

Material Safety Data Sheet

B-NINE® WSG PLANT GROWTH REGULATOR

Version 1.6 Revision Date: 23.11.2015 MSDS Number: 400000001064 Country: CA
Language: EN

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : B-NINE® WSG PLANT GROWTH REGULATOR
Product code : 400000001064
Chemical nature : Daminozide - 85%

Manufacturer or supplier's details

Company: MacDermid Agricultural Solutions, Inc
245 Freight St
Waterbury, CT
United States of America
06702
Telephone : +1 800 423 8569

Prepared by sds.request@arysta.com

Further information for the safety data sheet :
sds.request@arysta.com

1.4 Emergency telephone number

Emergency telephone number: 613-996-6666 (call collect) (CANUTEC)
For additional emergency telephone numbers see section 16 of the
Safety Data Sheet.

Recommended use : Plant growth regulator
Restrictions on use : Agriculture, For professional users only.

Prepared by :
sds.request@arysta.com

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	granules
Colour	white
Odour	odourless

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Hazard Summary	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
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WHMIS Regulatory status : This product, material or substance is not considered a WHMIS controlled product per Sections 33 - 66, Part IV of the CPR.

Potential Health Effects

Skin : Contact with dust can cause mechanical irritation or drying of the skin.

Eyes : Dust contact with the eyes can lead to mechanical irritation.

Aggravated Medical Condition : None known.

Symptoms of Overexposure : Symptoms may be delayed.

Carcinogenicity:

IARC

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Daminozide - 85%

Hazardous components

Chemical Name	CAS-No.	Concentration (% w/w)
daminozide	1596-84-5	85

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
If symptoms persist, call a physician.

In case of skin contact : Wash off with warm water and soap.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If symptoms persist, call a physician.

If swallowed : Do NOT induce vomiting.
Rinse mouth with water.
Obtain medical attention.

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Notes to physician	: The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.
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SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Carbon dioxide (CO2) Dry powder Foam Water mist
Unsuitable extinguishing media	: Water spray
Specific hazards during fire-fighting	: No information available.
Further information	: Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	: In the event of fire, wear self-contained breathing apparatus. Complete suit protecting against chemicals Full protective flameproof clothing

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Wear suitable protective equipment. Remove all sources of ignition. Do not breathe dust. Avoid contact with skin and eyes.
Environmental precautions	: Do not allow material to contaminate ground water system. Do not allow uncontrolled discharge of product into the environment.
Methods and materials for containment and cleaning up	: Do not create a powder cloud by using a brush or compressed air. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Avoid creating dust. Remove all sources of ignition. Take precautionary measures against static discharges. Use only with adequate ventilation. Keep container tightly closed.
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Conditions for safe storage	: Keep container tightly closed. Keep in a well-ventilated place. Keep away from heat. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Personal protective equipment

Respiratory protection	: In the case of dust or aerosol formation use respirator with an approved filter. Respirator with a dust filter
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Hand protection

Remarks	: PVC or other plastic material gloves Rubber gloves
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Eye protection	: Safety glasses with side-shields conforming to EN166
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Skin and body protection	: Impervious clothing
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Hygiene measures	: Wash thoroughly after handling. Remove and wash contaminated clothing before re-use.
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: granules
Colour	: white
Odour	: odourless
Odour Threshold	: No data available
pH	: 4, Concentration: 10 g/l
Melting point/range	: No data available
Boiling point/boiling range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: negligible
Upper explosion limit	: No data available
Lower explosion limit	: No data available

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Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: No data available
Density	: 0.40 - 0.50 g/cm ³ Method: No information available.
Solubility(ies)	
Water solubility	: completely soluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: Not applicable
Self-Accelerating decomposition temperature (SADT)	: Method: No information available.
Oxidizing potential	: No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Oxidizing agents Strong acids and strong bases
Hazardous decomposition products	: Burning produces noxious and toxic fumes.

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	: LC50 (Rat): > 4 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity Remarks: An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
Acute dermal toxicity	: LD50 (Rat): > 5,000 mg/kg

Components:

daminozide:

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg GLP: yes
Acute inhalation toxicity	: LC50 (Rat): > 2.1 mg/l Exposure time: 4 h Test atmosphere: dust/mist GLP: yes Assessment: The substance or mixture has no acute inhalation toxicity Remarks: An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
Acute dermal toxicity	: LD50 (Rabbit, male and female): > 5,000 mg/kg Method: OECD Test Guideline 402 Target Organs: Lungs GLP: yes

Skin corrosion/irritation

Product:

Species: Rabbit
Result: No skin irritation

Components:

daminozide:

Species: Rabbit
Result: No skin irritation
GLP: yes

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Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: No eye irritation

Components:

daminozide:

Species: Rabbit
Result: No eye irritation
GLP: yes

Respiratory or skin sensitisation

Product:

Species: Guinea pig
Result: negative

Components:

daminozide:

Test Type: Buehler Test
Exposure routes: Dermal
Species: Guinea pig
Result: Did not cause sensitisation on laboratory animals.
GLP: yes

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment : Based on available data, the classification criteria are not met.

Components:

daminozide:

Genotoxicity in vitro	:	Test Type: Ames test
		Species: Salmonella typhimurium
		Result: negative
	:	Species: Mouse Lymphoma
		Result: negative
	:	Test Type: Mutagenicity (Escherichia coli - reverse mutation assay)
		Species: Escherichia coli
		Concentration: 250-10,000 ug/ml
		Result: negative
	:	Species: Saccharomyces cerevisiae
		Concentration: 1-2,000 ug/ml
		Result: negative

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: Species: Salmonella typhimurium
Concentration: 0-10,000 ug/plate
Result: negative

: Species: Chinese hamster ovary cells
Concentration: 0-2000 ug/ml
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Mammalian bone marrow chromosome aberration test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Dose: 1500, 1750, 2000 mg/kg
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Test Type: DNA binding study
Species: Rat (male)
Application Route: Oral
Dose: 37 mg/kg

Test Type: dominant lethal test
Species: Mouse (male)
Application Route: Ingestion
Dose: 10, 300, 10,000 ppm

Germ cell mutagenicity - Assessment : negative

Carcinogenicity

Product:

Carcinogenicity - Assessment : Based on available data, the classification criteria are not met.

Components:

daminozide:

Species: Rat
Application Route: Oral
Dose: 300,1000,3000 ppm

Species: Dog, (male and female)
Application Route: Ingestion
Exposure time: 104 weeks
Dose: 300,1000,3000 ppm

Species: Rat
Application Route: Ingestion
Exposure time: 104 weeks
Dose: 100,500,5000,10000 ppm

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GLP: yes

Species: Rat
Application Route: Ingestion
Exposure time: 104 weeks
Dose: 5000,10000 ppm

Species: Mouse
Application Route: Ingestion
Exposure time: 104 weeks
Dose: 0,300,3000,6000,10000
Method: OECD Test Guideline 451
GLP: yes

Carcinogenicity - Assessment : negative

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : Based on available data, the classification criteria are not met.

Components:

daminozide:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Ingestion
Dose: 0,100,1000,10000 parts per million
Method: OECD Test Guideline 416
GLP: yes

Effects on foetal development : Species: Rat, female
Application Route: Oral
Dose: 250 and 500 milligram per kilogram

Species: Rat, female
Application Route: Oral
Dose: 0,85,390,1800 mg/kg bw/d
Duration of Single Treatment: 20 d

Species: Rabbit, female
Application Route: Oral
Dose: 0,50,150,300 mg/kg bw/d
Duration of Single Treatment: 28 d
Method: OECD Test Guideline 414

Reproductive toxicity - Assessment : negative
negative

Repeated dose toxicity

Components:

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daminozide:

Species: Rat
NOAEL: > 2,160 mg/kg
Application Route: Ingestion
Exposure time: 90-day
Dose: 26,80,240,720,2160 mg/kg bw/d
GLP: no
Target Organs: Liver, Kidney

Species: Dog, male and female
NOAEL: 80.5 mg/kg
Application Route: Oral
Exposure time: 1 y
Dose: 0,300,3000,7500 ppm
Method: OECD Test Guideline 452

Species: Rat, male and female
NOAEL: 2.0 mg/l
Application Route: Inhalation
Exposure time: 120 h
Dose: 0,0.2,0.6,2.0 mg/l
GLP: yes

Species: Rat
NOAEL: < 0.79 mg/l
Application Route: Inhalation
Exposure time: 30 h
Dose: 0.2, 0.4, 0.8 mg/l
Method: OECD Test Guideline 412
GLP: yes

Species: Rat, male and female
LOAEL: 2,000 mg/kg
Application Route: Dermal
Exposure time: 28-day 6 h
Dose: 125,5000, 2000 mg/kg
Method: OECD Test Guideline 410
GLP: yes

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates :
Remarks: Based on available data, the classification criteria are not met.

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Toxicity to algae :
Remarks: Based on available data, the classification criteria are not met.

Components:

daminozide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.4 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3.1 mg/l
Exposure time: 48 h
Test Type: flow-through test
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 0.17 mg/l
Exposure time: 120 h
Test Type: static test

Toxicity to fish (Chronic toxicity) : NOEC: 0.12 mg/l
Exposure time: 90 d
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.37 mg/l
Exposure time: 21 d
Test Type: flow-through test

Plant toxicity : 2.5 mg/kg

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Components:

daminozide:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life (DT50): 92 h pH: 5
Hydrolysis: at 25 °C

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

daminozide:

Bioaccumulation : Remarks: Does not bioaccumulate.

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Bioconcentration factor (BCF): 165

Partition coefficient: n-octanol/water : log Pow: -1.5
pH: 7

Mobility in soil

Product:

Mobility : Remarks: No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
This product has no known ecotoxicological effects.

Components:

daminozide:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : In accordance with local and national regulations.
Dispose of wastes in an approved waste disposal facility.

Contaminated packaging : Empty remaining contents.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

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TDG

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

WHMIS Classification

: Not Rated

This product is registered under the Pest Control Products Act and is therefore exempt from WHMIS supplier labeling and MSDS requirements. Please read entire MSDS and product label for safety precautions.

EPCRA - Emergency Planning and Community Right-to-Know Act

SSARA 311/312 Hazards

: No SARA Hazards

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TDG - Transportation of Dangerous Goods; UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and

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Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

CA / EN

Carechem24 International Worldwide Coverage

Emergency Phone Number

<u>Europe:</u>	All European Countries	+44 (0) 1235 239 670 (NCEC)
<u>Asia Pacific:</u>	East / South East Asia – Regional Number	+65 3158 1074
	Australia	+61 2801 44558
	New Zealand	+64 9929 1483
	China	+86 532 8388 9090
	China Taiwan	+86 10 5100 3039
	Japan	+81 345 789 341
	Indonesia	00780 3011 0293
	Malaysia	+60 3 6207 4347
	Thailand	001800 1 2066 6751
	Korea	+65 3158 1285 +82 (0)234 798 401
	Vietnam	+65 3158 1255
	India	+65 3158 1198 0800 100 7479
	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
<u>Middle East / Africa:</u>	Arabic speaking countries	+44 (0) 1235 239 671
	South Africa	+27 21 300 2732

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	All other countries	+44 (0) 1235 239 670
<u>America</u>	United States of America and Canada	+1866 928 0789 +1 215 207 0061
<u>Latin America:</u>	Brazil	+55 11 3197 5891
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670