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Version 2

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

Product identifier

Product Name Gordon's BENSUMEC™ 4LF

Other means of identification

Product Code PBI FP 8451016

EPA Pesticide Registration Number 2217-696

Product Size 55 U. S. Gal.

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 Oral Toxicity	Category 4
Acute dermal toxicity	Category 4
Acute Inhalation Toxicity - Gases	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation Category	Category 2
Serious eye damage/eye irritation	Category 2
Germ cell mutagenicity	Category 1A
Carcinogenicity	Category 1B
Aspiration Toxicity	Category 1
Flammable liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements

Toxic if inhaled. Causes skin irritation. Causes serious eye irritation. May cause genetic defects. May cause cancer. May be fatal if swallowed and enters airways.
 Flammable liquid and vapor.

**Appearance** Liquid**Physical state** Liquid**Odor** Mercaptan**Precautionary Statements - Prevention**

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep container tightly closed
- Ground/bond container and receiving equipment
- Use explosion-proof electrical/ventilating/lighting/./? /equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge
- Keep cool

Precautionary Statements - Response

- IF exposed or concerned: Get medical advice/attention
- Specific treatment (see .? on this label)
- Specific treatment (see .? on this label)
- 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
- Call a POISON CENTER or doctor/physician if you feel unwell
- If skin irritation occurs: Get medical advice/attention
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- 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
- Rinse mouth
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Do NOT induce vomiting
- In case of fire: Use CO₂, dry chemical, or foam for extinction

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. Number	Weight %
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Benzenesulfonamide, N-(2-mercaptoethyl)-, S-ester with O,O-diisopropylphosphorodithioate	741-58-2	46
Trade Secret	Proprietary	20-30*
Trade Secret	Proprietary	10-20*
Trade Secret	Proprietary	0-10*
Trade Secret	Proprietary	0-10*

* 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.
Inhalation	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Move to fresh air in case of accidental inhalation of vapors or decomposition products. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.
Self-protection of the first aider	Remove all sources of ignition. 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 (CO₂). Dry chemical. Water spray (fog).

Specific hazards arising from the chemical

Flammable.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge May be ignited by heat, sparks or flames.

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 Remove all sources of ignition. 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).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. 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 away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep containers tightly closed in a cool, well-ventilated place.

Incompatible materials Strong oxidizing agents. Strong acids. Chlorinated compounds.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Trade Secret	-	-	TWA: 25 ppm TWA: 125 mg/m ³
Trade Secret	TWA: 20 ppm	TWA: 200 ppm (vacated) TWA: 100 ppm (vacated) TWA: 375 mg/m ³ (vacated) STEL: 150 ppm (vacated) STEL: 560 mg/m ³ Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m ³ STEL: 150 ppm STEL: 560 mg/m ³
Trade Secret	STEL: 150 ppm TWA: 100 ppm	TWA: 100 ppm TWA: 435 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m ³ (vacated) STEL: 150 ppm (vacated) STEL: 655 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 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**

Physical state	Liquid	Odor	Mercaptan
Appearance	Liquid	Odor threshold	No information available
Color	Amber		
Property	Values	Remarks • Method	
pH	Not Available		
Melting point/freezing point	6 °C / 42 °F		
Boiling point / boiling range	> 143 °C / 290 °F		
Flash point	40 °C / 104 °F	CC (closed cup)	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limit in Air			
Upper flammability limit:	6.6%		
Lower flammability limit:	1.1%		
Vapor pressure	4 mm Hg		
Vapor density	>3.6		
Specific Gravity	1.032		
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	8.6 pounds/gallon
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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

Heat, flames and sparks.

Incompatible materials

Strong oxidizing agents. Strong acids. Chlorinated compounds.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation See "Numerical measures of toxicity-product information" in this section.

Eye contact Moderately irritating to the eyes.

Skin Contact Not a primary irritant.

Ingestion See "Numerical measures of toxicity-product information" in this section.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Benzenesulfonamide, N-(2-mercaptoethyl)-, S-ester with O,O-diisopropylphosphorodithioate 741-58-2	= 271 mg/kg (Rat)	= 3950 mg/kg (Rat) = 2 g/kg (Rabbit)	-
Trade Secret	= 8400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 3400 ppm (Rat) 4 h
Trade Secret	= 3280 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 18 g/m ³ (Rat) 4 h
Trade Secret	= 2600 mg/kg (Rat)	= 12000 mg/kg (Rabbit)	= 12.5 mg/L (Rat) 4 h
Trade Secret	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit) > 1700 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h = 5000 ppm (Rat) 4 h

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 table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Trade Secret		Group 3		
Trade Secret		Group 3		

IARC (International Agency for Research on Cancer)

Not classifiable as a human carcinogen

Reproductive toxicity Product is or contains a chemical which is a known or suspected reproductive hazard.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic toxicity Contains a known or suspected reproductive toxin. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system.

Target Organ Effects blood, Central nervous system, Eyes, Respiratory system, Skin.

Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Toxicity 5 % of the mixture consists of ingredient(s) of unknown toxicity

Oral LD50 960 mg/kg body weight Rat-male Rat-female

Dermal LD50 > 2000 mg/kg Rat-male Rat-female
 Inhalation LC50 > 2.10 mg/L Rat-male Rat-female

The following values are calculated based on chapter 3.1 of the GHS document
 ATEmix (inhalation-gas) 2464 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects

5% 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		9.22: 96 h Oncorhynchus mykiss mg/L LC50		6.14: 48 h Daphnia magna mg/L EC50
Trade Secret		7.19 - 8.28: 96 h Pimephales promelas mg/L LC50 flow-through		6.14: 48 h Daphnia magna mg/L EC50
Trade Secret	433: 96 h Pseudokirchneriella subcapitata mg/L EC50 12.5: 72 h Pseudokirchneriella subcapitata mg/L EC50 static	15.22 - 19.05: 96 h Pimephales promelas mg/L LC50 flow-through 12.6: 96 h Pimephales promelas mg/L LC50 static 5.89 - 7.81: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 14.1 - 17.16: 96 h Oncorhynchus mykiss mg/L LC50 static 5.8: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 11.0 - 15.0: 96 h Lepomis macrochirus mg/L LC50 static 54: 96 h Oryzias latipes mg/L LC50 static 28.2: 96 h Poecilia reticulata mg/L LC50 semi-static 50.87 - 70.34: 96 h Poecilia reticulata mg/L LC50 static	EC50 = 19.7 mg/L 30 min	5.46 - 9.83: 48 h Daphnia magna mg/L EC50 Static 11.5: 48 h Daphnia magna mg/L EC50
Trade Secret		13.4: 96 h Pimephales promelas mg/L LC50 flow-through 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static	EC50 = 0.0084 mg/L 24 h	3.82: 48 h water flea mg/L EC50 0.6: 48 h Gammarus lacustris mg/L LC50

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	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.
US EPA Waste Number	D001

14. TRANSPORT INFORMATION

DOT

Description

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

In our current available sizes, this product does not qualify as a Hazardous Material.

15. REGULATORY INFORMATION

U.S. EPA Label Information

EPA Pesticide Registration Number 2217-696

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. Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

International Inventories

TSCA	Listed
DSL/NDSL	Not Listed
EINECS/ELINCS	Listed
ENCS	Not Listed
IECSC	Listed
KECL	Not Listed
PICCS	Not Listed
AICS	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
Benzenesulfonamide,				X		X	X	X		X

N-(2-mercaptoethyl)-, S-ester with O,O-diisopropylphosphorodit hioate										
Trade Secret	X	X		X			X	X	X	X
Trade Secret	X	X		X		X	X	X	X	X
Trade Secret	X	X		X		X	X	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 %
Trade Secret -	1.0
Trade Secret -	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	X	X
Trade Secret	100 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)
Trade Secret	1000 lb 1 lb		RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ
Trade Secret	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
Trade Secret	X	X	X
Trade Secret	X	X	X
Trade Secret	X	X	X

International Regulations**Mexico - Grade**

Moderate risk, Grade 2

Chemical Name	Carcinogenicity	Exposure Limits
Trade Secret		Mexico: TWA 50 ppm Mexico: TWA 188 mg/m ³
Trade Secret		Mexico: TWA 100 ppm Mexico: TWA 435 mg/m ³ Mexico: STEL 150 ppm Mexico: STEL 655 mg/m ³

16. OTHER INFORMATION

NFPA	Health hazards 2	Flammability 2	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 2	Flammability 2	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