



Material Safety Data Sheet
RONSTAR® G HERBICIDE

MSDS Number: 102000004005
 MSDS Version 2.0
 Revision Date: 09/07/2007

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name RONSTAR® G HERBICIDE
MSDS Number 102000004005
EPA Registration No. 432-886

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

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-800-331-2867

SECTION 2. 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 3. HAZARDS IDENTIFICATION

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

Emergency Overview Warning! Causes eye irritation. Causes skin irritation. Harmful if inhaled. 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

Routes of Exposure 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.



Material Safety Data Sheet

MSDS Number: 102000004005
MSDS Version 2.0

RONSTAR® G HERBICIDE

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.
Potential Environmental Effect	Toxic to fish.

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



Material Safety Data Sheet
RONSTAR® G HERBICIDE

MSDS Number: 10200004005
MSDS Version 2.0

SECTION 5. FIRE FIGHTING MEASURES

Flash point	not applicable
Fire and Explosion Hazards	Dangerous gases are evolved in the event of a fire.
Fire Fighting Instructions	Use appropriate extinguishing media for material that is supplying fuel. Keep out of smoke. Fight fire from upwind position. Cool closed containers/ tanks 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	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	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. Take measures to prevent the build up of electrostatic charge.
Storing Procedures	Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.
Work/Hygienic Procedures	Keep away from food, drink and animal feedingstuffs. 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



Material Safety Data Sheet
RONSTAR® G HERBICIDE

MSDS Number: 102000004005
 MSDS Version 2.0

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** Waterproof 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	ACGIH	TWA	10 ppm
		ACGIH	STEL	15 ppm
		NIOSH	REL	10 ppm 50 mg/m3
		NIOSH	STEL	15 ppm 75 mg/m3
		OSHA Z1	PEL	10 ppm 50 mg/m3
		OSHA Z1A	TWA	10 ppm 50 mg/m3
		OSHA Z1A	STEL	15 ppm 75 mg/m3
		US CA OEL	TWA PEL	10 ppm 50 mg/m3
		US CA OEL	STEL	15 ppm 75 mg/m3
		Cellulose	9004-34-6	ACGIH
NIOSH	REL			5 mg/m3
Form of exposure	Respirable.			
NIOSH	REL			10 mg/m3
Form of exposure	Total			
OSHA Z1	PEL			5 mg/m3
Form of exposure	Respirable fraction.			
OSHA Z1	PEL			15 mg/m3
Form of exposure	Total dust.			
OSHA Z1A	TWA			5 mg/m3
Form of exposure	Respirable fraction.			



Material Safety Data Sheet
RONSTAR® G HERBICIDE

MSDS Number: 102000004005
MSDS Version 2.0

		OSHA Z1A	TWA	15 mg/m3
		Form of exposure		Total dust.
		US CA OEL	TWA PEL	5 mg/m3
		Form of exposure		Respirable fraction.
		US CA OEL	TWA PEL	10 mg/m3
		Form of exposure		Total dust.
		Z3	TWA	15 millions of particles per cubic foot of air
		Form of exposure		Respirable fraction.
		Z3	TWA	50 millions of particles per cubic foot of air
		Form of exposure		Total dust.
		Z3	TWA	5 mg/m3
		Form of exposure		Respirable fraction.
		Z3	TWA	15 mg/m3
		Form of exposure		Total dust.
Kaolin	1332-58-7	ACGIH	TWA	2 mg/m3
		Form of exposure		Respirable fraction.
		Remarks		The value is for particulate matter containing no asbestos and <1% crystalline silica.
		NIOSH	REL	5 mg/m3
		Form of exposure		Respirable.
		NIOSH	REL	10 mg/m3
		Form of exposure		Total
		US CA OEL	TWA PEL	2 mg/m3
		Form of exposure		Respirable dust.
		OSHA Z1	PEL	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1	PEL	15 mg/m3
		Form of exposure		Total dust.
		OSHA Z1A	TWA	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1A	TWA	10 mg/m3
		Form of exposure		Total dust.
		OSHA Z1	PEL	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1	PEL	15 mg/m3
		Form of exposure		Total dust.
		OSHA Z1A	TWA	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1A	TWA	15 mg/m3
		Form of exposure		Total dust.
		Z3	TWA	15 millions of particles per cubic foot of air
		Form of exposure		Respirable fraction.
		Z3	TWA	50 millions of particles per cubic foot of air
		Form of exposure		Total dust.



Material Safety Data Sheet
RONSTAR® G HERBICIDE

MSDS Number: 102000004005
MSDS Version 2.0

Calcium carbonate	471-34-1	Z3	TWA	5 mg/m3
		Form of exposure		Respirable fraction.
		Z3	TWA	15 mg/m3
		Form of exposure		Total dust.
		ACGIH	TWA	10 mg/m3
		Remarks		The value is for particulate matter containing no asbestos and <1% crystalline silica.
		ACGIH NIC	TWA	1 mg/m3
		Form of exposure		Inhalable fraction.
		US CA OEL	TWA PEL	5 mg/m3
		Form of exposure		Respirable fraction.
		US CA OEL	TWA PEL	10 mg/m3
		Form of exposure		Total dust.
		NIOSH	REL	5 mg/m3
		Form of exposure		Respirable.
		NIOSH	REL	5 mg/m3
		Form of exposure		Respirable.
		NIOSH	REL	10 mg/m3
		Form of exposure		Total
		NIOSH	REL	10 mg/m3
		Form of exposure		Total
		NIOSH	REL	10 mg/m3
		Form of exposure		Total
		NIOSH	REL	5 mg/m3
		Form of exposure		Respirable.
		OSHA Z1	PEL	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1	PEL	15 mg/m3
		Form of exposure		Total dust.
		OSHA Z1	PEL	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1	PEL	15 mg/m3
		Form of exposure		Total dust.
		OSHA Z1	PEL	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1A	TWA	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1A	TWA	15 mg/m3
		Form of exposure		Total dust.
		OSHA Z1A	TWA	15 mg/m3
		Form of exposure		Total dust.
		OSHA Z1A	TWA	15 mg/m3
		Form of exposure		Total dust.
		OSHA Z1A	TWA	5 mg/m3
		Form of exposure		Respirable fraction.
		OSHA Z1A	TWA	5 mg/m3



Material Safety Data Sheet
RONSTAR® G HERBICIDE

MSDS Number: 102000004005
MSDS Version 2.0

		Form of exposure		Respirable fraction.	
		OSHA Z1	PEL		5 mg/m3
		Form of exposure		Respirable fraction.	
		OSHA Z1	PEL		15 mg/m3
		Form of exposure		Total dust.	
		OSHA Z1A	TWA		5 mg/m3
		Form of exposure		Respirable fraction.	
		OSHA Z1A	TWA		15 mg/m3
		Form of exposure		Total dust.	
		Z3	TWA		15 millions of particles per cubic foot of air
		Form of exposure		Respirable fraction.	
		Z3	TWA		50 millions of particles per cubic foot of air
		Form of exposure		Total dust.	
		Z3	TWA		5 mg/m3
		Form of exposure		Respirable fraction.	
		Z3	TWA		15 mg/m3
		Form of exposure		Total dust.	
Titanium dioxide	13463-67-7	ACGIH	TWA		10 mg/m3
		OSHA Z1	PEL		15 mg/m3
		Form of exposure		Total dust.	
		OSHA Z1A	TWA		10 mg/m3
		Form of exposure		Total dust.	
		US CA OEL	TWA PEL		5 mg/m3
		Expressed as		as Ti	
		Form of exposure		Respirable fraction.	
		US CA OEL	TWA PEL		10 mg/m3
		Expressed as		as Ti	
		Form of exposure		Total dust.	
		Z3	TWA		15 millions of particles per cubic foot of air
		Form of exposure		Respirable fraction.	
		Z3	TWA		50 millions of particles per cubic foot of air
		Form of exposure		Total dust.	
		Z3	TWA		5 mg/m3
		Form of exposure		Respirable fraction.	
		Z3	TWA		15 mg/m3
		Form of exposure		Total dust.	

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	grey to tan
Physical State	granular
Odor	slight



Material Safety Data Sheet
RONSTAR® G HERBICIDE

MSDS Number: 102000004005
 MSDS Version 2.0

Bulk Density 44.0 - 50.0 lb/cu.ft.
Water solubility insoluble

SECTION 10. STABILITY AND REACTIVITY

Conditions to Avoid no data available

Incompatibility Strong bases
 Strong acids
 Strong oxidizing agents

Hazardous Decomposition Products Thermal decomposition
 Nitrogen oxides (NOx)
 Hydrogen chloride (HCl)
 Carbon oxides

Hazardous Reactions 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.

Sensitization 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.



Material Safety Data Sheet

RONSTAR® G HERBICIDE

MSDS Number: 102000004005
MSDS Version 2.0

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

OSHA

None.

Reproductive & Developmental 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.

RCRA Classification

The RCRA Classifications may be on the individual component(s) and not necessarily on the product as a whole.

91-20-3 Naphthalene



Material Safety Data Sheet

RONSTAR® G HERBICIDE

MSDS Number: 102000004005
MSDS Version 2.0

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): U165

91-20-3 Naphthalene
US. EPA Resource Conservation and Recovery Act (RCRA) U List of Hazardous Wastes (40 CFR 261.33(f) and 40 CFR 302 [CERCLA]): U165

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I.; other than poison

TDG (Canada):
Not regulated for road or rail.

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-886

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

Oxadiazon	19666-30-9	Developmental toxin.
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US State Right-To-Know Ingredients

Oxadiazon	19666-30-9	NJ
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Material Safety Data Sheet
RONSTAR® G HERBICIDE

MSDS Number: 102000004005
MSDS Version 2.0

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
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

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

Reason to Revise: Updated due to new system and numbering scheme. Updated for general editorial purposes.

Revision Date: 09/07/2007

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