

Issue Date 23-Mar-2015

Revision Date 17-Jun-2015

Version 2

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product identifier**

**Product Name** Avenue™ South Broadleaf Herbicide for Turfgrass (4 X 1 Gal.)

**Other means of identification**

**Product Code** PBI FP 8731076

**EPA Pesticide Registration Number** 2217-996

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Herbicide.

**Uses advised against** No information available.

**Details of the supplier of the safety data sheet**

**Supplier**

PBI Gordon Corporation  
 1217 West 12th Street  
 Kansas City, MO 64101

**Manufacturer**

PBI Gordon Corporation  
 1217 West 12th Street  
 Kansas City, MO 64101

**Company Name**

PBI Gordon Corporation  
 1217 West 12th Street  
 Kansas City, MO 64101

**Emergency telephone number**

**Emergency Telephone** Chemtrec 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Classification**

**OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 1

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.

**Label elements**

**Emergency Overview**

**Danger**

**Hazard statements**  
 Harmful if inhaled. Causes serious eye damage.



**Appearance** Liquid                      **Physical state** Liquid                      **Odor** Amines

**Precautionary Statements - Prevention**

- Avoid breathing dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Wear protective gloves/protective clothing/eye protection/face protection
- Contaminated work clothing should not be allowed out of the workplace
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep container tightly closed

**Precautionary Statements - Response**

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- If skin irritation or rash occurs: Get medical advice/attention
- Wash contaminated clothing before reuse
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- Call a POISON CENTER or doctor/physician if you feel unwell

**Precautionary Statements - Storage**

- Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**

- Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Have the product label with you when calling a poison control center or doctor or going in for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.

The low flash point of this product is due to a minor component in the mixture. Based on independent laboratory testing of similar products, this product would not sustain combustion as specified in DOT Regulation 49 CFR 173 Appendix H; however OSHA HCS 2012 flammable classifications are solely based on tested mixture flash points and boiling points.

**Other Information**

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Chemical Name</b>	<b>CAS No.</b>	<b>Weight-%</b>
2,4-D, dimethylamine salt	2008-39-1	7.28
Dimethylamine dicamba	2300-66-5	2.06
Sulfentrazone	122836-35-5	0.7
Penoxsulam	219714-96-2	0.7
Trade Secret	Proprietary	0-1*

\* The exact percentage (concentration) of composition has been withheld as a trade secret

**4. FIRST AID MEASURES**

**First aid measures**

**General advice**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.

**Eye contact**

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

**Skin Contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

---

<b>Inhalation</b>	Remove to fresh air. Move to fresh air in case of accidental inhalation of vapors or decomposition products. If symptoms persist, call a physician.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media**

Use. Foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water spray (fog).

**Specific hazards arising from the chemical**

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.

**Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective equipment and precautions for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on safe handling** Ensure adequate ventilation, especially in confined areas. Take precautionary measures against static discharges. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place.

**Incompatible materials** Acids.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Control parameters

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
2,4-D, dimethylamine salt 2008-39-1	TWA: 10 mg/m <sup>3</sup> inhalable fraction S*	TWA: 10 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> , TWA: 10 mg/m <sup>3</sup>
Trade Secret	STEL: 15 ppm TWA: 5 ppm	TWA: 10 ppm TWA: 18 mg/m <sup>3</sup> (vacated) TWA: 10 ppm (vacated) TWA: 18 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 10 ppm TWA: 18 mg/m <sup>3</sup>

*NIOSH IDLH Immediately Dangerous to Life or Health*

**Other Information** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

**Engineering Controls** Local and General Ventilation.

Individual protection measures, such as personal protective equipment

**Eye/face protection** Tight sealing safety goggles. Face protection shield.

**Skin and body protection** Wear protective gloves and protective clothing.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

<b>Physical state</b>	Liquid	<b>Odor</b>	Amines
<b>Appearance</b>	Liquid	<b>Odor threshold</b>	No information available
<b>Color</b>	Brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	7.5-8.5	
<b>Melting point/freezing point</b>	No information available	
<b>Boiling point / boiling range</b>	100 °C / 212 °F	
<b>Flash point</b>	44 °C / 112 °F	Pensky-Martens Closed Cup (PMCC)
<b>Evaporation rate</b>	No information available	
<b>Flammability (solid, gas)</b>	No information available	
<b>Flammability Limit in Air</b>		
<b>Upper flammability limit:</b>	No information available	

<b>Lower flammability limit:</b>	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Specific Gravity</b>	1.055
<b>Water solubility</b>	Miscible in water
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Oxidizing properties</b>	No information available

**Other Information**

**Density** 8.788 pounds/gallon

**10. STABILITY AND REACTIVITY**

**Reactivity**

No data available

**Chemical stability**

Stable.

**Possibility of Hazardous Reactions**

None under normal processing.

**Hazardous polymerization**

Will not occur.

**Conditions to avoid**

Extremes of temperature and direct sunlight.

**Incompatible materials**

Acids.

**Hazardous Decomposition Products**

May emit toxic fumes under fire conditions. Hydrogen chloride. Nitrogen oxides (NOx). Carbon monoxide.

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Product Information**

<b>Inhalation</b>	See "Numerical measures of toxicity-product information" in this section.
<b>Eye contact</b>	Minimally irritating.
<b>Skin Contact</b>	Substance may cause slight skin irritation.
<b>Ingestion</b>	See "Numerical measures of toxicity-product information" in this section.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Trade Secret	= 698 mg/kg ( Rat )	= 3900 mg/kg ( Rat )	= 4540 ppm ( Rat ) 6 h

**Information on toxicological effects**

**Symptoms** No information available.

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

<b>Sensitization</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Chronic toxicity</b>	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.
<b>Target Organ Effects</b>	Eyes, Respiratory system, Skin.
<b>Aspiration hazard</b>	No information available.

**Numerical measures of toxicity - Product Information**

<b>Unknown Acute Toxicity</b>	3% of the mixture consists of ingredient(s) of unknown toxicity
<b>Oral LD50</b>	> 5000 mg/kg (female rats)
<b>Dermal LD50</b>	> 5000 mg/kg body weight (male rats) (female rats)
<b>Inhalation LC50</b>	> 2.04 mg/L (male rats) (female rats)

The following values are calculated based on chapter 3.1 of the GHS document

**ATEmix (inhalation-gas)** 42169 mg/L

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Harmful to aquatic life with long lasting effects

3% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Trade Secret	9: 96 h Pseudokirchneriella subcapitata mg/L EC50	111 - 125: 96 h Oncorhynchus mykiss mg/L LC50 120: 96 h Oncorhynchus mykiss mg/L LC50 static 210: 96 h Poecilia reticulata mg/L LC50 static 127 - 349: 96 h Poecilia reticulata mg/L LC50 semi-static 396: 96 h Brachydanio rerio mg/L LC50 static	EC50 = 26.8 mg/L 15 min	88.7: 48 h Daphnia magna Straus mg/L EC50

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations. This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

**Contaminated packaging** Do not reuse container, unless specified by the manufacturer.

See Section 2: Hazards not otherwise classified (HNOC)

**14. TRANSPORT INFORMATION**

**DOT**

**Proper shipping name**

For package sizes less than 156 gallons: product is non-regulated.

**Description**

For package sizes 156 gallons or greater: UN3082, Environmentally Hazardous Substances, Liquid, N.O.S., 9, PGIII, RQ (2,4-D)

The following guidelines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Dept.

PESTICIDES, NOI, INCLUDING DEFOLIANTS, FUNGICIDES, HERBICIDES, OR INSECTICIDES NMFC 155050-6

If shipped in bulk containers (greater than 119 gallons), this product is a Marine Pollutant.

When shipped as a Hazardous Material, label required is Class 9 (Miscellaneous). Placards required on bulk shipments only.

**15. REGULATORY INFORMATION**

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** 2217-996

**Federal Insecticide, Fungicide, Rodenticide Act Regulations**

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:

**EPA Pesticide Label**

Caution. Do not enter or allow people (or pets) to enter the treated area until sprays have dried.

**International Inventories**

<b>TSCA</b>	Not Listed
<b>DSL/NDSL</b>	Not Listed
<b>EINECS/ELINCS</b>	Not Listed
<b>ENCS</b>	Not Listed
<b>IECSC</b>	Not Listed
<b>KECL</b>	Not Listed
<b>PICCS</b>	Not Listed
<b>AICS</b>	Not Listed

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
2,4-D, dimethylamine salt				X			X		X	X
Dimethylamine dicamba				X		X				X
Trade Secret	X	X		X		X	X	X	X	X

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Dimethylamine dicamba - 2300-66-5	1.0
Trade Secret -	1.0

**SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

**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
Trade Secret	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	CERCLA/SARA RQ	Reportable Quantity (RQ)
2,4-D, dimethylamine salt 2008-39-1	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Trade Secret	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

**US State Regulations**

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Dimethylamine dicamba 2300-66-5	X		
Trade Secret	X	X	X

**International Regulations**

Mexico - Grade Moderate risk, Grade 2

Chemical Name	Carcinogenicity	Exposure Limits
Trade Secret		Mexico: TWA 10 ppm Mexico: TWA 18 mg/m <sup>3</sup>

**16. OTHER INFORMATION**

<b>NFPA</b>	Health hazards 2	Flammability 1	Instability 0	Physical and Chemical Properties -
<b>HMIS</b>	Health hazards 2	Flammability 1	Physical hazards 0	Personal protection X

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of PBI Gordon Corporation's knowledge, information and belief at the date of this publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process, unless specified in the text. PBI GORDON CORPORATION MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. Given the variety of factors that can affect the use and application of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. Each user is also responsible for evaluating the conditions of use and designing the appropriate protective mechanisms to prevent employee exposures, property damage, or release to the environment. PBI Gordon Corporation assumes no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

**End of Safety Data Sheet**