



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

1/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name DERIGO™ HERBICIDE
Product code (UVP) 80555180
SDS Number 102000025797
EPA Registration No. 432-1533

Relevant identified uses of the substance or mixture and uses advised against

Use Herbicide
Restrictions on use See product label for restrictions.

Information on manufacturer

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency telephone no.

All Emergencies, 24hr/ 7 days 1-800-334-7577

Product Information

Telephone No.

SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200. :

Other hazards

No particular hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Foramsulfuron	173159-57-4	25.20
Iodosulfuron-methyl-sodium	144550-36-7	2.40
Thiencarbazone-methyl	317815-83-1	10.60
Naphthalene and alkyl naphthalene sulphonic acids formaldehyde condensate, sodium salt	68425-94-5	13.00



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

2/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

SECTION 4: FIRST AID MEASURES

Description of first aid measures

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

Most important symptoms and effects, both acute and delayed

Symptoms No symptoms known or expected.

Indication of any immediate medical attention and special treatment needed

Treatment Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	High volume water jet

Special hazards arising from the substance or mixture In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid), Hydrogen iodide (HI), Carbon monoxide (CO), Nitrogen oxides (NOx), Sulphur oxides

Advice for firefighters

Special protective equipment for fire-fighters In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

Further information Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

3/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

Flash point	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Sweep up or vacuum up spillage and collect in suitable container for disposal. 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.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation. For personal protection see section 8.

Advice on protection against fire and explosion No special precautions required.

Hygiene measures Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Store in a place accessible by authorized persons only. Keep away from direct sunlight.



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

4/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Foramsulfuron	173159-57-4	10 mg/m3 (TWA)		OES BCS*
Iodosulfuron-methyl-sodium	144550-36-7	1 mg/m3 (TWA)		OES BCS*
Thiencarbazone-methyl	317815-83-1	10 mg/m3 (OES BCS)		OES BCS*
Kaolin (Respirable fraction.)	1332-58-7	2 mg/m3 (TWA)	02 2012	ACGIH
Kaolin (Respirable.)	1332-58-7	5 mg/m3 (REL)	2010	NIOSH
Kaolin (Total)	1332-58-7	10 mg/m3 (REL)	2010	NIOSH
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (TWA)	06 2008	TN OEL
Kaolin (Total dust.)	1332-58-7	10 mg/m3 (TWA)	06 2008	TN OEL
Kaolin (Respirable dust.)	1332-58-7	2 mg/m3 (TWA PEL)	08 2010	US CA OEL

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

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

No personal respiratory protective equipment normally required. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection

Chemical resistant nitrile rubber gloves

Eye protection

Tightly fitting safety goggles

Skin and body protection

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

General protective measures

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.



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

5/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	beige
Physical State	water-dispersible granules
Odor	weak
Odour Threshold	no data available
pH	8.5 - 9.5 (1 %) at 23 °C
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Specific Gravity	no data available
Evaporation rate	not applicable
Boiling Point	not applicable
Melting / Freezing Point	not applicable
Water solubility	dispersible
Minimum Ignition Energy	no data available
Decomposition temperature	Stable under normal conditions.
Partition coefficient: n-octanol/water	no data available
Viscosity	not applicable
Ignition temperature	Further safety related physical-chemical data are not known.
Flash point	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

6/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Store only in the original container.
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute oral toxicity	LD50 (rat) > 2,000 mg/kg
Acute inhalation toxicity	LC50 (rat) > 5.02 mg/l Exposure time: 4 h Determined in the form of a respirable aerosol.
Acute dermal toxicity	LD50 (rat) > 2,000 mg/kg
Skin irritation	No skin irritation (rabbit)
Eye irritation	No eye irritation (rabbit)
Sensitisation	Non-sensitizing. (mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment repeated dose toxicity

Foramsulfuron did not cause specific target organ toxicity in experimental animal studies.
Iodosulfuron-methyl-sodium did not cause specific target organ toxicity in experimental animal studies.
Thiocarbazon-methyl did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity

Foramsulfuron was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.
Iodosulfuron-methyl-sodium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

7/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

Thiencarbazone-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Foramsulfuron was not carcinogenic in lifetime feeding studies in rats and mice.
Iodosulfuron-methyl-sodium was not carcinogenic in lifetime feeding studies in rats and mice.
Thiencarbazone-methyl was not carcinogenic in a lifetime feeding study in rats. Thiencarbazone-methyl caused at high dose levels an increased incidence of tumours in mice in the following organ(s): urinary bladder. The tumours seen with Thiencarbazone-methyl were caused through the chronic irritation due to the presence of bladder stones.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Foramsulfuron did not cause reproductive toxicity in a two-generation study in rats.
Iodosulfuron-methyl-sodium did not cause reproductive toxicity in a two-generation study in rats.
Thiencarbazone-methyl did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Foramsulfuron did not cause developmental toxicity in rats and rabbits.
Iodosulfuron-methyl-sodium did not cause developmental toxicity in rats and rabbits.
Thiencarbazone-methyl did not cause developmental toxicity in rats and rabbits.

Further information

The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish

LC50 (Rainbow trout (*Oncorhynchus mykiss*)) > 100 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient foramsulfuron.

LC50 (Rainbow trout (*Oncorhynchus mykiss*)) > 100 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient iodiosulfuron-methyl-sodium.



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

8/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

	<p>LC50 (Rainbow trout (<i>Oncorhynchus mykiss</i>)) > 104 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient thien carbazone-methyl.</p>
Toxicity to aquatic invertebrates	<p>LC50 (Daphnia) > 100 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient foramsulfuron.</p> <p>LC50 (Water flea (<i>Daphnia magna</i>)) > 100 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient iodosulfuron-methyl-sodium.</p> <p>LC50 (Water flea (<i>Daphnia magna</i>)) > 98.6 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient thien carbazone-methyl.</p>
Toxicity to aquatic plants	<p>EC50 (<i>Pseudokirchneriella subcapitata</i>) 75 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient foramsulfuron.</p> <p>IC50 (<i>Pseudokirchneriella subcapitata</i>) 0.152 mg/l Growth rate; Exposure time: 96 h The value mentioned relates to the active ingredient iodosulfuron-methyl-sodium.</p> <p>EC50 (<i>Lemna gibba</i> (duckweed)) 0.00081 mg/l Growth rate; Exposure time: 14 d The value mentioned relates to the active ingredient iodosulfuron-methyl-sodium.</p> <p>IC50 (<i>Pseudokirchneriella subcapitata</i>) 1.017 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient thien carbazone-methyl.</p> <p>IC50 (<i>Lemna gibba</i> (duckweed)) 0.00131 mg/l Growth rate; Exposure time: 7 d The value mentioned relates to the active ingredient thien carbazone-methyl.</p>
Biodegradability	<p>Foramsulfuron: not rapidly biodegradable</p> <p>Iodosulfuron-methyl-sodium: not rapidly biodegradable</p> <p>Thien carbazone-methyl: not rapidly biodegradable</p>
Koc	<p>Foramsulfuron: Koc:38 - 151</p>



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

9/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

	Iodosulfuron-methyl-sodium: Koc:45
	Thiencarbazone-methyl: Koc:100
Bioaccumulation	Foramsulfuron: Does not bioaccumulate. Iodosulfuron-methyl-sodium: Does not bioaccumulate. Thiencarbazone-methyl: Does not bioaccumulate.
Mobility in soil	Foramsulfuron: Mobile in soils Iodosulfuron-methyl-sodium: Mobile in soils Thiencarbazone-methyl: Moderately mobile in soils
Additional ecological information	No other effects to be mentioned.
Environmental precautions	Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.

Contaminated packaging Do not re-use empty containers.
Triple rinse 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. If burned, stay out of smoke.

RCRA Information Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

10/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

49CFR	Not dangerous goods / not hazardous material
IMDG	
UN number	3077
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (IODOSULFURON-METHYL-SODIUM MIXTURE)
IATA	
UN number	3077
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (IODOSULFURON-METHYL-SODIUM MIXTURE)

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.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-1533

US Federal Regulations

TSCA list

Naphthalene and alkyl naphthalene 68425-94-5
sulphonic acids formaldehyde
condensate, sodium salt

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

None.

US States Regulatory Reporting

CA Prop65

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

None.

Canadian Regulations

Canadian Domestic Substance List



DERIGO™ HERBICIDE

Version 1 / USA
102000025797

11/11
Revision Date: 08/06/2013
Print Date: 01/05/2017

Naphthalene and alkyl naphthalene
sulphonic acids formaldehyde
condensate, sodium salt 68425-94-5

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Instability - 0 Others - none

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

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

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

Reason for Revision: New Safety Data Sheet.

Revision Date: 08/06/2013

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.