

Syngenta Crop Protection Canada, Inc.
140 Research Lane, Research Park
Guelph, ON N1G 4Z3

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

Date of MSDS Preparation (Y/M/D): 2011-01-10

Supersedes date (Y/M/D): 2010-12-31

MSDS prepared by:

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

For further information contact:
1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: CRUISER MAXX® CEREALS Seed Treatment

Formulation No.: A15424B

Registration Number: 29192 (Pest Control Products Act)

Chemical Classes: A mixture of two fungicides and one insecticide; a triazole fungicide, a phenylamide fungicide and a neonicotinoid insecticide.

Active Ingredient (%): Difenoconazole (3.36 %)

CAS No.: 119446-68-3

Chemical Name: 1-[2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl-1,3-dioxolan-2-ylmethyl]-1H-1,2,4-triazole

Chemical Class: Triazole fungicide.

Active Ingredient (%): Metalaxyl-M (and S isomer) (0.56 %)

CAS No.: 70630-17-0

Chemical Name: {Metalaxyl-M is the active isomer of metalaxyl}

Chemical Name: methyl *N*-(2,6-dimethylphenyl)-*N*-(methoxyacetyl)-*D*-alaninate

Chemical Class: Phenylamide fungicide.

Active Ingredient (%): Thiamethoxam (2.80 %)

CAS No.: 153719-23-4

Chemical Name: 3-[(2-chloro-5-thiazolyl)methyl]tetrahydro-5-methyl-*N*-nitro-4*H*-1,3,5-oxadiazin-4-imine

Chemical Class: Neonicotinoid insecticide.

Product Use: A water-based seed treatment for cereals. 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†
Glycerin	15 mg/m ³ TWA (total); 5 mg/m ³ TWA (respirable)	10 mg/m ³ TWA (total)	Not Established	No	Not Established
Difenoconazole (3.4 %)	Not Established	Not Established	8 mg/m ³ TWA***	No	Not Established
Metalaxyl-M (and S isomer) (0.6 %)	Not Established	Not Established	10 mg/m ³ TWA***	No	Not Established
Thiamethoxam (2.8 %)	Not Established	Not Established	3 mg/m ³ TWA***	No	Not Established

*** 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.
Syngenta Hazard Category: B, S

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

May irritate eyes and skin.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Opaque brownish red liquid.

Odour: Slight paint-like odour.

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion. This product is a thick emulsion of oily and solid materials in water. It mixes with water to form a creamy emulsion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

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:	Flush eyes with clean water, holding eyelids apart for a minimum of 15 - 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 plenty of water for 15-20 minutes. Call Syngenta, a poison control centre or doctor for treatment advice.
INHALATION:	Move victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call Syngenta, a poison control centre or doctor for treatment advice.
INGESTION:	If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Have person sip a glass of water if able to swallow. 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. Treat symptomatically.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

None known.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: > 100 °C (Pensky-Martens CC)

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

Auto-ignition temperature: 395 °C.

Flammability: Not applicable.

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: Product is not flammable. Keep fire exposed containers cool by spraying with water.

Extinguishing media: Use water fog or mist, (avoid use of water jet), 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: No.

Sensitivity to explosion by static discharge: No.

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 equipment as described in Section 8 and/or the product label.

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. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. 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, small amounts will naturally decompose. For large amounts, 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 disposal. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory body.

SECTION – 7: HANDLING AND STORAGE

Handling practices: KEEP OUT OF REACH OF CHILDREN. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Avoid breathing vapours or spray mist. Wear appropriate protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, applying cosmetics 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, and away from access by animals, birds or unauthorized people.

Appropriate storage practices/requirements: Store above 0°C (32°F) in the original container. Store in a dry, well ventilated area away from feed and foodstuffs, and out of the reach of children and animals. Keep away from fire or open flame, or other sources of heat. Keep separate from other products to prevent cross contamination. Rotate stock.

National Fire Code classification: Not applicable.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use in commercial seed treatment operations. 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.

CONSULT THE PRODUCT LABEL FOR COMMERCIAL USE APPLICATIONS.

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, applying cosmetics, 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: A respirator is not normally required when handling this substance. 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, R or HE class filter and an organic vapour cartridge may be used under certain circumstances where airborne concentrations are expected to exceed exposure limits (e.g. emergency spills).

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Opaque brownish red liquid.

Formulation Type: Liquid suspension.

Odour: Slight paint-like odour.

pH: 7.0 (1% aqueous solution @ 25 °C).

Vapour pressure and reference temperature:	Difenoconazole:	2.5 x 10 ⁻¹⁰ mmHg @ 25 °C
	Metalaxyl-M (and S isomer):	2.5 x 10 ⁻⁵ mmHg @ 25 °C
	Thiamethoxam:	2 x 10 ⁻¹¹ mmHg @ 20 °C

Vapour density: Ingredients are not volatile.

Boiling point: Not available.

Melting point: Not applicable.

Freezing point: - 15 C

Specific gravity or density: 1.149 g/cm³ @ 20 °C.

Evaporation Rate: Not available.

Water/oil partition coefficient: Log Kow	Difenoconazole:	4.2
	Metalaxyl-M (and S isomer):	1.71
	Thiamethoxam:	-0.13

Odour threshold: Not available.

Viscosity: 396 mPas (or cps) @20°C.

Solubility in Water:	Difenoconazole:	15 mg/L @ 25 °C
	Metalaxyl-M (and S isomer):	26 g/L @ 25 °C
	Thiamethoxam:	4.1 g/L @ 25 °C

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.

Conditions to avoid: None known.

Incompatibility with other materials: None known.

Hazardous decomposition products: Can decompose at high temperatures forming toxic gases.

Hazardous polymerization: Will not occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	<u>Low Acute Toxicity</u> Oral (LD50 Female Rat):	> 5,000 mg/kg body weight
Dermal:	<u>Low Acute Toxicity</u> Dermal (LD50 Rat):	> 5,000 mg/kg body weight
Inhalation:	<u>Low Acute Toxicity</u> Inhalation (LC50 Rat):	> 2.51 mg/L air - 4 hours
Eye Contact:	<u>Minimally Irritating (Rabbit)</u>	

Skin Contact: Slightly Irritating (Rabbit)

Skin Sensitization: Not a Sensitizer (Guinea Pig)

Reproductive/Developmental Effects

Difenoconazole Technical: None observed.

Metalaxyl-M Technical: None observed.

Thiamethoxam Technical: Not teratogenic or a reproductive toxicant. Minor testis effects at high doses with no effect on reproduction.

Chronic/Subchronic Toxicity Studies

Difenoconazole Technical: Liver effects at high doses in animal models. Eye effects in dogs at high doses.

Metalaxyl-M Technical: Liver effects at high dose levels in animal models.

Thiamethoxam Technical: Liver and kidney effects at high doses in animal models. Not neurotoxic in animal models.

Carcinogenicity

Difenoconazole Technical: Liver effects at high doses in animal models. Eye effects in dogs at high doses.

Metalaxyl-M Technical: No evidence of carcinogenicity in rodent studies.

Thiamethoxam Technical: Liver tumors, at high doses in mice, that are not relevant to humans.

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.

Glycerin:

Repeated or prolonged exposure to concentrated solutions may result in dermatitis.

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

Target Organs

Active Ingredients

Difenoconazole Technical: Brain, liver, kidney, gastrointestinal tract.

Metalaxyl-M Technical: Liver.

Thiamethoxam Technical: Liver, kidney.

Inert Ingredients

Glycerin: Not Applicable

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

The insecticidal active ingredient, thiamethoxam, is slightly to practically non-toxic to fish, birds and aquatic invertebrates (water flea). The fungicides, metalaxyl-M (and S isomer) and difenoconazole, are practically non-toxic to slightly toxic to fish, birds, aquatic invertebrates (water flea). Fludioxonil is practically non-toxic to birds, but is moderately to very highly toxic to fish (rainbow trout) and aquatic invertebrates (water flea).

Eco-Acute Toxicity

Difenoconazole Technical:

Green Algae 5-Day EC₅₀ 0.31 ppm

Invertebrates (Water Flea) 48-hour EC₅₀ 0.77 ppm

Fish (Rainbow Trout) 96-hour LC₅₀ 1.06 ppm

Birds (Bobwhite Quail) 8-day Dietary LD₅₀ 4,760 ppm

Metalaxyl-M Technical:

Green Algae 5-Day EC ₅₀	140 ppm
Invertebrates (Water Flea) 48-hour /EC ₅₀	28 ppm
Fish (Rainbow Trout) 96-hour LC ₅₀	130 ppm
Bird (Bobwhite Quail) 5-day Dietary LD ₅₀	> 5,000 ppm

Thiamethoxam Technical:

Green Algae 5-Day EC ₅₀	> 100 ppm
Invertebrate (Water Flea) 48-hour EC ₅₀	> 106 ppm
Fish (Rainbow Trout) 96-hour LC ₅₀	> 100 ppm
Bird (Bobwhite Quail) 8-day Dietary LC ₅₀	> 5,200 ppm

Environmental Fate

The active ingredient, thiamethoxam, has a moderate bioaccumulation potential, low mobility, and moderate persistence in soil and water. The active ingredient metalaxyl-M (and S isomer) has a low bioaccumulation potential, a low to high mobility in soil (depending on soil type), and is not persistent in the environment. Difenoconazole has a moderate degradation rate in soil when used as a seed applied treatment, and has a low to moderate mobility in soil and a moderate bioaccumulation potential.

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers unless they are specifically designed to be refillable. 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.: 29192

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

Syngenta Crop Protection Canada, Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date thereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and of the information referred to herein are beyond the control of Syngenta Crop Protection Canada, Inc., Syngenta Crop Protection Canada, Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

CRUISER MAXX[®] is a trademark of a Syngenta Group Company.