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Version 2

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

Product identifier

Product Name Brush Killer for Hard-to-Kill Brush

Other means of identification

Product Code PBI FP 251-2

EPA Pesticide Registration Number 2217-952

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
P.O. Box 860350
Shawnee, KS 66286

Manufacturer

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

Company Name

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

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 Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation Category	Category 2
Serious eye damage/eye irritation	Category 2B
Aspiration Toxicity	Category 1
Chronic Aquatic Toxicity	Category 2

Label elements

Emergency Overview

Danger

Hazard statements

Harmful if inhaled. Causes skin irritation. Causes eye irritation. May be fatal if swallowed and enters airways. Toxic to aquatic life with long lasting effects.



Appearance Liquid

Physical state Liquid

Odor Aromatic

Precautionary Statements - Prevention

- Avoid breathing dust/fume/gas/mist/vapors/spray

- Use only outdoors or in a well-ventilated area
- Wash face, hands and any exposed skin thoroughly after handling
- Wear protective gloves/protective clothing/eye protection/face protection
- Contaminated work clothing should not be allowed out of the workplace
- Avoid release to the environment

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 eye irritation persists: Get medical advice/attention
- IF ON SKIN: Wash with plenty of soap and water
- If skin irritation or rash occurs: Get medical advice/attention
- Wash contaminated clothing before reuse
- 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 SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Do NOT induce vomiting
- Collect spillage

Precautionary Statements - Storage

- Store locked up
- Store in a well-ventilated place. Keep container tightly closed

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.

Other information**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical name	CAS-No	Weight-%
Trade Secret	Proprietary	30-40*
2,4-D, 2-ethylhexyl ester	1928-43-4	15.97
Triclopyr BEE, butoxyethyl ester	64700-56-7	8.40
Trade Secret	Proprietary	0-5*
Trade Secret	Proprietary	0-5*
Dicamba	1918-00-9	1.22

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

4. FIRST AID MEASURES**Description of 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 soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

Inhalation

Move to fresh air in case of accidental inhalation of vapors or decomposition products. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. 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. 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 Treat symptomatically. Contains petroleum distillate - vomiting may cause aspiration pneumonia.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

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

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 Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. 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 product from entering drains. Prevent further leakage or spillage if safe to do so. 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 Use personal protective equipment as required. Dam up. Cover liquid spill with sand, earth or other inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Use with local exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep out of the reach of children. Keep container tightly closed in a dry and well-ventilated place. Keep in properly labeled containers. Keep from freezing.
Incompatible materials	None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Exposure Guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
2,4-D, 2-ethylhexyl ester 1928-43-4	TWA: 10 mg/m ³ inhalable fraction S*	TWA: 10 mg/m ³	IDLH: 100 mg/m ³ , TWA: 10 mg/m ³
Trade Secret	TWA: 20 ppm	TWA: 100 ppm TWA: 300 mg/m ³ (vacated) S* (vacated) Ceiling: 50 ppm (vacated) Ceiling: 150 mg/m ³	IDLH: 1400 ppm Ceiling: 50 ppm Ceiling: 150 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 Ensure adequate ventilation, especially in confined areas.

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	Liquid	Odor	Aromatic
Appearance	Liquid	Odor threshold	No information available
Color	Amber		

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

Vapor density	No information available
Specific Gravity	0.93210
Water solubility	Emulsifiable
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 7.77 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 out of reach of children.

Incompatible materials

None known.

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 cause burns. May cause drowsiness or dizziness.

Eye contact Moderately irritating to the eyes.

Skin Contact Moderately irritating to the skin.

Ingestion Harmful if swallowed.

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Trade Secret	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
2,4-D, 2-ethylhexyl ester 1928-43-4	= 300 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.4 mg/L (Rat) 4 h
Trade Secret	= 1870 µL/kg (Rat)	= 1110 µL/kg (Rabbit)	-
Trade Secret	= 700 mg/kg (Rat) = 790 mg/kg (Rat)	= 3400 mg/kg (Rabbit) = 3402 mg/kg (Rabbit)	> 8000 ppm (Rat) 4 h
Dicamba 1918-00-9	= 1039 mg/kg (Rat)	= 1716 mg/kg (Rabbit) > 1 g/kg (Rat) > 2 g/kg (Rabbit)	-

Information on toxicological effects

Symptoms No information available.

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

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, 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, 2-ethylhexyl ester 1928-43-4		Group 2B		X

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Chronic toxicity Avoid repeated exposure.
Target Organ Effects Central nervous system, Eyes, Respiratory system, Skin.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Toxicity 44 % of the mixture consists of ingredient(s) of unknown toxicity

LD50 Oral VALUE (mg/kg) 3129 mg/kg (female rats)
LD50 Dermal VALUE > 5000 mg/kg (female rats) (male rats)
LC50 Inhalation (DUST) VALUE > 2.06 mg/L (female rats) (male rats)

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

ATEmix (inhalation-gas) 1289 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Trade Secret		2.2: 96 h Lepomis macrochirus mg/L LC50 static 2.4: 96 h Oncorhynchus mykiss mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through		4720: 96 h Den-dronereides heteropoda mg/L LC50
2,4-D, 2-ethylhexyl ester 1928-43-4	30: 120 h Pseudokirchneriella subcapitata mg/L EC50 30: 120 h Pseudokirchneriella subcapitata mg/L EC50 static	6 - 8.7: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 7.8: 96 h Oncorhynchus mykiss mg/L LC50 static 11.5: 96 h Lepomis macrochirus mg/L LC50 static		
Trade Secret		1.8: 96 h Oncorhynchus		

		mykiss mg/L LC50		
Trade Secret	500: 96 h Desmodosmus subspicatus mg/L EC50 500: 72 h Desmodosmus subspicatus mg/L EC50	1730 - 1910: 96 h Pimephales promelas mg/L LC50 static 1740: 96 h Pimephales promelas mg/L LC50 flow-through 100000 - 500000: 96 h Lepomis macrochirus µg/L LC50 static 1910000: 96 h Pimephales promelas µg/L LC50 static	EC50 = 2041.4 mg/L 5 min EC50 = 2186 mg/L 30 min EC50 = 3980 mg/L 24 h EC50 = 4400 mg/L 17 h	1983: 48 h Daphnia magna mg/L EC50 1897 - 2072: 48 h Daphnia magna mg/L EC50 Static

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.

14. TRANSPORT INFORMATION

Note: Products under 80 gallons not regulated by DOT. Below are designations for products over 80 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, 2-ethylhexyl ester: RQ (lb)= 626.00= 80 gallons
Special Provisions 8, 146, 173, 335, IB3, T4, TP1, TP29
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D, 2-ethylhexyl ester), 9, III, Marine pollutant
Emergency Response Guide Number 171

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, 2-ethylhexyl ester), 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, 2-ethylhexyl ester), 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, 2-ethylhexyl ester), 9, III

IATA

UN number	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es)	9
Packing group	III
NAERG (North American Emergency Response Guide)	9L
Special Provisions	A97, A158, A197
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D, 2-ethylhexyl ester), 9, III

IMDG

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, 2-ETHYLHEXYL ESTER), 9, III, MARINE POLLUTANT

15. REGULATORY INFORMATION

U.S. EPA Label Information**EPA Pesticide Registration Number** 2217-952**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.

Keep out of the reach of children.

Hazards to Humans and Domestic Animals

CAUTION: Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Harmful if swallowed.

Environmental Hazards:

This pesticide is 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. These chemicals (triclopyr, 2,4-D and dicamba) have properties and characteristics associated with chemicals detected in groundwater. The use of these chemicals 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/NDL	Not Listed
EINECS/ELINCS	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
Trade Secret	X	X		X			X	X	X	X
2,4-D, 2-ethylhexyl ester				X						
Triclopyr BEE, butoxyethyl ester				X						X
Trade Secret	X	X					X	X	X	X
Trade Secret	X	X		X		X	X	X	X	X
Dicamba				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 %
2,4-D, 2-ethylhexyl ester - 1928-43-4	0.1
Triclopyr BEE, butoxyethyl ester - 64700-56-7	1.0
Trade Secret -	1.0
Dicamba - 1918-00-9	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
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
2,4-D, 2-ethylhexyl ester 1928-43-4	100 lb			
Dicamba 1918-00-9	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, 2-ethylhexyl ester 1928-43-4	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Trade Secret	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Dicamba 1918-00-9	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
2,4-D, 2-ethylhexyl ester 1928-43-4	X		
Triclopyr BEE, butoxyethyl ester 64700-56-7	X		X
Trade Secret	X	X	X
Dicamba 1918-00-9	X	X	X

International Regulations

Mexico - Grade

Moderate risk, Grade 2

Chemical name	Mexico	Exposure Limits
Trade Secret		Mexico: Ceiling 50 ppm Mexico: Ceiling 150 mg/m ³

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

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