

Nichino America, Inc.
STRADA® PRO Herbicide
Safety Data Sheet

1. IDENTIFICATION

Product Name: STRADA® PRO Herbicide
General Use: Herbicide
Product Description: Water dispersible granule
EPA Reg. No.: 71711-47

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 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: Carcinogenicity 1A

DANGER

Signal word:



Hazard statements: May cause cancer.

Precautionary statements

Prevention:

Wash thoroughly after handling. Do not eat, drink, or smoke when using this product.

Do not breathe dust.

Response:

If swallowed: Call a poison center if you feel unwell. Rinse mouth.

If exposed or concerned: Call a poison center/doctor for treatment advice.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percentage
Orthosulfamuron CAS Name: Benzamide, 2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]amino]-N,N-dimethyl-	213464-77-8	42.05%
Halosulfamuron-methyl CAS Name: 1H-Pyrazole-4-carboxylic acid, 3-chloro-5-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]-1-methyl-, methyl ester	100784-20-1	11.92%
Kaolin	1332-58-7	10% to 20%
Silica, Amorphous Diatomaceous Earth	61790-53-2	1% to 10%
Quartz	14808-60-7	0% to 1%
*Other ingredients		15% to 35%

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

4. FIRST AID MEASURES

Eye Contact

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 eye. Call poison control or doctor for further treatment advice.

Ingestion Call 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 do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

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 further treatment advice.

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

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

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Water, CO2, Foam, Chemical powders, according to material involved in the fire.
Unsuitable extinguishing media	No information available
Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products)	Avoid inhaling the fumes which at high temperatures may contain toxic fumes such as CO(x), NO(x), and SO(x).
Special protective equipment and precautions for fire-fighters	Wear breathing protection (respirator) and standard protection equipment according to the materials involved in the fire.

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:

Evacuate non-essential personnel. Carefully sweep up, place in a metal drum and hold for waste disposal. Avoid raising dust. If a large spill occurs, wear protective clothing and self-contained breathing apparatus to avoid contact. Prevent spills from entering sewers, watercourse, or low areas.

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.
- Give adequate ventilation where the product is stored.

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):

Applicators and other handlers of agricultural products must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves made of any waterproof material
- Protective eyewear

Agricultural Use Requirements – for uses of this product that are covered by the Worker Protection Standard 40 CFR Part 170 – PPE required for early entry into treated areas:

- Coveralls
- Chemical-resistant gloves (made of any waterproof material)
- Protective eyewear
- Shoes plus socks

Respiratory Protection: Ensure good ventilation. Avoid breathing dust. If ventilation is inadequate, use approved respiratory protection equipment when airborne exposure limits are exceeded.

Exposure Limits:

<u>Ingredient:</u>	<u>ACGIH</u>	<u>OSHA</u>
Kaolin CAS 1332-58-7	2 mg/m ³ TWA (respirable)	5 mg/m ³ TWA (respirable); 15 mg/m ³ TWA (total dust)
Silica, Amorphous Diatomaceous Earth (CAS No. 61790-53-2)	-	20 mppcf (millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques)
Quartz CAS 14808-60-7	0.025 mg/m ³ TWA (respirable fraction)	Not established

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

OSHA = Occupational Safety and Health Administration

TWA = Time Weighted Averages are based on 8h/day, 40h/week exposures

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid mixture of whitish and brown pellets
Odor	Faint aromatic
Odor Threshold	No information available
pH	6.1 (1% aqueous dilution))
Melting point/freezing point	162 -172°C (orthosulfamuron technical) 175.5 -177.2°C (halosulfuron-methyl technical)
Initial boiling point and boiling range	No data available
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	Classification criteria not met
Upper/lower flammability or explosive limits	No data available
Vapor pressure	1.0×10^{-3} Pa at 25°C (orthosulfamuron technical) $<1 \times 10^{-4}$ Pa at 25°C (halosulfuron-methyl technical)
Vapor density	No data available
Relative density	0.601g/mL (pour)
Solubility	23.7 g/L (orthosulfamuron technical) 1.65 g/L (halosulfuron-methyl technical)
Partition coefficient (n-octanol/water)	No data available for this product. Data on orthosulfamuron technical: Log Pow = 2.02 (at pH = 4), Log Pow = 1.31 (at pH = 7), Log Pow < 0.3 (at pH = 9) Data on halosulfuron-methyl technical: 1.67 at pH 5
Auto-ignition temperature	No relative self-ignition temperature below melting point (162 - 172°C (orthosulfamuron technical)) Unknown for halosulfuron-methyl technical
Decomposition temperature	151°C (orthosulfamuron technical)

	Decomposition temperature for halosulfuron-methyl is unknown
Viscosity	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	No dangerous reaction known under conditions of normal use.
Chemical stability	Stable under normal conditions; stable at 54°C for two weeks
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Reducing agents, acids.
Incompatible materials	No data available.
Hazardous decomposition products	Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides, Sulfur Oxides, Hydrogen chloride gas. In the event of a fire; Avoid inhaling the fumes which at high temperatures may contain toxic fumes such as CO(x), NO(x), and SO(x).

11. TOXICOLOGICAL INFORMATION

The following data were developed using formulated product:

Acute Studies:

Oral LD₅₀ (rat):	>5000 mg/kg
Dermal LD₅₀ (rat):	>5000 mg/kg
Inhalation LC₅₀ (rat):	>3.1 mg/L (chemically determined mean aerosol concentration based on both active ingredients (4 hrs))
Eye irritation (rabbit):	Moderate eye irritant
Skin irritation (rabbit):	Not an irritant
Skin sensitization (guinea pig):	Not a sensitizer

The following data were developed using orthosulfamuron technical:

Chronic Effects:

Orthosulfamuron

Target organ effects observed after repeated long-term exposure to orthosulfamuron included liver, kidney, and thyroid toxicity.

Cancer Effects:

Orthosulfamuron has not been classified as carcinogenic by NTP, OSHA, or IARC. In male rats, long-term administration of orthosulfamuron resulted in an increased incidence of thyroid follicular cell adenomas. There was no evidence of carcinogenic effects in female rats or male or female mice. The EPA has classified orthosulfamuron as demonstrating “suggestive evidence of carcinogenicity”.

Teratogenicity (Birth Defects):

Orthosulfamuron is not a developmental toxicant.

Reproductive Effects:

Orthosulfamuron is not a reproductive toxicant.

Neurotoxicity:

There was no evidence of neurotoxicity in either short- or long-term studies with orthosulfamuron.

Immunotoxicity:

There was no evidence of immunotoxicity in either short-or long-term studies with orthosulfamuron.

Mutagenicity (Genetic Effects):

Orthosulfamuron is not mutagenic or genotoxic.

The following data were developed using halosulfuron-methyl:

Chronic Effects:

Halosulfuron-methyl

Target organ effects after subchronic and chronic exposure to halosulfuron-methyl include liver, kidney, testis, and epididymides toxicity, and alterations in hematologic and blood chemistry parameters.

Cancer Effects:

There was no evidence of carcinogenic effects after long-term exposure in rats or mice. Halosulfuron-methyl is not classified as a carcinogen by NTP, IARC, or OSHA.

Teratogenicity (Birth Defects):

Halosulfuron-methyl is not a developmental toxicant.

Reproductive Effects:

Halosulfuron-methyl is not a reproductive toxicant.

Neurotoxicity:

There was no evidence of neurotoxicity after acute, subchronic, or chronic exposure, nor was there any evidence of neurotoxicity in the developmental study with halosulfuron-methyl.

Immunotoxicity:

There was no evidence of biologically relevant effects on the immune system with halosulfuron-methyl.

Mutagenicity (Genetic Effects):

Halosulfuron-methyl is not mutagenic or genotoxic.

Carcinogenic Effects				
	CAS Number	OSHA	IARC	NTP
Quartz	14808-60-7	-	Group 1- Carcinogenic to humans	Known Human Carcinogen

12. ECOLOGICAL INFORMATION

Ecological data were developed using orthosulfamuron technical and halosulfuron-methyl technical.

Environmental Precautions:

This product is toxic to non-target vascular plants. With the exception of treating rice fields as specified in the label, do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate arable land and/or water when cleaning equipment or disposing of equipment washwaters or rinsate. This product contains a chemical that has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. In order to limit the potential for ground-water contamination and

off-site movement of phytotoxically significant residues via subsurface flow, halosulfuron-methyl shall not be used in any areas with the following soil characteristics (use of halosulfuron-methyl is only allowed in areas where none of the 3 sets of criteria below are met):

1. Areas (within the confines of a contiguous area representing a single soil series as defined within a single mapping unit) of any soil type with less than 2% organic matter in the upper 24 inches of the soil profile with historical average depth to ground water under 30 feet (utilizing the best available data from the NRCS, local county extension agents, and other sources) within counties with historical average precipitation over 40 inches (utilizing data from any weather station within the county with 20 or more years of continuous weather reporting).
2. Areas with sand or loamy sand soil texture and less than 2.5% organic matter content for at least the upper 24 inches of the soil profile with historical average depth to groundwater under 50 feet (utilizing the best available data from the NRCS, local county extension agents, and other sources) within counties with historical average precipitation over 30 inches (utilizing data from any weather station within the county with 20 or more years of continuous weather reporting).
3. Areas with sandy loam soil texture and less than 2% organic matter in the upper 24 inches of the soil profile with historical average depth to ground water under 40 feet (utilizing the best available data from the NRCS, local county extension agents, and other sources) within counties with historical average precipitation over 35 inches (utilizing data from any weather station within the county with 20 or more years of continuous weather reporting).

13. DISPOSAL CONSIDERATIONS

General Disposal:

Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

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 SDS 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:

Empty the package completely and triple rinse container (or equivalent) promptly after emptying with water to be used for application. Then dispose of the empty container according to state and local regulations. Place in trash or offer for recycling if available or return it to the Seller, or, if allowed by state and local authorities, by burning. If burned stay out of smoke.

14. TRANSPORT INFORMATION

DOT:	Not regulated
IATA	UN 3077, Environmentally hazardous substance, solid, n.o.s., (orthosulfamuron), Class 9, PG III.
IMDG:	UN 3077, Environmentally hazardous substance, solid, n.o.s., (orthosulfamuron), Class 9, PG III, MARINE POLLUTANT; EmS: F-A, S-F

STRADA PRO 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

Harmful if swallowed, absorbed through skin, or inhaled.
Causes moderate eye irritation

U.S. Federal Regulatory Information:

EPA Registration Number: 71711-47

TSCA Inventory: Registered pesticide; exempt from TSCA

SARA Title III Notification and Information:

Section 302 (EHS) Ingredients: Not applicable

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:

- Silica, Amorphous Diatomaceous Earth (CAS No. 61790-53-2)
- Kaolin (CAS No. 1332-58-7)
- Crystalline silica, quartz (CAS 14808-60-7)

California Proposition 65 List:

 **WARNING:** This product can expose you to chemicals including Quartz - CAS 14808-60-7 and Naphthalene - CAS 91-20-3, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

16. OTHER INFORMATION

HMIS® Hazard Rating:

Health: 1
Flammability: 0
Physical Hazard: 0

NFPA Hazard Rating:

Health: 2
Flammability: 0
Reactivity: 0
Specific Hazard: None

Prepared by: Regulatory Affairs

Date: 10/15/2019

Reason for Editing: **Updated California Proposition 65 List**

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.