



**DERIGO™ HERBICIDE**

Version 1 / USA  
102000025797

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Revision Date: 08/06/2013  
Print Date: 06/30/2014

**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 (24 hours/day)

**Product Information Telephone No.** 1-800-331-2867

**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



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**SECTION 4: FIRST AID MEASURES**

**Description of first aid measures**

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



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<b>Flash point</b>	not applicable
<b>Lower explosion limit</b>	not applicable
<b>Upper explosion limit</b>	not applicable
<b>Explosivity</b>	no data available

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**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.

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**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.



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**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.



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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

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

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**SECTION 10: STABILITY AND REACTIVITY**

**Reactivity**

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

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**SECTION 11: TOXICOLOGICAL INFORMATION**

**Information on toxicological effects**

<b>Acute oral toxicity</b>	LD50 (rat) > 2,000 mg/kg
<b>Acute inhalation toxicity</b>	LC50 (rat) > 5.02 mg/l Exposure time: 4 h Determined in the form of a respirable aerosol.
<b>Acute dermal toxicity</b>	LD50 (rat) > 2,000 mg/kg
<b>Skin irritation</b>	No skin irritation (rabbit)
<b>Eye irritation</b>	No eye irritation (rabbit)
<b>Sensitisation</b>	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.  
Thiencarbazone-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.



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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).

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**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 iodosulfuron-methyl-sodium.



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	<p>LC50 (Rainbow trout (<i>Oncorhynchus mykiss</i>)) &gt; 104 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient thien carbazone-methyl.</p>
<b>Toxicity to aquatic invertebrates</b>	<p>LC50 (<i>Daphnia</i>) &gt; 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>)) &gt; 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>)) &gt; 98.6 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient thien carbazone-methyl.</p>
<b>Toxicity to aquatic plants</b>	<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>
<b>Biodegradability</b>	<p>Foramsulfuron: not rapidly biodegradable</p> <p>Iodosulfuron-methyl-sodium: not rapidly biodegradable</p> <p>Thien carbazone-methyl: not rapidly biodegradable</p>
<b>Koc</b>	<p>Foramsulfuron: Koc:38 - 151</p>





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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.

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**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.

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**SECTION 14: TRANSPORT INFORMATION**



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

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**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**

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SAFETY DATA SHEET



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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.

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**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

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