia. Inform authorities immediately if material enters watercourses.

SECTION 7 HANDLING AND STORAGE

HANDLING PROCEDURES	Warning! Combustible liquid. Harmful if swallowed. May produce severe irritation of eyes and irritation of the skin. Avoid breathing spray mist. Avoid contact with skin and eyes. Avoid contamination of feed and foodstuffs.
STORAGE PROCEDURES	Store in original container. Keep tightly closed. Keep in a dry, cool place. Do not use or store near heat or open flame. If exposed to subzero temperatures, Alphanex gradually thickens. The liquid returns to its original consistency when placed in a room (over 50° F) for several days.
WORK/HYGIENIC PROCEDURES	Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this products concentrate. Do not reuse them.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS	Control airborne concentrations below the exposure guidelines. Use with adequate with adequate ventilation. Local exhaust ventilation may be necessary, when used in a confined area.
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EYE/FACE PROTECTION	Splash goggles face-shield
BODY PROTECTION	Nitrile or other chemical-resistant gloves
RESPIRATORY PROTECTION	Ensure good ventilation. If not adequate, wear organic vapor respirator for protection.

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 Interval (REI), and other Precautionary Statements.

FOR MANUFACTURING AND PACKAGING EMPLOYEES:

The personal protective equipment (PPE) in accordance with OSHA standards are recommended below.

EXPOSURE LIMITS:

Isobutyl alcohol	78-83-1	ACGIH	TWA	50 ppm	152 mg/m3
		NIOSH	REL	50 ppm	150 mg/m3
		OSHA Z1	PEL	100 ppm	300 mg/m3
		OSHA Z1A	TWA	50 ppm	150 mg/m3
		US CA OEL	TWA PEL	50 ppm	150 mg/m3
Isophorone	78-59-1	ACGIH	Ceiling	5 ppm	28 mg/m3
		NIOSH	REL	4 ppm	23 mg/m3
		OSHA Z1	PEL	25 ppm	140 mg/m3
		OSHA Z1A	TWA	4 ppm	23 mg/m3
		US CA OEL	TWA PEL	4 ppm	23 mg/m3
Trimethylbenzene	25551-13-7	ACGIH	TWA	25 ppm	123 mg/m3
		OSHA Z1A	TWA	25 ppm	125 mg/m3
		US CA OEL	TWA PEL	25 ppm	125 mg/m3
Xylene	1330-20-7	ACGIH	TWA	100 ppm	434 mg/m3
		ACGIH	STEL	150 ppm	651 mg/m3
		OSHA Z1	PEL	100 ppm	435 mg/m3
		OSHA Z1A	TWA	100 ppm	435 mg/m3
		OSHA Z1A	STEL	150 ppm	655 mg/m3
		US CA OEL	TWA PEL	100 ppm	435 mg/m3
		US CA OEL	Ceiling		300 ppm
		US CA OEL	STEL	150 ppm	655 mg/m3
NIOSH	REL	100 ppm	435 mg/m3		
NIOSH	STEL	150 ppm	655 mg/m3		

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	amber
PHYSICAL STATE	liquid
ODOR	Faint organic solvent
DENSITY	0.98 g/cm3
VAPOR PRESSURE	Pure Isophorone: < 1.0 mmHg at 20 °C
BOILING POINT	Not available
SOLUBILITY	Not available

SECTION 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY	Stable
HAZARDOUS POLYMERIZATION (Conditions to avoid)	Will not occur.

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SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY	Rat: LD50: 3,960 mg/kg. Low toxicity. Harmful if swallowed.
ACUTE DERMAL TOXICITY	Rabbit: LD50: > 9,900 mg/kg. Low toxicity. Rat: LD50: > 19,800 mg/kg. Low toxicity.
ACUTE INHALATION TOXICITY	Rat: LC50: > 10 mg/l (4 hr.). Greater than 2.6 mg/l, the highest attainable aerosol concentration in air. No mortality was observed when rats were exposed to this maximum dose. In addition, an estimated LC50 value for this Alphanex Herbicide product can be calculated from the known LC50 data for the several organic solvents.
ACUTE TOXICITY (IRRITATION, SENSITIZATION ETC.)	
Skin Irritation	A moderate skin irritant.
Eye Irritation	Severe eye irritation
Sensitization	Not known to be a skin sensitizer.

The toxicity studies reported below were carried out with the active ingredients: Desmedipham technical (>96%). In comparison, Alphanex Herbicide contains only 16% of DMP. Also reported is the data for Isophorone (the inert ingredient) from the chronic feeding studies in animals.

SUB-CHRONIC TOXICITY Results from 90-day animal studies suggest no target organ effects under the conditions of normal handling and use.

CHRONIC TOXICITY Desmedipham: In two-year feeding studies with desmedipham in 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 5000 ppm), toxic hemolytic anemia associated with compensatory erythropoiesis (generation of red blood cells) was the main effect noted, with a threshold level of 300 ppm. The approximate no-effect level for desmedipham is 25 mg/kg per day in mice; 3 mg/kg/day in rats; and 10 mg/kg/day in dogs.

Isophorone: When administered to mice or rats, by stomach tube in corn oil, at dosage levels of 250 or 500 mg/kg of body weight, isophorone was found to be associated 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 in these animal studies. The significance of this data is uncertain with regard to potential human health hazard under the realistic exposure conditions, i.e., exposure by inhalation or dermal contact during normal product handling and use. Isophorone is also listed as a NTP Testing Program Substance.

ASSESSMENT CARCINOGENICITY:

ACGIH	Isophorone	78-59-1	Group A3
	Xylene	1330-20-7	Group A4
NTP	None		
IARC	Xylene	1330-20-7	
OSHA	None		

REPRODUCTIVE CARCINOGENICITY/ TERATOGENICITY Desmedipham showed no adverse effects on fertility or reproduction in a two-generation rat reproduction studies at dose levels up to 1250 mg/kg/day. No teratogenic effects of desmedipham were observed in fetuses of rabbits given up to 450 mg/kg/day during gestation. In rats, desmedipham induced methemoglobin information in dams at all doses tested (10-1000 ppm). However, no teratogenic or

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embryotoxic effects were observed in the offspring from dams administered a low dose of 10 mg/kg/day. At the higher 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 Desmedipham was not mutagenic or genotoxic when tested in the Ames mutation test and chromosomal aberration tests using human lymphocytes or mouse micronucleus. It was mutagenic only in a mouse lymphoma cells when tested at high doses which extended into the toxic range (50-100 mg/ml).

SECTION 12 ECOLOGICAL INFORMATION

ENVIRONMENTAL PRECAUTIONS This pesticide is highly toxic to fish. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below mean high water mark. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters.

SECTION 13 DISPOSAL CONSIDERATIONS

GENERAL DISPOSAL GUIDANCE Do not contaminate water, food, or feed by storage or disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use 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.

CONTAINER DISPOSAL Please refer to product labeling for specific instructions.

RCRA CLASSIFICATION

78-83-1 Isobutyl alcohol US. EPA Resource Conservation and Recovery Act (RCRA) U List of Hazardous Wastes (40 CFR 261.33(f) and 40 CFR 302 [CERCLA]): U140

1330-20-7 Xylene US. EPA Resource Conservation and Recovery Act (RCRA) U List of Hazardous Wastes (40 CFR 261.33(f) and 40 CFR 302 [CERCLA]): U239

SECTION 14 TRANSPORT INFORMATION

PROPER SHIPPING NAME: None (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.)

PROPER SHIPPING NAME WHEN SHIPPED IN BULK CONTAINERS: Combustible liquid, n.o.s., (Isophorone), NA1993, PG III, *

* Insert net volume

SECTION 15 REGULATORY INFORMATION

US FEDERAL

TSCA list

Isobutyl alcohol	78-83-1
Isophorone	78-59-1
Trimethylbenzene	25551-13-7
AROMATIC HYDROCARBONS	64742-95-6
Xylene	1330-20-7

TSCA 12b export notification

None

SARA Title III • section 302 – notification and information

None

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SARA Title III • section 313 - toxic chemical release reporting

Desmedipham	13684-56-5	1.0%
Xylene	1330-20-7	1.0%

US 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.

US STATE RIGHT-TO-KNOW INGREDIENTS

Desmedipham	13684-56-5	NJ
Isobutyl alcohol	78-83-1	CA, CT, IL, NJ, PA, RI
Isophorone	78-59-1	CA, CT, IL, NJ, PA, RI
Trimethylbenzene	25551-13-7	CA, IL, PA, RI
Xylene	1330-20-7	CA, CT, IL, NJ, PA, RI

Environmental

CERCLA

Isobutyl alcohol	78-83-1	5,000 lbs.
Isophorone	78-59-1	5,000 lbs.
Xylene	1330-20-7	100 lbs.

Clean Water Section 307 Priority Pollutants

Isophorone	78-59-1
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Safe Drinking Water Act Maximum Contaminant Levels

Xylene	1330-20-7
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SECTION 16 OTHER INFORMATION

	Health	Flammability	Reactivity	Others
HMIS	2	2	0	H
NFPA	2	2	0	none

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The information provided herein relates to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. This Material Safety Data Sheet (MSDS) serves different purposes other than, and DOES NOT REPLACE OR MODIFY, THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). 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 labeling provides that information specifically for product use in the ordinary course.