



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

1/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

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

Product identifier

Trade name RONSTAR® G HERBICIDE

Product code (UVP) 05950651

SDS Number 102000004005

EPA Registration No. 432-886

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
USA

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577

Product Information Telephone Number

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.



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

2/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Oxadiazon	19666-30-9	2.00
Titanium dioxide	13463-67-7	0.92
Naphthalene	91-20-3	0.42

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

Risks Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

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 None known.



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

3/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

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	Use appropriate extinguishing media for material that is supplying fuel. 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.
Flash point	not applicable
Autoignition temperature	no data available
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available

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. 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 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.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling 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.

Advice on protection Take measures to prevent the build up of electrostatic charge.



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

4/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

against fire and explosion

Hygiene measures

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 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.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Naphthalene	91-20-3	10 ppm (TWA)		OES BCS*
Naphthalene	91-20-3	10 ppm (TWA)	02 2012	ACGIH
Naphthalene	91-20-3	15 ppm (STEL)	02 2012	ACGIH
Naphthalene	91-20-3	10 ppm (TWA)	02 2013	ACGIH NIC
Naphthalene	91-20-3	50 mg/m ³ /10 ppm (REL)	2010	NIOSH
Naphthalene	91-20-3	75 mg/m ³ /15 ppm (STEL)	2010	NIOSH
Naphthalene	91-20-3	50 mg/m ³ /10 ppm (PEL)	02 2006	OSHA Z1
Naphthalene	91-20-3	75 mg/m ³ /15 ppm (STEL)	1989	OSHA Z1A
Naphthalene	91-20-3	50 mg/m ³ /10 ppm (TWA)	1989	OSHA Z1A
Naphthalene	91-20-3	75 mg/m ³ /15 ppm (STEL)	06 2008	TN OEL
Naphthalene	91-20-3	50 mg/m ³ /10 ppm (TWA)	06 2008	TN OEL
Naphthalene	91-20-3	10ppb (AN ESL)	07 2011	TX ESL
Naphthalene	91-20-3	38ppb (ST ESL)	02 2013	TX ESL
Naphthalene	91-20-3	50ug/m ³ (AN ESL)	07 2011	TX ESL



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

5/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

Naphthalene	91-20-3	200ug/m3 (ST ESL)	02 2013	TX ESL
Naphthalene	91-20-3	75 mg/m3/15 ppm (STEL)	08 2010	US CA OEL
Naphthalene	91-20-3	50 mg/m3/10 ppm (TWA PEL)	08 2010	US CA OEL
Cellulose	9004-34-6	10 mg/m3 (TWA)	02 2012	ACGIH
Cellulose (Total)	9004-34-6	10 mg/m3 (REL)	2010	NIOSH
Cellulose (Respirable.)	9004-34-6	5 mg/m3 (REL)	2010	NIOSH
Cellulose (Total dust.)	9004-34-6	15 mg/m3 (PEL)	02 2006	OSHA Z1
Cellulose (Respirable fraction.)	9004-34-6	5 mg/m3 (PEL)	02 2006	OSHA Z1
Cellulose (Total dust.)	9004-34-6	15 mg/m3 (TWA)	1989	OSHA Z1A
Cellulose (Respirable fraction.)	9004-34-6	5 mg/m3 (TWA)	1989	OSHA Z1A
Cellulose (Respirable fraction.)	9004-34-6	5 mg/m3 (TWA)	06 2008	TN OEL
Cellulose (Total dust.)	9004-34-6	15 mg/m3 (TWA)	06 2008	TN OEL
Cellulose (Particulate.)	9004-34-6	50ug/m3 (ST ESL)	02 2013	TX ESL
Cellulose (Particulate.)	9004-34-6	5ug/m3 (AN ESL)	02 2013	TX ESL
Kaolin (Respirable fraction.)	1332-58-7	2 mg/m3 (TWA)	02 2012	ACGIH
Kaolin (Total)	1332-58-7	10 mg/m3 (REL)	2010	NIOSH
Kaolin (Respirable.)	1332-58-7	5 mg/m3 (REL)	2010	NIOSH
Kaolin (Total dust.)	1332-58-7	15 mg/m3 (PEL)	02 2006	OSHA Z1
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (PEL)	02 2006	OSHA Z1
Kaolin (Total dust.)	1332-58-7	10 mg/m3 (TWA)	1989	OSHA Z1A
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (TWA)	1989	OSHA Z1A
Kaolin (Total dust.)	1332-58-7	10 mg/m3 (TWA)	06 2008	TN OEL
Kaolin (Respirable fraction.)	1332-58-7	5 mg/m3 (TWA)	06 2008	TN OEL
Kaolin (Particulate.)	1332-58-7	20ug/m3 (ST ESL)	02 2013	TX ESL
Kaolin	1332-58-7	2ug/m3	02 2013	TX ESL



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

6/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

(Particulate.)		(AN ESL)		
Kaolin (Respirable dust.)	1332-58-7	2 mg/m3 (TWA PEL)	08 2010	US CA OEL
Calcium carbonate (Respirable.)	471-34-1	5 mg/m3 (REL)	2010	NIOSH
Calcium carbonate (Total)	471-34-1	10 mg/m3 (REL)	2010	NIOSH
Calcium carbonate	471-34-1	50ug/m3 (ST ESL)	07 2011	TX ESL
Calcium carbonate	471-34-1	5ug/m3 (AN ESL)	07 2011	TX ESL
Titanium dioxide	13463-67-7	10 mg/m3 (TWA)	02 2012	ACGIH
Titanium dioxide (Respirable fraction.)	13463-67-7	1 mg/m3 (TWA)	02 2013	ACGIH NIC
Titanium dioxide (Total dust.)	13463-67-7	15 mg/m3 (PEL)	02 2006	OSHA Z1
Titanium dioxide (Total dust.)	13463-67-7	10 mg/m3 (TWA)	1989	OSHA Z1A
Titanium dioxide (Total dust.)	13463-67-7	10 mg/m3 (TWA)	06 2008	TN OEL
Titanium dioxide (Respirable particles.)	13463-67-7	50ug/m3 (ST ESL)	02 2013	TX ESL
Titanium dioxide (Respirable particles.)	13463-67-7	5ug/m3 (AN ESL)	02 2013	TX ESL
Oxadiazon	19666-30-9	0.28 mg/m3 (TWA)		OES BCS*
Oxadiazon	19666-30-9	5ug/m3 (AN ESL)	07 2011	TX ESL
Oxadiazon	19666-30-9	50ug/m3 (ST ESL)	07 2011	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.

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.



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

7/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	grey to tan
Physical State	granular
Odor	slight
Odour Threshold	no data available
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)
Evaporation rate	no data available
Boiling Point	not applicable
Melting / Freezing Point	not applicable
Water solubility	insoluble
Minimum Ignition Energy	no data available
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	not applicable
Flash point	not applicable
Autoignition temperature	no data available
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Explosivity	no data available



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

8/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	no data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	no data available
Incompatible materials	Strong bases, Strong acids, Strong oxidizing agents
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Inhalation, Eye contact, Skin contact, Ingestion
Immediate Effects	
Eye	Causes redness, irritation, tearing.
Skin	Causes irritation, redness, swelling.
Ingestion	Harmful if swallowed.
Inhalation	May cause upper respiratory tract irritation. Harmful if inhaled.
Information on toxicological effects	
Acute oral toxicity	LD50 (rat) > 5,000 mg/kg
Acute inhalation toxicity	LC50 (rat) > 200 mg/l Exposure time: 1 h Determined in the form of dust.
Acute dermal toxicity	LD50 (rabbit) > 2,000 mg/kg
Skin irritation	Moderate skin irritation. (rabbit)
Eye irritation	Moderate 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 the following organ(s):



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

9/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

liver. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.

ACGIH

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

NTP

Naphthalene	91-20-3
-------------	---------

IARC

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

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 (Skeletonema costatum) 0.0056 mg/l Exposure time: 120 h The value mentioned relates to the active ingredient oxadiazon.
Biodegradability	Oxadiazon: ; not rapidly biodegradable
Koc	Oxadiazon: Koc: 1294
Bioaccumulation	Oxadiazon: Bioconcentration factor (BCF) 243; Does not bioaccumulate.
Mobility in soil	Oxadiazon: Slightly mobile in soils
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.



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

10/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	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.
Contaminated packaging	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 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

UN number	3077
Class	9
Packaging group	III
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (NAPHTHALENE)
RQ	Reportable Quantity is reached with 23,809 lb of product.

IMDG

UN number	3077
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (OXADIAZON MIXTURE)

IATA

UN number	3077
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	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.



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

11/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

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

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-886

US Federal Regulations

TSCA list

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)

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
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
Titanium dioxide 13463-67-7
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.

US State Right-To-Know Ingredients

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

Canadian Regulations

Canadian Domestic Substance List

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)



RONSTAR® G HERBICIDE

Version 3.0 / USA
102000004005

12/12
Revision Date: 03/10/2014
Print Date: 02/28/2018

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

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: Warning!

Hazard statements: 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.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 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: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 03/10/2014

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.