



Material Safety Data Sheet
RONSTAR® FLO HERBICIDE

MSDS Number: 102000001747
 MSDS Version 2.0
 Revision Date: 09/17/2007

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name RONSTAR® FLO HERBICIDE
MSDS Number 102000001747
EPA Registration No. 432-1465

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	34.10
1,2-Propanediol	57-55-6	
Nonyl phenoxy (polyethyleneoxy)ethanol 10 EO	68412-54-4	

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview Caution! Harmful if swallowed or absorbed through skin. Moderate eye irritation. Avoid contact with skin, eyes and clothing.

Physical State liquid

Odor amine-like

Appearance off-white to pink

Routes of Exposure Eye contact, Skin contact, Ingestion, Inhalation

Immediate Effects

Eye Moderate eye irritation. Avoid contact with eyes.

Skin May cause slight irritation. Harmful if absorbed through skin. Avoid contact with skin and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation May cause irritation of the mucous membranes. Avoid breathing spray mist.



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Chronic or Delayed Long-Term This product or its components may have target organ effects.

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	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. 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.
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 Signs and Symptoms	Local: The product causes irritation of eyes, skin and mucous membranes. Systemic: To date no symptoms are known.
Treatment	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 96.7 °C / 206.1 °F
Fire and Explosion Hazards	Dangerous gases are evolved in the event of a fire.
Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	High volume water jet



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Fire Fighting Instructions

Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Keep people away from and upwind of spill/leak. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke.

Methods for Cleaning Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Keep in suitable, closed containers for disposal. Clean floors and contaminated objects with plenty of water.

Additional Advice

Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13. Check also for any local site procedures.

SECTION 7. HANDLING AND STORAGE

Handling Procedures

No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Use only in area provided with appropriate exhaust ventilation.

Storing Procedures

Store in a place accessible by authorized persons only. Keep away from direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from freezing.

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.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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.



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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

1,2-Propanediol	57-55-6	WEEL	TWA		10 mg/m3
		Form of exposure		Aerosol.	

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	off-white to pink
Physical State	liquid
Odor	amine-like
pH	6.8 - 7.8 (10 %) aqueous suspension
Density	approx. 1.12 g/cm ³ at 20 °C
Water solubility	dispersible
Viscosity	600 - 950 mPa.s

SECTION 10. STABILITY AND REACTIVITY

Conditions to Avoid	Extremes of temperature and direct sunlight.
Hazardous Reactions	No hazardous reactions when stored and handled according to prescribed instructions. 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 ingredient, oxadiazon.

Acute Oral Toxicity	female rat: LD50: > 2,000 mg/kg
Acute Dermal Toxicity	rat: LD50: > 2,000 mg/kg



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Acute Inhalation Toxicity rat: LC50: > 2.31 mg/l
 Exposure time: 4 h
 Determined in the form of liquid aerosol.
 highest concentration tested
 No deaths

rat: LC50: > 9.24 mg/l
 Exposure time: 1 h
 Determined in the form of liquid aerosol.
 Extrapolated from the 4 hr LC50.

Skin Irritation rabbit: Slight irritation.

Eye Irritation rabbit: Mild 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.

ACGIH

None.

NTP

None.

IARC

None.

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

Toxicity to Fish Oncorhynchus mykiss (rainbow trout)
 LC50: 1.2 mg/l



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Exposure time: 96 h
The value mentioned relates to the active ingredient oxadiazon.

Toxicity to Aquatic Plants Skeletonema costatum
EC50: 0.0056 mg/l
Exposure time: 120 h
The value mentioned relates to the active ingredient oxadiazon.

Acute Toxicity to Aquatic Invertebrates Water flea (Daphnia magna)
EC50: > 2.4 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient oxadiazon.

Bioaccumulation Bluegill sunfish BCF: 1,111
The value mentioned relates to the active ingredient oxadiazon.

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. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. 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. Triple rinse containers. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

SECTION 14. TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:
Not regulated for Domestic Surface Shipment

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

SECTION 15. REGULATORY INFORMATION

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US Federal Regulations

TSCA list

1,2-Propanediol	57-55-6
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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
Oxadiazon 19666-30-9

1.0%

US States Regulatory Reporting

CA Prop65

This product contains a chemical known to the State of California to cause cancer.
Oxadiazon 19666-30-9

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.

US State Right-To-Know Ingredients

Oxadiazon	19666-30-9	NJ
1,2-Propanediol	57-55-6	MN, RI

Canadian Regulations

Canadian Domestic Substance List

1,2-Propanediol	57-55-6
Nonyl phenoxy (polyethyleneoxy)ethanol 10 EO	68412-54-4

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)

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1,2-Propanediol	57-55-6



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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 Section 9. Physical and Chemical Properties: Appearance.

Revision Date: 09/17/2007

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