

**MERIDIAN**

Version 1.0      Revision Date: 03.05.2018      SDS Number: S146546265      This version replaces all previous versions.

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : MERIDIAN

**Design code** : A9584C

**Manufacturer or supplier's details**

Company : Syngenta SA (Pty) Ltd

Address : P.O. Box 1044, No. 4 Krokodil drift Avenue  
Brits 0250  
South Africa

Telephone : +27 12 2502 120

Telefax : +27 12 2503 125

Emergency telephone number : +27 83 1233 911

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

Recommended use : Insecticide

**2. HAZARDS IDENTIFICATION****Most important hazards**

Warning  
H410: Very toxic to aquatic life with long lasting effects.

**Other hazards**

May form combustible dust concentrations in air.

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Hazardous components**

Chemical name	CAS-No.	Classification	Concentration (% w/w)
thiamethoxam (ISO)	153719-23-4	Flam. Sol. 1; H228 Acute Tox. 4; H302 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 25 - < 30
lignosulfonic acid, ethoxylated, sodium salts	68611-14-3	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	>= 1 - < 10
sulfuric acid, mono-C12-14-	85586-07-8	Acute Tox. 4; H302	>= 3 - < 10

## MERIDIAN

Version 1.0      Revision Date: 03.05.2018      SDS Number: S146546265      This version replaces all previous versions.

alkyl esters, sodium salts		Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	
Alcohols, C12-14	80206-82-2	Aquatic Acute 1; H400	>= 0,1 - < 0,25
Substances with a workplace exposure limit :			
starch	9005-25-8		>= 50 - < 70
silica	61790-53-2		>= 1 - < 10

For explanation of abbreviations see section 16.

### 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 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.

### 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

## MERIDIAN

Version 1.0	Revision Date: 03.05.2018	SDS Number: S146546265	This version replaces all previous versions.
----------------	------------------------------	---------------------------	--

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| 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. |
| Specific extinguishing methods                | : | Do not allow run-off from fire fighting to enter drains or water courses.<br>Cool closed containers exposed to fire with water spray.   |
| Special protective equipment for firefighters | : | Wear full protective clothing and self-contained breathing apparatus.   |

### 6. ACCIDENTAL RELEASE MEASURES

- |   |   |  |
|---|---|--|
| Personal precautions, protective equipment and emergency procedures | : | Refer to protective measures listed in sections 7 and 8.<br>Avoid dust formation.  |
| Environmental precautions   | : | Do not flush into surface water or sanitary sewer system.<br>If the product contaminates rivers and lakes or drains inform respective authorities.   |
| Methods and materials for containment and cleaning up               | : | 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).<br>Do not create a powder cloud by using a brush or compressed air.<br>Clean contaminated surface thoroughly.<br>Clean with detergents. Avoid solvents.<br>Retain and dispose of contaminated wash water. |

### 7. HANDLING AND STORAGE

- |                             |   |  |
|-----------------------------|---|--|
| Advice on safe handling     | : | This material is capable of forming flammable dust clouds in air, which, if ignited, can produce a dust cloud explosion. Flames, hot surfaces, mechanical sparks and electrostatic discharges can serve as ignition sources for this material. Electrical equipment should be compatible with the flammability characteristics of this material. The flammability characteristics will be made worse if the material contains traces of flammable solvents or is handled in the presence of flammable solvents.<br><br>Avoid contact with skin and eyes.<br>When using do not eat, drink or smoke.<br>For personal protection see section 8. |
| Conditions for safe storage | : | Keep containers tightly closed in a dry, cool and well-ventilated place.   |

## MERIDIAN

Version 1.0      Revision Date: 03.05.2018      SDS Number: S146546265      This version replaces all previous versions.

Keep out of the reach of children.  
Keep away from food, drink and animal feedingstuffs.

Further information on storage stability : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
starch	9005-25-8	TWA OEL-RL (Respirable dust)	5 mg/m <sup>3</sup>	ZA OEL
Further information: Recommended Limit				
		TWA OEL-RL (inhalable dust)	10 mg/m <sup>3</sup>	ZA OEL
Further information: Recommended Limit				
thiamethoxam (ISO)	153719-23-4	TWA	3 mg/m <sup>3</sup>	Syngenta
silica	61790-53-2	TWA OEL-RL (Respirable dust)	3 mg/m <sup>3</sup>	ZA OEL
Further information: Recommended Limit				
		TWA OEL-RL (inhalable dust)	6 mg/m <sup>3</sup>	ZA OEL
Further information: Recommended Limit				
		TWA OEL-RL (Respirable dust)	1,5 mg/m <sup>3</sup>	ZA OEL
Further information: Recommended Limit				

**Engineering measures** : Containment and/or segregation is the most reliable technical 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.

**MERIDIAN**

Version 1.0      Revision Date: 03.05.2018      SDS Number: S146546265      This version replaces all previous versions.

---

**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.
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**9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : granules
- Colour : beige to brown
- Odour : musty
- Odour Threshold : No data available
- pH : 7 - 11  
Concentration: 1 % w/v
- Melting point/range** : No data available
- Boiling point/boiling range** : No data available
- Flash point : No data available
- Evaporation rate : No data available
- Flammability (solid, gas) : May form combustible dust concentrations in air.
- Burning number : 2 (20 °C)  
5 (100 °C)
- Upper explosion limit / Upper flammability limit : No data available
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**MERIDIAN**

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
1.0	03.05.2018	S146546265	

---

Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Bulk density	:	0,42 - 0,52 g/cm <sup>3</sup>
Solubility(ies) Solubility in other solvents	:	not soluble
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	> 120 °C
Minimum ignition temperature	:	400 °C
Viscosity Viscosity, dynamic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Self-heating substances	:	The substance or mixture is not classified as self heating.
Surface tension	:	46,0 - 47,6 mN/m, 20 °C
Minimum ignition energy	:	30 - 100 mJ

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**10. STABILITY AND REACTIVITY**

Possibility of hazardous reactions	:	Stable at normal ambient temperature and pressure. Hazardous polymerisation does not occur. At elevated temperatures it will undergo rapid, gas evolving thermal decomposition.
Hazardous decomposition products	:	Combustion or thermal decomposition will evolve toxic and irritant vapours.

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**11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure	:	Ingestion Inhalation Skin contact Eye contact
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**MERIDIAN**

Version 1.0      Revision Date: 03.05.2018      SDS Number: S146546265      This version replaces all previous versions.

---

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

- Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
- Acute inhalation toxicity : LC50 (Rat, male and female): > 5,29 mg/m3  
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

**Components:****thiamethoxam (ISO):**

- Acute oral toxicity : LD50 (Rat, male and female): 1.563 mg/kg
- Acute inhalation toxicity : LC50 (Rat, male and female): > 3,72 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): > 2.000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**lignosulfonic acid, ethoxylated, sodium salts:**

- Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

**sulfuric acid, mono-C12-14-alkyl esters, sodium salts:**

- Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

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

- Species : Rabbit  
Result : No skin irritation

**Components:****thiamethoxam (ISO):**

- Species : Rabbit  
Result : No skin irritation

**lignosulfonic acid, ethoxylated, sodium salts:**

- Result : Irritating to skin.

**MERIDIAN**

Version 1.0      Revision Date: 03.05.2018      SDS Number: S146546265      This version replaces all previous versions.

---

**sulfuric acid, mono-C12-14-alkyl esters, sodium salts:**

Result : Irritating to skin.

**Serious eye damage/eye irritation****Product:**

Species : Rabbit  
Result : No eye irritation

**Components:****thiamethoxam (ISO):**

Species : Rabbit  
Result : No eye irritation

**lignosulfonic acid, ethoxylated, sodium salts:**

Result : Eye irritation

**sulfuric acid, mono-C12-14-alkyl esters, sodium salts:**

Result : Risk of serious damage to eyes.

**Respiratory or skin sensitisation****Product:**

Test Type : Maximisation Test  
Species : Guinea pig  
Result : Did not cause sensitisation on laboratory animals.

**Components:****thiamethoxam (ISO):**

Species : Guinea pig  
Result : Does not cause skin sensitisation.

**Germ cell mutagenicity****Components:****thiamethoxam (ISO):**

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

**Carcinogenicity****Components:****thiamethoxam (ISO):**

Carcinogenicity - Assessment : Liver tumours noted in mice that are not relevant to humans.



**MERIDIAN**

Version 1.0      Revision Date: 03.05.2018      SDS Number: S146546265      This version replaces all previous versions.

---

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

Reproductive toxicity - Assessment : No toxicity to reproduction

**STOT - single exposure****Components:****lignosulfonic acid, ethoxylated, sodium salts:**

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

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

Remarks : Did not show neurotoxicity in animal experiments.

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
Exposure time: 72 h

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life., Classification of the product is based on the summation of the concentrations of classified components.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects., Classification of the product is based on the summation of the concentrations of classified components.

**Components:****thiamethoxam (ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l

---

## MERIDIAN

Version 1.0	Revision Date: 03.05.2018	SDS Number: S146546265	This version replaces all previous versions.
----------------	------------------------------	---------------------------	--

- Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h
- EC50 (Cloeon sp.): 0,014 mg/l  
Exposure time: 48 h
- EC50 (Chironomus riparius (harlequin fly)): 0,035 mg/l  
Exposure time: 48 h
- Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 81,8 mg/l  
Exposure time: 72 h
- NOEC (Pseudokirchneriella subcapitata (green algae)): 81,8 mg/l  
End point: Growth rate  
Exposure time: 72 h
- M-Factor (Acute aquatic toxicity) : 10
- Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 28 d  
Test Type: flow-through test
- NOEC (Oncorhynchus mykiss (rainbow trout)): > 20 mg/l  
Exposure time: 88 d  
Test Type: Early-life Stage
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 100 mg/l  
Exposure time: 21 d
- NOEC (Chironomus riparius (Midge larvae)): 0,01 mg/l  
Exposure time: 30 d
- M-Factor (Chronic aquatic toxicity) : 10
- Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l  
Exposure time: 3 h

### sulfuric acid, mono-C12-14-alkyl esters, sodium salts:

#### Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

#### Alcohols, C12-14:

#### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

**MERIDIAN**

Version 1.0      Revision Date: 03.05.2018      SDS Number: S146546265      This version replaces all previous versions.

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

Biodegradability : Result: Not readily biodegradable.  
Stability in water : Degradation half life: 11 d  
Remarks: Product is not persistent.

**silica:**

Biodegradability : Result: Not readily biodegradable.

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

Bioaccumulation : Remarks: Low bioaccumulation potential.  
Partition coefficient: n-octanol/water : log Pow: -0,13 (25 °C)

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

Distribution among environmental compartments : Remarks: Moderately mobile in soils  
Stability in soil : Dissipation time: 51 d  
Percentage dissipation: 50 % (DT50)  
Remarks: Product is not persistent.

**Other adverse effects****Components:****silica:**

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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**13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : 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

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## MERIDIAN

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
1.0	03.05.2018	S146546265	

incineration.  
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : 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.

### 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIAMETHOXAM)  
Class : 9  
Packing group : III  
Labels : 9

##### IATA-DGR

UN/ID No. : UN 3077  
Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (THIAMETHOXAM)  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 956  
Packing instruction (passenger aircraft) : 956  
Environmentally hazardous : yes

##### IMDG-Code

UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIAMETHOXAM)  
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.

#### 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.

**MERIDIAN**

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
1.0	03.05.2018	S146546265	

**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture**

None known.

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

ZA OEL : South Africa. Hazardous Chemical Substances Regulations, Occupational Exposure Limits

ZA OEL / TWA OEL-RL : Long term occupational exposure limits - recommended limit

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

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

## **MERIDIAN**

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
1.0	03.05.2018	S146546265	

---

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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