



## Safety Data Sheet SERPENTINE®

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### SECTION 1: Identification

#### 1.1 GHS Product identifier

Product name SERPENTINE®

#### 1.2 Recommended use of the chemical and restrictions on use

Agricultural Fertilizer Coating/Nitrogen Stabilizer

#### 1.3 Supplier's details

Name CAROLINA EASTERN, INC.  
Address 347 McAllister Mill Road  
Scranton SC 29591  
USA

Telephone 843-389-2761

#### 1.4 Emergency phone number

CHEMTREC Administrative Office Telephone number: 1-800-262-8200

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### SECTION 2: Hazard identification

#### 2.1 Classification of the substance or mixture

GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Eye damage/irritation (C.4.5), Cat. 1
- Acute toxicity, oral (C.4.1), Cat. 4
- Specific target organ toxicity (repeated exposure) (C.4.12), Cat. 2

#### 2.2 GHS label elements, including precautionary statements.

##### Pictograms



1. Exclamation mark; 2. Corrosion; 3. Health hazard

##### Signal word

**Danger**

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### Hazard statement(s)

Harmful if swallowed.

Harmful in contact with skin

Causes serious eye damage.

May cause damage to organs [organs] through prolonged or repeated exposure [route]

### Precautionary statement(s)

P260

Do not breathe dust/fume/gas/mist/vapors/spray.

P264

Wash thoroughly after handling.

P270

Do not eat, drink, or smoke when using this product.

P280

Wear eye protection/face protection/protective gloves/protective clothing.

P301+P312

IF SWALLOWED: Call a POISON CENTER /doctor if you feel unwell,

P302+P352

IF ON SKIN: Wash with plenty of water.

P305+P351+P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P310

Immediately call a POISON CENTER/doctor.

P312

Call a POISON CENTER/doctor if you feel unwell.

P314

Get medical advice/attention if you feel unwell.

P321

Specific treatment (see on this label).

P330

Rinse mouth.

P362+P364

Take off contaminated clothing and wash it before reuse.

P501

Dispose of contents/container.

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## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous components

##### 1. N-(n-Butyl)thiophosphoric triamide

Concentration 20 - 40 % (weight)

CAS no. 94317-64-3

##### 2. Dimethyl sulfoxide

Concentration 15 - 30 % (weight)

CAS no. 67-68-5

- Flammable liquids (C.4.19), Cat. 4

##### 3. Guanidine, N-cyano-

Concentration 5 - 10 % (weight)

CAS no. 461-58-5

##### 4. Ethylene glycol

Concentration 30 - 50 % (weight)

CAS no. 107-21-1

- Acute toxicity, oral (C.4.1), Cat. 4

- Specific target organ toxicity (repeated exposure) (C.4.12), Cat. 2

H302

Harmful if swallowed.

H373

May cause damage to organs [organs] through prolonged or repeated exposure [route]

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### Trade secret statement (OSHA 1910.1200(i))

\*The specific chemical identities and/or actual concentrations or actual concentration ranges for one or more listed components are being withheld as trade secrets under the US regulation 29 CFR 1910.1200(i).

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Wash with plenty of water for at least 15 minutes. Call a poison center or doctor if irritation develops or persists. Take off contaminated clothing and wash it before reuse.  Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
In case of eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.  Acute and delayed symptoms and effects: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.
If swallowed	Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention immediately if symptoms occur.

### 4.2 Most important symptoms/effects, acute and delayed.

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

No data available

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

### 5.2 Specific hazards arising from the chemical.

Vapors released in fire conditions may be toxic, irritating and corrosive.

### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### Further information

May intensify fire, oxidizer.

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## SECTION 6: Accidental release measures

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### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up.

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Use personal protective equipment as required. Keep container closed when not in use. Never return spills in original containers for re-use. Keep out of the reach of children. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities.

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Long-term storage at temperatures above 100F(36C) and long-term storage of opened containers, can adversely impact the efficacy of products containing N-(n-butyl)-thiophosphoric triamide.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### 1. Dimethyl sulfoxide (CAS: 67-68-5 EC: 200-664-3)

WEEL (Inhalation): 250 ppm (ACGIH)

#### 2. Ethylene glycol (CAS: 107-21-1 EC: 203-473-3)

PEL-C (Inhalation): 100 mg/m<sup>3</sup>; USA (ACGIH)

USA. ACGIH Threshold Limit Values (TLV)/ Eye & Upper Respiratory Tract irritation, not classifiable as a human carcinogen

PEL-C (Inhalation): 100 mg/m<sup>3</sup>; USA (ACGIH)

USA. ACGIH Threshold Limit Values (TLV)/ Upper Respiratory Tract irritation, Eye irritation, not classifiable as a human carcinogen

PEL-C (Inhalation): 100 mg/m<sup>3</sup>; USA (ACGIH)

USA. ACGIH Threshold Limit Values (TLV)/ Upper Respiratory Tract irritation, Eye irritation, adopted values or notations enclosed are those for which changes are proposed in the NIC, See Notice of Intended Changes (NIC), Not classifiable as a human carcinogen.

PEL-C (Inhalation): 40 ppm, 100 mg/m<sup>3</sup>; USA (Cal/OSHA)

California permissible exposure limits for chemical contaminants (Title 8, Article 107)

TWA (Inhalation): 10 mg/m<sup>3</sup>; Australia (AU/SWA)

Other advisory: Sk

TWA (Inhalation): 20 ppm; 52 mg/m<sup>3</sup>; Australia (AU/SWA)

Other advisory: Sk

STEL (Inhalation): 40 ppm; 104 mg/m<sup>3</sup>; Australia (AU/SWA)

Other advisory: Sk

### 8.2 Appropriate engineering controls

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Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Environmental exposure controls

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### Basic physical and chemical properties

Physical state	Liquid
Appearance	Slightly turbid to clear liquid
Color	Green
Odor	Fresh cut grass
Odor threshold	Not Available
Melting point/freezing point	Not Available
Boiling point or initial boiling point and boiling range	Not Applicable
Flammability	Not Available
Lower and upper explosion limit/flammability limit	Not Available
Flash point	94°C (201.2°F)
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available
pH	Not Available
Kinematic viscosity	Not Available
Solubility	Not Available
Partition coefficient n-octanol/water (log value)	Not Available
Vapor pressure	Not Available
Evaporation rate	Not Available
Density and/or relative density	1.132@ 20°C (68°F)
Relative vapor density	Not Available

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## SECTION 10: Stability and reactivity

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### 10.1 Reactivity

None under normal use conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

None under normal use conditions.

### 10.4 Conditions to avoid.

Heat, sparks, other sources of ignition and temperature extremes.

### 10.5 Incompatible materials

Dimethyl sulfoxide: Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents

Ethylene glycol: Strong acids, Strong oxidizing agents, Strong bases, Aldehydes, Aluminum

### 10.6 Hazardous decomposition products

Ethylene glycol: Hazardous decomposition products formed under fire conditions. - Carbon oxides, methanethiol, formaldehyde, water, bis(methylthio)methane, dimethyl disulfide, dimethyl sulfone, dimethyl sulfide, sulfur dioxide, nitrogen sulfur and other compounds

In the event of fire: see section 5.

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

The ATE (oral) of the mixture is: 1000 mg/kg bw

Dimethyl sulfoxide

LD50 Skin - Rat - > 5,000 mg/kg

Dimethyl sulfoxide

LD50 Oral - Rat - 14,500 mg/kg

Dimethyl sulfoxide

LC50 Inhalation - Rat - 40250 ppm

Ethylene glycol

LD50 Oral - Rat - 4,700 mg/kg

Ethylene glycol

LD50 Skin - Rabbit - 10,626 mg/kg

#### Skin corrosion/irritation

Irritating to skin.

#### Serious eye damage/irritation

Risk of serious damage to eyes.

#### Respiratory or skin sensitization

No data available

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### Germ cell mutagenicity

No data available

### Carcinogenicity

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### Reproductive toxicity

Suspected of damaging fertility or the unborn child

### Specific target organ toxicity (STOT) - single exposure

No data available

### Specific target organ toxicity (STOT) - repeated exposure

No data available

### Aspiration hazard

No data available

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## SECTION 12: Ecological information

### Toxicity

Dimethyl sulfoxide

Result: 31 % - According to the results of tests of biodegradability this product is not readily biodegradable.

Dimethyl sulfoxide

LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h

Dimethyl sulfoxide

LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h

Dimethyl sulfoxide

LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h

Dimethyl sulfoxide

EC50 - Daphnia magna (water flea) - 24,600 mg/l - 48 h

Ethylene glycol

other fish - 50 mg/l - 61 d

Ethylene glycol

Result: Ratio BOD/ThBOD 0.78 %

Ethylene glycol

Result: Ratio BOD/ThBOD 0.78 %

Ethylene glycol

LC50 - Oncorhynchus mykiss (rainbow trout) - 18,500 mg/l - 96 h

Ethylene glycol

LC50 - Leuciscus idus (golden orfe) - >10,000 mg/l - 48 h

Result: Bioconcentration factor (BCF): 0.60

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Ethylene glycol  
NOEC - Pimephales promelas (fathead minnow) - 32,000 mg/l - 7 d

Ethylene glycol  
NOEC - Pimephales promelas (fathead minnow) - 39,140 mg/l - 96 h

Ethylene glycol  
EC50 - Daphnia magna (water flea) - 74,000 mg/l - 24 h

Ethylene glycol  
NOEC - Daphnia magna (water flea) - 24,000 mg/l - 48 h

Ethylene glycol  
LC50 - Daphnia magna (water flea) - 41,000 mg/l - 48 h

### **Persistence and degradability**

No data available on product

### **Bioaccumulative potential**

No data available on product

### **Mobility in soil**

No data available

### **Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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## **SECTION 13: Disposal considerations**

### **Disposal methods**

#### **Product disposal**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### **Packaging disposal**

Dispose of as unused product.

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## **SECTION 14: Transport information**

### **DOT (US)**

Not dangerous goods

### **IMDG**

Not dangerous goods

### **IATA**

Not dangerous goods

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## **SECTION 15: Regulatory information**

### **15.1 Safety, health, and environmental regulations specific for the product in question**

#### **Canadian Domestic Substances List (DSL)**

Chemical name: Phosphorothioic triamide, butyl-

CAS: 94317-64-3



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### New Jersey Right To Know Components

Common name: Dimethyl sulfoxide

CAS number: 67-68-5

### California Prop. 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

### Pennsylvania Right To Know Components

Common name: Dimethyl sulfoxide

CAS number: 67-68-5

### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

### SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### Canadian Domestic Substances List (DSL)

Chemical name: Methane, sulfinylbis-

CAS: 67-68-5

### Canadian Domestic Substances List (DSL)

Chemical name: Guanidine, cyano-

CAS: 461-58-5

### California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Ethylene glycol

CAS number: 107-21-1

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ethylene glycol

CAS number: 107-21-1

### Pennsylvania Right To Know Components

Ethylene glycol

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CAS number: 107-21-1

### **New Jersey Right To Know Components**

Ethylene glycol  
CAS number: 107-21-1

### **Massachusetts Right To Know Components**

Ethylene glycol  
CAS number: 107-21-1

### **Canadian Domestic Substances List (DSL)**

Chemical name: 1,2-Ethanediol  
CAS: 107-21-1

### **California Prop. 65 components**

Chemical name: Ethylene glycol  
CAS number: 107-21-1  
06/19/2015 - Developmental toxicity

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## **SECTION 16: Other information**

Certification Date: November 26, 2023

### **16.1 Further information/disclaimer**

DISCLAIMER: 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.

### **16.2 Preparation information**

Prepared by IMS Labs, - Crop Excellence Regulatory Consultant