Bonide Duraturf Crabgrass Preventer 24-0-8

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 Preventer 24-0-8

Product code : 2286134

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

Use of the substance/mixture : Herbicide, Fertilizer

1.3. Details of the supplier of the safety data sheet

Bonide Products, Inc.
6301 Sutliff Road
Oriskany, NY 13424
T (315) 736-8231
www.bonide.com

1.4. Emergency telephone number

Emergency number : 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)

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

Mixture

Name	Product identifier	%	Classification (GHS-US)
Urea	(CAS No) 57-13-6	41.8	Not classified
Muriate of Potash	(CAS No) 7447-40-7	13	Not classified
Polymer Coated-Sulfur Urea	(CAS No) 57-13-6	11.2	Not classified
Ferrous Sulfate	(CAS No) 7782-63-0	5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315
Prodiamine	(CAS No) 29091-21-2	0.28	Not classified
Copper Sulfate	(CAS No) 7758-98-7	0.25	Acute Tox. 3 (Oral), H301 Skin Irrit. 2, H315 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Manganese Sulfate	(CAS No) 7785-87-7	0.2	STOT RE 2, H373 Aquatic Chronic 2, H411
Zinc sulfate	(CAS No) 7733-02-0	0.15	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Sodium Borate	(CAS No) 1330-43-4	0.1	Not classified
Sodium Molybdate	(CAS No) 10102-40-6	0.002	Not classified

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.

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.

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 : Not expected to present a significant hazard under anticipated conditions of normal use.

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

No additional information available

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

No additional information available

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.

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

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.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect from moisture. Keep container closed when not in use. Store in original container.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ferrous Sulfate (7782-63-0)		
USA ACGIH	ACGIH TWA (mg/m³)	1 mg/m³

Manganese Sulfate (7785-87-7)		
USA ACGIH	ACGIH TWA (mg/m³)	0.1 mg/m³

Sodium Borate (1330-43-4)		
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³
USA ACGIH	ACGIH STEL (mg/m³)	6 mg/m³

Sodium Molybdate (10102-40-6)		
USA ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³ (Molybdenum, Soluble compounds, as Mo; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction)

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 : Multi-colored granules
Color : Multi-colored
Odor : Fertilizer odor
Odor threshold : No data available
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Self ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : No data available
Solubility : Partially soluble
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosive limits : No data available

9.2. Other information

No additional information available

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.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Urea (57-13-6)	
LD50 oral rat	8471 mg/kg (Rat)
LD50 dermal rat	> 3200 mg/kg (Rat)
LD50 dermal rabbit	> 21000 mg/kg (Rabbit)

Polymer Coated-Sulfur Urea (57-13-6)	
LD50 oral rat	> 14300 mg/kg (Rat)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit)

Copper Sulfate (7758-98-7)	
LD50 oral rat	300 mg/kg (Rat)
LD50 dermal rabbit	> 1000 mg/kg (Rabbit)

Ferrous Sulfate (7782-63-0)	
LD50 oral rat	1480 mg/kg (Rat)

Manganese Sulfate (7785-87-7)	
LD50 oral rat	2150 mg/kg (Rat; Experimental value)

Zinc sulfate (7733-02-0)	
LD50 oral rat	1000 - 2000 mg/kg (Rat)

Sodium Borate (1330-43-4)	
LD50 oral rat	> 2000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Sodium Molybdate (10102-40-6)	
LD50 oral rat	4233 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg (Rat)

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Urea (57-13-6)	
LC50 fish 1	> 6810 mg/l (96 h; Leuciscus idus)
EC50 Daphnia 1	> 10000 mg/l (48 h; Daphnia magna)
LC50 fish 2	17500 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 2	> 10000 mg/l (24 h; Daphnia magna)
TLM fish 1	17500 ppm (96 h; Poecilia reticulata)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (Pseudomonas putida)
Threshold limit algae 2	> 10000 mg/l (168 h; Scenedesmus quadricauda)

Polymer Coated-Sulfur Urea (57-13-6)	
LC50 fish 1	> 6810 mg/l (LC50; 96 h)
EC50 Daphnia 1	> 10000 mg/l (EC50; 48 h)

Copper Sulfate (7758-98-7)	
LC50 fish 1	0.0199 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Soft water)
EC50 Daphnia 1	0.01 mg/l (48 h; Daphnia magna; Soft water)
LC50 fish 2	0.298 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Hard water)
EC50 Daphnia 2	0.2 mg/l (48 h; Daphnia magna; Hard water)
TLM fish 1	3.8 ppm 24 h; Salmo gairdneri (Oncorhynchus mykiss)
Threshold limit algae 2	1.1 mg/l (Scenedesmus quadricauda)

Ferrous Sulfate (7782-63-0)	
LC50 fish 1	925 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	7.2 mg/l (48 h; Daphnia magna; Metal ion)
LC50 fish 2	> 200 mg/l (48 h; Leuciscus idus)
EC50 Daphnia 2	152 mg/l (48 h; Daphnia magna; Anhydrous form)

Manganese Sulfate (7785-87-7)	
LC50 fish 1	2850 mg/l (96 h; Colisa fasciatus; Manganese ion)
EC50 Daphnia 1	8.28 mg/l (48 h; Daphnia magna)
LC50 fish 2	33.8 mg/l (96 h; Pimephales promelas)
EC50 Daphnia 2	10 mg/l (24 h; Daphnia magna)
Threshold limit algae 1	25.7 mg/l (Phaeodactylum; Growth)
Threshold limit algae 2	61 mg/l (72 h; Desmodesmus subspicatus; GLP)

Zinc sulfate (7733-02-0)	
LC50 fish 1	1.7 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	1 mg/l (24 h; Daphnia magna)
LC50 fish 2	2.4 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 2	0.56 mg/l (48 h; Daphnia magna)
Threshold limit algae 1	136 µg/l (72 h; Selenastrum capricornutum; Growth rate)
Threshold limit algae 2	24 µg/l (3 days; Selenastrum capricornutum; Growth rate)

Sodium Borate (1330-43-4)	
LC50 fish 1	100 - 1000 mg/l (96 h; Pisces)
LC50 other aquatic organisms 1	100 - 100 mg/l (96 h)
EC50 Daphnia 1	340 mg/l (24 h; Daphnia magna)
LC50 fish 2	807 mg/l (Leuciscus idus)
TLM fish 1	8200 ppm (48 h; Gambusia affinis)
Threshold limit other aquatic organisms 1	100 - 100,96 h; Protozoa
Threshold limit other aquatic organisms 2	1 mg/l (72 h)
Threshold limit algae 1	47 mg/l (96 h; Scenedesmus subspicatus; Growth)
Threshold limit algae 2	0.58 mg/l (Scenedesmus quadricauda)

Prodiamine (29091-21-2)	
LC50 fish 1	> 552 ppb

Prodiamine (29091-21-2)	
LC50 other aquatic organisms 1	> 658 ppb

12.2. Persistence and degradability

Bonide Duraturf Crabgrass Preventer 24-0-8	
Persistence and degradability	Not established.

Urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water.
ThOD	0.27 g O^2/g substance

Polymer Coated-Sulfur Urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. No (test)data on mobility of the components available.
ThOD	0.27 g O^2/g substance

Muriate of Potash (7447-40-7)	
Persistence and degradability	Biodegradability in water: no data available. No (test)data on mobility of the components available.

Copper Sulfate (7758-98-7)	
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Ferrous Sulfate (7782-63-0)	
Persistence and degradability	Biodegradability in water: no data available. Biodegradability in soil: no data available. Adsorbs into the soil.

Manganese Sulfate (7785-87-7)	
Persistence and degradability	Biodegradability: not applicable. No (test)data on mobility of the substance available.
ThOD	Not applicable (inorganic)

Zinc sulfate (7733-02-0)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Sodium Borate (1330-43-4)	
Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. Adsorbs into the soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Sodium Molybdate (10102-40-6)	
Persistence and degradability	Biodegradability: not applicable. Photolysis in water. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

12.3. Bioaccumulative potential

Bonide Duraturf Crabgrass Preventer 24-0-8	
Bioaccumulative potential	Not established.

Urea (57-13-6)	
BCF fish 1	1 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11700 (Chlorella sp.)
Log Pow	-2.59 - -1.59

Urea (57-13-6)	
Bioaccumulative potential	Bioaccumulation: not applicable.

Polymer Coated-Sulfur Urea (57-13-6)	
BCF fish 1	1 (BCF; 72 h; Brachydanio rerio)
BCF other aquatic organisms 1	117000 (BCF)
Log Pow	-2.59 - -1.59
Bioaccumulative potential	Bioaccumulation: not applicable.

Muriate of Potash (7447-40-7)	
Bioaccumulative potential	No bioaccumulation data available.

Copper Sulfate (7758-98-7)	
Bioaccumulative potential	Bioaccumable.

Ferrous Sulfate (7782-63-0)	
Bioaccumulative potential	Not bioaccumulative.

Manganese Sulfate (7785-87-7)	
Bioaccumulative potential	No bioaccumulation data available.

Zinc sulfate (7733-02-0)	
BCF fish 1	59 - 242 (Cyprinus carpio; Test duration: 8 weeks)
Bioaccumulative potential	Bioaccumable.

Sodium Borate (1330-43-4)	
Bioaccumulative potential	Not bioaccumulative.

Sodium Molybdate (10102-40-6)	
BCF fish 1	4.9 (BCF; 28 days; Oncorhynchus tshawytscha; Fresh water)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Copper Sulfate (7758-98-7)	
Ecology - soil	Toxic to flora.

Sodium Borate (1330-43-4)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

Prodiamine (29091-21-2)	
Ecology - soil	Half-life in soil is <57 days.

12.5. Other adverse effects

Other information : Avoid release to the environment.

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

In accordance with DOT

No dangerous good in sense of transport regulations

Additional information

Other information : No supplementary information available.

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: Harmful if absorbed through skin. Harmful if inhaled. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Wear: Long-sleeved

shirt and long pants, shoes plus socks, and chemical-resistant waterproof gloves. Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

15.1. US Federal regulations

No additional information available

15.2. International regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
H301	Toxic if swallowed
H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

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.