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Version 1

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
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)

Serious eye damage/eye irritation	Category 1
Skin Sensitization	Category 1
Chronic Aquatic Toxicity	Category 3
Flammable liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements

May cause an allergic skin reaction. Causes eye irritation. Harmful to aquatic life with long lasting effects. Flammable liquid and vapor.



Appearance Liquid

Physical State @20°C Liquid

Odor Musty

Precautionary Statements - Prevention

- Wear protective gloves/protective clothing/eye protection/face protection

- Avoid breathing dust/fume/gas/mist/vapors/spray
- Contaminated work clothing should not be allowed out of the workplace
- Avoid release to the environment
- 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
- In case of fire: Use CO2, dry chemical, or foam for extinction

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

Chemical Name	CAS. Number	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

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

4. FIRST AID MEASURES

First aid measures

- General advice** If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
- 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 plenty of water for at least 15 minutes. Immediate medical attention is not required. 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. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.
- Ingestion** Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. If symptoms persist, call a

physician.

Self-protection of the first aider 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 May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water spray (fog). Foam. Dry chemical. Carbon dioxide (CO2).

Specific hazards arising from the chemical

In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. 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 Use personal protective equipment as required. Avoid contact with eyes and skin. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

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 Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers. Soak up with inert absorbent material. After cleaning, flush away traces with water. Prevent product from entering drains. Dam up.

7. HANDLING AND STORAGE

Precautions for safe handling

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

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

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 ³ inhalable fraction S*	TWA: 10 mg/m ³	IDLH: 10 mg/m ³ , TWA: 10 mg/m ³

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 No information available.

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. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State @20°C	Liquid	Odor	Musty
Appearance	Liquid	Odor threshold	No information available
Color	Brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7.52	
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 information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	<17 mm Hg	
Vapor density	>1	
Specific Gravity	1.0951	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Oxidizing properties	No information available	

Other Information

Density VALUE 9.12 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

Keep from freezing.

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

Inhalation Irritant, moderate respiratory.

Eye contact Mild eye irritation.

Skin Contact Moderate skin irritation.

Ingestion May cause irritation.

Chemical Name	LD50 Oral VALUE (mg/kg)	LD50 Dermal VALUE	LC50 Inhalation (DUST) VALUE
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)	-
Sulfentrazone 122836-35-5	> 2855 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms No information available.

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

Sensitization No information available.

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. 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		

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.
Chronic toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.
Target Organ Effects	Eyes, Respiratory system, Skin.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

Unknown Toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

11% of the mixture consists of component(s) of unknown hazards to the aquatic environment

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.

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

US EPA Waste Number U240 D001 See Section 2: Hazards not otherwise classified (HNOC)

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name For package sizes less than 92.85 gallons: product is non-regulated.

Description

For package sizes 92.85 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 2217-930

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

TSCA	Not Listed
DSL/NDSL	Not Listed
EINECS/ELINCS	Not Listed
ENCS	Not Listed
IECSC	Not Listed
KECL	Not Listed
PICCS	Not Listed
AICS	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
Quinclorac		X			X		X		X	X
Dimethylamine dicamba				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

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)

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

US State Regulations

U.S. State Right-to-Know Regulations

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

International Regulations

Mexico - Grade Moderate risk, Grade 2

16. OTHER INFORMATION

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

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