



Material Safety Data Sheet

RONSTAR 2G SELECTIVE, PRE-EMERGENCE HERBICIDE

MSDS Number: 102000004005

MSDS Version 2.1

Revision Date: 09/07/2010

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name RONSTAR 2G SELECTIVE, PRE-EMERGENCE HERBICIDE
MSDS Number 102000004005
PCP Registration No. 23600

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 Caution! Poison. Causes eye irritation. Causes skin irritation. Do not get in eyes, on skin, or on clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling.

Physical State granular

Odor slight

Appearance grey to tan

Exposure routes Inhalation, Eye contact, Skin contact, Ingestion

Immediate Effects

Eye Causes redness, irritation, tearing. Do not get in eyes.

Skin Causes irritation, redness, swelling. Do not get in eyes, on skin, or on clothing.

Ingestion Harmful if swallowed.

Inhalation May cause upper respiratory tract irritation. Harmful if inhaled. Avoid breathing dust.

Chronic or Delayed Long-Term

This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic). Prolonged contact may cause benign changes in lung tissue. This product or its components may have target organ effects.

Medical Conditions Aggravated by Exposure

Skin contact may aggravate existing skin disease. Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.



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Potential Environmental Effect Toxic to fish.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Oxadiazon	19666-30-9	2.00
Polyoxyethylene-(octylphenyl)-ether	9036-19-5	1.25
Titanium dioxide	13463-67-7	0.92
Naphthalene	91-20-3	0.42

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	
Hazards	Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
Treatment	Treat symptomatically. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	not applicable
Autoignition temperature	no data available



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Lower Flammability Limit	not applicable
Upper Flammability Limit	not applicable
Fire and Explosion Hazards	Dangerous gases are evolved in the event of a fire.
Fire Fighting Instructions	<p>Use appropriate extinguishing media for material that is supplying fuel.</p> <p>Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.</p> <p>Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.</p>

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	Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. Decontaminate tools and equipment following cleanup.
Additional advice	Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation.

SECTION 7. HANDLING AND STORAGE

Handling procedures	<p>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.</p> <p>Take measures to prevent the build up of electrostatic charge.</p>
Storing Procedures	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. Store in original container and out of the reach of children, preferably in a locked storage area.
Work/Hygienic Procedures	<p>Keep away from food, drink and animal feedingstuffs.</p> <p>Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.</p>



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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.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- General Protection** Follow all label instructions. Train employees in safe use of the product.

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.
- Eye/Face Protection** Tightly fitting safety goggles
- Hand protection** Chemical resistant nitrile rubber gloves
- 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.

Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

Exposure Limits

Naphthalene	91-20-3	OEL (QUE)	TWA	10 ppm
		OEL (QUE)	STEL	15 ppm
		CAD AB OEL	TWA	10 ppm
		CAD AB OEL	STEL	15 ppm
		CAD BC OEL	TWA	10 ppm
		CAD BC OEL	STEL	15 ppm
		CAD ON OEL	TWAEV	10 ppm
		CAD ON OEL	STEV	15 ppm
		OES BCS*	TWA	10 ppm
		Cellulose	9004-34-6	OEL (QUE)
CAD AB OEL	TWA			10 mg/m3
CAD BC OEL	TWA			10 mg/m3
CAD BC OEL	TWA			3 mg/m3
CAD ON OEL	TWAEV			10 mg/m3
OEL (QUE)	TWA			10 mg/m3
Kaolin	1332-58-7	OEL (QUE)	TWA	5 mg/m3
		CAD AB OEL	TWA	2 mg/m3
		CAD BC OEL	TWA	2 mg/m3
		CAD BC OEL	TWA	2 mg/m3



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		CAD ON OEL	TWAEV	2 mg/m3
		OEL (QUE)	TWA	5 mg/m3
Calcium carbonate	471-34-1	OEL (QUE)	TWA	10 mg/m3
		CAD AB OEL	TWA	10 mg/m3
		CAD ON OEL	TWAEV	10 mg/m3
		OEL (QUE)	TWA	10 mg/m3
Titanium dioxide	13463-67-7	OEL (QUE)	TWA	10 mg/m3
		CAD AB OEL	TWA	10 mg/m3
		CAD BC OEL	TWA	10 mg/m3
		CAD BC OEL	TWA	3 mg/m3
		CAD ON OEL	TWAEV	10 mg/m3
		OEL (QUE)	TWA	10 mg/m3
Oxadiazon	19666-30-9	OES BCS*	TWA	0.28 mg/m3

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	grey to tan
Physical State	granular
Odor	slight
pH	no data available
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Bulk density	44.0 - 50.0 lb/ft ³ (loose)
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	insoluble
Minimum Ignition Energy	no data available
Partition coefficient: n-octanol/water	no data available

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	no data available
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Incompatibility	Strong bases Strong acids Strong oxidizing agents
Hazardous Decomposition Products	Thermal decomposition nitrogen oxides (NOx) Hydrogen chloride (HCl) Carbon oxides
Chemical Stability	Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity studies have been bridged from a similar formulation containing a similar percentage of the active ingredient, oxadiazon. The sensitization data, as well as, the non-acute information pertains to the technical-grade active ingredient.

Acute oral toxicity	rat: LD50: > 5,000 mg/kg
Acute dermal toxicity	rabbit: LD50: > 2,000 mg/kg
Acute inhalation toxicity	rat: LC50: > 0.5 mg/l Exposure time: 4 h Determined in the form of dust.
	rat: LC50: > 2.0 mg/l Exposure time: 1 h Determined in the form of dust. Extrapolated from the 4 hr LC50.
Skin irritation	rabbit: Moderate skin irritation.
Eye irritation	rabbit: Moderate eye irritation.
Sensitisation	guinea pig: Non-sensitizing.
Chronic toxicity	Oxadiazon caused liver effects in chronic studies in rats, mice and dogs.

Assessment Carcinogenicity

Oxadiazon has been shown to cause liver tumors in lifetime feeding studies in rats and mice.

ACGIH

Titanium dioxide	13463-67-7	Group A4
Naphthalene	91-20-3	Group A4

NTP

Naphthalene	91-20-3
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IARC

Titanium dioxide	13463-67-7	Overall evaluation: 2B
Naphthalene	91-20-3	Overall evaluation: 2B



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OSHA
None.

Reproductive toxicity **REPRODUCTION:** Oxadiazon was not a primary reproductive toxicant in a multi-generation reproduction study in rats. Reproductive effects were observed only at doses that caused systemic toxicity in adult rats.

DEVELOPMENTAL TOXICITY: Oxadiazon was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed but were considered secondary to maternal toxicity.

Neurotoxicity Oxadiazon did not demonstrate the potential to cause neurotoxicity in standard toxicity studies using laboratory animals.

Mutagenicity Oxadiazon is not considered mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

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. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Container Disposal Do not re-use empty containers. Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke.

SECTION 14. TRANSPORT INFORMATION

TDG Not dangerous goods / not hazardous material

CFR Not dangerous goods / not hazardous material

IMDG

UN-Number **3077**
Class 9
Packaging group III
Marine pollutant Marine Pollutant
Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.



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(OXADIAZON MIXTURE)

IATA

UN-Number **3077**
 Class **9**
 Packaging group **III**
 Description of the goods **ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (OXADIAZON 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.

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

SECTION 15. REGULATORY INFORMATION

PCP Registration No. 23600

US Federal Regulations

TSCA list

Polyoxyethylene-(octylphenyl)-ether 9036-19-5
 Titanium dioxide 13463-67-7
 Naphthalene 91-20-3

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

Naphthalene 91-20-3

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Oxadiazon 19666-30-9 1.0%
 Naphthalene 91-20-3 0.1%

US States Regulatory Reporting

CA Prop65

This product contains a chemical known to the State of California to cause cancer.

Oxadiazon 19666-30-9
 Naphthalene 91-20-3

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

US State Right-To-Know Ingredients

Oxadiazon 19666-30-9 NJ
 Titanium dioxide 13463-67-7 IL, MN, RI
 Naphthalene 91-20-3 CA, CT, IL, MN, NJ, PA, RI

Canadian Regulations

Canadian Domestic Substance List

Polyoxyethylene-(octylphenyl)-ether 9036-19-5



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Titanium dioxide 13463-67-7
Naphthalene 91-20-3

Environmental

CERCLA

Naphthalene 91-20-3 100 lbs

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Oxadiazon 19666-30-9
Titanium dioxide 13463-67-7
Naphthalene 91-20-3

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 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: The following sections have been revised: Section 8: Exposure Controls / Personal Protection. Section 16: Other Information.

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

Revision Date: 09/07/2010

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