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Version 2

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

**Product identifier.**

**Product Name** Q4® Plus Turf Herbicide for Grassy & Broadleaf Weeds

**Other means of identification**

**Product Code** PBI FP 6971000  
**EPA Pesticide Registration Number** 2217-930  
**Product Size** Gallon

**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 Address**

PBI-Gordon Corporation  
P.O. Box 860350  
Shawnee, KS 66286

**Company Name**

PBI-Gordon Corporation  
P.O. Box 860350  
Shawnee, KS 66286

**Manufacturer**

PBI-Gordon Corporation  
P.O. Box 860350  
Shawnee, KS 66286

**Emergency telephone number**

**24 Hour Emergency Phone Number** 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)

Serious eye damage/eye irritation	Category 2B
Chronic Aquatic Toxicity	Category 3
Flammable liquids	Category 3

**Label elements**

**Emergency Overview**

**Signal word**

Warning

**Hazard statements**

- Causes eye irritation
- Harmful to aquatic life with long lasting effects
- Flammable liquid and vapor



**Appearance** Liquid

**Physical state** Liquid

**Odor** Musty

**Precautionary Statements - Prevention**

Avoid breathing dust/fume/gas/mist/vapors/spray  
Contaminated work clothing should not be allowed out of the workplace

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Keep container tightly closed  
Wear protective gloves and protective clothing

**Precautionary Statements - Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
In case of fire: Use CO2, dry chemical, or foam to extinguish

**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**

Not applicable

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance**

Not applicable.

**Mixture**

Chemical name	CAS No	Weight-%
2,4-D, dimethylamine salt	2008-39-1	11.81
Quinclorac	84087-01-4	8.43
Dimethylamine dicamba	2300-66-5	1.49
Sulfentrazone	122836-35-5	0.69
Trade Secret	Trade secret	0-1*

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

**4. FIRST AID MEASURES**

**Description of first aid measures**

**General advice** Do not get in eyes, on skin, or on clothing. If symptoms persist, call a physician.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue 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.

**Inhalation** Remove to fresh air. Call a physician if irritation persists.

**Ingestion** Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.

**Self-protection of the first aider** Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. See section 8 for more information.

**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** Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

**Unsuitable extinguishing media** No information available.

**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.

**Special protective equipment for fire-fighters** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

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

**Personal precautions** Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch or walk through spilled material.

**Environmental precautions**

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

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

**Methods for containment** Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

**Methods for cleaning up** Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on safe handling** Use personal protection equipment. Avoid breathing vapors or mists. Use with local exhaust ventilation. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. In case of insufficient ventilation, wear suitable

respiratory equipment. Take off contaminated clothing and wash before reuse.

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

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Store locked up. Keep out of the reach of children. Keep from freezing.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Limits** The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

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>

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)  
Ceiling Maximum limit value \* Skin designation

**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** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

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

**Hand protection** Chemical resistant gloves.

**Skin and body protection** Wear suitable protective clothing. Wear long-sleeved shirt, long pants, socks and shoes.

**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** Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Wash hands thoroughly after handling. Wash hands before breaks and after work.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

**Physical state** Liquid  
**Appearance** Liquid  
**Color** Brown

**Odor** Musty  
**Odor threshold** No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7.5 - 9.0	
Melting point/freezing point	<35 °F	
Boiling point / boiling range	100 °C / 212 °F	
Flash point	59 °C / 138 °F	Pensky-Martens Closed Cup (PMCC)
Evaporation rate	< 1	
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	<17 mm Hg	
Vapor density	>1	
Specific Gravity	1.0951	
Water solubility	Soluble in water	
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known

**Other Information**  
**Oxidizing properties** No information available  
**Liquid Density** 9.12 pounds/gallon  
**Bulk density** No information available

## 10. STABILITY AND REACTIVITY

**Reactivity**  
 No information available

**Stability**  
 Stable under recommended storage conditions

**Possibility of hazardous reactions**  
 None under normal processing.

**Hazardous polymerization**  
 Will not occur.

**Conditions to avoid**  
 Keep out of reach of children.

**Incompatible materials**  
 Strong acids. Strong bases. Strong oxidizing agents.

**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

**Inhalation** May be harmful if inhaled.  
**Eye contact** Causes eye irritation.  
**Skin contact** May cause irritation.

**Ingestion** May be harmful if swallowed.

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2,4-D, dimethylamine salt 2008-39-1	= 625 mg/kg ( Rat )	= 2115 mg/kg ( Rabbit )	-
Quinclorac 84087-01-4	= 2190 mg/kg ( Rat )	> 2 g/kg ( Rat )	-
Dimethylamine dicamba 2300-66-5	= 1267 mg/kg ( Rat ) = 2629 mg/kg ( Rat )	> 2 g/kg ( Rabbit ) > 2000 mg/kg ( Rabbit )	-
Sulfentrazone 122836-35-5	> 2855 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 4.14 mg/L ( Rat ) 4 h
Trade Secret	= 698 mg/kg ( Rat )	= 3900 mg/kg ( Rat )	= 4540 ppm ( Rat ) 6 h

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** No information available.

**Acute toxicity**

**Numerical measures of toxicity - Product Information**

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

ATEmix (oral)	4146 mg/kg
ATEmix (dermal)	68003 mg/kg
ATEmix (inhalation-gas)	18135 mg/L
ATEmix (inhalation-dust/mist)	38.9 mg/L

**Unknown Toxicity**

- 32 % of the mixture consists of ingredient(s) of unknown toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 32 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 32 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 32 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

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

**Skin corrosion/irritation** May cause skin irritation.

**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, MCP, 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. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
2,4-D, dimethylamine salt 2008-39-1	-	Group 2B	-	-

Legend

IARC (International Agency for Research on Cancer)  
Group 2B - Possibly Carcinogenic to Humans

**Reproductive toxicity** No information available.  
**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.  
**Target Organ Effects** Eyes, Respiratory system, Skin.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Trade Secret	9: 96 h Pseudokirchneriella subcapitata mg/L EC50	210: 96 h Poecilia reticulata mg/L LC50 static 111 - 125: 96 h Oncorhynchus mykiss mg/L LC50 120: 96 h Oncorhynchus mykiss 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**

**Waste from residues/unused products** Disposal should be in accordance with applicable regional, national and local laws and regulations. Should not be released into the environment.

**Contaminated packaging** Do not reuse empty containers.

**US EPA Waste Number** D001, See Section 2: Hazards not otherwise classified (HNOC).

**14. TRANSPORT INFORMATION**

**Note:** **Products under 93 gallons not regulated by DOT. Below are designations for products over 93 gallons. See RQ**

**DOT**

**UN/ID no.** UN3082  
**Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**Hazard class** 9  
**Packing group** III  
**Reportable Quantity (RQ)** 2,4-D, dimethylamine salt: RQ (lb)= 847.00 = 93 gallons  
**Special Provisions** 8, 146, 173, 335, IB3, T4, TP1, TP29  
**Description** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D, dimethylamine salt), 9, III, Marine pollutant

**TDG**

UN/ID no. UN3082  
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
Hazard class 9  
Packing group III  
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D, dimethylamine salt), 9, III

**MEX**

UN/ID no. UN3082  
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
Hazard class 9  
Special Provisions 274, 331, 335  
Packing group III  
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D, dimethylamine salt), 9, III

**ICAO (air)**

UN/ID no. UN3082  
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
Hazard class 9  
Packing group III  
Special Provisions A97, A158, A197  
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D, dimethylamine salt), 9, III

**IATA**

Limited quantity applies with an inner packaging less than 5 L or gross package weight less than 30 kg.  
UN number UN3082  
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
Transport hazard class(es) 9  
Packing group III  
Special Provisions A97, A158, A197  
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D, dimethylamine salt), 9, III

**IMDG**

Limited quantity applies with an inner packaging less than 5 L or gross package weight less than 30 kg.  
UN number UN3082  
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
Transport hazard class(es) 9  
Packing group III  
EmS-No. F-A, S-F  
Special Provisions 274, 335, 969  
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D, DIMETHYLAMINE SALT), 9, III, MARINE POLLUTANT

**15. REGULATORY INFORMATION**

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** 2217-930

**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**

KEEP OUT OF REACH OF CHILDREN. CAUTION. Hazards to Humans and Domestic Animals. CAUTION: Causes moderate eye

irritation. Avoid contact with eyes or clothing. Harmful if swallowed. Environmental Hazards: This pesticide may be toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate. This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical 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.

**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

**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

**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
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	Extremely Hazardous Substances RQs
2,4-D, dimethylamine salt 2008-39-1	100 lb	-
Trade Secret	1000 lb	-

**US State Regulations**

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

**US State Regulations**

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

**16. OTHER INFORMATION**

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

**Disclaimer**

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End of Safety Data Sheet