

**Nichino America, Inc.  
TORAC® Insecticide  
Safety Data Sheet**

**1. IDENTIFICATION**

**Product Name:** TORAC Insecticide  
**General Use:** Insecticide  
**Product Description:** Emulsifiable Concentrate  
**EPA Reg. No.:** 71711-31

**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.  
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Wilmington, Delaware 19808, USA  
Phone: 302-636-9001  
Facsimile: 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:**

Acute Toxicity (Oral):	Category 3
Aspiration	Category 1
Skin Irritation	Category 2
Eye Irritation	Category 2A
Acute Toxicity (Inhalation)	Category 3
Carcinogenicity	Category 2
Reproductive Toxicity	Category 1B
Specific Target Organ Toxicity (Repeated Exposure):	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

**Signal Word:** DANGER



**Hazard Statements:**

- Toxic if swallowed
- May be fatal if swallowed and enters airway
- Causes skin irritation
- Causes serious eye irritation
- Toxic if inhaled
- Suspected of causing cancer
- May damage fertility or the unborn child
- Causes damage to organs (liver, pancreas, and reproductive) through prolonged and repeated exposure
- May cause damage to organs (heart) through prolonged and repeated exposure

**Precautionary Statements:**

Prevention:

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe mist, vapors, and/or spray.  
Wash thoroughly after handling.  
Do not eat, drink, or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.

Response:

If INHALED: Remove victim to fresh air and keep comfortable for breathing.  
Call a POISON CENTER or doctor/physician.  
If ON SKIN: Wash with plenty of water.  
Specific treatment, see supplemental first aid information.  
Take off contaminated clothing and wash before reuse.  
If skin irritation occurs: Get medical advice/attention.

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 SWALLOWED: Immediately call a POISON CENTER or  
doctor/physician.  
Rinse mouth.  
Do NOT induce vomiting.  
If exposed or concerned: Get medical advice/attention.  
Get medical advice/attention if you feel unwell.

Storage:

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

Disposal:

Dispose of content and/or container in accordance with local,  
regional, national, and/or international regulations.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	CAS Number	Percentage
Tolfenpyrad CAS Name: 1H-Pyrazole-5-carboxamide (4-chloro-3-ethyl-1-methyl-N-[[4-(4-methylphenoxy) phenyl] methyl])	129558-76-5	15.0%
2-Pyrrolidinone, 1-methyl-	872-50-4	10 -15%
Naphthalene	91-20-3	0.1-1%
1-methylnaphthalene	90-12-0	0 - 15%
2-methylnaphthalene	91-57-6	0 - 25%
*Other ingredients		29 - 74.9%

\*Specific chemical identity and percentage of composition withheld as a trade secret

**4. FIRST AID MEASURES**

**Ingestion**

Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to

	apparatus. Avoid permitting extinguishing media, such as water, foam, and dry chemicals, flow into ponds, rivers, and lakes.
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## 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 and wash contaminated clothing before reuse.

**Storage Precautions:**

- Keep container closed. Store in original container.
- Do not store near heat or open flame.
- Keep container at room temperature or store in a cool, dry 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 source 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 for chemical workers, goggles or face shield) to prevent eye contact.

**Skin Protection:** Wear long-sleeved shirt and long pants, chemical-resistant footwear plus socks, and chemical-resistant gloves made of material such as barrier laminate or Viton. Remove and wash contaminated clothing before reuse.

**Respiratory Protection:** Ensure good ventilation. Avoid breathing spray mist. If ventilation is inadequate, use approved respiratory protection equipment (combination or gas/vapor respirator) when handling large quantities or handling large spills.

**Exposure Limits:**

<b>Ingredient:</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>
1-methylnaphthalene	TWA: 0.5 ppm skin notation	None
2-methylnaphthalene	TWA: 0.5 ppm skin notation	None
Naphthalene	TWA: 10 ppm STEL: 15 ppm; skin notation	10 ppm (50 mg/m <sup>3</sup> )

TWA = time-weighted average  
 STEL = short-term exposure limit

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	Pale yellow liquid
<b>Odor</b>	Hydrocarbon odor
<b>Odor Threshold</b>	No information available
<b>pH</b>	6.1 (as a 1% w/v emulsion)
<b>Melting point/freezing point</b>	No data available
<b>Initial boiling point and boiling range</b>	No data available
<b>Flash point</b>	96°C (205°F)
<b>Evaporation rate</b>	No data available
<b>Flammability (solid, gas)</b>	Not applicable
<b>Upper/lower flammability or explosive limits</b>	Not explosive
<b>Vapor pressure</b>	$4 \times 10^{-5}$ Pa at 25°C (tolfenpyrad TGAi)
<b>Vapor density</b>	No data available
<b>Relative density</b>	1.03 g/cm <sup>3</sup> at 20°C
<b>Solubility(ies)</b>	Water: 0.061 mg/L at 20°C (for tolfenpyrad pure grade active ingredient)
<b>Partition coefficient (n-octanol/water)</b>	Log Pow = 5.61 (25°C)
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	> 250°C (tolfenpyrad TGAi)
<b>Viscosity</b>	12.9 mm <sup>2</sup> /s (cSt) at 20°C and 6.52 mm <sup>2</sup> /s (cSt) at 40°C

TGAi = Technical Grade Active Ingredient

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	Not reactive to monoammonium phosphate, zinc, and water. Reactive with potassium permanganate.
<b>Chemical stability</b>	Stable under ambient temperatures (1°C to 26° C) for two years
<b>Possibility of hazardous reactions</b>	None known
<b>Conditions to avoid</b>	None known
<b>Incompatible materials</b>	None known
<b>Hazardous decomposition products</b>	Combustible or thermal decomposition may evolve toxic vapors (CO, NOx, etc.)

## 11. TOXICOLOGICAL INFORMATION

The following data were developed using TORAC Insecticide:

### Acute Studies:

<b>Oral LD<sub>50</sub> (rat):</b>	102 mg/kg (male) 83 mg/kg (female)
<b>Dermal LD<sub>50</sub> (rat):</b>	>2000 mg/kg
<b>Inhalation LC<sub>50</sub> (rat):</b>	542 mg/m <sup>3</sup> (0.542 mg/L) (4 hrs.)
<b>Eye irritation (rabbit):</b>	Causes substantial but temporary eye injury
<b>Skin irritation (rabbit):</b>	Causes skin irritation
<b>Skin sensitization (guinea pig):</b>	Not sensitizing

The following data were developed using tolfenpyrad technical:

### Subchronic and Chronic Effects:

In a 13-week sub-chronic oral toxicity study in rats, the no effect level was 1.0 mg/kg/day. Low body weight and increased relative liver and kidney weights were observed as were some hematological and blood chemistry parameters. These effects dissipated after withdrawal of treatment.

In a 13-week dietary toxicity study in mice, the no effect level was 46.2 mg/kg. Effects observed were decreases in food consumption.

In a long term study in beagle dogs, the NOAEL was 5 mg/kg. Effects observed were emesis and decreases in body weight. Liver effects were also observed.

### Cancer Effects:

Tolfenpyrad was tested in life-time studies in rats and mice. There was no evidence of carcinogenicity in the rat or mice at the doses tested.

In the two-year chronic oral study in rats, the NOAEL was 0.6 mg/kg/day, based on decreased body weight. Liver and kidney effects were observed.

In the 78-week dietary oncogenicity study in mice, the NOAEL was 2.2 mg/kg/day, with decreases in body weight observed.

### Teratogenicity (Birth Defects):

Tolfenpyrad is not a developmental toxicant.



**Reproductive Effects:**

Tolfenpyrad is not a reproductive toxicant.

**Neurotoxicity:**

There was no evidence of neurotoxicity after oral exposure in acute or subchronic studies conducted with tolfenpyrad.

**Immunotoxicity:**

No significant treatment-related effects on the immune system were observed in a developmental immunotoxicity study in rats.

**Mutagenicity (Genetic Effects):**

Tolfenpyrad was not mutagenic or genotoxic.

**Aspiration Hazard**

**Toxicity of other components:**

**Naphthalene**

Naphthalene caused lung cancer in laboratory animal studies but the relevance of these findings to humans is uncertain. Naphthalene is listed as “reasonably anticipated to be a human carcinogen” by NTP and “possibly carcinogenic to humans (Group 2B)” by IARC.

**N-Methyl-2-pyrrolidone**

Reproductive / developmental effects were observed in rats and rabbits. These effects occurred in the presence of maternal toxicity. The relevance of these findings to humans is unknown.

<b>Carcinogenic Effects</b>				
	<b>CAS Number</b>	<b>OSHA</b>	<b>IARC</b>	<b>NTP</b>
Naphthalene	91-20-3	-	Group 2B (possibly carcinogenic to humans)	Reasonably anticipated to be a human carcinogen

**12. ECOLOGICAL INFORMATION**

Ecological data were developed using tolfenpyrad technical.

**Environmental Precautions:**



Tolfenpyrad technical is very highly toxic to fish and 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 apply when weather conditions favor drift from treated areas. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

This product is highly toxic to bees and other pollinating insects exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees or other pollinating insects are visiting the treatment area. Application must be made at least 8 hours prior to bees foraging.

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having medium to high potential for reaching both surface water and aquatic sediment via runoff for several weeks after application. A level, well-maintained vegetative filter (buffer) strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of this chemical from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's potential to reach aquatic sediment via runoff.

### 13. DISPOSAL CONSIDERATIONS

#### **General Disposal Guidance:**

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:**

Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining content 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.

Pressure rinse as follows: empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or a mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

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 and local authorities, by burning. If burned, stay out of smoke.

**14. TRANSPORT INFORMATION**

<b>DOT:</b>	UN 2902: Pesticides, liquid , n.o.s. (tolfenpyrad) Class 6.1, PG III
<b>IATA:</b>	UN 2902, Pesticides, liquid, toxic, n.o.s., (tolfenpyrad), Class 6.1, PG III
<b>IMDG:</b>	UN 2902, Pesticides, liquid, toxic, n.o.s.(tolfenpyrad), Class 6.1, PG III, MARINE POLLUTANT, EMS: F-A, S-F

**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:

**WARNING:**

May be fatal if swallowed.  
Causes skin irritation.  
Causes substantial but temporary eye injury.  
Harmful if absorbed through skin.  
Harmful if inhaled.

**U.S. Federal Regulatory Information**

**EPA Registration Number:** 71711-31

**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):**

Name	CAS #	Final Reportable Quantity
Calcium dodecylbenzenesulfonate	26264-06-2	1,000 lbs. (454 kg)
Naphthalene	91-20-3	100 lbs. (45.4 kg)

**Section 313 Ingredients:**

Naphthalene CAS # 91-20-3

N-methyl-2-pyrrolidone CAS #872-50-4

**U.S. State Regulatory Information:**

**U.S. State Right-to-Know (RTK) Ingredients:**

- N-methyl-2-pyrrolidone
- 2-ethyl hexanol
- Naphthalene

**California Proposition 65 List:**

- N-methyl-2-pyrrolidone (CAS 872-50-4): *This product contains a chemical known in the state of California to cause developmental effects.*

- Naphthalene (CAS 91-20-3): *This product contains a chemical known in the state of California to cause cancer.*

## 16. OTHER INFORMATION

### HMIS® Hazard Rating:

Health: 3\*  
Fire: 1  
Physical Hazard: 0

\*indicates both acute and chronic health hazard

### NFPA Hazard Rating:

Health: 3  
Fire: 1  
Reactivity: 0  
Specific Hazard: None

Prepared by: Regulatory Affairs

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### 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.