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

Product identifier.
Product Name Zylam® Liquid Systemic Insecticide

Other means of identification
Product Code PBI FP 732-6
EPA Pesticide Registration Number 2217-937

Recommended use of the chemical and restrictions on use.
Recommended Use Insecticide
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)

<table>
<thead>
<tr>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral Toxicity</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
</tr>
<tr>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>Chronic Aquatic Toxicity</td>
</tr>
<tr>
<td>Category 4</td>
</tr>
<tr>
<td>Category 4</td>
</tr>
<tr>
<td>Category 1B</td>
</tr>
<tr>
<td>Category 1</td>
</tr>
</tbody>
</table>

Label elements

Signal word Danger

Hazard statements
- Harmful if swallowed or in contact with skin
- May cause cancer
- Very toxic to aquatic life with long lasting effects

Appearance Clear liquid
Physical state Liquid
Odor Slight

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid release to the environment

**Precautionary Statements - Response**
IF exposed or concerned: Get medical advice/attention
IF ON SKIN: Wash with plenty of water and soap
Call a POISON CENTER or doctor if you feel unwell
Take off contaminated clothing and wash it before reuse
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
Rinse mouth
Collect spillage

**Precautionary Statements - Storage**
Store locked up

**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**
Not applicable

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

- **Substance**: Not applicable.
- **Mixture**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dinotefuran</td>
<td>165252-70-0</td>
<td>10</td>
</tr>
</tbody>
</table>

* 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 breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. IF exposed or concerned: Get medical advice/attention.

**Eye contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation persists.

**Skin contact**
Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.

**Inhalation**
Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. 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**
Wear personal protective clothing (see section 8).

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

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical This product is not expected to burn or explode in normal conditions, but may burn violently if involved in fire. Dinotefuran is self-reactive under high temperature. Exposure to heat may promote violent decomposition. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

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 Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Should not be released into the environment See Section 12 for additional ecological information

Other information Refer to protective measures listed in Sections 7 and 8.

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. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Avoid contact with skin, eyes or clothing. Take precautionary measures against static discharges. Ensure adequate ventilation. Use only outdoors.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from sunlight. Keep away from heat. Keep out of the reach of children. Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Control parameters

Exposure Limits
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Legend  Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
TWA  TWA (time-weighted average)  STEL  STEL (Short Term Exposure Limit)
Ceiling  Maximum limit value  *  Skin designation

Appropriate engineering controls

Engineering controls
- Showers
- Eyewash stations
- Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection  Wear safety glasses with side shields (or 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  Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Slight</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>4.07</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 102 °C / &gt;215°F</td>
<td>None known</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td>None known</td>
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<tr>
<td>Specific Gravity</td>
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<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble in water</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Other Information

Oxidizing properties  No information available
Liquid Density  8.92 pounds/gallon
10. STABILITY AND REACTIVITY

Reactivity
No information available

Stability
Stable under recommended storage conditions

Possibility of hazardous reactions
Product may decompose if heated.

Hazardous polymerization
Will not occur.

Conditions to avoid
Keep out of reach of children. Heat, flames and sparks.

Incompatible materials
Strong oxidizing agents. Heat.

Hazardous decomposition products
May emit toxic fumes under fire conditions. Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation
May cause irritation.

Eye contact
Contact with eyes may cause irritation.

Skin contact
Harmful in contact with skin.

Ingestion
Harmful if swallowed.

Component Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dinotefuran</td>
<td>&gt; 2000 mg/kg (Rat) = 2804 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rat)</td>
<td>&gt; 4.09 mg/L (Rat) 4 h</td>
</tr>
</tbody>
</table>

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms
No information available.

Acute toxicity

Numerical measures of toxicity - Product Information

Unknown Toxicity
100 % of the mixture consists of ingredient(s) of unknown toxicity
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

LD50 Oral
> 2000 mg/kg (rat)

LD50 Dermal
> 2000 mg/kg (rat)
Delayed and immediate effects as well as chronic effects from short and long-term exposure:

Skin corrosion/irritation
No information available.

Serious eye damage/eye irritation
No information available.

Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity
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>Dinotefuran</td>
<td>-</td>
<td>Group 2A</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

Legend
IARC (International Agency for Research on Cancer)
Group 2A - Probably 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.

12. ECOLOGICAL INFORMATION

Ecotoxicity
This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas maybe hazardous to aquatic organisms in water adjacent to treated areas. Do not dispose equipment washwaters or rinsate into a natural drain or water body.

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects
Toxic to shrimp. Very toxic to bees.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
Do not reuse empty containers.

14. TRANSPORT INFORMATION

DOT
Not regulated

TDG
Not regulated

MEX
Not regulated

ICAO (air)
Not regulated
**IATA**

- **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.

**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.

### 15. REGULATORY INFORMATION

**U.S. EPA Label Information**

**EPA Pesticide Registration Number**: 2217-937

**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
- **PRECAUTIONARY STATEMENTS**
  - **Hazards to Humans and Domestic Animals**
  - CAUTION: Harmful if swallowed or absorbed through skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Remove and wash contaminated clothing before reuse.
  - **Environmental Hazards**
  - This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in water adjacent to treated areas. Do not dispose equipment washwaters or rinsate into a natural drain or water body. This compound is toxic to honey bees. The persistence of residues and potential residual toxicity of Dinotefuran in nectar and pollen suggests the possibility of chronic toxic risk to honey bee larvae and the eventual instability of the hive.
  - • This product is toxic to bees exposed to residue for more than 38 hours following treatment.
  - • Do not apply this product to blooming, pollen-shedding or nectar producing parts of plants if bees may forage on the plants during this time period, unless the application is made in response to a public health emergency declared by appropriate state or federal authorities. Dinotefuran and its degrade, MNG, have the properties and characteristics associated with chemicals detected in groundwater. The high water solubility of Dinotefuran, and its degrade MNG, coupled with its very high mobility, and resistance to biodegradation indicates that this compound has a strong potential to leach to the subsurface under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Periodic monitoring of shallow groundwater in the use area is recommended.
- **Spray Drift Advisory**
  - Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crop thereof rendered for sale, use, or consumption.

**International Inventories**

- **TSCA**: Not Listed
16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Legend:

**HMIS**

- Health hazards 1*
- Flammability 0
- Physical hazards 0
- Physical and Chemical Properties - 0
- Personal protection X

* = Chronic Health Hazard

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