

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

1.1. Product identifier

Product form : Mixture
 Product name : ZOLERA™ FX FUNGICIDE
 Other means of identification : EPA Reg. No. 66330-424

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

Use of the substance/mixture : Fungicide

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

Skin Sens. 1 H317
 STOT RE 1 H372

Full text of H-statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H317 - May cause an allergic skin reaction
 H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) :

P260 - Do not breathe mist, vapours
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
 P264 - Wash hands thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 P272 - Contaminated work clothing must not be allowed out of the workplace
 P280 - Wear protective clothing, protective gloves
 P302+P352 - If on skin: Wash with plenty of water
 P314 - Get medical advice/attention if you feel unwell
 P321 - Specific treatment (see First aid measures on this label)
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
 P363 - Wash contaminated clothing before reuse
 P501 - Dispose of contents/container to an authorised waste collection point

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

0.89 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
 0.89 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
 0.89 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

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3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
Fluoxastrobin (Main constituent)	(CAS No) 361377-29-9	10 – 20	Acute Tox. 4 (Inhalation:dust,mist), H332 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
tetraconazole (ISO) (Main constituent)	(CAS No) 112281-77-3	10 – 20	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Aquatic Chronic 2, H411
Polymeric Surfactant	(CAS No) proprietary	1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Polymer/emulsifier	(CAS No) proprietary	1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
1,2-benzisothiazolone	(CAS No) 2634-33-5	0.01 – 0.5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Acute 1, H400

*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. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.
- First-aid measures after ingestion : Rinse mouth. Get medical advice/attention.

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

- Symptoms/injuries : Causes damage to organs through prolonged or repeated exposure.
- Symptoms/injuries after skin contact : May cause an allergic skin reaction. Slight irritation.
- Symptoms/injuries after eye contact : May cause slight irritation.

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 : No particular fire or explosion hazard.
- Reactivity : No dangerous reactions known.

5.3. Advice for firefighters

- Firefighting instructions : Do not allow run-off from fire fighting to enter drains or water courses.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus.

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 : Wear suitable protective clothing and gloves.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing and gloves.
- Emergency procedures : Ventilate area.

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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 : Absorb and/or contain spill with inert material, then place in suitable container.
Methods for cleaning up : Following recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

6.4. Reference to other sections

Section 13: disposal information. 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 breathe mist, vapours.
Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. 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 the original container in a cool well ventilated place. Do not store near food, foodstuffs, drugs, or potable water supplies.
Heat and ignition sources : Keep away from heat, sparks and flame.
Storage area : Store in a dry place. Store in a well-ventilated place.

7.3. Specific end use(s)

Fungicide.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ZOLERA™ FX FUNGICIDE	
ACGIH	Not applicable
OSHA	Not applicable
Fluoxastrobin (361377-29-9)	
ACGIH	Not applicable
OSHA	Not applicable
tetraconazole (ISO) (112281-77-3)	
ACGIH	Not applicable
OSHA	Not applicable
Polymer/emulsifier (proprietary)	
ACGIH	Not applicable
OSHA	Not applicable
Polymeric Surfactant (proprietary)	
ACGIH	Not applicable
OSHA	Not applicable
1,2-benzisothiazolone (2634-33-5)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls : Avoid splashing. Use only outdoors or in a well-ventilated area.
Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : Wear suitable gloves. nitrile rubber gloves. Butyl rubber gloves. PVC.
Eye protection : In case of splashing or aerosol production: protective goggles.
Skin and body protection : Long sleeved protective clothing.

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Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Use an approved respirator equipped with oil/mist cartridges.
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	: Off-white
Odour	: Latex Paint
Odour threshold	: No data available
pH	: 6.67 (1% in suspension)
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 93 °C
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	: No data available
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Density	: 1.1224 g/ml
Solubility	: Water: Solubility in water of component(s) of the mixture : • Fluoxastrobin: 43 mg/l @ 20 °C pH 4; 2.29 mg/l @ 20 °C pH 7; 2.27 mg/l @ 20 °C pH 9 • tetraconazole (ISO): 189.8 mg/l @ 20 °C
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	: 994 mPa.s @ 25 °C

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

Heat.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon oxides (CO, CO₂). Hydrogen fluoride. hydrogen chloride. Hydrogen cyanide. Nitrogen oxides.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact
Acute toxicity : Not classified

ZOLERA™ FX FUNGICIDE	
LD50 oral rat	3383 mg/kg
LD50 dermal rat	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 2.1 mg/l/4h
ATE US (oral)	3383.000 mg/kg bodyweight

Fluoxastrobin (361377-29-9)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 5000 mg/kg
LC50 inhalation rat (mg/l)	4.9 mg/l/4h
ATE US (vapours)	4.900 mg/l/4h
ATE US (dust,mist)	4.900 mg/l/4h

tetraconazole (ISO) (112281-77-3)	
ATE US (oral)	500.000 mg/kg bodyweight
ATE US (gases)	4500.000 ppmv/4h
ATE US (vapours)	11.000 mg/l/4h
ATE US (dust,mist)	1.500 mg/l/4h

1,2-benzisothiazolone (2634-33-5)	
ATE US (oral)	500.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified
(Slightly irritating to skin)
Serious eye damage/irritation : Not classified
(Minimally irritating)
Respiratory or skin sensitisation : May cause an allergic skin reaction.
(Positive)
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified

In subchronic, chronic, and reproduction studies on rats, and carcinogenicity studies on mice, and a chronic study on dogs, increase liver weight, increases in serum enzymes, or gross and microscopic liver pathology were noted, providing evidence of liver toxicity upon repeated exposure to very high doses of tetraconazole. Dietary administration of tetraconazole to mice throughout their lifetime at very high doses resulted in an increased incidence of neoplastic effects in liver and the formation of tumors. The significance of the neoplastic effect in mouse liver is unknown with respect to potential human exposure.

Specific target organ toxicity (repeated exposure) : Causes damage to organs through prolonged or repeated exposure.

Fluoxastrobin (361377-29-9)	
NOAEL (oral, rat, 90 days)	1.5 mg/kg bodyweight/day liver effects

Aspiration hazard : Not classified
Symptoms/injuries after skin contact : May cause an allergic skin reaction. Slight irritation.
Symptoms/injuries after eye contact : May cause slight irritation.

SECTION 12: Ecological information

12.1. Toxicity

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

Fluoxastrobin (361377-29-9)	
LC50 fish 1	0.435 mg/l 96 h Oncorhynchus mykiss
LC50 other aquatic organisms 1	0.053 mg/l 96 h M. bahia
EC50 Daphnia 1	0.48 mg/l 48 h
LC50 fish 2	0.57 mg/l 96 h Cyprinus carpio ; 0.97 mg/l 96 h Lepomis macrochirus

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tetraconazole (ISO) (112281-77-3)	
LC50 fish 1	4.8 mg/l 96 h Rainbow trout
EC50 Daphnia 1	3 mg/l 48 h
EC50 other aquatic organisms 1	0.31 mg/l Duckweed
LC50 fish 2	4.3 mg/l 96 h Bluegill

12.2. Persistence and degradability

ZOLERA™ FX FUNGICIDE	
Persistence and degradability	May cause long-term adverse effects in the environment.

Fluoxastrobin (361377-29-9)	
Persistence and degradability	Not rapidly degradable.

tetraconazole (ISO) (112281-77-3)	
Persistence and degradability	Product persists.

12.3. Bioaccumulative potential

Fluoxastrobin (361377-29-9)	
Bioconcentration factor (BCF REACH)	52.1
Log Pow	2.86 @ 20 °C
Bioaccumulative potential	Does not bioaccumulate significantly.

tetraconazole (ISO) (112281-77-3)	
Bioconcentration factor (BCF REACH)	35.7
Log Pow	3.56 @ 20 °C

12.4. Mobility in soil

Fluoxastrobin (361377-29-9)	
Ecology - soil	Slightly mobile in soil.

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.

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

- Transport document description : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tetraconazole, Fluoxastrobin), 9, III, (E)
Packing group (ADR) : III
Class (ADR) : 9 - Miscellaneous dangerous substances and articles
Hazard identification number (Kemler No.) : 90
Classification code (ADR) : M6
Danger labels (ADR) : 9 - Miscellaneous dangerous substances and articles



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Orange plates : 

Tunnel restriction code (ADR) : E
Limited quantities (ADR) : 5I
Excepted quantities (ADR) : E1

Transport by sea

IMDG

Transport hazard class(es) (IMDG) : 9
Danger labels (IMDG) : 9

Marine pollutant : Yes



UN-No. (IMDG) : 3082
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tetraconazole, Fluoxastrobin)
Class (IMDG) : 9 - Miscellaneous dangerous substances and articles
Packing group (IMDG) : III - substances presenting low danger

Air transport

IATA

Transport hazard class(es) (IATA) : 9
Hazard labels (IATA) : 9

Marine pollutant : Yes



UN-No. (IATA) : 3082
Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s. (Tetraconazole, Fluoxastrobin)
Class (IATA) : 9 - Miscellaneous Dangerous Goods
Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Fluoxastrobin (361377-29-9)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

tetraconazole (ISO) (112281-77-3)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Polymer/emulsifier (proprietary)

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

Polymeric Surfactant (proprietary)

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

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1,2-benzisothiazolone (2634-33-5)

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

15.2. International regulations

CANADA

Fluoxastrobin (361377-29-9)

Not listed on the Canadian DSL (Domestic Substances List) inventory.

tetraconazole (ISO) (112281-77-3)

Not listed on the Canadian DSL (Domestic Substances List) inventory.

Polymer/emulsifier (proprietary)

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

Polymeric Surfactant (proprietary)

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

1,2-benzisothiazolone (2634-33-5)

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

EU-Regulations

Fluoxastrobin (361377-29-9)

Not listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

tetraconazole (ISO) (112281-77-3)

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

1,2-benzisothiazolone (2634-33-5)

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

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Sens. 1 H317

STOT RE 1 H372

Aquatic Acute 1 H400

Aquatic Chronic 2 H411

Full text of classification categories and H statements : see section 16

National regulations

Fluoxastrobin (361377-29-9)

Not listed on the Canadian Non-Domestic Substances List (NDSL).

tetraconazole (ISO) (112281-77-3)

Not listed on the Canadian Non-Domestic Substances List (NDSL).

Polymer/emulsifier (proprietary)

Polymer exempt from EINECS.

Polymeric Surfactant (proprietary)

Polymer exempt from EINECS.

1,2-benzisothiazolone (2634-33-5)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on Taiwan National Chemical Inventory

Listed on KECI (Korean Existing Chemicals Inventory)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on NZIoC (New Zealand Inventory of Chemicals)

15.3. US State regulations

No additional information available

15.4. US EPA – FIFRA Regulations

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

Signal word (FIFRA)

: CAUTION.

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Hazard statements (FIFRA)	: Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
Environmental hazards	: This pesticide is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. The active ingredient in this product can be persistent for several months or longer. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark, or other sensitive areas that may be exposed to spray drift. Do not contaminate water when disposing of equipment washwater or rinsate.
Physical or Chemical hazards	: None

SECTION 16: Other information

Indication of changes	: Composition/information on ingredients.
Revision date	: 09/28/2015
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). 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. 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. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. LD50: Lethal Dose for 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). NOEC: No Observable Effect Concentration. OSHA: Occupational Safety & Health Administration. TSCA: Toxic Substances Control Act.
Other information	: None.

Full text of H-statements:

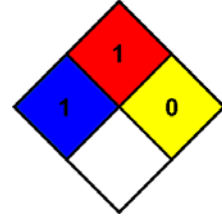
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, category 1
Skin Sens. 1B	Sensitisation — Skin, category 1B
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H372	Causes damage to organs through prolonged or repeated exposure
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

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- 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: 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