1. PRODUCT IDENTIFICATION

1.1. Product Identifiers
   Product name: BorActin™ Insecticide Powder

1.2. Other Means of Identification
   Product synonyms: none

1.3. Recommended Uses/Restrictions to Use
   Uses: 99% boric acid dust for control of various pest species per label
   Restrictions: see product label for details

1.4. Supplier Details
   Company: Rockwell Labs Ltd
   1257 Bedford Avenue
   North Kansas City, MO 64116-4308
   USA
   Telephone: 1 816-283-3167

1.5. Emergency Contact
   Outside normal business hours
   Emergency Phone #: 1 800-424-9300 (USA & Canada)
   1 703-527-3887 (Outside USA & Canada)

2. HAZARDS IDENTIFICATION

2.1. Classification of Substance or Mixture
   none

2.2. GHS label elements, including precautionary statements
   Pictogram(s): none
   Signal word: none
   Hazard statement(s): none
   Precautionary statement(s): none

2.3. Other hazards which do not result in classification
In animal feeding tests, boric acid has been shown to impair fertility at very high doses. However, decades of occupational exposure in humans have shown no adverse effects associated with this material.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Hazardous component(s) or components of note:

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Contains (% w/w)</th>
<th>CAS-No.</th>
<th>Hazard Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthoboric Acid (boric acid)</td>
<td>99</td>
<td>10043-35-3</td>
<td>none</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

#### 4.1. Description of first aid measures

**General advice**
Consult a physician or poison control center. Provide this safety data sheet to medical personnel. Move out of hazardous areas.

**If inhaled**
Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth if possible. Call a poison control center or doctor for further treatment advice.

**In case of skin contact**
Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**In case of eye contact**
Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If swallowed**
Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

#### 4.2. Most important symptoms and effects, both acute and delayed

Boric acid may cause gastrointestinal discomfort with ingestion of more than an incidental amount.

#### 4.3. Indication of any immediate medical attention and special treatment needed, if necessary

None known

### 5. FIRE FIGHTING MEASURES

#### 5.1. Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2. Specific hazards arising from the chemical
Borane/boron oxides

5.3. Special protective equipment and precautions for fire fighters
Wear self contained breathing apparatus for firefighting if deemed necessary.
Additional information: none

5.4. Further information
No data available

6. ACCIDENTAL RELEASE MEASURES
6.1. Personal precautions, protective equipment and emergency procedures
Avoid contact with spilled product and contaminated surfaces. Evacuate personnel to safe areas during emergencies. For safe handling instructions see section 7. For proper PPE see section 8.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not allow release directly to water, to areas where surface water is present or to intertidal areas below the mean high-water mark.

6.3. Methods and materials for containment and cleaning up
Sweep up any spilled material and dispose of according to instructions in section 13. Vacuuming or wet sweeping may be used to avoid dust dispersal. Wash contaminated surfaces with soap and water.

7. HANDLING AND STORAGE
7.1. Precautions for safe handling
Handle in accordance with good industrial hygiene practices. Wash hands thoroughly with soap and water after use and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash before reuse. For additional precautions see section 2.2.

7.2. Conditions for safe storage, including any incompatibilities
Store product tightly sealed in original container. Store in dry location as product may clump or aggregate if left in areas with excessive moisture or high humidity. Do not store where children or animals may gain access.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1. Control parameters
Components with workplace parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls
Ensure relevant engineering controls are employed to prevent exceeding threshold values for the listed control parameters in section 8.1.

8.3. Individual protection measures, such as personal protective equipment
In normal use and handling conditions refer to the product label for required PPE. In all other cases the following recommendations would apply.
Eye/face protection
Safety glasses or other similar eye protection conforming to ANSI Z87.1 standards recommended when handling product.

**Skin protection**
Chemical resistant nitrile rubber or similarly compatible gloves recommended when handling product. Dispose of contaminated gloves after use in accordance with applicable local and state regulations. Wash exposed skin with soap and water immediately. Wash all contaminated clothing prior to reuse.

**Respiratory protection**
Not required under normal use conditions. Particulate respirator recommended when risk assessment shows need for air-purifying respirators, such as when working in enclosed spaces.

**Thermal hazards**
None known

9. **PHYSICAL AND CHEMICAL PROPERTIES**

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance;</td>
<td>Opaque white solid powder, blue tint</td>
</tr>
<tr>
<td>Odor;</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold;</td>
<td>No data available</td>
</tr>
<tr>
<td>pH;</td>
<td>5.1 @ 1% in water (22.0 °C)</td>
</tr>
<tr>
<td>Melting point/freezing point;</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range;</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point;</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate;</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas);</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits;</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure;</td>
<td>None</td>
</tr>
<tr>
<td>Vapor density;</td>
<td>None</td>
</tr>
<tr>
<td>Relative density;</td>
<td>0.71 g/ml</td>
</tr>
<tr>
<td>Solubility;</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water;</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature;</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature;</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity;</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Additional Information
10. STABILITY AND REACTIVITY

10.1. Reactivity
No data available

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
No data available

10.4. Conditions to avoid
Exposure to moisture.

10.5. Incompatible materials
Potassium, acid anhydrides, substances sensitive to protic materials

10.6. Hazardous decomposition products
Other decomposition products – no data available
In the event of a fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity
LD50 Oral – Rat – 3450 mg/kg
LD50 Dermal – Rat – > 2000 mg/kg
LD50 Inhalation – 2.12 mg/l

Skin corrosion/irritation
Skin – Rabbit
Results: slight skin irritation
(OECD Test Guideline 404)

Serious eye damage/irritation
Eye – Rabbit
Results: moderate eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization
Not a known sensitizer

Germ cell mutagenicity
Not a known mutagen

Carcinogenicity
IARC: No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.
NTP: No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by NTP.

OSHA: No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by OSHA.

**Reproductive toxicity**
In animal feeding tests, boric acid has been shown to impair fertility at very high doses. However, decades of occupational exposure in humans have shown no adverse effects associated with this material.

**Specific target organ toxicity – single exposure**
No data available

**Specific target organ toxicity – repeated exposure**
No data available

**Aspiration hazard**
No data available

### 12. ECOLOGICAL INFORMATION

#### 12.1. Toxicity
- **Toxicity to fish**
  
  LC50 - Oncorhynchus mykiss (Rainbow trout) - > 1,100 mg/l – 96 h
  
  LC50 - Lepomis macrochirus (Bluegill) - > 1,021 mg/l – 96 h

- **Toxicity to daphnia and other aquatic invertebrates**
  
  EC50 – Daphnia magna (Water flea) – 133 to 226 mg/l – 48 h

#### 12.2. Persistence and degradability
No data available

#### 12.3. Bioaccumulative potential
No data available

#### 12.4. Mobility in soil
No data available

#### 12.5. Other adverse effects
No data available

### 13. DISPOSAL CONSIDERATIONS


The best disposal method is to use the entire quantity per label directions. If it is necessary to dispose of unused material then follow the label instructions and relevant local, state and federal waste disposal guidelines.

**Product Disposal:**
Do not contaminate water, food or feed by storage or disposal.

**Packaging Disposal:**
If empty: Place in trash or offer for recycling if available. If partly filled: Call your local solid waste agency or 1-800-CLEANUP which is managed as a public-private partnership.
See section 8 for proper PPE and precautionary handling measures.

14. TRANSPORT INFORMATION

**DOT**
Not dangerous goods

**IMDG**
Not dangerous goods

**IATA**
Not dangerous goods

15. REGULATORY INFORMATION

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:

**KEEP OUT OF THE REACH OF CHILDREN**

**CAUTION**
Harmful if swallowed or inhaled.
Causes moderate eye irritation.
Avoid contact with eyes or clothing.
Avoid breathing dust.
Wash hands thoroughly with soap and water after use and before eating, drinking, chewing gum, using tobacco or using the toilet.
Remove contaminated clothing and wash before reuse.

**SARA 302 Components**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
None

**California Proposition 65 Components**
This product does not contain any chemicals known to the state of California to cause cancer, birth defects, or reproductive harm.

**TSCA**
All components of this product are listed, exempted, or excluded from listing on the U.S. Toxic Substances Control Act chemical substance inventory.
16. OTHER INFORMATION

Acronyms and abbreviations used
LD50   Lethal Dose, 50%
OECD  Organization for Economic Cooperation and Development
IARC  International Agency for Research on Cancer
ACGIH American Conference of Industrial Hygienists
NTP   National Toxicology Program
OSHA  Occupational Safety and Health Administration
DOT   Department of Transportation
IMDG  International Maritime Dangerous Goods
IATA  International Air Transport Association
SARA  Superfund Amendments and Reauthorization Act
TSCA  Toxic Substances Control Act
CAS-No. Chemical Abstract Services - Number
PPE   Personal Protective Equipment
HMIS  Hazardous Materials Identification System
NFPA  National Fire Protection Association
PPM   Parts Per Million

Hazard Rating System Crossover

<table>
<thead>
<tr>
<th>HMIS Rating</th>
<th>NFPA Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Hazard:</td>
<td>Health Hazard:</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Flammability:</td>
<td>Flammability:</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reactivity:</td>
<td>Reactivity:</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Preparation information
Prepared by: Rockwell Labs Ltd
Version: 1.0
Revision Date: May 15, 2015
Reason for revision: none

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