

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Product name : Pilatus™

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

Use of the substance/mixture : Fertilizer.
 Restrictions on use : No additional information available

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
 T 1-866-761-9397

1.4. Emergency telephone number

Emergency number : Exposure calls (PROPHARMA): 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. 2B H320
 Aquatic Chronic 2 H411

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS09

Signal word (GHS-US) : Warning
 Hazard statements (GHS-US) : H320 - Causes eye irritation
 H411 - Toxic to aquatic life with long lasting effects.
 Precautionary statements (GHS-US) : P264 - Wash hands thoroughly after handling.
 P273 - Avoid release to the environment.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P313 - If eye irritation persists: Get medical advice/attention.
 P391 - Collect spillage.
 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

No additional information available

2.4. Unknown acute toxicity (GHS US)

5.01% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
 19.81% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
 19.81% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	% (w/w)	GHS-US classification
zinc sulfate monohydrate	(CAS-No.) 7446-19-7	10 – 15	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Oxidized lignosulfonate	(CAS-No.) none	10 – 15	Eye Irrit. 2A, H319 STOT SE 3, H335

*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 person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Gently wash with plenty of soap and water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists.
- First-aid measures after ingestion : Do NOT induce vomiting. Drink plenty of water. Get immediate medical advice/attention.

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

- Symptoms/effects after inhalation : Irritation.
- Symptoms/effects after skin contact : May cause slight irritation.
- Symptoms/effects after eye contact : Causes eye irritation.
- Symptoms/effects after ingestion : May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract. Diarrhea. Nausea. Vomiting.

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

Treat symptomatically.

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 : Not flammable.
- Explosion hazard : Product is not explosive.
- Reactivity : No dangerous reactions known.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Do not allow run-off from fire fighting to enter drains or water courses.
- 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 : Ventilate area. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

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. Following recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

6.4. Reference to other sections

Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : 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 : Do not store near food, foodstuffs, drugs, or potable water supplies. Keep container tightly closed. Keep only in original container.
Incompatible products : Corrosive substances. Explosives.
Incompatible materials : Strong bases. Strong oxidizers.
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.
Special rules on packaging : All containers must be labelled to warn against exposure.

7.3. Specific end use(s)

Fertilizer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Pilatus™	
ACGIH	Not applicable
OSHA	Not applicable
zinc sulfate monohydrate (7446-19-7)	
ACGIH	Not applicable
OSHA	Not applicable
Oxidized lignosulfonate (none)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station. Eyewash stations.
Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Wear suitable gloves. nitrile rubber gloves. neoprene gloves. PVC.
Eye protection : Chemical goggles or safety glasses.
Respiratory protection : In case of inadequate ventilation wear respiratory protection. NIOSH. Approved respirator.
Environmental exposure controls : Prevent contaminated water run-off.
Consumer exposure controls : Keep out of reach of children.
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
Colour : brown
Odour : slight aromatic
Odour threshold : No data available
pH : 2 - 3.5 (10 % dilution)
Melting point : No data available
Freezing point : No data available

Boiling point	: 103 °C
Flash point	: Not flammable
Relative evaporation rate (butylacetate=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	: 1.23 g/cm ³
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

No additional information available

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

Extremely high or low temperatures.

10.5. Incompatible materials

Strong bases. Strong oxidizers. Corrosive substances. Explosives.

10.6. Hazardous decomposition products

Thermal decomposition generates : Toxic gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Skin and eye contact; Inhalation

Acute toxicity : Not classified

Pilatus™	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
zinc sulfate monohydrate (7446-19-7)	
ATE US (oral)	500 mg/kg bodyweight
Oxidized lignosulfonate (none)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg

Skin corrosion/irritation	: Not classified (Irritating to rabbits on cutaneous application. Slightly irritant but not relevant for classification)
Serious eye damage/irritation	: Causes eye irritation. (Irritating to rabbits on ocular application)

Respiratory or skin sensitisation	: Not classified (No sensitizing reaction was observed for guinea pigs)
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: Irritation.
Symptoms/effects after skin contact	: May cause slight irritation.
Symptoms/effects after eye contact	: Causes eye irritation.
Symptoms/effects after ingestion	: May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract. Diarrhea. Nausea. Vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Pilatus™	
Persistence and degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

12.4. Mobility in soil

12.5. Other adverse effects

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.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN3082 Environmentally hazardous substances, liquid, n.o.s. (zinc sulfate monohydrate), 9, III
UN-No.(DOT)	: UN3082
Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s. (zinc sulfate monohydrate)
Packing group (DOT)	: III - Minor Danger
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)



Dangerous for the environment : Yes

Pilatus™

Safety Data Sheet

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

Marine pollutant : Yes



Additional information

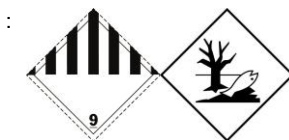
Emergency Response Guide (ERG) Number : 171

Other information : Non-bulk (<= 119 gallons / 450 Liters) Not Regulated; Bulk (> 119 gallons / 450 Liters) Regulated as stated.

Transport by sea

IMDG

Transport hazard class(es) (IMDG) : 9



Marine pollutant : Yes

UN-No. (IMDG) : 3082

Transport document description (IMDG) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (zinc sulfate monohydrate), 9, III, MARINE POLLUTANT

Class (IMDG) : 9 - Miscellaneous dangerous substances and articles

Packing group (IMDG) : III - substances presenting low danger

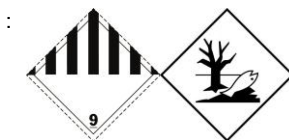
EmS-No. (Fire) : F-A

EmS-No. (Spillage) : S-F

Air transport

IATA

Transport hazard class(es) (IATA) : 9



Marine pollutant : Yes

UN-No. (IATA) : 3082

Transport document description (IATA) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (zinc sulfate monohydrate), 9, III

Class (IATA) : 9 - Miscellaneous Dangerous Goods

Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

zinc sulfate monohydrate (7446-19-7)

Listed on the Canadian DSL (Domestic Substances List) inventory.

15.3. US State regulations

No additional information available

SECTION 16: Other information

Revision date : 06/05/2018

Data sources : European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>. National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-statements:

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H320	Causes eye irritation
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

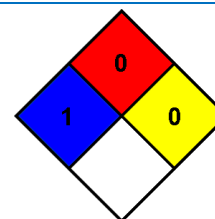
Abbreviations and acronyms:

	ACGIH (American Conference of Government Industrial Hygienists)
	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	CLP: Classification, Labelling, Packaging.
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
	OSHA: Occupational Safety & Health Administration
	TSCA: Toxic Substances Control Act

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

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



Indication of changes:
Classification.

SDS Prepared by: The Redstone Group, LLC.
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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