

Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name:	QUADRIS OPTI	Product No.:	A13666B
EPA Signal Word:	Warning		
Active Ingredient(%):	Azoxystrobin (4.6%)	CAS No.:	131860-33-8
Chemical Name:	Methyl (E)-2-[2-[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl]-3-methoxyacrylate		
Chemical Class:	A Beta-Methoxyacrylate Fungicide		
Active Ingredient(%):	Chlorothalonil (46.0%)	CAS No.:	1897-45-6
Chemical Name:	Tetrachloroisophthalonitrile		
Chemical Class:	Chlorinated Benzonitrile Fungicide		
EPA Registration Number(s):	100-1171	Section(s) Revised:	9, 14

2. HAZARDS IDENTIFICATION

Health and Environmental

Harmful if swallowed. Irritating to eyes. May cause an allergic skin reaction.

Hazardous Decomposition Products

None known.

Physical Properties

Appearance: Light yellow to greyish yellow liquid
 Odor: Not characteristic; weak

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Propylene Glycol	Not Established	Not Established	10 mg/m ³ TWA ****	No
Azoxystrobin (4.6%)	Not Established	Not Established	2 mg/m ³ TWA ***	No
Chlorothalonil (46.0%)	Not Established	Not Established	0.1 mg/m ³ TWA ***	IARC Group 2B

*** Syngenta Occupational Exposure Limit (OEL)

**** Recommended by AIHA (American Industrial Hygiene Association)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
 Syngenta Hazard Category: C, S

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Persons suffering with temporary allergic skin reactions may respond to treatment with oral antihistamines and topical or oral steroids.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method):	> 230°F	
Flammable Limits (% in Air):	Lower: Not Applicable	Upper: Not Applicable
Autoignition Temperature:	> 650°F	
Flammability:	Not Applicable	

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions in Protective Equipment Section. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Ingestion:	Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
Eye Contact:	Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Skin Contact:	Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.
Inhalation:	A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light yellow to greyish yellow liquid
Odor:	Not characteristic; weak
Melting Point:	Not Applicable
Boiling Point:	Not Available
Specific Gravity/Density:	1.28 - 1.32 g/ml; 10.85 lbs/gal (typical) @ 68°F (20°C)
pH:	6.0 - 8.0 (as is @ 68 - 77°F (20 - 25°C))

Solubility in H₂O

Azoxystrobin :	6 mg/l in water @ 68°F (20°C)
Chlorothalonil:	0.81 mg/l @ 77°F (25°C)

Vapor Pressure

Azoxystrobin :	8.25 x 10 ⁽⁻¹³⁾ mmHg @ 68°F (20°C)
Chlorothalonil:	5.7 x 10 ⁽⁻⁷⁾ mmHg @ 77°F (25°C)

10. STABILITY AND REACTIVITY

Stability:	Stable under normal use and storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	None known.
Materials to Avoid:	None known.
Hazardous Decomposition Products:	None known.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:	Oral (LD50 Rat) :	1750 mg/kg body weight (based on a substantially similar formulation)
Dermal:	Dermal (LD50 Rat) :	> 5000 mg/kg body weight (based on a substantially similar formulation)
Inhalation:	Inhalation (LC50 Rat) :	> 6.21 mg/l air - 4 hours (based on a substantially similar formulation)
Eye Contact:	Moderately Irritating (Rabbit) (based on a substantially similar formulation)	

Skin Contact: Non-Irritating (Rabbit) (based on a substantially similar formulation)
Skin Sensitization: Not Available

Reproductive/Developmental Effects

Azoxystrobin : Shows weak chromosomal damage in mammalian cells at cytotoxic levels. Negative in whole animal assays for chromosomal and DNA damage at high dosages (> or = 2000 mg/kg).
In rabbits, no effect was observed up to the highest dose level (500 mg/kg/day). In rats, developmental effects were seen only at maternally toxic doses (100 mg/kg/day).

Chlorothalonil: Did not show reproductive toxicity effects in animal experiments. Did not show teratogenic effects in animal experiments.

Chronic/Subchronic Toxicity Studies

Azoxystrobin : In a rat 90-day feeding study, liver toxicity was observed at 2000 ppm. This was manifest as gross distension of the bile duct, increased numbers of lining cells and inflammation of the duct. No toxicologically significant effects were seen in repeat dose dog studies.

Data reviews do not indicate any potential for endocrine disruption.

There is no evidence of neurotoxicity in any of the studies conducted with azoxystrobin.

Chlorothalonil: In dogs, 1 year administration caused a significant decrease in body weight gain and increases in absolute liver and kidney weights.

Neurotoxicity: No evidence in regulatory studies.

Carcinogenicity

Azoxystrobin : No carcinogenic effects observed in rats or mice at doses up to the maximum tolerated dose.

Chlorothalonil: Chlorothalonil causes kidney tumors in rats and mice via a nongentoxic mode of action secondary to target organ toxicity.

Did not show mutagenic effects in animal experiments.

IARC identifies chlorothalonil as a 2B carcinogen (possibly carcinogenic to humans).

Other Toxicity Information

Studies on rats and mice have suggested that technical chlorothalonil (97%), when fed at high levels in the diet, may have oncogenic potential to these laboratory animals. However, neither chlorothalonil nor its metabolites interact with DNA and thus are not mutagenic. Tumor formation has been related to a non-genotoxic mechanism of action for which threshold levels have been established in rats and mice. Comprehensive dietary and worker exposure studies have shown exposure levels for humans to be well below these threshold levels. In addition, surveillance of chlorothalonil plant workers for over twenty years has not demonstrated any increase in oncogenic potential to humans.

May cause sensitization by skin contact. Exposure of the skin to chlorothalonil may result in weak contact dermatitis.

Toxicity of Other Components

Propylene Glycol

Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation.

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea.

Chronic dietary exposure caused kidney and liver injury in experimental animals.

Target Organs

Active Ingredients

Azoxystrobin : Liver

Chlorothalonil: Lung, eye, kidney

Inert Ingredients

Propylene Glycol: CNS, kidney, liver

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

Azoxystrobin :

Fish (Rainbow Trout) 96-hour LC50 470 ppb
Green Algae 5-day EC50 106 ppb
Invertebrate (Water Flea) 48-hour EC50 259 ppb
Bird (Mallard Duck) 14-day LD50 > 250 mg/kg

Chlorothalonil:

Green Algae 5-day EC50 190 ppb
Bird (Mallard Duck) LD50 Oral > 4640 mg/kg
Invertebrate (Water Flea) 48-hour EC50 70 ppb
Fish (Rainbow Trout) 96-hour LC50 47 ppb

Environmental Fate

Azoxystrobin :

The information presented here is for the active ingredient, azoxystrobin.
Low bioaccumulation potential. Not persistent in soil. Stable in water. Moderate mobility in soil. Sinks in water (after 24 h).

Chlorothalonil:

The information presented here is for the active ingredient, chlorothalonil.
Low bioaccumulation potential. Not persistent in soil or water. Low mobility in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Under certain circumstances, discarded product may exhibit TCLP hazardous characteristics. A hazardous waste determination should be done on a case by case basis.

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA
Not regulated.

Comments

Water Transport - International
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Azoxystrobin, Chlorothalonil), Marine Pollutant
Hazard Class: Class 9
Identification Number: UN 3082
Packing Group: PG III

Air Transport
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Azoxystrobin, Chlorothalonil)
Hazard Class: Class 9
Identification Number: UN 3082
Packing Group: PG III

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Chlorothalonil (46.0%) (CAS No. 1897-45-6)

California Proposition 65

This product contains a chemical known to the State of California to cause cancer.

CERCLA/SARA 304 Reportable Quantity (RQ)

None

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 2
Flammability: 1
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 8/18/2003

Revision Date: 9/7/2012

Replaces: 9/17/2010

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

End of MSDS