

Section 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING
Product Identifier

Product Name: DELVE

Product Code: 178-02

EPA Registration No.: 101986-1

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

Product Use: Fungicide

Restrictions on use: See product label for restrictions

Details of the supplier of the safety data sheet

Company: Life Scientific Inc.,
300 Creek View Road,
Suite 209,
Newark, DE 19711

Telephone: +353 (0) 1 2832024
Email: info@lifescientific.com
Web: www.lifescientific.com

Emergency contact information

In case of Emergency: 1-800-222-1222

Section 2. HAZARD IDENTIFICATION
WARNING

May cause damage to the liver through prolonged or repeated exposure (H373)

May cause harm to breast-fed children (H362)

Very toxic to aquatic life with long lasting effects. (H400+H410)


HAZARD CLASSIFICATION
Health Hazards

Specific target organ toxicity – repeated
Reproductive Toxicity

Category

2

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Physical Hazards

None

Category

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Environmental Hazards

Hazardous to the aquatic environment – short-term (acute)

Hazardous to the aquatic environment – long-term (chronic)

Category

1

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HAZARDS NOT REQUIRING CLASSIFICATION

Do not mix or allow to come into contact with any oxidizing agent. Hazardous chemical reaction may occur.

PRECAUTIONARY STATEMENTS

Obtain, read and follow all safety instructions before use. Do not breathe mist/vapors/spray. Avoid contact during pregnancy and while nursing. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. (P203+P260+P263+P264+P270)

IF exposed or concerned, get medical advice. (P318)

Avoid release to the environment not in accordance with the product label. Collect spillage. (P273+P391)

Dispose of contents / container using instructions in the product label and in accordance with local / Federal regulations. (P501)

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous component name	CAS	Concentration (% w/w)
Prothioconazole	178928-70-6	15.77
Trifloxystrobin	141517-21-7	13.51
Alcohols, coco, ethoxylated	61791-13-7	7.21

Section 4. FIRST AID MEASURES
Description of first aid measures

General information: When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth- to-mouth, if possible. Call a poison control center or doctor for treatment advice.

Most important symptoms and effects, both acute and delayed

Symptoms: None known.

NOTE TO PHYSICIAN:

No specific antidote. Treat symptomatically.

Section 5. FIREFIGHTING MEASURES
Extinguishing media

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

Unsuitable: High volume water jet.

Special hazards arising from the substance or mixture: In the event of fire the following may be released, hydrogen chloride (HCl), hydrogen cyanide (hydrocyanic acid), carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides (NO_x), sulphur dioxide (SO₂).

Advice for firefighters

Special protective equipment for fire fighters: Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information: Avoid contact with spilled product or contaminated surfaces. Evacuate personnel to safe areas. 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

Auto-ignition temperature: 374°C

Lower explosion limit: No data available.

Upper explosion limit: No data available.

Explosivity: No data available.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Spill Cleanup: Dike spill using suitable absorbent or impervious materials such as sand or clay. Collect and contain contaminated absorbent and place in an appropriate container for disposal. Pump any free liquid into an appropriate closed container and decontaminate tools and equipment following cleanup. Collect washings for disposal.

Section 7. HANDLING AND STORAGE
Handling:

Avoid contact with skin, eyes and clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. Precautions for safe handling.

Storage:

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Section 8. EXPOSURE CONTROL/PERSONAL PROTECTION
Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Prothioconazole	178928-70-6	1.4 mg/m ³ (SK-ABS)		OES BCS*
Trifloxystrobin	141517-21-7	2.7 mg/m ³ (SK-SEN)		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

Protective Clothing:

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

General:

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Users should remove PPE immediately after handling this product or if pesticide gets inside. Wash gloves before removing. Then wash thoroughly and put on clean clothing.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES
Information on basic physical and chemical properties
Appearance

Form: Liquid.
 Colour: White to beige.
 Odour: Data not available.

Chemical properties

pH (1% w/w):	6.5.
Boiling point (°C):	Data not available
Melting point (°C):	Data not available
Flash Point:	Data not available
Oxidizing properties :	Data not available
Explosive properties:	Data not available
Density (at 20 °C):	1.11 g/ml at 20°C
Viscosity (Kinematic)	165.5 – 490.0 mPa.s @ 20°C 165.5 – 450.0 mPa.s @ 40°C
Solubility in water:	Miscible.

Other Information

None.

Section 10. STABILITY AND REACTIVITY
Reactivity

Thermal decomposition:	Stable under normal conditions
Chemical Stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid:	None known.
Incompatible materials:	Incompatible with strong oxidizing agents.
Hazardous decompositions products:	No decomposition products expected under normal conditions of use.

Section 11. TOXICOLOGICAL INFORMATION

Exposure routes: Skin and Ingestion.

Immediate Effects

Eye :	May cause temporary eye irritation.
Skin:	May be harmful in contact with skin.
Ingestion:	May be harmful if swallowed.
Inhalation:	Harmful if inhaled

Information on toxicological effects

Acute oral toxicity:	LD50 (female Rat) 5,000 mg/kg
Acute inhalation toxicity:	LC50 (male/female combined Rat) >2.8 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. Highest attainable concentration. No deaths
Acute dermal toxicity:	LD50 (female Rat) >2,000 mg/kg
Skin corrosion/irritation:	Non-irritant to the skin (Rabbit).
Serious eye damage/eye irritation:	Non-irritant (Rabbit)
Respiratory or skin sensitisation:	Skin: Non-sensitizing. (Guinea pig)

Assessment STOT Specific target organ toxicity – single exposure

Prothioconazole and Trifloxystrobin: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Prothioconazole did not cause specific target organ toxicity in experimental animal studies.

With repeated dosing of Trifloxystrobin, the liver is consistently the target organ.

Assessment mutagenicity:

Prothioconazole was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

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

Assessment carcinogenicity

Prothioconazole was not carcinogenic in lifetime feeding studies in rats and mice.

Trifloxystrobin was not carcinogenic in lifetime feeding studies in rats and mice.

EPA

Not likely to be carcinogenic to humans.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Prothioconazole caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Prothioconazole is related to parental toxicity.

Trifloxystrobin caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Trifloxystrobin is related to parental toxicity.

Assessment developmental toxicity

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

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

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

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

The non-acute information pertains to the active ingredients.

Section 12. ECOLOGICAL INFORMATION
Toxicity to fish:

LC50 (Oncorhynchus mykiss (rainbow trout)) 1.83 mg/l

Exposure time: 96 h

NOAEC ((Oncorhynchus mykiss (rainbow trout)) 0.49 mg/L

The value mentioned relates to the active ingredient prothioconazole.

LC50 (Oncorhynchus mykiss (rainbow trout)) 0.0143 mg/l

Exposure time: 96 h

NOAEL ((Oncorhynchus mykiss (rainbow trout)) 0.0043 mg/L

The value mentioned relates to the active ingredient trifloxystrobin.

Toxicity to aquatic invertebrates:

EC50 (Daphnia magna (Water flea)) 1.2 mg/l

Exposure time: 48 h

NOAEC (Daphnia magna (Water flea)) 0.56 mg/L

The value mentioned relates to the active ingredient prothioconazole.

EC50 (Daphnia magna (Water flea)) 0.0253 mg/l

Exposure time: 48 h

NOAEC (Daphnia magna (Water flea)) 0.00276 mg/L

The value mentioned relates to the active ingredient trifloxystrobin.

Toxicity to aquatic plants:

ErC50 (Skeletonema costatum) 0.03278 mg/l

Exposure time: 72 h

NOAEC (Algae) 0.042 mg/L

The value mentioned relates to the active ingredient prothioconazole.

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ErC50 (Skeletonema costatum) 0.000974 mg/l

	Exposure time: 72 h NOAEC (Algae) 0.00053 mg/L The value mentioned relates to the active ingredient trifloxystrobin.
Biodegradability:	Prothioconazole: Not rapidly biodegradable Trifloxystrobin: Not rapidly biodegradable
Koc:	Prothioconazole: Koc: 1765 Trifloxystrobin: Koc: 2377
Bioaccumulation:	Prothioconazole: Bioconcentration factor (BCF) 19 Does not bioaccumulate. Trifloxystrobin: Bioconcentration factor (BCF) 431 Does not bioaccumulate.
Mobility in soil:	Prothioconazole and Trifloxystrobin: Slightly mobile in soils
Results of PBT and vPvB assessment	
PBT and vPvB:	Prothioconazole: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Trifloxystrobin: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Additional ecological information:	No other effects to be mentioned.
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. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not allow to get into surface water, drains and ground water. Apply this product as specified on the label.

Section 13. DISPOSAL CONSIDERATIONS

Pesticide Disposal:

Wastes resulting from the use of this product must be disposed of on-site or at an approved waste disposal facility.

Container Disposal:

Nonrefillable container. Do not reuse or refill this container. Refer to the product label for specific container disposal instructions.

Section 14. TRANSPORT INFORMATION

US-DOT

Not Regulated

IMDG

UN Number: 3082
Class: 9
Packaging group: III
Marine pollutant: YES
Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PROTHIOCONAZOLE SOLUTION, TRIFLOXYSTROBIN)

IATA

UN Number: 3082
Class: 9
Packaging group: III
Marine pollutant: YES
Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(PROTHIOCONAZOLE SOLUTION, TRIFLOXYSTROBIN)

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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

Section 15. REGULATORY INFORMATION

FIFRA –

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Harmful if swallowed, absorbed through skin or inhaled. Causes moderate eye irritation. Avoid contact with skin, eyes and clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

PHYSICAL AND CHEMICAL HAZARDS

Do not mix or allow to come into contact with any oxidizing agent. Hazardous chemical reaction may occur.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPA/TSCA.

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate (acute), Delayed (chronic)

SARA Title III – Section 312 Threshold Planning Quantity

Not listed

SARA Title III – Section 313 Reportable Ingredients

Not listed

CERCLA Reportable Quantity (RQ) –

Not listed

CALIFORNIA PROP 65 STATUS –

This product does not contain any chemical known to the State of California to cause cancer or other reproductive harm.

CANADA – This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

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 organization

NFPA 704 (National Fire Protection Association):
Health - 2 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)
Health - 2 Flammability - 1 Physical Hazard - 0 PPE –

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

The information presented in this document is accurate to the best of our knowledge at the date of its publication. However, the information given is designed only as a guide for the methods of handling, storage, use, transportation and disposal of the product and is not considered a warranty or quality specification. Life Scientific Inc. cannot be held responsible for any loss or damage resulting from the handling, storage, use or disposal of the product. The information contained in this document relates only to this specific product.

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