



### TRILEX® ADVANCED

Version 2.0 / USA  
102000018535

1/11  
Revision Date: 11/19/2015  
Print Date: 01/04/2017

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### Product identifier

**Trade name** TRILEX® ADVANCED

**Product code (UVP)** 79277199

**SDS Number** 102000018535

**EPA Registration No.** 264-1069

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

**Use** Fungicide, Seed treatment

**Restrictions on use** See product label for restrictions.

### Information on supplier

**Supplier** Bayer CropScience  
2 T.W. Alexander Drive  
Research Triangle PK, NC 27709  
United States

**Responsible Department** Email: SDSINFO.BCS-NA@bayer.com

### Emergency telephone no.

**Emergency Telephone Number (24hr/ 7 days)** 1-800-334-7577

**Product Information Telephone Number** 1-866-99BAYER (1-866-992-2937)

## SECTION 2: HAZARDS IDENTIFICATION

### Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity(Inhalation): Category 4



**Signal word:** Warning

### Hazard statements

Harmful if inhaled.

### Precautionary statements

Avoid breathing mist and spray.

Use only outdoors or in a well-ventilated area.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician if you feel unwell.

**TRILEX® ADVANCED**Version 2.0 / USA  
1020000185352/11  
Revision Date: 11/19/2015  
Print Date: 01/04/2017**Other hazards**

No other hazards known.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Hazardous Component Name</b>	<b>CAS-No.</b>	<b>Concentration % by weight</b>
Trifloxystrobin	141517-21-7	8.55
Triadimenol	55219-65-3	4.27
Metalaxyl	57837-19-1	12.82
Zinc sulphate heptahydrate	7446-20-0	3.4
Glycerine	56-81-5	11.0

**SECTION 4: FIRST AID MEASURES****Description of first aid measures**

<b>General advice</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Inhalation</b>	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
<b>Skin contact</b>	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
<b>Eye contact</b>	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

**Most important symptoms and effects, both acute and delayed****Symptoms** To date no symptoms are known.**Indication of any immediate medical attention and special treatment needed****Treatment** Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

**TRILEX® ADVANCED**Version 2.0 / USA  
1020000185353/11  
Revision Date: 11/19/2015  
Print Date: 01/04/2017**SECTION 5: FIREFIGHTING MEASURES****Extinguishing media****Suitable** Water spray, Foam, Carbon dioxide (CO<sub>2</sub>), Dry chemical**Unsuitable** None known.**Special hazards arising from the substance or mixture** Dangerous gases are evolved in the event of a fire.**Advice for firefighters****Special protective equipment for fire-fighters** Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.**Further information** Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.**Flash point** no data available**Autoignition temperature** no data available**Lower explosion limit** no data available**Upper explosion limit** no data available**Explosivity** not applicable**SECTION 6: ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures****Precautions** Isolate hazard area. Keep unauthorized people away. Avoid contact with spilled product or contaminated surfaces.**Methods and materials for containment and cleaning up****Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.**Additional advice** Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.**Reference to other sections** Information regarding safe handling, see section 7.  
Information regarding personal protective equipment, see section 8.  
Information regarding waste disposal, see section 13.

**TRILEX® ADVANCED**Version 2.0 / USA  
102000018535

4/11

Revision Date: 11/19/2015

Print Date: 01/04/2017

**SECTION 7: HANDLING AND STORAGE****Precautions for safe handling**

**Advice on safe handling** Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation.

**Hygiene measures** Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.  
Remove soiled clothing immediately and clean thoroughly before using again. Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Wash thoroughly and put on clean clothing.

**Conditions for safe storage, including any incompatibilities**

**Requirements for storage areas and containers** Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Keep away from direct sunlight.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

Components	CAS-No.	Control parameters	Update	Basis
Trifloxystrobin	141517-21-7	2.7 mg/m <sup>3</sup> (TWA)		OES BCS*
Triadimenol	55219-65-3	3ug/m <sup>3</sup> (AN ESL)	07 2011	TX ESL
Triadimenol	55219-65-3	30ug/m <sup>3</sup> (ST ESL)	07 2011	TX ESL
Triadimenol	55219-65-3	1.61 mg/m <sup>3</sup> (TWA)		OES BCS*
Metalaxyl	57837-19-1	5ug/m <sup>3</sup> (AN ESL)	07 2011	TX ESL
Metalaxyl	57837-19-1	50ug/m <sup>3</sup> (ST ESL)	07 2011	TX ESL
Zinc sulphate heptahydrate	7446-20-0	20ug/m <sup>3</sup> (ST ESL)	03 2014	TX ESL
Zinc sulphate heptahydrate	7446-20-0	2ug/m <sup>3</sup> (AN ESL)	03 2014	TX ESL
Glycerine (Respirable fraction.)	56-81-5	5 mg/m <sup>3</sup> (PEL)	02 2006	OSHA Z1
Glycerine (Total dust.)	56-81-5	15 mg/m <sup>3</sup> (PEL)	02 2006	OSHA Z1
Glycerine (Respirable fraction.)	56-81-5	5 mg/m <sup>3</sup> (TWA)	1989	OSHA Z1A

**TRILEX® ADVANCED**Version 2.0 / USA  
102000018535

5/11

Revision Date: 11/19/2015

Print Date: 01/04/2017

Glycerine (Total dust.)	56-81-5	10 mg/m <sup>3</sup> (TWA)	1989	OSHA Z1A
Glycerine (Total dust and mist.)	56-81-5	10 mg/m <sup>3</sup> (TWA)	06 2008	TN OEL
Glycerine (Respirable fraction and dust or fume.)	56-81-5	5 mg/m <sup>3</sup> (TWA)	06 2008	TN OEL
Glycerine	56-81-5	1000ug/m <sup>3</sup> (ST ESL)	03 2014	TX ESL
Glycerine	56-81-5	50ug/m <sup>3</sup> (ST ESL)	03 2014	TX ESL
Glycerine	56-81-5	100ug/m <sup>3</sup> (AN ESL)	03 2014	TX ESL
Glycerine	56-81-5	5ug/m <sup>3</sup> (AN ESL)	03 2014	TX ESL

\*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

**Exposure controls****Personal protective equipment**

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

**Respiratory protection**

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

**Hand protection**

Chemical resistant nitrile rubber gloves

**Eye protection**

Safety glasses with side-shields

**Skin and body protection**

Wear long-sleeved shirt and long pants and shoes plus socks.

**General protective measures**

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.

Keep and wash PPE separately from other laundry.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	beige
<b>Physical State</b>	suspension
<b>Odor</b>	slight
<b>Odour Threshold</b>	no data available
<b>pH</b>	5 - 7 at 100 % (23 °C)
<b>Vapor Pressure</b>	no data available



### TRILEX® ADVANCED

Version 2.0 / USA  
102000018535

6/11  
Revision Date: 11/19/2015  
Print Date: 01/04/2017

---

<b>Vapor Density (Air = 1)</b>	no data available
<b>Density</b>	1.17 g/cm <sup>3</sup> at 20 °C
<b>Evaporation rate</b>	no data available
<b>Boiling Point</b>	no data available
<b>Melting / Freezing Point</b>	no data available
<b>Water solubility</b>	dispersible
<b>Minimum Ignition Energy</b>	not applicable
<b>Decomposition temperature</b>	not applicable
<b>Partition coefficient: n-octanol/water</b>	not applicable
<b>Viscosity</b>	200 - 800 mPa.s at 25 °C
<b>Flash point</b>	no data available
<b>Autoignition temperature</b>	no data available
<b>Lower explosion limit</b>	no data available
<b>Upper explosion limit</b>	no data available
<b>Explosivity</b>	not applicable

---

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

<b>Thermal decomposition</b>	not applicable
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Extremes of temperature and direct sunlight.
<b>Incompatible materials</b>	no data available
<b>Hazardous decomposition products</b>	No decomposition products expected under normal conditions of use.

---

## SECTION 11: TOXICOLOGICAL INFORMATION

<b>Exposure routes</b>	Ingestion, Inhalation, Eye contact, Skin Absorption
<b>Immediate Effects</b>	

**TRILEX® ADVANCED**Version 2.0 / USA  
1020000185357/11  
Revision Date: 11/19/2015  
Print Date: 01/04/2017

<b>Eye</b>	Moderate eye irritation.
<b>Skin</b>	May cause slight irritation. Harmful if absorbed through skin.
<b>Ingestion</b>	Harmful if swallowed.
<b>Inhalation</b>	Harmful if inhaled.

**Information on toxicological effects**

<b>Acute oral toxicity</b>	LD50 (female rat) > 2,000 mg/kg
<b>Acute inhalation toxicity</b>	LC50 (rat) > 2.6 mg/l Exposure time: 4 h Determined in the form of liquid aerosol.
<b>Acute dermal toxicity</b>	LD50 (rat) > 5,000 mg/kg
<b>Skin irritation</b>	Slight irritation (rabbit)
<b>Eye irritation</b>	Minimally irritating. (rabbit)
<b>Sensitisation</b>	Non-sensitizing. (guinea pig)

**Assessment repeated dose toxicity**

Trifloxystrobin did not cause specific target organ toxicity in experimental animal studies.  
Triadimenol did not cause specific target organ toxicity in experimental animal studies.  
Metalaxyl did not cause specific target organ toxicity in experimental animal studies.

**Assessment mutagenicity**

Trifloxystrobin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.  
Triadimenol was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.  
Metalaxyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**Assessment carcinogenicity**

Trifloxystrobin was not carcinogenic in lifetime feeding studies in rats and mice.  
Triadimenol caused at high dose levels an increased incidence of tumours in mice in the following organ(s): liver. The increased tumour incidence is not considered to be treatment related.  
Metalaxyl was not carcinogenic in lifetime feeding studies in rats and mice.

**ACGIH**

None.

**NTP**

None.

**IARC**

None.

**OSHA**

None.

**Assessment toxicity to reproduction**

Trifloxystrobin caused reproduction toxicity in a two-generation study in rats only at dose levels also

**TRILEX® ADVANCED**Version 2.0 / USA  
102000018535

8/11

Revision Date: 11/19/2015

Print Date: 01/04/2017

toxic to the parent animals. The reproduction toxicity seen with Trifloxystrobin is related to parental toxicity.

Triadimenol caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. Triadimenol caused reduced fertility.

Metalaxyl did not cause reproductive toxicity in a multi-generation study in rats.

**Assessment developmental toxicity**

Trifloxystrobin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Trifloxystrobin are related to maternal toxicity.

Triadimenol caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Triadimenol are related to maternal toxicity.

Metalaxyl did not cause developmental toxicity in rats and rabbits.

**Further information**

Only acute toxicity studies have been performed on the formulated product.

The non-acute information pertains to the active ingredient(s).

---

**SECTION 12: ECOLOGICAL INFORMATION**

<b>Toxicity to fish</b>	LC50 (Oncorhynchus mykiss (rainbow trout)) 0.015 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient trifloxystrobin.
<b>Toxicity to aquatic invertebrates</b>	EC50 (Daphnia magna (Water flea)) 0.016 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient trifloxystrobin.
<b>Toxicity to aquatic plants</b>	IC50 (Desmodosmus subspicatus (green algae)) 0.0053 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient trifloxystrobin.
<b>Biodegradability</b>	Trifloxystrobin: not rapidly biodegradable Triadimenol: not rapidly biodegradable Metalaxyl: not rapidly biodegradable
<b>Koc</b>	Trifloxystrobin: Koc: 2377 Triadimenol: Koc: 273 Metalaxyl: Koc: 163
<b>Bioaccumulation</b>	Trifloxystrobin: Bioconcentration factor (BCF) 431 Does not bioaccumulate. Triadimenol: Bioconcentration factor (BCF) 21 Does not bioaccumulate. Metalaxyl: Bioconcentration factor (BCF) < 7 Does not bioaccumulate.
<b>Mobility in soil</b>	Trifloxystrobin: Slightly mobile in soils



### TRILEX® ADVANCED

Version 2.0 / USA  
102000018535

9/11  
Revision Date: 11/19/2015  
Print Date: 01/04/2017

Triadimenol: Moderately mobile in soils  
Metalaxyl: Moderately mobile in soils

**Environmental precautions** Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.  
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.  
Apply this product as specified on the label.

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

**Product** Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

**Contaminated packaging** Do not re-use empty containers.  
Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.  
If burned, stay out of smoke.  
Follow advice on product label and/or leaflet.

**RCRA Information** Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

## SECTION 14: TRANSPORT INFORMATION

**49CFR** Not dangerous goods / not hazardous material

### IMDG

UN number	<b>3082</b>
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIFLOXYSTROBIN SOLUTION)

### IATA

UN number	<b>3082</b>
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIFLOXYSTROBIN SOLUTION )

**TRILEX® ADVANCED**Version 2.0 / USA  
10200001853510/11  
Revision Date: 11/19/2015  
Print Date: 01/04/2017

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

**SECTION 15: REGULATORY INFORMATION****EPA Registration No.** 264-1069**US Federal Regulations****TSCA list**

Glycerine 56-81-5

**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

None.

**SARA Title III - Section 302 - Notification and Information**

None.

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

None.

**US States Regulatory Reporting****CA Prop65**

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

**US State Right-To-Know Ingredients**

Zinc sulphate heptahydrate	7446-20-0	CT, IL, NJ, RI
Glycerine	56-81-5	MN

**Canadian Regulations****Canadian Domestic Substance List**

None.

**Environmental****CERCLA**

Zinc sulphate heptahydrate 7446-20-0 1,000 lbs

**Clean Water Section 307 Priority Pollutants**

None.

**Safe Drinking Water Act Maximum Contaminant Levels**

None.

**EPA/FIFRA Information:**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification

**TRILEX® ADVANCED**Version 2.0 / USA  
102000018535

11/11

Revision Date: 11/19/2015

Print Date: 01/04/2017

criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

<b>Signal word:</b>	Caution!
<b>Hazard statements:</b>	Harmful if swallowed, inhaled or absorbed through the skin. Moderate eye irritation. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before re-use.

**SECTION 16: OTHER INFORMATION****Abbreviations and acronyms**

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

**NFPA 704 (National Fire Protection Association):**

Health - 1      Flammability - 1      Instability - 0      Others - none

**HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)**

Health - 1      Flammability - 1      Physical Hazard - 0      PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

**Reason for Revision:** Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

**Revision Date:** 11/19/2015

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.