

**ARBOTECT 20-S**

Version 1.0      Revision Date: 05/07/2019      SDS Number: S11120199      This version replaces all previous versions.

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**SECTION 1. IDENTIFICATION**

Product name : ARBOTECT 20-S  
Design code : A10345A  
Product Registration number : 16694  
Other means of identification : No data available

**Manufacturer or supplier's details**

Company name of supplier : Syngenta Canada Inc.  
Address : 140 Research Lane, Research Park  
Guelph ON N1G 4Z3  
Canada  
Telephone : 1-87-SYNGENTA (1-877-964-3682)  
Telefax : 1-519-823-0504  
Emergency telephone number : 1-800-327-8633 (FAST MED)

**Recommended use of the chemical and restrictions on use**

Recommended use : Fungicide

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**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the Hazardous Products Regulations**

Not a hazardous substance or mixture.

**GHS label elements**

Not a hazardous substance or mixture.

**Other hazards**

None known.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****Components**

Chemical name	CAS-No.	Concentration (% w/w)
thiabendazol (ISO)	148-79-8	20
phosphinic acid	6303-21-5	>= 5 - < 10

Actual concentration or concentration range is withheld as a trade secret

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**SECTION 4. FIRST AID MEASURES**

General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control

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		center or physician, or going for treatment.
If inhaled	:	Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control centre immediately.
In case of skin contact	:	Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.
In case of eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.
If swallowed	:	If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.
Most important symptoms and effects, both acute and delayed	:	Nonspecific No symptoms known or expected.
Notes to physician	:	There is no specific antidote available. Treat symptomatically.

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**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media	:	Extinguishing media - small fires Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Extinguishing media - large fires Alcohol-resistant foam or Water spray
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	:	As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.
Further information	:	Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.
Special protective equipment for firefighters	:	Wear full protective clothing and self-contained breathing apparatus.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Clean contaminated surface thoroughly.  
Clean with detergents. Avoid solvents.  
Retain and dispose of contaminated wash water.

**SECTION 7. HANDLING AND STORAGE**

- Advice on safe handling : Avoid contact with skin and eyes.  
When using do not eat, drink or smoke.  
For personal protection see section 8.  
Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass.
- Conditions for safe storage : No special storage conditions required.  
Keep containers tightly closed in a dry, cool and well-ventilated place.  
Keep out of the reach of children.  
Keep away from food, drink and animal feedingstuffs.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
thiabendazol (ISO)	148-79-8	TWA	5 mg/m <sup>3</sup>	Syngenta

- Engineering measures** : THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Containment and/or segregation is the most reliable technical

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protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.

Where necessary, seek additional occupational hygiene advice.

**Personal protective equipment**

Respiratory protection : No personal respiratory protective equipment normally required.  
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection

Remarks : No special protective equipment required.

Eye protection : No special protective equipment required.

Skin and body protection : No special protective equipment required.  
Select skin and body protection based on the physical job requirements.

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.  
When selecting personal protective equipment, seek appropriate professional advice.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : liquid

Colour : light amber to orange

Odour : No data available

Odour Threshold : No data available

pH : 2.7  
Concentration: 1 % w/v

Melting point/range : No data available

Boiling point/boiling range : 100 °C  
(1,013.25 hPa)

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Flash point	:	> 100 °C (990.5 hPa) Method: Pensky-Martens closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	1.095 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	:	
Solubility in other solvents	:	(25 °C) very soluble  No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	185 °C
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, dynamic	:	3.88 mPa.s ( 20 °C)  2.29 mPa.s ( 40 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Metal corrosion rate	:	Not corrosive to metals

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	:	See section "Possibility of hazardous reactions".
Chemical stability	:	Product may release hydrogen. Exercise caution when opening to allow pressure release. Avoid increased storage temperature. Do not mix with other ink waste.
Possibility of hazardous reactions	:	Gives off hydrogen by reaction with metals.

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Conditions to avoid : No decomposition if used as directed.

Incompatible materials : Aluminium  
Mild steel  
Iron

Hazardous decomposition products : No hazardous decomposition products are known.

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**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Ingestion  
Inhalation  
Skin contact  
Eye contact

**Acute toxicity****Product:**

Acute oral toxicity : LD50 (Rat, female): 5,000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 7.5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

Acute dermal toxicity : LD50 (Rat, male and female): > 5,050 mg/kg

**Components:****thiabendazol (ISO):**

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 0.53 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

**Skin corrosion/irritation****Product:**

Species : Rabbit  
Result : No skin irritation

**Components:****thiabendazol (ISO):**

Species : Rabbit  
Result : No skin irritation

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**phosphinic acid:**

Result : Corrosive after 3 minutes to 1 hour of exposure

**Serious eye damage/eye irritation****Product:**Species : Rabbit  
Result : No eye irritation**Components:****thiabendazol (ISO):**Species : Rabbit  
Result : No eye irritation**Respiratory or skin sensitisation****Product:**Test Type : Buehler Test  
Species : Guinea pig  
Result : Did not cause sensitisation on laboratory animals.**Components:****thiabendazol (ISO):**Species : Guinea pig  
Result : Did not cause sensitisation on laboratory animals.**Germ cell mutagenicity****Components:****thiabendazol (ISO):**

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

**Carcinogenicity****Components:****thiabendazol (ISO):**

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

**Reproductive toxicity****Components:****thiabendazol (ISO):**

Reproductive toxicity - Assessment : No toxicity to reproduction

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**Repeated dose toxicity****Components:****thiabendazol (ISO):**

Remarks : No adverse effect has been observed in chronic toxicity tests.

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 17 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna Straus): 2.9 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 60 mg/l  
Exposure time: 72 h

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Classification of the product is based on the summation of the concentrations of classified components.

**Components:****thiabendazol (ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.55 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Americamysis): 0.34 mg/l  
Exposure time: 96 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 14.7 mg/l  
Exposure time: 96 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.53 mg/l  
End point: Growth rate  
Exposure time: 96 h

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.012 mg/l  
Exposure time: 69 d

NOEC (Pimephales promelas (fathead minnow)): 0.11 mg/l  
Exposure time: 33 d



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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.041 mg/l  
Exposure time: 21 d

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h

**Persistence and degradability****Components:****thiabendazol (ISO):**

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: > 1 y  
Remarks: Persistent in water.

**Bioaccumulative potential****Components:****thiabendazol (ISO):**

Bioaccumulation : Remarks: Does not bioaccumulate.

**Mobility in soil****Components:****thiabendazol (ISO):**

Distribution among environmental compartments : Remarks: Low mobility in soil.

Stability in soil : Dissipation time: 33 d - 2 y  
Percentage dissipation: 50 % (DT50)  
Remarks: Persistent in soil.

**Other adverse effects****Components:****thiabendazol (ISO):**

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 very persistent and very bioaccumulating (vPvB).

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### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

- Waste from residues : Refer to the product label for specific disposal/recycling information
- Do not contaminate ponds, waterways or ditches with chemical or used container.  
Do not dispose of waste into sewer.  
Where possible recycling is preferred to disposal or incineration.  
If recycling is not practicable, dispose of in compliance with local regulations.
- Contaminated packaging : Refer to the product label for specific disposal/recycling information
- Empty remaining contents.  
Triple rinse containers.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not re-use empty containers.

### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

- UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIABENDAZOLE)  
Class : 9  
Packing group : III  
Labels : 9

##### IATA-DGR

- UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (THIABENDAZOLE)  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964  
Environmentally hazardous : yes

##### IMDG-Code

- UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIABENDAZOLE)

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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**

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(THIABENDAZOLE)  
Class : 9  
Packing group : III  
Labels : 9  
ERG Code : 171  
Marine pollutant : yes(THIABENDAZOLE)

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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**SECTION 15. REGULATORY INFORMATION**

Read the label, authorised under the Pest Control Products Act, prior to using or handling the pest control product

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. The following is the hazard information required on the pest control product label: There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label.

Caution  
Skull and crossbones  
poison  
Skin irritant  
Eye irritant  
Respiratory Irritant

**The components of this product are reported in the following inventories:**

DSL : This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.

thiabendazol (ISO)

**Canadian lists**

No substances are subject to a Significant New Activity Notification.

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**SECTION 16. OTHER INFORMATION****Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; 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; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; 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; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); 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

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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.

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