

Material Safety Data Sheet

VITAFLO® 280

Version 2.7 Revision Date: 02.02.2016 MSDS Number: 400000004577 Country: CA
Language: EN

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : VITAFLO® 280
Product code : 400000004577
Chemical nature : Carboxin - 174 gm/L, Thiram - 147 gm/L

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 : Fungicide
Restrictions on use : Agriculture, For professional users only.

Prepared by :
sds.request@arysta.com

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

DANGER!	
Appearance	liquid
Colour	light pink

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Odour	mild, sweet
Hazard Summary	Causes skin irritation. May cause an allergic skin reaction. Fatal if inhaled. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

WHMIS Regulatory status : 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.

Potential Health Effects

Target Organs : Skin

Inhalation : Highly Toxic

Skin : Causes skin irritation.
May cause allergic skin reaction.

Ingestion : May cause damage to the kidneys/ liver/ eyes/ brain/ digestive system/ central nervous system through prolonged or repeated exposure if swallowed.

Chronic Exposure : May cause allergic skin reaction.

Aggravated Medical Condition : None known.

Symptoms of Overexposure : irritant effects
Sensitisation
Symptoms may be delayed.

Carcinogenicity:

IARC Group 1: Carcinogenic to humans

Distillates (petroleum), solvent-dewaxed heavy paraffinic 64742-65-0

ACGIH Suspected human carcinogen

Distillates (petroleum), solvent-dewaxed heavy paraffinic 64742-65-0

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Confirmed animal carcinogen with unknown relevance to humans

Solvent naphtha (petroleum), heavy arom. 64742-94-5

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Carboxin - 174 gm/L
Thiram - 147 gm/L

Hazardous components

Chemical Name	CAS-No.	Concentration (% w/w)
carboxin	5234-68-4	≥ 10 - < 20
ethane-1,2-diol	107-21-1	≥ 10 - < 20
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	≥ 10 - < 20
thiram	137-26-8	≥ 10 - < 20
sodium 2-[methylethylamino]ethane-1-sulphonate	137-20-2	≥ 1 - < 5

SECTION 4. FIRST AID MEASURES

If inhaled : Remove to fresh air.
If not breathing, give artificial respiration.
Obtain medical attention.

In case of skin contact : Wash off with warm water and soap.
Remove contaminated clothing and shoes.
Wash clothing before reuse.
If symptoms persist, call a physician.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Obtain medical attention.

If swallowed : If victim is fully conscious, give a cupful of water.
Do not induce vomiting without medical advice.
Get medical attention immediately.
Do not give milk, alcoholic beverages or castor oil.

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

SECTION 5. FIREFIGHTING MEASURES

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| Suitable extinguishing media | : Extinguishing media - large fires
Alcohol-resistant foam
(on small fires)
Carbon dioxide (CO2)
Dry chemical
Water spray |
| Unsuitable extinguishing media | : Water spray jet |
| Specific extinguishing methods | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Further information | : Do not discharge extinguishing waters into streams, rivers and lakes. |
| Special protective equipment for firefighters | : Body covering protective clothing, full "turn-out" gear.
Self-contained breathing apparatus (EN 133) |
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions, protective equipment and emergency procedures | : Wear suitable protective equipment.
Avoid contact with skin and eyes. |
| Environmental precautions | : Prevent leaks and prevent soil / water pollution caused by leaks. |
| Methods and materials for containment and cleaning up | : Absorb on inert material such as sand, earth, vermiculite.
Collect for disposal.
Dam up.
Large spills should be collected mechanically (remove by pumping) for disposal.
Pump excess material into suitable container (metal drums, metal tank, or such).

In accordance with local and national regulations. |
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SECTION 7. HANDLING AND STORAGE

- | | |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice on safe handling | : Do not eat, drink or smoke when using this product.
Avoid contact with skin, eyes and clothing.
Avoid inhalation of vapour or mist.
Use with adequate ventilation.
Wash thoroughly after handling.
Wash thoroughly after handling. |
| Conditions for safe storage | : Keep in a dry, cool place. |
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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

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Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ethane-1,2-diol	107-21-1	CEV	100 mg/m3	CA ON OEL
		(c)	100 mg/m3	CA AB OEL
		(c)	100 mg/m3	CA AB OEL
		TWA (particulate)	10 mg/m3	CA BC OEL
		STEL (particulate)	20 mg/m3	CA BC OEL
		C (aerosol)	100 mg/m3	CA BC OEL
		C (Vapour)	50 ppm	CA BC OEL
		C (Vapour and mist)	50 ppm 127 mg/m3	CA QC OEL
		C	100 mg/m3	ACGIH
		C (Aerosol only)	100 mg/m3	ACGIH
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	TWA (Mist)	0.2 mg/m3	CA BC OEL
		TWA (Mist)	1 mg/m3	CA BC OEL
		TWA (Mist)	5 mg/m3	CA AB OEL
		STEL (Mist)	10 mg/m3	CA AB OEL
		TWAEV (Mist)	5 mg/m3	CA QC OEL
		STEV (Mist)	10 mg/m3	CA QC OEL
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
thiram	137-26-8	TWA	1 mg/m3	CA AB OEL
		TWA	1 mg/m3	CA BC OEL
		TWAEV	1 mg/m3	CA ON OEL
		TWAEV	5 mg/m3	CA QC OEL
		TWA (Inhalable fraction and vapor)	0.05 mg/m3	ACGIH

Personal protective equipment

Respiratory protection : In the absence of engineering controls sufficient to maintain airborne concentrations below recommended occupational exposure limit values, appropriate respiratory protection should be utilized.
A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Hand protection

Remarks : Impervious gloves

Eye protection : Safety glasses with side-shields

Skin and body protection : Preventive skin protection

Hygiene measures : Do not store near food, feed or fertilizers.

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Do not contaminate ponds, lakes, streams, or any source of water.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: light pink
Odour	: mild, sweet
Odour Threshold	: No data available
pH	: ca. 7.8
Melting point/range	: -20 °C
	: No data available
Flash point	: No data available
Evaporation rate	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: No data available
Relative vapour density	: No data available
Relative density	: 1.090 - 1.140 (25 °C)
Density	: ca. 1.117 g/cm3
Solubility(ies)	
Water solubility	: No data available
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	: No data available
Self-Accelerating decomposition	: Method: No information available.

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temperature (SADT)

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Incompatible materials	: Oxidizing agents Strong acids and strong bases
Hazardous decomposition products	: Burning produces noxious and toxic fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	: Skin contact Ingestion Inhalation
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Acute toxicity

Product:

Acute oral toxicity	: LD50 (Rat): 4,587 mg/kg Remarks: The following toxicological data shown are those obtained from tests on products of similar composition.
Acute inhalation toxicity	: LC50 (Rat): > 1.0 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg Remarks: The following toxicological data shown are those obtained from tests on products of similar composition.

Components:

carboxin:

Acute oral toxicity	: LD50 (Rat, male): 2,588 mg/kg LD50 (Rat, male): 2,588 mg/kg LD50 (Rat, male): 2,588 mg/kg
Acute inhalation toxicity	: LC50 (Rat, male and female): > 4.7 mg/l Exposure time: 4 h 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. LC50 (Rat, male and female): > 4.7 mg/l

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Exposure time: 4 h
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.

LC50 (Rat, male and female): > 4.7 mg/l
Exposure time: 4 h
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): > 4,000 mg/kg
LD50 (Rabbit, male and female): > 4,000 mg/kg
LD50 (Rabbit, male and female): > 4,000 mg/kg

ethane-1,2-diol:
Acute oral toxicity : LD50 (Rat, female): 4,700 mg/kg
LD50 (Rat, female): 4,700 mg/kg
LD50 (Rat, female): 4,700 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 10,670 mg/kg
LD50 (Rabbit): 10,670 mg/kg
LD50 (Rabbit): 10,670 mg/kg

thiram:
Acute oral toxicity : LD50 (Rat, female): 1,800 mg/kg
Acute inhalation toxicity : LC50 (Rat, female): 3.46 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

Product:

Species: Rabbit
Result: Skin irritation

Components:

carboxin:
Species: Rabbit
Result: No skin irritation

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Species: Rabbit
Result: No skin irritation

Species: Rabbit
Result: No skin irritation

thiram:
Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit
Assessment: No eye irritation

Components:

carboxin:
Species: Rabbit
Result: slight irritation
Assessment: No eye irritation

Species: Rabbit
Result: slight irritation
Assessment: No eye irritation

Species: Rabbit
Result: slight irritation
Assessment: No eye irritation

thiram:
Species: Rabbit
Result: Irritating to eyes.
Assessment: Irritating to eyes.

Respiratory or skin sensitisation

Product:

Species: Guinea pig
Assessment: Did not cause sensitisation on laboratory animals.
Remarks: Information given is based on data obtained from similar substances.

Components:

carboxin:
Species: Guinea pig
Assessment: May cause sensitisation by skin contact.
Method: Magnusson-Kligmann-Test
Result: positive
GLP: yes

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Species: Guinea pig
Assessment: May cause sensitisation by skin contact.
Method: Magnusson-Kligmann-Test
Result: positive
GLP: yes

Species: Guinea pig
Assessment: May cause sensitisation by skin contact.
Method: Magnusson-Kligmann-Test
Result: positive
GLP: yes

thiram:

Species: Guinea pig
Assessment: May cause sensitisation by skin contact.
Result: Causes sensitisation.

Germ cell mutagenicity

Components:

carboxin:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation test Species: Salmonella typhimurium Result: negative
	: Test Type: Bacterial reverse mutation test Species: Salmonella typhimurium Result: negative
	: Test Type: Bacterial reverse mutation test Species: Salmonella typhimurium Result: negative
	: Test Type: Chromosome aberration test in vitro Species: Chinese hamster ovary cells Result: Negative without activation, positive with activation
	: Test Type: Chromosome aberration test in vitro Species: Chinese hamster ovary cells Result: Negative without activation, positive with activation
	: Test Type: Chromosome aberration test in vitro Species: Chinese hamster ovary cells Result: Negative without activation, positive with activation
	: Test Type: In Vitro mammalian Cell Gene Mutation Test Species: Chinese hamster ovary cells Result: negative
	: Test Type: In Vitro mammalian Cell Gene Mutation Test Species: Chinese hamster ovary cells Result: negative
	: Test Type: In Vitro mammalian Cell Gene Mutation Test

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	Species: Chinese hamster ovary cells Result: negative
	: Test Type: Unscheduled DNA synthesis (UDS) Species: rat hepatocytes Result: positive
	: Test Type: Unscheduled DNA synthesis (UDS) Species: rat hepatocytes Result: positive
	: Test Type: Unscheduled DNA synthesis (UDS) Species: rat hepatocytes Result: positive
Genotoxicity in vivo	: Test Type: Mammalian bone marrow chromosome aberration test Species: Sprague-Dawley rat bone marrow cells Result: negative
	Test Type: Mammalian bone marrow chromosome aberration test Species: Sprague-Dawley rat bone marrow cells Result: negative
	Test Type: Mammalian bone marrow chromosome aberration test Species: Sprague-Dawley rat bone marrow cells Result: negative
	Test Type: Mammalian bone marrow chromosome aberration test Species: Sprague-Dawley rat bone marrow cells Result: negative
	Test Type: Mammalian bone marrow chromosome aberration test Species: Sprague-Dawley rat bone marrow cells Result: negative
	Test Type: Mammalian bone marrow chromosome aberration test Species: Sprague-Dawley rat bone marrow cells Result: negative
	Test Type: Unscheduled DNA synthesis (UDS) Species: Male Sprague-Dawley rat liver hepatocyte cells Result: negative
	Test Type: Unscheduled DNA synthesis (UDS) Species: Male Sprague-Dawley rat liver hepatocyte cells Result: negative
	Test Type: Unscheduled DNA synthesis (UDS)

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Species: Male Sprague-Dawley rat liver hepatocyte cells
Result: negative

Germ cell mutagenicity - Assessment : negative

negative

negative

thiram:
Genotoxicity in vitro : Test Type: Bacterial reverse mutation test
Species: Salmonella typhimurium
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: positive

: Test Type: Chromosome aberration test in vitro
Species: Chinese hamster ovary cells
Result: negative

: Test Type: In Vitro mammalian Cell Gene Mutation Test
Species: Chinese hamster ovary cells
Method: In Vitro mammalian Cell Gene Mutation Test
Result: negative

Genotoxicity in vivo : Test Type: Mammalian bone marrow chromosome aberration test
Species: Mouse
Result: negative

Test Type: Chromosome aberration test in vitro
Species: Mouse
Result: negative

Germ cell mutagenicity - Assessment : negative

Carcinogenicity

Components:

carboxin:

Species: Rat, (male)
Application Route: Oral
NOAEL: No observed adverse effect level: 0.82 mg/kg bw/day

Species: Rat, (male)
Application Route: Oral
NOAEL: No observed adverse effect level: 0.82 mg/kg bw/day

Species: Rat, (male)
Application Route: Oral

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NOAEL: No observed adverse effect level: 0.82 mg/kg bw/day

Species: Mouse
Application Route: Oral

Carcinogenicity - Assessment : negative

: negative

: negative

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen
ment

thiram:

Species: Rat
Application Route: Oral
Exposure time: 104 weeks
NOAEL: No observed adverse effect level: 1.5 mg/kg bw/day

Result: negative

Carcinogenicity - Assessment : negative
ment

Reproductive toxicity

Components:

carboxin:

Effects on fertility : General Toxicity - Parent: No observed adverse effect level: 1 mg/kg bw/day
General Toxicity F1: No observed adverse effect level F1: 20 mg/kg bw/day
Early Embryonic Development: No observed adverse effect level F2: 10 mg/kg bw/day

General Toxicity - Parent: No observed adverse effect level: 1 mg/kg bw/day
General Toxicity F1: No observed adverse effect level F1: 20 mg/kg bw/day
Early Embryonic Development: No observed adverse effect level F2: 10 mg/kg bw/day

Species: Rat
General Toxicity - Parent: No observed adverse effect level: 1 mg/kg bw/day
General Toxicity F1: No observed adverse effect level F1: 20 mg/kg bw/day
Early Embryonic Development: No observed adverse effect level F2: 10 mg/kg bw/day

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Effects on foetal development

: Species: Rat
General Toxicity Maternal: No observed adverse effect level: 10 mg/kg bw/day
Teratogenicity: No observed adverse effect level: 90 mg/kg bw/day

Species: Rat
General Toxicity Maternal: No observed adverse effect level: 10 mg/kg bw/day
Teratogenicity: No observed adverse effect level: 90 mg/kg bw/day

Species: Rat
General Toxicity Maternal: No observed adverse effect level: 10 mg/kg bw/day
Teratogenicity: No observed adverse effect level: 90 mg/kg bw/day

Species: Rabbit
General Toxicity Maternal: No observed adverse effect level: 75 mg/kg bw/day
Teratogenicity: No observed adverse effect level: 75 mg/kg bw/day

Species: Rabbit
General Toxicity Maternal: No observed adverse effect level: 75 mg/kg bw/day
Teratogenicity: No observed adverse effect level: 75 mg/kg bw/day

Species: Rabbit
General Toxicity Maternal: No observed adverse effect level: 75 mg/kg bw/day
Teratogenicity: No observed adverse effect level: 75 mg/kg bw/day

Reproductive toxicity - Assessment

: negative
negative

negative
negative

negative
negative

thiram:

Effects on fertility

: Species: Rat
General Toxicity - Parent: No observed adverse effect level: 2.3 mg/kg bw/day
General Toxicity F1: No observed adverse effect level F1: 9 mg/kg bw/day
Early Embryonic Development: No observed adverse effect level F2: 3 mg/kg bw/day

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Effects on foetal development	: Species: Rabbit General Toxicity Maternal: No observed adverse effect level: 10 mg/kg bw/day Teratogenicity: No observed adverse effect level: 10 mg/kg bw/day Species: Rat Teratogenicity: No observed adverse effect level: 7.5 mg/kg bw/day
Reproductive toxicity - Assessment	: negative negative

STOT - single exposure

Product:

Remarks: No data available

Repeated dose toxicity

Components:

carboxin:

Species: Rat, male
NOAEL: 30 mg/kg
Application Route: Dermal
Exposure time: 28 d
GLP: yes
Target Organs: Kidney

Species: Rat, male
NOAEL: 30 mg/kg
Application Route: Dermal
Exposure time: 28 d
GLP: yes
Target Organs: Kidney

Species: Rat, male
NOAEL: 30 mg/kg
Application Route: Dermal
Exposure time: 28 d
GLP: yes
Target Organs: Kidney

Species: Rat, male
NOAEL: 5.5 mg/kg
Application Route: Oral
Exposure time: 90 d
GLP: yes
Target Organs: Kidney

Species: Rat, male
NOAEL: 5.5 mg/kg
Application Route: Oral

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Exposure time: 90 d
GLP: yes
Target Organs: Kidney

Species: Rat, male
NOAEL: 5.5 mg/kg
Application Route: Oral
Exposure time: 90 d
GLP: yes
Target Organs: Kidney

thiram:
Species: Rat
NOAEL: 2.5 mg/kg
Application Route: Oral
Exposure time: 90 d
Target Organs: Stomach

Species: Rabbit
NOAEL: 300 mg/kg
Application Route: Dermal
Exposure time: 21 d

Species: Dog
NOAEL: 2 mg/kg
Application Route: Oral
Exposure time: 90 d
Target Organs: Liver

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

carboxin:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.3 mg/l
Exposure time: 96 h
Test Type: flow-through test
GLP: yes

LC50 (Oncorhynchus mykiss (rainbow trout)): 2.3 mg/l
Exposure time: 96 h
Test Type: flow-through test
GLP: yes

LC50 (Oncorhynchus mykiss (rainbow trout)): 2.3 mg/l
Exposure time: 96 h
Test Type: flow-through test
GLP: yes

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 57 mg/l
aquatic invertebrates Exposure time: 48 h

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	Test Type: flow-through test GLP: yes
	EC50 (Daphnia magna (Water flea)): > 57 mg/l Exposure time: 48 h Test Type: flow-through test GLP: yes
	EC50 (Daphnia magna (Water flea)): > 57 mg/l Exposure time: 48 h Test Type: flow-through test GLP: yes
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): 0.48 mg/l Exposure time: 5 d Test Type: static test
	EC50 (Pseudokirchneriella subcapitata (green algae)): 0.48 mg/l Exposure time: 5 d Test Type: static test
	EC50 (Pseudokirchneriella subcapitata (green algae)): 0.48 mg/l Exposure time: 5 d Test Type: static test
Toxicity to fish (Chronic toxicity)	: NOEC (Cyprinus carpio (Carp)): 0.32 mg/l Exposure time: 21 d GLP: yes
	NOEC (Cyprinus carpio (Carp)): 0.32 mg/l Exposure time: 21 d GLP: yes
	NOEC (Cyprinus carpio (Carp)): 0.32 mg/l Exposure time: 21 d Method: OECD Test Guideline 204 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0.32 mg/l Exposure time: 17 d GLP: yes
	NOEC (Daphnia magna (Water flea)): 0.32 mg/l Exposure time: 17 d GLP: yes
	NOEC (Daphnia magna (Water flea)): 0.32 mg/l Exposure time: 17 d GLP: yes
Toxicity to bacteria	: EC50 (Selenastrum capricornutum): 0.48 mg/l

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Exposure time: 5 d

Toxicity to soil dwelling organisms : LC50 (*Eisenia fetida* (earthworms)): > 500 mg/kg
Exposure time: 14 d
GLP: yes

Toxicity to terrestrial organisms : (*Colinus virginianus* (Bobwhite quail)): 83 mg/kg
GLP: yes

thiram:

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 0.046 mg/l
Exposure time: 96 h
Test Type: static test
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 0.011 mg/l
Exposure time: 48 h
Test Type: static test
GLP: yes

Toxicity to algae : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 0.065 mg/l
Exposure time: 72 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : (*Daphnia magna* (Water flea)): 0.008 mg/l
Exposure time: 21 d

Toxicity to soil dwelling organisms : LC50 (*Eisenia fetida* (earthworms)): 540 mg/kg
Exposure time: 14 d

Persistence and degradability

Components:

carboxin:

Biodegradability : Result: Not readily biodegradable.

Result: Not readily biodegradable.

Result: Not readily biodegradable.

thiram:

Biodegradability : Result: Not readily biodegradable.

Bioaccumulative potential

Components:

carboxin:

Partition coefficient: n-octanol/water : log Pow: 2.3

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log Pow: 2.3

log Pow: 2.3

ethane-1,2-diol:

Partition coefficient: n-octanol/water : log Pow: -1.3

thiram:

Partition coefficient: n-octanol/water : log Pow: 2.1

log Pow: 2.1

log Pow: 2.1

Mobility in soil

Components:

carboxin:

Distribution among environmental compartments : Koc: 152

thiram:

Distribution among environmental compartments : Koc: 9629

Other adverse effects

Components:

carboxin:

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

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

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

thiram:

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 : Dispose of waste in accordance with environmental legislation. The product should not be allowed to enter drains, water courses or the soil.

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SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

No. UN	: UN 3082
Nom d'expédition	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (carboxin, thiram)
Classe	: 9
Groupe d'emballage	: III
Étiquettes	: 9

IATA-DGR

UN/ID No.	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., Environmentally hazardous substance, liquid, n.o.s. (carboxin, thiram)
Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 964
Packing instruction (passenger aircraft)	: 964

IMDG-Code

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (carboxin, thiram)
Class	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

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

Not applicable for product as supplied.

National Regulations

TDG

Not regulated as a dangerous good	
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (carboxin, thiram)
Class	: 9
Packing group	: III
Labels	: 9
ERG Code	: 171
Marine pollutant	: yes

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SECTION 15. REGULATORY INFORMATION

WHMIS Classification : 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.

NPRI Components : ethane-1,2-diol
butan-1-ol
naphthalene
1,2,4-trimethylbenzene
ethylene oxide
acetaldehyde
1,4-dioxane

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 Cooperation 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 Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic

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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

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