



Bonide DuraTurf Crabgrass Plus Crabgrass & Broadleaf Weed Killer

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Bonide DuraTurf Crabgrass Plus Crabgrass & Broadleaf Weed Killer
Product code : 22179734

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Herbicide

1.3. Details of the supplier of the safety data sheet

Bonide Products, LLC
6301 Sutliff Road
Oriskany, NY 13424
Telephone Number: (315) 736-8231
Comment: Bonide hours of operation are 8:00 a.m. to 4:30 p.m EST.
Website: www.bonide.com
Email address: sales@bonide.com

1.4. Emergency telephone numbers (24 hour)

Medical : SafetyCall - (833) 972-1101
Spills : CHEMTREC - 1 (800) 424-9300 and/or 1 (703) 527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Eye damage/ irritation 2B H320
Carcinogenicity 1 H350

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H320 - Causes eye irritation.
H350 - May cause cancer. (Inhalation)
Precautionary statements (GHS-US) : P203 - Obtain, read and follow all safety instructions before use.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338 - IF IN EYES - Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
P337 + P317 - If eye irritation persists: Get medical help.
P318 - If exposed or concerned, get medical advice.
P405 - Store locked up.
P501 - Dispose of contents/container to in accordance with regional/national regulations.

2.3. Other hazards

Avoid creating dust when handling, using or storing.

SECTION 3: Composition/information on ingredients

Mixture

Name	Product identifier	%
2,4-dichlorophenoxyacetic acid	(CAS No) 94-75-7	0.675
Quinclorac	(CAS No) 84087-01-4	0.346
Dithopyr	(CAS No) 97886-45-8	0.121
Dicamba	(CAS No) 1918-00-9	0.06
Silica, crystalline - quartz*	14808-60-7	> 0.1*

*May be present as a naturally occurring mineral in the ingredients used in this formulation. The respirable portion of crystalline silica in this product is very small, and excessive inhalation is unlikely under normal conditions of use.

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SECTION 4: First aid measures

4.1. Description of first aid measures

- | | |
|---------------------------------------|---|
| First-aid measures general | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Suspected of causing cancer. |
| First-aid measures after inhalation | : Assure fresh air breathing. Allow the person to rest. |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. |
| First-aid measures after eye contact | : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist. |
| First-aid measures after ingestion | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. |

4.2. Most important symptoms and effects, both acute and delayed

Repeated and prolonged exposure through inhalation may cause cancer.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- | | |
|--------------------------------|--|
| Suitable extinguishing media | : Foam. Dry powder. Carbon dioxide. Water spray. Sand. |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

In the event of fire and/or explosion do not breathe fumes. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

5.3. Advice for firefighters

- | | |
|--------------------------------|--|
| Firefighting instructions | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- | | |
|----------------------|-----------------------------------|
| Emergency procedures | : Evacuate unnecessary personnel. |
|----------------------|-----------------------------------|

6.1.2. For emergency responders

- | | |
|----------------------|--|
| Protective equipment | : Equip cleanup crew with proper protection. |
| Emergency procedures | : Ventilate area. |

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- | | |
|-------------------------|--|
| Methods for cleaning up | : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials. |
|-------------------------|--|

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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|-------------------------------|---|
| Precautions for safe handling | : Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid breathing dust. Do not handle until all safety precautions have been read and understood. |
| Hygiene measures | : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. |

7.2. Conditions for safe storage, including any incompatibilities

- | | |
|------------------------|---|
| Storage conditions | : Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers.. |
| Incompatible products | : Strong bases. Strong acids. |
| Incompatible materials | : Sources of ignition. |

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
2,4-Dichlorophenoxyacetic acid (2,4-D) 94-75-7	TWA: 10 mg/m ³ inhalable particulate matter	TWA: 10 mg/m ³ (vacated) TWA: 10 mg/m ³	IDLH: 100 mg/m ³ TWA: 10 mg/m ³
Trade Secret	No data available	TWA: 50 µg/m ³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays (vacated) TWA: 6 mg/m ³ <1%	IDLH: 3000 mg/m ³ TWA: 6 mg/m ³
		Crystalline silica TWA: 20 mppcf : (80)/(%) SiO ₂ mg/m ³ TWA	

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

8.2. Exposure controls

Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Respiratory protection	: Wear approved mask.
Other information	: When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: White and brown granules
Color	: White and brown
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
pH solution	: 6.59
Melting point/ Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Flammability (solid, gas)	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Insoluble in water.

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high or low temperatures.

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10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Causes eye irritation.
Skin contact	May cause slight irritation.
Ingestion	May be harmful if swallowed.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2,4-Dichlorophenoxyacetic acid (2,4-D) 94-75-7	= 375 mg/kg (Rat) = 420 mg/kg (Rat)	= 1400 mg/kg (Rabbit) = 1500 mg/kg (Rat)	-
Trade Secret	= 7900 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 2.2 mg/L (Rat) 1 h
Quinclorac 84087-01-4	= 2190 mg/kg (Rat)	> 2 g/kg (Rat)	-
Dithiopyr 97886-45-8	> 5 g/kg (Rat)	-	> 6 g/m ³ (Rat) 4 h
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	= 1039 mg/kg (Rat)	= 1716 mg/kg (Rabbit) > 1 g/kg (Rat) > 2 g/kg (Rabbit)	-

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity - Product Information

Unknown Toxicity

98 % of the mixture consists of ingredient(s) of unknown toxicity

LD50 Oral	> 5000 mg/kg Rat-female
LD50 Dermal	> 5000 mg/kg (rat)
LC50 Inhalation (DUST)	> 2.08 mg/L (rat)

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	Causes eye irritation.
Respiratory or skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	No information available.

Carcinogenicity

The International Agency for Research on Cancer (IARC) lists chlorophenoxy herbicides in its Group 2B (limited evidence for Carcinogenicity in humans.) The US EPA has given the chlorophenoxy Herbicides 2,4-D, 2,4-DP, MCPP, and MCPA a Class D classification (not classifiable as to human carcinogenicity.) More current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic effects and a recent World Health Organization (WHO) review of 2,4-D toxicology has concluded that 2,4-D is not a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
2,4-Dichlorophenoxyacetic acid (2,4-D) 94-75-7	-	Group 2B	-	X
Trade Secret	-	Group 1 Group 3	Known	X

Legend - IARC (International Agency for Research on Cancer), Group 1 - Carcinogenic to Humans, Group 2B - Possibly Carcinogenic to Humans, Group 3 - Not Classifiable as to Carcinogenicity in Humans

NTP (National Toxicology Program); Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor), X - Present

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Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.

SECTION 12: Ecological information

12.1. Toxicity

2,4-dichlorophenoxyacetic acid (94-75-7)	
LC50 fish 1	31 - 96 mg/l (96 h; Cyprinus carpio)
EC50 Daphnia 1	90 mg/l (48 h; Daphnia magna)
LC50 fish 2	82 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
TLM fish 1	375 mg/l (48 h; Lepomis macrochirus)
Threshold limit algae 1	< 0.1 mg/l (Scenedesmus quadricauda; Chronic)
Threshold limit algae 2	26.4 mg/l (120 h; Selenastrum capricornutum; Growth rate)
Dicamba (1918-00-9)	
LC50 fish 1	23 mg/l (96 h; Lepomis macrochirus)
LC50 other aquatic organisms 1	10 - 100 mg/l (96 h)
EC50 Daphnia 1	> 100 mg/l (48 h; Daphnia magna; Locomotor effect)
LC50 fish 2	28 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
TLM fish 1	40 ppm (48 h; Lepomis macrochirus)
TLM fish 2	35 ppm 48 h; Salmo gairdneri (Oncorhynchus mykiss)
Threshold limit other aquatic organisms 1	10 - 100,96 h

12.2. Persistence and degradability

Bonide DuraTurf Crabgrass Plus Crabgrass & Broadleaf Weed Killer	
Persistence and degradability	Not established.
2,4-dichlorophenoxyacetic acid (94-75-7)	
Persistence and degradability	Readily biodegradable in water. Inhibition of nitrification. Biodegradable in the soil. No (test)data on mobility of the substance available.
Quinclorac (84087-01-4)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Bonide DuraTurf Crabgrass Plus Crabgrass & Broadleaf Weed Killer	
Bioaccumulative potential	Not established.
2,4-dichlorophenoxyacetic acid (94-75-7)	
BCF fish 1	< 10 (3 days; Leuciscus idus)
BCF other aquatic organisms 1	6 (24 h; Algae)
Log Pow	2.58 - 2.83 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Dicamba (1918-00-9)	
Log Pow	2.21
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Quinclorac (84087-01-4)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

Dicamba (1918-00-9)	
Ecology - soil	Not toxic to bees.

12.5. Other adverse effects

Other information : Avoid release to the environment.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Not regulated for transport by DOT.

SECTION 15: Regulatory 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 as required on the pesticide label:

CAUTION: Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wear long-sleeved shirt and long pants, shoes plus socks and gloves. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Environmental Hazards: This pesticide is toxic to fish and aquatic invertebrates. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Sweeping any product that lands on a driveway, sidewalk, or street, back onto the treated area of the lawn or garden will help to prevent run off to water bodies or drainage systems. These chemicals (2,4-D and dicamba) have properties and characteristics associated with chemicals detected in groundwater. The use of these chemicals in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

RCRA STATUS: When discarded in its purchased form, this product is a listed RCRA hazardous waste and should be managed as a hazardous waste. (40 CFR 261.20-24)

15.1. US Federal regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
2,4-Dichlorophenoxyacetic acid (2,4-D) 94-75-7	100 lb	-	-	X
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	1000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
2,4-Dichlorophenoxyacetic acid (2,4-D) 94-75-7	100 lb	-
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	1000 lb	-

15.2. US State regulations

2,4-dichlorophenoxyacetic acid (94-75-7)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Other information : None.
SDS US (GHS HazCom 2012) - Pesticides

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.