

**DuPont™ Zorvec® Encantia®**

Version 2.1

Revision Date 11/17/2016

Ref. 130000124577

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ Zorvec® Encantia®
Tradename/Synonym : B13157422
DPX-TAH88 330 g/L SE
DPX-TAH88 SE
Famoxadone: 2,4-Oxazolinedione, 5-methyl-5-(4-phenoxyphenyl)-3-(phenylamino)-
Oxathiapiprolin: Ethanone, 1-[4-[4-[5-(2,6-difluorophenyl)-4,5-dihydro-3-isoxazolyl]-2-thiazolyl]-1-piperidinyl]-2-[5-methyl-3-(trifluoromethyl)-1H

Product Use : Fungicide

Restrictions on use : Do not use product for anything outside of the above specified uses.
Manufacturer/Supplier : DuPont
974 Centre Road
Wilmington, DE 19805, USA

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Flammable liquids	Category 4
Skin sensitisation	Category 1
Specific target organ toxicity - repeated exposure	Category 2

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Label content

Pictogram

:



Signal word

: Warning

Hazardous warnings

: Combustible liquid.
 May cause an allergic skin reaction.
 May cause damage to organs through prolonged or repeated exposure.

Hazardous prevention measures

: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/ eye protection/ face protection.
 IF ON SKIN: Wash with plenty of soap and water.
 Get medical advice/ attention if you feel unwell.
 If skin irritation or rash occurs: Get medical advice/ attention.
 Wash contaminated clothing before reuse.
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 Store in a well-ventilated place. Keep cool.
 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

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No applicable data available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Famoxadone	131807-57-3	28.3 %
Oxathiapiprolin	1003318-67-9	2.83 %
Fumed silica, crystalline-free	112945-52-5	1 - 5 %
Other Ingredients		63.87 - 67.87 %

SECTION 4. FIRST AID MEASURES

- General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
For medical emergencies involving this product, call toll free 1-800-441-3637.
See Label for Additional Precautions and Directions for Use.
- Inhalation : 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 poison control center or doctor for treatment advice.
- Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

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- Ingestion : Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Do not give anything by mouth to an unconscious person.
- Most important symptoms/effects, acute and delayed : No applicable data available.
- Protection of first-aiders : No applicable data available.
- Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray, Dry chemical, Foam, Carbon dioxide (CO₂)
- Unsuitable extinguishing media : High volume water jet, (contamination risk)
- Specific hazards : No applicable data available.
- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.
- Further information : (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Use personal protective equipment.
- Environmental precautions : Prevent material from entering sewers, waterways, or low areas.
- Spill Cleanup : Soak up with sawdust, sand, oil dry or other absorbent material. Dispose of in an approved container.

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If liquid has been spilt in large quantities clean up promptly by scoop or vacuum.

Accidental Release Measures : Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Handling (Physical Aspects) : Keep away from heat and sources of ignition.

Dust explosion class : No applicable data available.
Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Keep tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Observe label precautions. Keep out of the reach of children.

Storage period : No applicable data available.

Storage temperature : No applicable data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Ensure adequate ventilation, especially in confined areas. Information presented in Section 8 conforms to the requirements of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard of 2012. See Section 15 for applicable information conforming to the requirements of the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), as required by the US Environmental Protection Agency (EPA), or by state Regulatory Agencies.

Personal protective equipment
Hand protection : Material: Protective gloves



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Skin and body protection : Applicators and other handlers must wear:
 Long sleeved shirt and long pants
 Shoes plus socks
 PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
 Coveralls
 Chemical resistant gloves made of any waterproof material
 Shoes plus socks

Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. Use this product in accordance with its label.

Exposure Guidelines
 Exposure Limit Values

Famoxadone			
AEL *	(DuPont)	2 mg/m3	8 hr. TWA
AEL *	(DuPont)	1 mg/m3	12 hr. TWA

Oxathiapiprolin			
AEL *	(DuPont)	5 mg/m3	8 & 12 hr. TWA

Fumed silica, crystalline-free			
Permissible exposure limit:	(OSHA)	20 millions of particles per cubic foot of air	TWA
Permissible exposure limit:	(OSHA)	0.8 mg/m3	TWA

Remarks	The exposure limit is calculated from the equation, 80/(%SiO ₂), using a value of 100% SiO ₂ . Lower values of % SiO ₂ will give higher exposure limits.
AEL *	(DuPont) 1 mg/m3 8 & 12 hr. TWA Respirable dust.



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Famoxadone			
AEL *	(DuPont)	2 mg/m3	8 hr. TWA
AEL *	(DuPont)	1 mg/m3	12 hr. TWA
White mineral oil (petroleum)			
Permissible exposure limit:	(OSHA)	5 mg/m3	8 hr. TWA Mist.
Oxathiapiprolin			
AEL *	(DuPont)	5 mg/m3	8 & 12 hr. TWA
Fumed silica, crystalline-free			
Permissible exposure limit:	(OSHA)	20 millions of particles per cubic foot of air	TWA
Permissible exposure limit:	(OSHA)	0.8 mg/m3	TWA
		Remarks	The exposure limit is calculated from the equation, 80/(%SiO ₂), using a value of 100% SiO ₂ . Lower values of % SiO ₂ will give higher exposure limits.
AEL *	(DuPont)	1 mg/m3	8 & 12 hr. TWA Respirable dust.
Distillates (petroleum), hydrotreated light; Kerosine - unspecified			
TLV	(ACGIH)	200 mg/m3 vapor	TWA Non-aerosol. as total hydrocarbon
		Remarks	P: Application restricted to conditions in which there are negligible aerosol exposures.

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	: liquid
Form	: liquid
Color	: off-white
Odor	: none
Odor threshold	: no data available
pH	: not determined
Melting point/range	: No applicable data available.
Boiling point/boiling range	: Boiling point > 100 °C (> 212 °F)
Flash point	: 77 °C
Evaporation rate	: not determined
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: not determined
Lower explosion limit	: not determined
Vapor pressure	: not determined
Vapour density	: No applicable data available.
Specific gravity (Relative density)	: 1.05 - 1.12
Water solubility	: dispersible
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: 422 °C

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Ignition temperature : not determined
Decomposition temperature : no data available
Viscosity, kinematic : no data available
Viscosity, dynamic : no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No applicable data available.
Chemical stability : Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions : Polymerization will not occur.
Conditions to avoid : None reasonably foreseeable.
Incompatible materials : No materials to be especially mentioned.
Hazardous decomposition products : No applicable data available.

SECTION 11. TOXICOLOGICAL INFORMATION

Famoxadone

Inhalation 4 h LC50 : > 5.3 mg/l , Rat
Dermal LD50 : > 2,000 mg/kg , Rat
Oral LD50 : > 5,000 mg/kg , Rat
Skin irritation : No skin irritation, Rabbit
Minimal effects that do not meet the threshold for classification.
Eye irritation : No eye irritation, Rabbit
Minimal effects that do not meet the threshold for classification.
Skin sensitization : Does not cause skin sensitisation., Guinea pig
Repeated dose toxicity :
The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.


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Oral - feed

Dog

-

Target Organs: Eyes

eye effects

Oral - feed

Rat

-

Reduced body weight gain, Organ weight changes, Increased liver enzyme levels in serum, Liver effects, Red blood cell destruction causing abnormal decrease in number of red blood cells (anaemia)

Dermal

Rat

-

Increased liver weight, Increased liver enzyme levels in serum

- Carcinogenicity : Did not show carcinogenic effects in animal experiments.
Not classifiable as a human carcinogen.
- Mutagenicity : Animal testing did not show any mutagenic effects.
Test on bacterial cultures did not show mutagenic effects.
Tests on mammalian cell cultures showed mutagenic effects.
- Reproductive toxicity : No toxicity to reproduction
Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.
- Teratogenicity : Animal testing showed no developmental toxicity.
- Oxathiapiprolin
- Inhalation 4 h LC50 : > 5.1 mg/l , Rat
- Dermal LD50 : > 5,000 mg/kg , Rat
- Oral LD50 : > 5,000 mg/kg , Rat
- Skin irritation : No skin irritation, Rabbit
Minimal effects that do not meet the threshold for classification.
- Eye irritation : No eye irritation, Rabbit

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Skin sensitization	:	Does not cause skin sensitisation., Guinea pig
Repeated dose toxicity	:	Oral Rat - No toxicologically significant effects were found. Oral Dog - No toxicologically significant effects were found. Oral Mouse - No toxicologically significant effects were found.
Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Reproductive toxicity	:	No toxicity to reproduction Slight delays in maturation observed in rats.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Fumed silica, crystalline-free Inhalation	:	Rat An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
Dermal LD50	:	> 5,000 mg/kg , Rabbit Information given is based on data obtained from similar substances.
Oral LD50	:	> 3,300 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	No eye irritation, Rabbit
Repeated dose toxicity	:	Inhalation


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Rat
- 91 d
dust/mist
Target Organs: Respiratory system
Respiratory effects, Information given is based on data obtained from similar substances.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Teratogenicity : Animal testing showed no developmental toxicity.
Information given is based on data obtained from similar substances.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION
**Aquatic Toxicity
Famoxadone**

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 0.011 mg/l
72 h EbC50	:	Pseudokirchneriella subcapitata (green algae) 0.023 mg/l
72 h ErC50	:	Pseudokirchneriella subcapitata (green algae) 0.048 mg/l
48 h EC50	:	Daphnia magna (Water flea) 0.012 mg/l
48 h EC50	:	Daphnia magna (Water flea) 0.0118 mg/l
90 d	:	NOEC Oncorhynchus mykiss (rainbow trout) 0.0014 mg/l
21 d	:	NOEC Daphnia magna (Water flea) 0.0037 mg/l


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Oxathiapiprolin

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 0.69 mg/l
96 h ErC50	:	Pseudokirchneriella subcapitata (green algae) > 0.142 mg/l
48 h EC50	:	Daphnia magna (Water flea) 0.67 mg/l
32 d flow-through test	:	NOEC Americamysis bahia (mysid shrimp) 0.058 mg/l

Fumed silica, crystalline-free

96 h LC50	:	Danio rerio (zebra fish) > 10,000 mg/l OECD Test Guideline 203
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Environmental Fate

Fumed silica, crystalline-free

Bioaccumulation	:	Does not bioaccumulate.
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SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
Waste disposal methods - Container	:	Refer to the product label for instructions. Do not transport if this container is damaged or leaking. In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.
Contaminated packaging	:	No applicable data available.

SECTION 14. TRANSPORT INFORMATION

IATA_C	UN number	:	3082
	Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Famoxadone, Oxathiapiprolin)
	Class	:	9
	Packing group	:	III
	Labelling No.	:	9MI
IMDG	UN number	:	3082


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Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Famoxadone, Oxathiapiprolin)
Class	:	9
Packing group	:	III
Labelling No.	:	9
Marine pollutant	:	yes (Famoxadone, Oxathiapiprolin)

Not regulated by DOT/49 CFR unless shipped in bulk package or by water.

SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s)	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	:	Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): White mineral oil (petroleum), Propane-1,2-diol, Fumed silica, crystalline-free
NJ Right to Know Regulated Chemical(s)	:	Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): White mineral oil (petroleum), Propane-1,2-diol
CERCLA Reportable Quantity	:	775194 lbs Based on the percentage composition of this chemical in the product.: Xylene
California Prop. 65	:	Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

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Contact person : DuPont Crop Protection, Wilmington, DE, 19805, Phone: 1-888-638-7668

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