

**Safety Data Sheet****BETAMIX® β EC HERBICIDE**

SDS Number: 102000014215

SDS Version 2.1

Revision Date: 05/18/2012

Print Date: 05/05/2015

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name	BETAMIX® β EC HERBICIDE
SDS Number	102000014215
Product code (UVP)	05950634
PCP Registration No.	28650
Product Use	Herbicide

Bayer CropScience Inc
#200, 160 Quarry Park Blvd, SE
Calgary, Alberta T2C 3G3
Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-888-283-6847

SECTION 2. HAZARDS IDENTIFICATION

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

Emergency Overview Warning! Causes eye irritation. Do not get in eyes. May cause skin irritation.
Avoid contact with skin and clothing.

Physical State clear liquid

Odor aromatic

Appearance bronze

Exposure routes Eye contact, Ingestion, Skin Absorption, Skin contact

Immediate Effects

Eye Causes eye irritation. Do not get in eyes.

skin May cause skin irritation. Avoid contact with skin and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Potential Environmental Effect Toxic to aquatic organisms. This product may cause adverse effects on non-target plants.

**Safety Data Sheet****BETAMIX® β EC HERBICIDE**

SDS Number: 102000014215

SDS Version 2.1

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Desmedipham	13684-56-5	15.00
Phenmedipham	13684-63-4	15.00
N,N-Dimethyl decanamide	14433-76-2	44.50
Alcohol ethoxylate		3.00
N-Methyl-2-pyrrolidone	872-50-4	2.50
Polyarylphenyl ether phosphate	90093-37-1	1.50
Ethoxylated polyarylphenol	99734-09-5	1.35

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	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. Call a physician or poison control center immediately.
skin	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Inhalation	Move 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 physician or poison control center immediately.
Notes to physician Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 100 °C / 212 °F
Autoignition temperature	no data available
Lower Flammability Limit	no data available

**Safety Data Sheet****BETAMIX® β EC HERBICIDE**SDS Number: 102000014215
SDS Version 2.1**Upper Flammability Limit** no data available**Suitable extinguishing media** Carbon dioxide (CO₂), Dry chemical, Water spray, Foam**Fire Fighting Instructions** Fight fire from upwind position. Keep out of smoke. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES**Personal precautions** Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.**Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Contaminated soil may have to be removed and disposed. Clean contaminated floors and objects thoroughly, observing environmental regulations.**Additional advice** Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.**SECTION 7. HANDLING AND STORAGE****Handling procedures** Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Keep away from heat and sources of ignition.

Storing Procedures Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed.**Work/Hygienic Procedures** Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.



Safety Data Sheet

BETAMIX® β EC HERBICIDE

SDS Number: 102000014215

SDS Version 2.1

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

Train employees in safe use of the product. Follow all label instructions. Eye wash facility and safety shower should be available.

Eye/Face Protection Safety glasses with side-shields
or
Goggles

Hand protection Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)

Body Protection Wear long-sleeved shirt and long pants and shoes plus socks.

Respiratory protection When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

Desmedipham	13684-56-5	OES BCS*	TWA	1.2 mg/m ³
Phenmedipham	13684-63-4	OES BCS*	TWA	3.8 mg/m ³
N-Methyl-2-pyrrolidone	872-50-4	CAD ON OEL	TWAEV	400 mg/m ³
		OES BCS*	TWA	19 ppm

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	bronze
Physical State	clear liquid
Odor	aromatic
pH	2.7 - 3.5 (5 %)
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	1.02 g/cm ³ at 20 °C
Evaporation rate	no data available

**Safety Data Sheet****BETAMIX® β EC HERBICIDE**SDS Number: 102000014215
SDS Version 2.1

Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	emulsifiable
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	no data available

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Heat, flames and sparks.
Incompatibility	no data available
Hazardous Decomposition Products	no data available
Hazardous reactions	No hazardous reactions known.
Chemical Stability	Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredients, phenmedipham and desmedipham.

Acute oral toxicity	female rat: LD50: > 2,000 mg/kg
Acute dermal toxicity	male/female combined rat: LD50: > 2,000 mg/kg



Safety Data Sheet

BETAMIX® β EC HERBICIDE

SDS Number: 102000014215
SDS Version 2.1

Acute inhalation toxicity male/female combined rat: LC50: > 2.1 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
(actual)

male/female combined rat: LC50: > 8.4 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.
(actual)

Skin irritation rabbit: Slight irritation

Eye irritation rabbit: Moderate eye irritation.

Sensitisation guinea pig: Non-sensitizing.

Chronic toxicity Desmedipham caused methaemoglobinaemia, haemolytic anaemia in animal studies. The observed effects do not appear to be relevant for humans.

Phenmedipham caused haemolytic anaemia, methaemoglobinaemia in animal studies. The observed effects do not appear to be relevant for humans.

Assessment Carcinogenicity

Desmedipham was not carcinogenic in lifetime feeding studies in rats and mice.

Phenmedipham was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Reproductive toxicity Desmedipham caused a reduced litter size and a reduced pup weight. The reproduction toxicity seen with Desmedipham is related to general toxicity.

Phenmedipham caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Phenmedipham is related to general toxicity.

Developmental Toxicity Desmedipham caused developmental toxicity only at dose levels toxic to the dams. Desmedipham caused a delayed ossification of foetuses, an increased incidence of variations. The developmental effects seen with Desmedipham are related to maternal toxicity.

Phenmedipham caused developmental toxicity only at dose levels toxic to the



Safety Data Sheet

BETAMIX® β EC HERBICIDE

SDS Number: 102000014215

SDS Version 2.1

dams. Phenmedipham caused a delayed ossification of fetuses. The developmental effects seen with Phenmedipham are related to maternal toxicity.

Mutagenicity

Desmedipham was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Phenmedipham was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish

Oncorhynchus mykiss (rainbow trout)
semi-static test
LC50: 0.26 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient desmedipham.

Oncorhynchus mykiss (rainbow trout)
LC50: ca. 3 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient phenmedipham.

Toxicity to aquatic plants

Pseudokirchneriella subcapitata
IC50: 0.056 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient desmedipham.

Scenedesmus subspicatus
IC50: 0.13 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient phenmedipham.

Acute Toxicity to Aquatic Invertebrates

Water flea (Daphnia magna)
semi-static test
EC50: 0.45 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient desmedipham.

Water flea (Daphnia magna)
flow-through test
EC50: 0.5 mg/l
Exposure time: 24 h
The value mentioned relates to the active ingredient phenmedipham.

Water flea (Daphnia magna)
EC50: 6 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient phenmedipham.



Safety Data Sheet

BETAMIX® β EC HERBICIDE

SDS Number: 102000014215
SDS Version 2.1

Bioaccumulation

Lepomis macrochirus (Bluegill sunfish) BCF: 157
The value mentioned relates to the active ingredient desmedipham.

Lepomis macrochirus (Bluegill sunfish) BCF: 165
The value mentioned relates to the active ingredient phenmedipham.

Oncorhynchus mykiss (rainbow trout) BCF: 321
The value mentioned relates to the active ingredient phenmedipham.

Environmental precautions

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not allow to get into surface water, drains and ground water.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance

Pesticide wastes are toxic. 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. Dispose in accordance with all local, state/provincial and federal regulations.

Container Disposal

Triple rinse containers. Do not re-use empty containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.

SECTION 14. TRANSPORT INFORMATION

TDG

UN-Number	3082
Labels	9
Packaging group	III
Marine pollutant	Marine pollutant
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DESMEDIPHAM)

49CFR

UN-Number	3082
Class	9
Packaging group	III
Marine pollutant	Marine pollutant



Safety Data Sheet

BETAMIX® β EC HERBICIDE

SDS Number: 102000014215

SDS Version 2.1

Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.
(DESMEDIPHAM)

IMDG

UN-Number **3082**
 Class 9
 Packaging group III
 Marine pollutant YES
 Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
 (PHENMEDIPHAM, DESMEDIPHAM SOLUTION)

IATA

UN-Number **3082**
 Class 9
 Packaging group III
 Environm. Hazardous Mark YES
 Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
 (PHENMEDIPHAM, DESMEDIPHAM SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Further Information Exempt from regulation when transported by road or rail, in accordance with TDG Regulations 1.45.1.
 This exemption provides that this product does not require dangerous goods shipping documentation or safety marks when transported on land by road or rail.

Freight Classification: COMPOUNDS, TREE OR WEEDKILLING, N.O.I., other than poison;
 HAVING A DENSITY OF GREATER THAN 20 LBS. PER CUBIC FOOT

SECTION 15. REGULATORY INFORMATION

PCP Registration No. 28650

US Federal Regulations

TSCA list

N,N-Dimethyl decanamide 14433-76-2
 N-Methyl-2-pyrrolidone 872-50-4

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
 None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Desmedipham 13684-56-5 1.0%
 N-Methyl-2-pyrrolidone 872-50-4 1.0%

US States Regulatory Reporting CA Prop65

**Safety Data Sheet****BETAMIX® β EC HERBICIDE**

SDS Number: 102000014215

SDS Version 2.1

This product does not contain any substances known to the State of California to cause cancer.

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

N-Methyl-2-pyrrolidone	872-50-4	Developmental toxin.
US State Right-To-Know Ingredients		
Desmedipham	13684-56-5	NJ
N-Methyl-2-pyrrolidone	872-50-4	MN, NJ

Canadian Regulations**Canadian Domestic Substance List**

N-Methyl-2-pyrrolidone	872-50-4
Ethoxylated polyaryphenol	99734-09-5

Environmental**CERCLA**

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations**European Inventory of Existing Commercial Substances (EINECS)**

Desmedipham	13684-56-5
Phenmedipham	13684-63-4
N-Methyl-2-pyrrolidone	872-50-4

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 2 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 2 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Reviewed and updated for general editorial purposes. The following sections have been revised: Section 3: Composition / Information on Ingredients. Section 14: Transport Information.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 05/18/2012

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