Nichino America, Inc.  
VETICA® Insecticide  
Safety Data Sheet

1. IDENTIFICATION

Product Name: VETICA Insecticide  
General Use: Insecticide  
Product Description: Suspension Concentrate  
EPA Reg. No.: 71711-32

Manufacturer  
Main Headquarters: Nihon Nohyaku Co., Ltd., Kyobashi OM Building, 19-8 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8386 JAPAN

US Connection: Nichino America Inc.  
4550 New Linden Hill Road, Suite 501  
Wilmington, Delaware 19808, USA  
Phone: 302-636-9001  
Fax: 302-636-9122

Emergency and health and safety inquiries: (800) 348-5832 (24 hours)  
In case of fire or spills: (800) 424-9300 (24 hours)  
In case of international shipments: (703) 527-3887 (24 hours)

2. HAZARD(S) IDENTIFICATION

Classified according to OSHA 29 CFR 1910.1200 HCS

Classification:  
Reproductive Toxicity: Category 1

Signal Word: DANGER
Hazard Statements:
- May damage fertility or the unborn child.

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.

Response:
- If exposed or concerned: Get medical advice/attention.

Storage:
- Store locked up.

Disposal:
- Dispose of contents / container in accordance with local / national regulations.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprofezin</td>
<td>953030-84-7</td>
<td>26.4%</td>
</tr>
<tr>
<td>CAS Name: 4H-1,3,5-Thiadiazin-4-one, 2-[(1,1-dimethylethyl)imino]tetrahydro-3-(1-methylethyl)-5-phenyl-, (2Z)-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flubendiamide</td>
<td>272451-65-7</td>
<td>3.8%</td>
</tr>
<tr>
<td>CAS Name: 1,2-Benzenedicarboxamide, N2-[1,1-dimethyl-2-(methylsulfonyl)ethyl]-3-iodo-N1-[2-methyl-4-[1,2,2, 2-tetrafluoro-1-(trifluoromethyl)ethyl]phenyl]-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>1310-73-2</td>
<td>0.01%</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>0.01 - 0.10%</td>
</tr>
<tr>
<td>*Other ingredients</td>
<td></td>
<td>69.69 - 69.78%</td>
</tr>
</tbody>
</table>

*Specific chemical identity and percentage of composition withheld as a trade secret
4. FIRST AID MEASURES

Eye contact
Causes moderate eye irritation. Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

Skin contact
Avoid contact with skin, eyes, or clothing. 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.

Most important symptoms and effects, both acute and delayed
Refer to Section 11 for Toxicological Information.

5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Foam, dry chemical powder, carbon dioxide or water (spray)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuitable extinguishing media</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products)</td>
<td>Combustion or thermal decomposition may evolve toxic vapors (CO\textsubscript{2}, CO, NO\textsubscript{x})</td>
</tr>
<tr>
<td>Special protective equipment and precautions for fire-fighters</td>
<td>Firefighters should wear full protective clothing and self-breathing apparatus.</td>
</tr>
</tbody>
</table>

6. ACCIDENTAL RELEASE MEASURES

General and Disposal:
Use proper protective equipment to minimize personal exposure (see Section 8). Take all necessary action to prevent and to remedy the effects of the spill. Ensure that the disposal is in compliance with federal or local disposal regulations (see Section 13). Notify the appropriate authorities immediately (see Section 15 for any applicable Reportable Quantity (RQ)). Report to authorities if water enters watercourse or sewer.
Land Spill or Leak:
Liquid spills on the floor or other impervious surfaces should be contained or
diked and then absorbed with sawdust, sand, bentonite, or other absorbent clay.
Collect contaminated absorbent, and place it in a metal drum. Thoroughly
scrub the floor or other impervious surface with a strong industrial-type
detergent and rinse with water.

Liquid spills that soak into the ground should be dug up and placed in metal
drums. When a large spill or leakage is found, wear protective clothing and
respirator to avoid exposure.

Avoid contaminated absorbents or water flow into ponds, rivers, and lakes,
due to the danger of acute toxicity to aquatic organisms.

7. HANDLING AND STORAGE

Handling Precautions:
• Open container with care.
• Use adequate ventilation.
• Avoid handling near an open flame or heat source or ignition source.
• Do not contaminate water by cleaning of equipment or disposal of waste.
• Avoid contact with skin, eyes, or clothing.
• Do not eat, drink, smoke, or chew gum or tobacco while handling this
  product and until hands and face are thoroughly washed with soap and
  water.
• Do not use the toilet before thoroughly washing hands.
• Remove contaminated clothing immediately and wash thoroughly before
  reuse.

Storage Precautions:
• Keep container closed. Store in original container.
• Keep container at room temperature or store in a cool place.
• Avoid storage in direct sunlight, excessive heat or cold.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls
(Local exhaust): Ventilation may be necessary under certain confined
conditions. If practical, use ventilation at the sources of air contamination.
Control airborne contaminants below the exposure guidelines (see below for any applicable OSHA / ACGIH exposure limits).

**Personal Protective Equipment (PPE):**

**Eye/Face Protection:** Wear protective eyewear (safety glasses, goggles, or face shield).

**Skin Protection:** Wear long-sleeved shirt, long pants, waterproof gloves, shoes and socks.

**Respiratory Protection:** None required. Ensure good ventilation. Avoid breathing mist. If ventilation is inadequate, use approved respiratory protection equipment when airborne exposure limits are exceeded.

**Exposure Limits:**

<table>
<thead>
<tr>
<th>Ingredient:</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol (CAS 64-17-5)</td>
<td>STEL: 1000 ppm</td>
<td>1000 ppm (8-hour TWA)</td>
</tr>
<tr>
<td></td>
<td>A3</td>
<td>1900 mg/m³ (8-hour TWA)</td>
</tr>
<tr>
<td></td>
<td>Upper Respiratory Tract irritant</td>
<td></td>
</tr>
<tr>
<td>Sodium Hydroxide (CAS 1310-73-2)</td>
<td>2 mg/m³</td>
<td>2 mg/m³ (8-hour TWA)</td>
</tr>
</tbody>
</table>

A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Off-white liquid</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Faint</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>5.84</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>Buprofezin TGA: 104.5-105.5°C  Flubendiamide TGA: 217.5-220.7°C</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Buprofezin TGA: $4.2 \times 10^{-5}$ Pa (20°C)  Flubendiamide TGA: $&lt; 10^{-4}$ Pa (25°C)</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>No data available</td>
</tr>
</tbody>
</table>
Relative density | 1.061 @ 20°C
Solubility(ies) | Buprofezin TGAI: 0.485 mg/L (water)
 | Flubendiamide TGAI: 0.0299 mg/L (water)
Partition coefficient (n-octanol/water) | Log Pow = 4.8 (Buprofezin TGAI)
 | Log Pow = 4.2 (Flubendiamide TGAI)
Auto-ignition temperature | Not applicable
Decomposition temperature | No data available
Viscosity | 527.368 mm²/s (cSt) @ 20°C
 | 344.499 mm²/s (cSt) @ 40°C

TGAI = Technical Grade Active Ingredient

10. STABILITY AND REACTIVITY

Reactivity | No data available
Chemical stability | This product is stable for at least 1 year under normal warehouse conditions
Possibility of hazardous reactions | None known
Conditions to avoid | None known
Incompatible materials | 10% potassium permanganate
Hazardous decomposition products | None known

11. TOXICOLOGICAL INFORMATION

The following data were developed using an alternate co-formulation with buprofezin and flubendiamide:

Acute Studies:

| Oral LD₅₀ (rat): | > 5,000 mg/kg |
| Dermal LD₅₀ (rat): | > 5,000 mg/kg |
| Inhalation LC₅₀ (rat): | No data available. This product could not be aerosolized in order to perform the acute inhalation test |
| Eye irritation (rabbit): | Mildly irritating to the eye |
| Skin irritation (rabbit): | Slightly irritating to the skin |
| Skin sensitization (guinea pig): | Not a contact sensitizer |
The following data were developed using buprofezin technical and flubendiamide technical:

**Subchronic and Chronic Effects:**
In a repeated dosing study for 13 weeks, rats fed buprofezin exhibited body weight depression, increase in relative liver weight and enlargement of hepatocyte. Dogs fed buprofezin for 2 years exhibited body weight depression, and increase of serum alkaline phosphatase activity and relative liver weight. Rats fed buprofezin for 2 years showed body weight depression. Any clinical parameters showing organ toxicity were not observed.

There is no information available on subchronic or chronic effects for flubendiamide technical.

**Cancer Effects:**
Buprofezin Technical did not produce tumors in both sexes of rats. There is no evidence of carcinogenicity for Flubendiamide Technical.

**Teratogenicity (Birth Defects):**
There is no evidence of teratogenicity for buprofezin technical. There is no information on teratogenicity for flubendiamide technical.

**Reproductive Effects:**
There is no evidence of reproductive toxicity for buprofezin technical. There is no information on reproductive toxicity for flubendiamide technical.

**Neurotoxicity:**
No information on neurotoxicity of buprofezin technical or flubendiamide technical.

**Immunotoxicity:**
No information on immunotoxicity of buprofezin technical or flubendiamide technical.

**Mutagenicity (Genetic Effects):**
There is no evidence of genetic effects for buprofezin technical or flubendiamide technical.

**12. ECOLOGICAL INFORMATION**

Ecological data were developed using buprofezin technical and flubendiamide technical.
Environmental Hazards:
This pesticide is toxic to aquatic invertebrates. For terrestrial uses, 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 contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.

Ground Water Advisory:
Flubendiamide and its degradate NNI-0001-des-iodo have properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory:
Flubendiamide and its degradate NNI-0001-des-iodo may also impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow groundwater. These chemicals are classified as having a medium potential for reaching both surface water and aquatic sediment via runoff several months or more after application. A well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams and springs, as required under the Directions for Use, will reduce the potential for loading of flubendiamide and its degradate NNI-0001-des-iodo from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Environmental Precautions:
Do not discharge effluent containing this product directly into lakes, streams, ponds, estuaries, oceans or public waters unless this product is specifically identified and addressed in a NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your state water board or regional office of the Environmental Protection Agency.

13. DISPOSAL CONSIDERATIONS

General Disposal:
Any disposal practice must be in compliance with all federal, state/provincial, and local laws and regulations. State (provincial) and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Chemical additions, processing, storage or otherwise altering this material may make the waste disposal information presented in this MSDS incomplete, inaccurate, or otherwise inappropriate. Waste characterization and disposal compliance are the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.
Refer to appropriate federal (RCRA: 40 CFR.261), state/provincial, or local requirements for proper classification information. For regulatory information on the ingredient components, see Section 15.

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, pesticide spray, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal:**
Non-refillable container. Do not reuse or refill this container. Triple rinse, or equivalent, promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State or local authorities, by burning. If burned, stay out of smoke.

### 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th></th>
<th>DOT:</th>
<th>IATA:</th>
<th>IMDG:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT:</td>
<td>Not regulated</td>
<td>UN 3082, Environmentally</td>
<td>UN 3082, Environmentally hazardous substance, liquid, n.o.s., (buprofezin, flubendiamide) Class 9, PG III.</td>
</tr>
<tr>
<td>IATA:</td>
<td></td>
<td>Environmentally hazardous substance, liquid, n.o.s., (buprofezin, flubendiamide) Class 9, PG III, MARINE POLLUTANT, EmS: F-A, S-F.</td>
<td></td>
</tr>
</tbody>
</table>

**VETICA Insecticide is not regulated for transport** unless shipped by water or air.
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:

CAUTION
Causes moderate eye irritation

U.S. Federal Regulatory Information:
EPA Registration Number: 71711-32
TSCA Inventory: Registered pesticide; exempt from TSCA

SARA Title III Notification and Information:
Section 302 (EHS) Ingredients: None
Section 304 (EHS) or CERCLA Ingredients (RQ): None

Section 313 Ingredients: None

U.S. State Regulatory Information:
U.S. State Right-to-Know (RTK) Ingredients:
• Ethanol - CAS No. 64-17-5 (carcinogen, mutagen, teratogen, flammable 3rd degree)

California Proposition 65 List:
• Naphthalene - CAS 91-20-3

16. OTHER INFORMATION

HMIS® Hazard Rating:
Health: 1*
Flammability: 0
Physical Hazard: 0

*indicates both acute and chronic health hazard
NFPA Hazard Rating:
Health: 0
Flammability: 0
Reactivity: 0

Prepared by: Regulatory Affairs
Date: 12/21/15
Reason for editing: Updated Section 14

Disclaimer of Expressed and Implied Warranties:
This information is provided in good faith but without express or implied warranty. Buyer assumes all responsibility for safety and use not in accordance with FIFRA label instructions.