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**In Case of Emergency, Call
1-800-327-8633 (FAST MED)**

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MSDS prepared by:

Department of Regulatory & Biology Development
Syngenta Crop Protection Canada, Inc.

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1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: PRINCEP® NINE-T® Herbicide

Formulation No.: A6119B

Registration Number: 16370 (Pest Control Products Act)

Chemical Class: Triazine Herbicide

Synonym: Simazine

Active Ingredient(%): Simazine (and Related Triazines) (90.0 %)

CAS No.: 122-34-9

Chemical Name: 2-chloro-4,6-bis(ethylamino)-s-triazine

Product Use: A water dispersible granule for selective weed control. For further details please refer to product label.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Kaolin Clay	15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)	2 mg/m ³ TWA (respirable)	10 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)**	No	Not Established
Crystalline Silica, Quartz	10 mg/m ³ / (%SiO ₂ +2) (respirable dust)	0.05 mg/m ³ (respirable silica)	0.05 mg/m ³ (respirable dust)**	IARC Group 2A	Yes
Dispersing Agent	15 mg/m ³ TWA (total)	15 mg/m ³ TWA (total)	Not Established	No	Not Established
Sodium Alkylphthalene- sulfonate	Not Established	Not Established	15 mg/m ³ TWA (total dust)*	No	Not Established
Simazine (90.0 %)	Not Established	Not Established	10 mg/m ³ TWA***	No	Not Established

* recommended by manufacturer

** recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

May cause mild eye, skin and respiratory passage irritation.

Hazardous Decomposition Products

Can decompose at high temperatures and form toxic gases.

Physical Properties

Appearance: Light beige to brown grey granules.

Odour: Odourless.

Unusual Fire, Explosion and Reactivity Hazards

This product is a combustible powder and like all combustible powders can ignite, burn and form explosive mixtures with air if not handled correctly. Mixtures of powder in air with flammable solvent vapours should be avoided. This product has a minimum ignition energy between 10 and 30 millijoules. Static electricity, mechanical sparks, open flames, and certain hot surfaces can serve as ignition sources for this material. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, lungs.

Adverse health effects from exposure to product or ingredients of product:

Symptoms of exposure to PRINCEP NINE-T Herbicide may include irritation to eyes, skin, or respiratory tract. This product is practically nontoxic by ingestion, slightly toxic by skin contact, dermal absorption and inhalation. It is minimally irritating by eye contact.

SECTION – 4: FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [**1-800-327-8633 (1-800-FASTMED)**], for further information.

EYE CONTACT:	Immediately flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.
SKIN CONTACT:	Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 20 minutes. Obtain medical attention if irritation occurs.
INHALATION:	Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is laboured, give oxygen. Obtain immediate medical attention.
INGESTION:	If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Provided the patient is conscious, wash out mouth with water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control center. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

NOTES TO PHYSICIAN:

There is no specific antidote if PRINCEP NINE-T Herbicide is ingested. If a large amount has been ingested and emesis has been inadequate, lavage stomach. Five mg/kg of activated charcoal suspension (50 g/400 mL water) can be given to absorb the remaining toxicant. Treat symptomatically.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

None known.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: Not applicable.

Upper and lower flammable (explosive) limits in air: Not available.

Auto-ignition temperature: Not available.

Flammability: Not flammable.

Hazardous combustion products: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Conditions under which flammability could occur: This product is a combustible powder and like all combustible powders can ignite, burn and form explosive mixtures with air if not handled correctly. Mixtures of powder in air with flammable solvent vapours should be avoided. This product has a minimum ignition energy between 10 and 30 millijoules. Static electricity, mechanical sparks, open flames, and certain hot surfaces can serve as ignition sources for this material.

Extinguishing media: Use foam, carbon dioxide, dry powder or halon extinguishant. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.

Sensitivity to explosion by mechanical impact: See “Conditions under which flammability could occur”, above.

Sensitivity to explosion by static discharge: See “Conditions under which flammability could occur”, above.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation.

Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

SECTION – 7: HANDLING AND STORAGE

Handling practices: Handle this material only in electrically conductive equipment. Electrically ground and bond this equipment as well as any worker who could contact a dust cloud formed of this material. Eliminate the presence of mechanical sparks and other ignition sources where dust clouds of this material could form. Bulk bags (FIBC) used to contain this material should be either type B or type C. If type C bags are used make sure they are electrically grounded before powder is discharged from the bag.

KEEP OUT OF REACH OF CHILDREN and animals. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. After work, rinse gloves and remove protective equipment. Wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Keep product, wash or rinse water, and contaminated materials out of water, away from crops, and away from access by people, animals and birds.

Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose containers to temperatures above 40 °C. Keep separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

National Fire Code classification: Not applicable.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Personal protective equipment for each exposure route:

General: Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, or handling tobacco.

INGESTION: Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

EYES: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

SKIN: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

INHALATION: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light beige to brown grey granules.

Formulation Type: Water dispersible granule.

Odour: Odourless.

pH: 7 - 10 (10 % solution in water @ 25 °C).

Vapour pressure and reference temperature: 2.2×10^{-2} mmHg @ 25 °C (Simazine Technical).

Vapour density: Not available.

Boiling point: Not available.

Melting point: 225 – 227 °C (Simazine Technical).

Freezing point: Not applicable.

Specific gravity or density: 368 g/L @ 20 °C (Simazine Technical).

Evaporation Rate: Not available.

Water/oil partition coefficient: Not applicable.

Odour threshold: Not available.

Viscosity: Not applicable.

Solubility in Water: 6.2 mg/L @ 22 °C (Simazine Technical).

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions. Active ingredient stable in neutral, weakly acidic, weakly alkaline media. Hydrolysed by stronger acids and bases.

Conditions to avoid: None known.

Incompatibility with other materials: Strong acids and bases.

Hazardous decomposition products: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Hazardous polymerization: Will not occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	<u>Practically Non-Toxic</u> Oral (LD50 Rat):	> 5,000 mg/kg body weight
Dermal:	<u>Slightly Toxic</u> Dermal (LD50 Rabbit):	> 2,000 mg/kg body weight
Inhalation:	<u>Practically Non-Toxic</u> Inhalation (LC50 Rat):	> 2.5 mg/L air - 4 hours
Eye Contact:	<u>Minimally Irritating (Rabbit)</u>	
Skin Contact:	<u>Slightly Irritating (Rabbit)</u>	
Skin Sensitization:	<u>Not a Sensitizer (Guinea Pig)</u>	

Reproductive/Developmental Effects

Simazine Technical: None observed.

Chronic/Subchronic Toxicity Studies

Simazine Technical: Decreased survival at high doses (rats).

Carcinogenicity

Simazine Technical: Increased incidence of mammary tumors (female Sprague-Dawley rats) sex and species specific effect.

Other Toxicity Information:

None.

Toxicity of Other Components

The acute toxicity test results reported in Section 11, above, for the finished product take into account any acute hazards related to the “other components” in the formulation.

Dust may produce a respiratory allergenic response and/or irritation in some individuals.

Long term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs. Continued long term overexposure may affect respiratory function in some individuals.

None observed.

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Active Ingredients

Simazine Technical: Mammary gland.

Inert Ingredients

Dispersing Agent: Respiratory tract.

Kaolin Clay: Lung.

Sodium

Alkylnaphthalenesulfonate: Not Applicable

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

PRINCEP NINE-T is used to kill weeds in various vegetables, fruits, and trees and most of the material applied remains in the treated area. The active ingredient, simazine, is non-toxic to birds, insects (bees), and aquatic invertebrates and slightly toxic to fish.

Eco-Acute Toxicity

Simazine Technical:

Bees LC ₅₀ /EC ₅₀ (contact, oral)	> 99 ug/bee
Invertebrates (<i>Daphnia magna</i>) 48-hour LC ₅₀ /EC ₅₀	> 100 ppm
Fish (Rainbow Trout) 96-hour LC ₅₀ /EC ₅₀	> 10 ppm
Fish (Sheephead Minnow) 96-hour LC ₅₀ /EC ₅₀	> 4.3 ppm
Birds (8-day dietary - Bobwhite Quail) LC ₅₀ /EC ₅₀	> 10,000 ppm
Birds (8-day dietary - Mallard Duck) LC ₅₀ /EC ₅₀	> 10,000 ppm
Mallard Oral LD ₅₀	> 4,640 mg/kg

Eco-Chronic Toxicity

Simazine Technical:

Invertebrate (<i>Daphnia magna</i>) Life Cycle MATC	0.07 mg/L
Fish (Rainbow trout) 21-day NOEC (Growth)	3.2 ppm
Mallard Reproduction NOEC	150 ppm
Bobwhite Reproduction NOEC	100 ppm

Environmental Fate

The active ingredient, simazine, is biodegradable via microbial activity and other processes in soil and natural waters. It has a low bioaccumulation potential. Simazine is moderately persistent in soil. Under typical conditions of use, the DT50 is between 18 and 70 days. Simazine is moderately to highly mobile in soil. Bulk material sinks in water (when evaluated after 24 h) but is gradually dispersed, forming a white suspension.

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL
Not Regulated.

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

A statement that the MSDS has been prepared to meet WHMIS requirements, except for use of the 16 headings.

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No.: 16370

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

Prepared by: Syngenta Crop Protection Canada, Inc.
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