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

**Product identifier**

**Product Name**
TZone™ SE BROADLEAF HERBICIDE FOR TOUGH WEEDS

**Other means of identification**

**Product Code**
PBI FP 836-5

**EPA Pesticide Registration Number**
2217-976

**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

**Emergency telephone number**
Chemtrec 1-800-424-9300

**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

2. HAZARDS IDENTIFICATION

**Classification**

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

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral Toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute Inhalation Toxicity - Dusts and Mists</td>
<td>Category 4</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2A</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

**Label elements**

**Emergency Overview**

**Warning**

**Hazard statements**
Harmful if swallowed. Harmful if inhaled. Causes serious eye irritation. May cause skin irritation. Flammable liquid and vapor.

**Appearance**
Opaque

**Physical State @20°C**
Liquid

**Odor**
Fruity

Precautionary Statements - Prevention
- 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
• 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
• Wear protective gloves/protective clothing/eye protection/face protection

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 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
• IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
• Rinse mouth

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS. Number</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester</td>
<td>1928-43-4</td>
<td>29.32</td>
</tr>
<tr>
<td>Triclopyr 2-butoxyethyl ester</td>
<td>64700-56-7</td>
<td>7.72</td>
</tr>
<tr>
<td>Dicamba</td>
<td>1918-00-9</td>
<td>2.22</td>
</tr>
<tr>
<td>Sulfentrazone</td>
<td>122836-35-5</td>
<td>0.66</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Proprietary</td>
<td></td>
</tr>
</tbody>
</table>

* 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
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. Never give anything by mouth to an unconscious person. Call a physician immediately.

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.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

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
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). Take precautionary measures against static discharges.

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. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Incompatible materials
Corrosive materials. Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester 1928-43-4</td>
<td>TWA: 10 mg/m³ inhalable fraction S*</td>
<td>TWA: 10 mg/m³</td>
<td>IDLH: 100 mg/m³, TWA: 10 mg/m³</td>
</tr>
</tbody>
</table>

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 @20°C
Liquid

Appearance
Opaque

Color
White

Odor
Fruity

Odor threshold
No information available

Property
pH
Melting point/freezing point
Boiling point / boiling range
Flash point
Evaporation rate
Flammability (solid, gas)
Flammability Limit in Air
Upper flammability limit:
Lower flammability limit:
Vapor pressure

Values
7.5-8.5
No information available
No information available
51 °C / 123 °F
No information available
No information available
No information available

Remarks • Method
CC (closed cup)
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
Corrosive materials. Oxidizing agents.

Hazardous Decomposition Products
Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

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

Eye contact
Minimally irritating.

Skin Contact
Substance may cause slight skin irritation.

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral VALUE (mg/kg)</th>
<th>LD50 Dermal VALUE</th>
<th>LC50 Inhalation (DUST) VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester 1928-43-4</td>
<td>= 300 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dicamba 1918-00-9</td>
<td>= 1039 mg/kg (Rat)</td>
<td>&gt; 1 g/kg (Rat) &gt; 2 g/kg (Rabbit)</td>
<td>-</td>
</tr>
<tr>
<td>Sulfentrazone 122836-35-5</td>
<td>&gt; 2855 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>= 1020 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Information on toxicological effects
Symptoms
No information available.

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

Sensitization
May cause sensitization by skin contact.

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.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester</td>
<td></td>
<td>Group 2B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1928-43-4</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**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
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
9 % of the mixture consists of ingredient(s) of unknown toxicity

LD50 Oral VALUE (mg/kg)
1030 mg/kg body weight

LD50 Dermal VALUE
> 5000 mg/kg body weight Rat-male Rat-female

LC50 Inhalation (DUST) VALUE
> 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) 54264 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity
Very toxic to aquatic life with long lasting effects 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 waters when disposing of equipment wash waters or rinsate

9% of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester</td>
<td>30: 120 h</td>
<td>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</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1928-43-4</td>
<td>Pseudokirchneriella subcapitata mg/L EC50 30: 120 h Pseudokirchneriella subcapitata mg/L EC50 static</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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
D001 See Section 2: Hazards not otherwise classified (HNOC)

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name
For package sizes less than 38.05 gallons: product is non-regulated.
For package sizes 38.05 gallons or greater: UN3082, Environmentally Hazardous Substances, Liquid, N.O.S., 9, PGIII, RQ (2,4-D)

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

15. REGULATORY INFORMATION

U.S. EPA Label Information
EPA Pesticide Registration Number 2217-976
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 REACH OF CHILDREN
Hazards to Human and Domestic Animals
CAUTION: Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. 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/NDSL Not Listed
EINECS/ELINCS Not Listed
ENCS Not Listed
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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triclopyr 2-butoxyethyl ester</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dicamba</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade Secret</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester</td>
<td>100 lb</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Dicamba</td>
<td>1000 lb</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester</td>
<td>100 lb</td>
<td></td>
<td>RQ 100 lb final RQ</td>
</tr>
<tr>
<td>Dicamba</td>
<td>1000 lb</td>
<td></td>
<td>RQ 1000 lb final RQ</td>
</tr>
</tbody>
</table>

US State Regulations

U.S. State Right-to-Know Regulations
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D, 2-ethylhexyl ester 1928-43-4</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triclopyr 2-butoxyethyl ester 64700-56-7</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Dicamba 1918-00-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

International Regulations

Mexico - Grade

Moderate risk, Grade 2

16. OTHER INFORMATION

NFPA

Health hazards 2  Flammability 1  Instability 0

HMIS

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