



RONSTAR® FLO HERBICIDE

Version 1 / USA
102000028077

1/11
Revision Date: 09/13/2013
Print Date: 01/23/2017

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

Product identifier

| | |
|----------------------|------------------------|
| Trade name | RONSTAR® FLO HERBICIDE |
| Product code (UVP) | 80533683 |
| SDS Number | 102000028077 |
| EPA Registration No. | 432-1465 |

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

Eye irritation : Category 2B

Signal word: Warning

Hazard statements

Causes eye irritation.

Precautionary statements

Wash thoroughly after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Other hazards

No other hazards known.



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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Component Name | CAS-No. | Average % by Weight |
|--------------------------|------------|---------------------|
| Oxadiazon | 19666-30-9 | 34.10 |
| 1,2-Propanediol | 57-55-6 | 3.00 |

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 | To date no symptoms are known. |
|-----------------|--------------------------------|

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 |



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Special hazards arising from the substance or mixture

Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for fire-fighters

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information

Evacuate personnel to safe areas. Keep out of smoke. Fight fire from upwind position. Avoid contact with spilled product or contaminated surfaces. Cool closed containers exposed to fire with water spray.

Do not allow run-off from fire fighting to enter drains or water courses.

Flash point

no data available

Autoignition temperature

no data available

Lower explosion limit

no data available

Upper explosion limit

no data available

Explosivity

not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions

Isolate hazard area. Keep unauthorized people away. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

Methods and materials for containment and cleaning up

Methods for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. Decontaminate tools and equipment following cleanup.

Additional advice

Do not allow to enter soil, waterways or waste water canal.

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



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Precautions for safe handling

Advice on safe handling Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Smoking, eating and drinking should be prohibited in the application area. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in original container. 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. Protect from freezing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| Components | CAS-No. | Control parameters | Update | Basis |
|-------------------------------|------------|------------------------|---------|----------|
| Oxadiazon | 19666-30-9 | 0.28 mg/m3 (TWA) | | OES BCS* |
| Oxadiazon | 19666-30-9 | 5 ug/m3 (AN ESL) | 07 2011 | TX ESL |
| Oxadiazon | 19666-30-9 | 50 ug/m3 (ST ESL) | 07 2011 | TX ESL |
| 1,2-Propanediol (Aerosol.) | 57-55-6 | 10 mg/m3 (TWA) | 2010 | WEEL |
| 1,2-Propanediol | 57-55-6 | 1000 ug/m3 (ST ESL) | 03 2012 | TX ESL |
| 1,2-Propanediol | 57-55-6 | 50 ug/m3 (ST ESL) | 03 2012 | TX ESL |
| 1,2-Propanediol | 57-55-6 | 100 ug/m3 (AN ESL) | 03 2012 | TX ESL |
| 1,2-Propanediol | 57-55-6 | 50 ppb (AN ESL) | 03 2012 | TX ESL |
| 1,2-Propanediol | 57-55-6 | 500 ppb (ST ESL) | 03 2012 | TX ESL |
| 1,2-Propanediol | 57-55-6 | 5 ug/m3 (AN ESL) | 03 2012 | TX ESL |

*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.



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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. |
| Hand protection | Chemical resistant nitrile rubber gloves |
| Eye protection | Chemical resistant goggles must be worn. |
| 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. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-------------------------------------|---------------------------------|
| Appearance | beige |
| Physical State | suspension |
| Odor | amine-like |
| Odour Threshold | no data available |
| pH | 3.5 - 5.5 (100 %) at 23 °C |
| Vapor Pressure | no data available |
| Vapor Density (Air = 1) | no data available |
| Density | 1.09 g/cm ³ at 20 °C |
| Evapouration rate | no data available |
| Boiling Point | no data available |
| Melting / Freezing Point | no data available |
| Water solubility | dispersible |
| Solubility in other solvents | no data available |
| Minimum Ignition Energy | not applicable |



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| | |
|---|---|
| Decomposition temperature | not applicable |
| Partition coefficient: n-octanol/water | no data available |
| Viscosity | 220 - 400 mPa.s at 20 °C Velocity gradient 20 /s 100 - 200 mPa.s at 20 °C Velocity gradient 100 /s |
| Flash point | no data available |
| Autoignition temperature | no data available |
| Lower explosion limit | no data available |
| Upper explosion limit | no data available |
| Explosivity | not applicable |

SECTION 10: STABILITY AND REACTIVITY

Reactivity

| | |
|---|---|
| Thermal decomposition | not applicable |
| Chemical stability | Stable under recommended storage conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | freezing |
| Incompatible materials | no data available |
| Hazardous decomposition products | no data available |

SECTION 11: TOXICOLOGICAL INFORMATION

| | |
|--------------------------|--|
| Exposure routes | Eye contact, Skin contact, Ingestion, Inhalation |
| Immediate Effects | |



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| | |
|-------------------|--|
| Eye | Moderate eye irritation. |
| Skin | May cause slight irritation. Harmful if absorbed through skin. |
| Ingestion | Harmful if swallowed. |
| Inhalation | May cause irritation of the mucous membranes. |

Information on toxicological effects

| | |
|----------------------------------|---|
| Acute oral toxicity | LD50 (female rat) > 2,000 mg/kg |
| Acute inhalation toxicity | LC50 (rat) > 2.31 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. highest concentration tested No deaths LC50 (rat) > 9.24 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50. |
| Acute dermal toxicity | LD50 (rat) > 2,000 mg/kg |
| Skin irritation | Slight irritation (rabbit) |
| Eye irritation | Mild eye irritation. (rabbit) |
| Sensitisation | Non-sensitizing. (guinea pig) |

Assessment repeated dose toxicity

Oxadiazon caused specific target organ toxicity in experimental animal studies in the following organ(s): liver, blood. The observed effects do not appear to be relevant for humans.

Assessment Mutagenicity

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

Assessment Carcinogenicity

Oxadiazon caused at high dose levels an increased incidence of tumours in in the following organ(s): liver. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.

ACGIH

None.

NTP

None.

IARC

None.



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OSHA

None.

Assessment toxicity to reproduction

Oxadiazon caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Oxadiazon is related to parental toxicity.

Assessment developmental toxicity

Oxadiazon caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Oxadiazon are related to maternal toxicity.

SECTION 12: ECOLOGICAL INFORMATION

| | |
|--|---|
| Toxicity to fish | LC50 (Oncorhynchus mykiss (rainbow trout)) 1.2 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient oxadiazon. |
| Toxicity to aquatic invertebrates | EC50 (Water flea (Daphnia magna)) > 2.4 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient oxadiazon. |
| Toxicity to aquatic plants | EC50 (Scenedesmus subspicatus) 0.00423 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient oxadiazon. |
| Bioaccumulation | Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 243 The value mentioned relates to the active ingredient oxadiazon. Does not bioaccumulate. |
| 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

Waste treatment methods

Product It is best to use all of the product in accordance with label directions.
If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.
Never place unused product down any indoor or outdoor drain.



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Contaminated packaging

Do not re-use empty containers.
Follow advice on product label and/or leaflet.

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

49CFR

Not dangerous goods / not hazardous material

IMDG

| | |
|----------------------|--|
| UN number | 3082 |
| Class | 9 |
| Packaging group | III |
| Marine pollutant | YES |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (OXADIAZON SOLUTION) |

IATA

| | |
|--------------------------|---|
| UN number | 3082 |
| Class | 9 |
| Packaging group | III |
| Environm. Hazardous Mark | YES |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (OXADIAZON SOLUTION) |

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. 432-1465

US Federal Regulations

TSCA list

1,2-Propanediol 57-55-6

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

25,000lbs

US States Regulatory Reporting



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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 |
|-----------------|---------|

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)

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

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Harmful if swallowed or absorbed through skin.
Moderate eye irritation.
Avoid contact with skin, eyes and clothing.

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

Bayer Environmental Science

SAFETY DATA SHEET



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Reason for Revision: New Safety Data Sheet.

Revision Date: 09/13/2013

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