

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Mixture  
 Product name : Pilatus® FOL

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Foliar spray  
 Use of the substance/mixture : Fertilizer

### 1.3. Details of the supplier of the safety data sheet

Arysta LifeScience North America LLC  
 15401 Weston Parkway, Suite 150  
 Cary, NC 27513 – USA

### 1.4. Emergency telephone number

Emergency number : Exposure Calls (PROSAR): +1-866-303-6952 or +1-651-603-3432 (international)  
 Spill Calls (CHEMTREC) (Contract # CCN1779): +1-800-424-9300 or +1-703-527-3887 (international)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### GHS-US classification

Eye Irrit. 2A H319  
 Repr. 1B H360  
 Full text of H statements : see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07



GHS08

Signal word (GHS-US) : Danger  
 Hazard statements (GHS-US) : H319 - Causes serious eye irritation  
 H360 - May damage fertility or the unborn child  
 Precautionary statements (GHS-US) : P201 - Obtain special instructions before use  
 P202 - Do not handle until all safety precautions have been read and understood  
 P264 - Wash hands thoroughly after handling  
 P280 - Wear eye protection, protective clothing, protective gloves  
 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 P308+P313 - If exposed or concerned: Get medical advice/attention  
 P337+P313 - If eye irritation persists: Get medical advice/attention  
 P405 - Store locked up  
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.3. Other hazards

Other hazards not contributing to the classification : Harmful to aquatic life with long lasting effects.

### 2.4. Unknown acute toxicity (GHS US)

4.47 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)  
 5.64 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)  
 5.64 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
Ferrous Sulfate heptahydrate	(CAS No) 7782-63-0	1 – 3	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Disodium Octaborate Tetrahydrate	(CAS No) 12280-03-4	1 – 3	Repr. 1B, H360
zinc sulfate monohydrate	(CAS No) 7446-19-7	1 – 2	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and water. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Drink plenty of water. Get immediate medical advice/attention.

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

- Symptoms/injuries : May damage fertility or the unborn child.
- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : Irritation of the respiratory tract and the other mucous membranes. Vomiting. Diarrhea.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Burning produces irritating, toxic and noxious fumes.
- Explosion hazard : Product is not explosive.
- Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

- Firefighting instructions : Keep upwind. Cool adjacent structures and containers with water spray to protect and prevent ignition. Do not allow run-off from fire fighting to enter drains or water courses. Dike and collect water used to fight the fire.
- Protection during firefighting : Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

## SECTION 6: Accidental release measures

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

- General measures : Avoid all eye and skin contact and do not breathe vapour and mist.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.
- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.
- Emergency procedures : Stop leak if safe to do so. Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Prevent dispersion.

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

- For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
- Methods for cleaning up : Absorb and/or contain spill with inert material, then place in suitable container.

### 6.4. Reference to other sections

Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Avoid all eye and skin contact and do not breathe vapour and mist.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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

- Storage conditions : Keep only in original container. Keep container tightly closed. Do not store near food, foodstuffs, drugs, or potable water supplies.
- Incompatible products : Strong oxidizers. Strong acids. Strong bases.
- Storage temperature : <= 40 °C
- Heat and ignition sources : Keep away from heat, sparks and flame.
- Prohibitions on mixed storage : Incompatible materials.
- Storage area : Store in dry, cool, well-ventilated area. Store in a dark area. Protect from freezing.

### 7.3. Specific end use(s)

Growth rate. Regulation.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Pilatus® FOL	
ACGIH	Not applicable
OSHA	Not applicable
zinc sulfate monohydrate (7446-19-7)	
ACGIH	Not applicable
OSHA	Not applicable
Ferrous Sulfate heptahydrate (7782-63-0)	
ACGIH	Not applicable
OSHA	Not applicable
Disodium Octaborate Tetrahydrate (12280-03-4)	
ACGIH	Not applicable
OSHA	Not applicable

### 8.2. Exposure controls

- Appropriate engineering controls : Avoid splashing. Provide adequate general and local exhaust ventilation.
- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear suitable gloves resistant to chemical penetration. PVC. nitrile rubber gloves. neoprene gloves.
- Eye protection : Chemical goggles or safety glasses.
- Skin and body protection : Long sleeved protective clothing.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. NIOSH. Approved respirator. Full face respirator.
- Environmental exposure controls : Prevent contaminated water run-off. Prevent leakage or spillage.
- Consumer exposure controls : Avoid contact during pregnancy/while nursing.
- Other information : Do not eat, drink or smoke when using this product.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Turbid. sediment.
Colour	: brown
Odour	: mild characteristic
Odour threshold	: No data available
pH	: 4 - 5 (10% dilution)
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 104 °C
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: 17.5 mm Hg
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Density	: 1.16 g/cm <sup>3</sup>
Solubility	: Miscible with water.
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

#### 9.2. Other information

VOC content	: 70 - 80 %
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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No dangerous reactions known.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

#### 10.4. Conditions to avoid

Heat.

#### 10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers.

#### 10.6. Hazardous decomposition products

Burning produces irritating, toxic and noxious fumes.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eyes contact

Acute toxicity : Not classified

#### zinc sulfate monohydrate (7446-19-7)

ATE US (oral)	500.000 mg/kg bodyweight
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# Pilatus® FOL

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: May damage fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: Irritation of the respiratory tract and the other mucous membranes. Vomiting. Diarrhea.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology – water : Harmful to aquatic life with long lasting effects.

#### 12.2. Persistence and degradability

##### Pilatus® FOL

Persistence and degradability	May cause long-term adverse effects in the environment.
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#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Dispose of container in a licensed facility.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Not considered a dangerous good for transport regulations

#### Additional information

Other information : No supplementary information available.

#### ADR

No additional information available

#### Transport by sea

##### IMDG

Transport hazard class(es) (IMDG) : Not applicable

Marine pollutant :

#### Air transport

##### IATA

Transport hazard class(es) (IATA) : Not applicable

Marine pollutant :

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

**zinc sulfate monohydrate (7446-19-7)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**Ferrous Sulfate heptahydrate (7782-63-0)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**Disodium Octaborate Tetrahydrate (12280-03-4)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

**zinc sulfate monohydrate (7446-19-7)**

Listed on the Canadian DSL (Domestic Substances List) inventory

**Ferrous Sulfate heptahydrate (7782-63-0)**

Listed on the Canadian DSL (Domestic Substances List) inventory

**Disodium Octaborate Tetrahydrate (12280-03-4)**

Listed on the Canadian DSL (Domestic Substances List) inventory

#### EU-Regulations

**zinc sulfate monohydrate (7446-19-7)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Ferrous Sulfate heptahydrate (7782-63-0)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Disodium Octaborate Tetrahydrate (12280-03-4)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

No additional information available

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

Data sources

- : ACGIH (American Conference of Government Industrial Hygienists).
- European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>.
- Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.
- National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.
- NIOSH Occupational Health Guide for chemical Substances - Vol. II, September, 1978.
- OSHA 29CFR 1910.1200 Hazard Communication Standard.
- TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Abbreviations and acronyms

- : ATE: Acute Toxicity Estimate.
- CAS (Chemical Abstracts Service) number.
- EC50: Environmental Concentration associated with a response by 50% of the test population.
- GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
- LD50: Lethal Dose for 50% of the test population.
- OSHA: Occupational Safety & Health Administration.
- STEL: Short Term Exposure Limits.
- TSCA: Toxic Substances Control Act.
- TWA: Time Weighted Average.

Other information

- : None.

# Pilatus® FOL

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Full text of H-statements:

H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H360	May damage fertility or the unborn child
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

NFPA health hazard

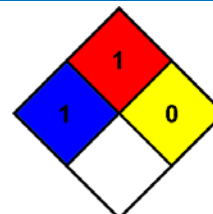
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Redstone SDS US GHS for Arysta

### SDS Prepared by:

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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*