



Bonide DuraTurf Crabgrass & Weed Preventer for Lawns & Ornamental Beds

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 & Weed Preventer for Lawns & Ornamental Beds
Product code : 627194294

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, Inc.
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)

Acute Toxicity, oral 4	H302
Skin Irritation 2	H315
Eye Irritation 2A	H319
Skin Sensitisation 1	H317
Specific target organ toxicity, single exposure, respiratory tract irritation 3	H335
Aquatic Toxicity, acute 2	H401
Aquatic Toxicity, long term 3	H412

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H401 - Toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P321 - Specific treatment (see first aid on this label).
P333+P317 - If skin irritation or rash occurs: Get medical help.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P317 - IF SWALLOWED: Get medical help.
P330 - If swallowed, rinse mouth.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position

Bonide DuraTurf Crabgrass & Weed Preventer for Lawns & Ornamental Beds

Safety Data Sheet

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

comfortable for breathing.
P305+P351+P338 - If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P319 - Get medical help if you feel unwell.
P337+P317 - If eye irritation persists: Get medical help.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P273 - Avoid release to the environment.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local/national regulations.

2.3. Other hazards

Combustible Dust - May form combustible dust concentrations in air
Oxidizer - May intensify fire

SECTION 3: Composition/information on ingredients

Mixture

Name	CAS Number	%
Dithopyr - (S,S)-Dimethyl-2-(difluoromethyl)-4-(2-methylpropyl)-6-(trifluoromethyl)-3,5-pyridinedicarbothioate	97886-45-8	0.27
Synthetic Gypsum (calcium sulfate dihydrate)	10101-41-4	90
Limestone (calcium carbonate)	1317-65-3	< 10
Calcium Lignosulfonate (stabilizer)	8061-52-7	1.5
Trace metals	-	< 1
Crystalline Silica (quartz)	14808-60-7	< 0.1

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).
First-aid measures after inhalation : Assure fresh air breathing. Allow the person to rest. If you feel unwell, seek medical advice.
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. Obtain medical attention if irritation develops or persists.
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

Symptoms/injuries : Harmful if swallowed. Eye irritation. Causes skin irritation. May cause an allergic reaction in sensitive individuals. May cause respiratory irritation.
Symptoms/Injuries After Inhalation: Irritating to the respiratory system and mucous membranes. May cause cancer by inhalation. May cause drowsiness or dizziness.
Symptoms/Injuries After Skin Contact: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/Injuries After Eye Contact: Causes serious eye irritation.
Symptoms/Injuries After Ingestion: Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.
Chronic Symptoms: May cause cancer.

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

If medical advice is needed, have product container or label at hand.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Alcohol foam, dry chemical, carbon dioxide, water spray, fog. Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media : Do not use water jet. Use of heavy stream of water may spread fire.

5.2. Special hazards arising from the substance or mixture

Fire Hazard: Not considered flammable but will burn at high temperatures. Decomposes above 132 °C (270 °F). Under conditions of fire this material may produce: Ammonia. Nitrogen oxides.

Explosion Hazard: May form explosive compounds if mixed with: Calcium hypochlorite. Sodium hypochlorite. Nitrates. Nitric acid. Perchloric acid. Product itself is not explosive but if dust is generated, dust clouds suspended in air can be explosive.

Reactivity: This product as shipped in the form of coarse granules should not contain sufficient dust to present an explosion hazard. Prevent dust accumulation (to minimize explosion hazard).

5.3. Advice for firefighters

Firefighting instructions : Not flammable. Exercise caution when fighting any chemical fire.

Bonide DuraTurf Crabgrass & Weed Preventer for Lawns & Ornamental Beds

Safety Data Sheet

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

- Protection during firefighting : Firefighters must use full bunker gear including NIOSH-approved positive-pressure self-contained breathing apparatus to protect against potential hazardous combustion and decomposition products.
- Other information : Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General Measures: Handle in accordance with good industrial hygiene and safety practice. This material becomes slippery when wet. Avoid all eyes and skin contact and do not breathe vapor and mist. Do not allow product to spread into the environment.

6.1.1. For non-emergency personnel

- Protective Equipment : Wear suitable protective clothing, gloves and eye/face protection. Use appropriate personal protection equipment (PPE).
- Emergency procedures : Collect as any solid. Ventilate area. Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye/face protection. Equip cleanup crew with proper protection. Use appropriate personal protection equipment (PPE).
- Emergency procedures : If possible, stop flow of product. Contain and collect as any solid. Evacuate unnecessary personnel. Ventilate area..

6.2. Environmental precautions

Avoid release to the environment. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Recover the product by vacuuming, shoveling or sweeping. Avoid generation of dust during clean-up of spills. If spilled directly onto the ground, remove sufficient soil to ensure material is fully recovered. Material may be used if uncontaminated. Clear up spills immediately and dispose of waste safely.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : This material becomes slippery when wet.
- Precautions for safe handling : Handle in accordance with good industrial hygiene and safety procedures. Wear recommended personal protective equipment. Avoid creating or spreading dust. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.
- Hygiene Measures : Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash hands and forearms thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store tightly closed in a dry, cool and well -ventilated place. Protect from moisture. Keep container closed when not in use.
- Incompatible products : Strong bases. Strong acids. Strong oxidizers.
- Prohibitions on mixed storage : Store away from: Ammonium nitrate.
- Special rules on packaging : Corrosive to copper and its alloys.

7.3. Specific end use(s)

Herbicide

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Chemical Name/Component	OSHA PEL (mg/m3)	ACGIH TLV (mg/m3)	Dow IHG
Dithiopyr		(TWA) 20 ppm	(TWA) 0.25 mg/m3
Toluene	(Z-1)	(TWA) BEI	
	(Z-2) (TWA) 200 ppm		
	(Z-2) (CEIL) 300 ppm		

Bonide DuraTurf Crabgrass & Weed Preventer for Lawns & Ornamental Beds

Safety Data Sheet

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

	(Z-2) (Peak) 500 ppm		
Gypsum(calcium sulfate), total particulate Particles not otherwise specified (PNOS)	15	10	
Gypsum(calciumsulfate), PNOS respirable fraction	5	3	

Notes:

1. "OSHA" means Occupational Safety and Health Administration.
2. "PEL" means (OSHA) permissible exposure limit.
3. "ACGIH" means American Conference of Governmental Industrial Hygienists.
4. "TLV" means Threshold Limit Value.
5. "TWA" means time-weighted average.

8.2. Exposure controls

Appropriate Engineering Controls	: Ensure all national/local regulations are observed.
Personal Protective Equipment	: Gloves. Safety glasses. Protective clothing. Insufficient ventilation: wear respiratory protection.
Materials for Protective Clothing	: Chemically resistant materials and fabrics.
Hand Protection	: Protective gloves.
Eye Protection	: Chemical goggles or safety glasses.
Skin and Body Protection	: Wear suitable protective clothing.
Respiratory Protection	: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.
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
Color	: Tan
Odor	: Slight sulfur like
Odor threshold	: No data available
pH	: 4.2
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 65 °C (149 °F)
Freezing point	: Not applicable to solids
Boiling point	: Not applicable to solids
Flash point	: closed cup 184 °C (363 °F)
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Negligible
Relative density	: No data available
Solid Density	: 1.41 g/cm ³
Water Solubility	: 0.00014% at 20 °C (68 °F)
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: Not applicable

9.2. Other information

Note: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: Stability and reactivity

10.1. Reactivity

This product as shipped in the form of coarse granules should not contain sufficient dust to present an explosion hazard. Prevent dust accumulation (to minimize explosion hazard). Avoid contact with strong acids and strong oxidizers.

10.2. Chemical stability

Stable at standard temperature and pressure and in dry environments.

10.3. Possibility of hazardous reactions

Contact with strong acids could result in release of carbon dioxide.

10.4. Conditions to avoid

Protect from moisture. Keep away from heat. Direct sunlight. Extremely high or low temperatures. Sparks, heat, open flame and other sources of ignition.

Bonide DuraTurf Crabgrass & Weed Preventer for Lawns & Ornamental Beds

Safety Data Sheet

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

10.5. Incompatible materials

Strong acids, aluminum (at high temperatures), diazomethane, oxidizers.

10.6. Hazardous decomposition products

No hazardous decomposition up to 1450 °C. Above 1450 °C it could decompose to calcium oxide (CaO) and release sulfur dioxide (SO₂) and various carbon dioxides and trace amounts of hydrogen cyanide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed

LESCO DIMENSION™ 0.27%

LD50 Dermal Rat mg/kg

(S,S)-Dimethyl 2-(difluoromethyl)-4-(2-methyl propyl)-6-(trifluoromethyl)-3,5-pyridinedicarbothioate (97886-45-8)

LC50 Inhalation Rat (mg/l) >6 g/m³ (Exposure time: 4h)

Note: No specific data are available for the product as a whole, so this information pertains to calcium sulfate dehydrate.

Human Data (Calcium Sulfate Dihydrate)

Likely routes of exposure: inhalation, ingestion, skin and eye contact.

Symptoms: Irritation of the eyes, skin, mucous membrane, upper respiratory system; cough, sneezing, rhinorrhea (discharge of nasal mucous), nosebleed.

Acute Ingestion: Irritation to the esophagus and stomach, abdominal spasms and pain. GI blockage if material hardens.

Health Effects: Nuisance particulate (accumulation in lungs).

Delayed and Immediate Effects: None known.

Chronic effects from short and long term exposure: None known.

Animal Data (Calcium Sulfate Dihydrate)

Acute Oral Toxicity

Species: Rat (Sprague-Dawley) ; Route of Administration: Oral (gavage) ; Method: OECD Test Guideline 420 (Acute Oral Toxicity-Fixed dose procedure) ; 2,000 mg/kg body weight of test substance was administered to 4 female rats during main study (50, 300 and 2,000 mg/kg body weight administered during sighting study).

No mortality, no specific clinical signs observed during test period.

LD50 (Lethal Dose): >2,000 mg/kg body weight (category 5 under Harmonized Integrated Classification System for Human Health and Environmental Hazards of Chemical Substances and Mixtures).

Skin Irritation

Species: Rabbit (New Zealand White) ; Test Type: In vivo ; Method: OECD TG 404 (1991) "Acute Dermal Irritation/Corrosion" ; Exposure Period: 4 hours, 500 mg/site/rabbit

No erythema, no eschar, and no oedema (score of zero under OECD method: grading of skin reaction) was observed at the skin on the backs of three rabbits during test period.

Result: Not irritating

Skin Sensitization

Species: Guinea Pig (Hartley); Test Type: Buehler test; Method: OECD TG 406 (1991) "Skin Sensitization"

Exposure Period: hours/weeks for 3 consecutive weeks

0.4 grams/site/guinea pig was applied topically with an occluded patch to the backs of 40 male guinea pigs. After 6 hours, the material was removed and the skin was examined using the sensitization grading system.

Result: Not sensitizing

No acute inhalation toxicity, acute dermal toxicity, acute toxicity (other routes of administration), corrosiveness/irritation, or eye irritation corrosion studies are available.

Studies of Mutagenicity and Reproduction/Developmental Toxicity Screening Tests were negative.

Carcinogenicity

None of the components are listed as a carcinogen or suspected carcinogen in the U.S. National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions), or by OSHA. Note: This product may contain small quantities of crystalline silica (<0.1%), which has been identified as a carcinogen by the IARC and U.S. NTP.

SECTION 12: Ecological information

12.1. Toxicity

Acute Toxicity to Fish:

Dithiopyr: Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), 96 hour, 0.48 mg/L

Calcium Sulfate, Dihydrate: Method: OECD TG 203 "Fish, Acute Toxicity Test", Test Species: *Oryzias latipes*, Type: Static, Exposure Period: 96 hours

Bonide DuraTurf Crabgrass & Weed Preventer for Lawns & Ornamental Beds

Safety Data Sheet

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

LC50(Lethal Concentration): >100 mg/L, No mortality or visible abnormality occurred at the test limit of 100 mg/L.

Acute Toxicity to Aquatic Invertebrates:

Dithiopyr: LC50, saltwater mysid *Mysidopsis bahia*, 0.586 mg/L, EC50, eastern oyster (*Crassostrea virginica*), 0.168 mg/L

Calcium Sulfate, Dihydrate: Method: OECD TG 202, "Daphnia sp., Acute Immobilization Test and Reproduction Test", Test Species: *Daphnia magna*, Type: Static, Exposure Period: 48 hours, EC50(Effective Concentration): >100 mg/L, No immobilization or mortality occurred at the test limit of 100 mg/L.

Toxicity to Above Ground Organisms (Dithiopyr):

Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

dietary LC50, *Colinus virginianus* (Bobwhite quail), >5,620 ppm

oral LD50, *Colinus virginianus* (Bobwhite quail), >2,250 mg/kg

contact LD50, *Apis mellifera* (bees), 48 hour, 81 µg/bee

Toxicity to soil-dwelling organisms (Dithiopyr):

LC50, *Eisenia fetida* (earthworms), mortality, > 1,000 mg/kg

Exotoxicity (Calcium Sulfate, Dihydrate) : Algae

Method: OECD TG 201, "Alga, Growth Inhibition Test"; Test Species: *Selenastrum capricornutum*; Exposure Period: 72 hours; Endpoint: Growth Rate

EGC50(Effective growth concentration): >100 mg/L; EbC50(Effective Biomass concentration): >100 mg/L

NOECr(No Observed Effect Concentration – Reproduction): <100 mg/L; NOECb(No Observed Effect Concentration – Biomass): <100 mg/L

No significant difference in growth curve between test and control group.

12.2. Persistence and degradability

Dithiopyr - Biodegradability: Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Toluene - Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. 10-day Window: Not applicable

Biodegradation: 100%; Exposure time: 14 d; Method: OECD Test Guideline 301C or Equivalent; Theoretical Oxygen Demand: 3.13 mg/mg Calculated.

Photodegradation; Test Type: Half-life (indirect photolysis); Sensitizer: OH radicals; Atmospheric half-life: 2 d; Method: Estimated.

Balance - Biodegradability: No relevant data found.

Calcium Sulfate, Dihydrate - Not relevant for an inorganic compound.

12.3. Bioaccumulative potential

Dithiopyr, Toluene, Balance: No data available.

Calcium Sulfate, Dihydrate: Bioaccumulation is not expected.

12.4. Mobility in soil

Dithiopyr; Expected to be relatively immobile in soil (Koc > 5000). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. Partition Coefficient(Koc): 20500

Toluene; Potential for mobility in soil is very high (Koc between 0 and 50). Partition Coefficient(Koc): 37 – 178 Estimated.

Balance; No relevant data found.

Calcium Sulfate, Dihydrate; Soluble in water and mobile in soil.

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, IMDG and IATA

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 eye irritation.

15.1. US Federal regulations

Dithiopyr

OSHA Hazard Communication Standard; This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312; Chronic Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

Bonide DuraTurf Crabgrass & Weed Preventer for Lawns & Ornamental Beds

Safety Data Sheet

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

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

15.2. US State regulations

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986) WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

Pennsylvania (Worker and Community Right-to-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-to-Know Act): Pennsylvania Special Hazardous Substances

List: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

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.