

**DuPont™ Vertisan™ Fungicide**

Version 3.0

Issue Date : 03/18/2019 Ref. 130000036424  
Revision Date : 02/07/2019

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™ Vertisan™ Fungicide  
Tradename/Synonym : DPX-LEM17 200 g/L EC  
DPX-LEM17 20 EC Fungicide  
PENTHIOPYRAD (RS)-N-[2-(1,3-dimethylbutyl)thiophen-3-yl]-1-methyl-3-trifluoromethyl-1H-pyrazole-4-carboxamide

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 : +1-800-424-9300 (outside the U.S. +1-703-527-3887)

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

Flammable liquids	Category 4
Serious eye damage/eye irritation	Category 2B
Skin sensitisation	Category 1

**Label content**

Pictogram :



Signal word : Warning


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Hazardous warnings : Combustible liquid.  
 May cause an allergic skin reaction.  
 Causes eye irritation.

Hazardous prevention measures : Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 Wash skin thoroughly after handling.  
 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.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 If skin irritation or rash occurs: Get medical advice/ attention.  
 If eye irritation persists: Get medical advice/ attention.  
 Wash contaminated clothing before reuse.  
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
 Store in a well-ventilated place. Keep cool.  
 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

Information presented in Section 2 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.

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

Component	CAS-No.	Concentration
Penthiopyrad	183675-82-3	20.6 %
Substituted Fatty Amide		10 - 15 %
Substituted Fatty Amide		15 - 20 %



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Ethoxylated Alkyl Ether		20 - 25 %
Other Ingredients		19.4 - 34.4 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

### 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.  
 Information presented in Section 4 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.
- 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** : 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 poison control center or doctor for treatment advice.
- 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.

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Notes to physician : No applicable data available.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Water spray, Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam
- Unsuitable extinguishing media : High volume water jet, (contamination risk)
- Specific hazards : Hazardous combustion products: Carbon oxides Nitrogen oxides (NO<sub>x</sub>) sulphur oxides Fluorinated compounds
- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
(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) : Control access to area. Keep people away from and upwind of spill/leak. Ventilate spill area. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent material from entering sewers, waterways, or low areas.
- Spill Cleanup : Clean-up methods - small spillage Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.  
Clean-up methods - large spillage Prevent further leakage or spillage. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth,



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diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Large spills should be collected mechanically (remove by pumping) for disposal. Collect leaking liquid in sealable (metal/plastic) containers. Collect and contain contaminated absorbent and dike material for disposal.

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 product in original container only in a location inaccessible to children and pets. Keep in properly labelled containers. Keep in a dry, cool and well-ventilated place. Avoid extreme heat or cold. Keep container closed when not in use. Keep locked up or in an area accessible only to qualified or authorised persons. Keep out of the reach of children. Observe label precautions.
- Storage period : No applicable data available.
- Storage temperature : No applicable data available.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.
- Personal protective equipment


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Skin and body protection : Mixers, loaders, applicators and other handlers must wear:  
 Long sleeved shirt and long pants  
 Shoes plus socks  
 Protective eyewear  
 Goggles, face shield, or safety glasses.  
 Personal protective equipment required for early entry:  
 Coveralls  
 Shoes plus socks  
 Chemical resistant gloves made of any waterproof material  
 Protective eyewear  
 Goggles, face shield, or safety glasses.

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.  
 Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. Use this product in accordance with its label.

 Exposure Guidelines  
 Exposure Limit Values

<b>Penthiopyrad</b>
No applicable data available.

<b>Substituted Fatty Amide</b>
No applicable data available.

<b>Substituted Fatty Amide</b>
No applicable data available.

<b>Ethoxylated Alkyl Ether</b>
No applicable data available.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

## Appearance

Physical state : liquid  
 Form : liquid  
 Color : light yellow

Odor : fruity

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Odor threshold : No applicable data available.

pH : 5.8 at 10 g/l

Melting point/range : No applicable data available.

Boiling point/boiling range : No applicable data available.

Flash point : 88 °C  
Method: Pensky-Martens closed cup - PMCC

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : No applicable data available.

Lower explosion limit : No applicable data available.

Vapour Pressure : No applicable data available.

Vapour density : No applicable data available.

Specific gravity (Relative density) : 0.9681

Water solubility : emulsifiable

Solubility(ies) : No applicable data available.

Partition coefficient: n-octanol/water : No applicable data available.

Auto-ignition temperature : No applicable data available.

Ignition temperature : 482 °F

Decomposition temperature : No applicable data available.

Viscosity, kinematic : No applicable data available.

Viscosity, dynamic : No applicable data available.

Oxidizing Substance : The product is not oxidizing.



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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : No applicable data available.  
 Chemical stability : Stable at normal temperatures and storage conditions.

Possibility of hazardous reactions : No applicable data available.  
 Conditions to avoid : Protect from frost. Heat Direct sunlight.

Incompatible materials : No applicable data available.

Hazardous decomposition products : Carbon oxides, Nitrogen oxides (NOx), sulphur oxides, Fluorinated compounds

### SECTION 11. TOXICOLOGICAL INFORMATION

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Inhalation 4 h LC50 : > 4.89 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 : Mild eye irritation, Rabbit

Sensitisation : May cause sensitisation by skin contact., Mouse

Further information : Information presented in this Section 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.

Penthiopyrad  
 Repeated dose toxicity : No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for




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classification., The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

Oral  
 multiple species

-

Reduced body weight gain, Liver effects, Thyroid effects, Spleen effects, Gallbladder effects, Liver enlargement, Immune system effects, altered blood chemistry, altered hematology, Organ weight changes, Decreased spleen weight, Increased liver weight

Carcinogenicity : Not classifiable as a human carcinogen.  
 The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.  
 A slight increased incidence in tumors was observed in animal studies.  
 Liver  
 Thyroid

Mutagenicity : Animal testing did not show any mutagenic effects.  
 Did not cause genetic damage in cultured bacterial cells.  
 Genetic damage in cultured mammalian cells was observed in one laboratory test but was not observed in others.

Reproductive toxicity : No toxicity to reproduction

Teratogenicity : No toxicity to reproduction  
 The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.  
 Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

## Substituted Fatty Amide

Repeated dose toxicity : Ingestion  
 Rat  
 - 91 d  
 LOAEL: 200 mg/kg Method: OECD Test Guideline 409  
 Liver effects, altered blood chemistry, Information given is based on data obtained from similar substances.

Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
 Has not been tested in animals.  
 Information given is based on data obtained from similar substances.

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels



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equal to or above those causing maternal toxicity.  
 Information given is based on data obtained from similar substances.

### Substituted Fatty Amide

Repeated dose toxicity : Ingestion  
 Dog  
 - 13 Weeks  
 NOAEL: 200 mg/kg  
 LOAEL: > 200 mg/kg Method: OECD Test Guideline 409  
 Liver effects, altered blood chemistry, 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.  
 Has not been tested in animals.  
 Information given is based on data obtained from similar substances.

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.  
 Information given is based on data obtained from similar substances.

### Ethoxylated Alkyl Ether

Repeated dose toxicity : Ingestion  
 Rat  
 - 90 d  
 No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification., Information given is based on data obtained from similar substances.

Skin contact  
 Rat  
 - 90 d Method: OECD Test Guideline 411  
 No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification., Information given is based on data obtained from similar substances.

Carcinogenicity : Weight of evidence does not support classification as a carcinogen  
 Overall weight of evidence indicates that the substance is not carcinogenic.  
 Information given is based on data obtained from similar substances.

Mutagenicity : Weight of evidence does not support classification as a germ cell



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mutagen.

Overall weight of evidence indicates that the substance is not mutagenic.

Information given is based on data obtained from similar substances.

Reproductive toxicity : Weight of evidence does not support classification for reproductive toxicity  
 Evidence suggests the substance is not a reproductive toxin in animals.  
 No effects on or via lactation  
 Information given is based on data obtained from similar substances.

Teratogenicity : Evidence suggests the substance is not a developmental toxin in animals.  
 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

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96 h LC50 : Pimephales promelas (fathead minnow) 0.32 mg/l

48 h EC50 : Daphnia magna (Water flea) 1.2 mg/l

### Penthiopyrad

72 h EbC50 : Pseudokirchneriella subcapitata (green algae) 2.21 mg/l

72 h EbC50 : Pseudokirchneriella subcapitata (green algae) > 1.5 mg/l

### Substituted Fatty Amide

72 h NOEC : Pseudokirchneriella subcapitata (green algae) 1.8 mg/l OECD Test Guideline 201

Information given is based on data obtained from similar substances.


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35 d : NOEC Pimephales promelas (fathead minnow) 0.71 mg/l OECD Test Guideline 210

21 d : NOEC Daphnia magna (Water flea) 0.079 mg/l OECD Test Guideline 211

Substituted Fatty Amide  
 72 h ErC50 : Pseudokirchneriella subcapitata (green algae) 16.06 mg/l OECD Test Guideline 201  
 Information given is based on data obtained from similar substances.

72 h NOEC : Pseudokirchneriella subcapitata (green algae) 1.8 mg/l OECD Test Guideline 201  
 Information given is based on data obtained from similar substances.

21 d : NOEC Daphnia magna (Water flea) 1.3 mg/l OECD Test Guideline 211  
 Information given is based on data obtained from similar substances.

Ethoxylated Alkyl Ether  
 72 h EC50 : Pseudokirchneriella subcapitata (green algae) 1.2 mg/l  
 Information given is based on data obtained from similar substances.

72 h NOEC : Pseudokirchneriella subcapitata (green algae) 0.088 mg/l  
 Information given is based on data obtained from similar substances.

**Environmental Fate**

Substituted Fatty Amide  
 Biodegradability : rapidly biodegradable OECD Test Guideline 301  
 Readily biodegradable.  
 Information given is based on data obtained from similar substances.

Bioaccumulation : Bioaccumulation is unlikely.

Substituted Fatty Amide  
 Biodegradability : Not biodegradable OECD Test Guideline 301D  
 Readily biodegradable.  
 Information given is based on data obtained from similar substances.

Bioaccumulation : Bioaccumulation is unlikely.

Additional ecological information : Environmental Hazards: This product is toxic to fish. For Terrestrial Uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do



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not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. See product label for additional application instructions relating to environmental precautions.

### 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. (Penthiopyrad)
	Class	: 9
	Packing group	: III
IMDG	Labelling No.	: 9
	UN number	: 3082
	Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Penthiopyrad)
	Class	: 9
	Packing group	: III
	Labelling No.	: 9
	Marine pollutant	: yes (Penthiopyrad)

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



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**SECTION 15. REGULATORY INFORMATION**

Other regulations : This Safety Data Sheet is for a pesticide product registered by the US Environmental Protection Agency (USEPA) and various state regulatory agencies, and is therefore also subject to certain requirements under US and state pesticide laws, including the Federal Insecticide Fungicide and Rodenticide Act (FIFRA). These requirements differ from the classification criteria and hazard information required by OSHA for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is information determined by USEPA, and various states.

**WARNING!**

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear goggles, face shield or safety glasses. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. May be harmful if swallowed. Wash hands 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 re-use. This product is toxic to fish. This product is toxic to: Aquatic invertebrates

SARA 311/312 Hazard classification : Flammable (gases, aerosols, liquids, or solids)  
 Serious eye damage or eye irritation  
 Respiratory or skin sensitisation

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):  
 Methanol

CERCLA Reportable Quantity : Based on the percentage composition of this chemical in the product.:  

100 lbs	Methanol
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SARA Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

EPA Reg. No. : 352-836  
 In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in

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a manner inconsistent with its labeling. Read and follow all label directions.  
This product is excluded from listing requirements under EPA/TSCA.

California Prop. 65 : This product can expose you to Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**SECTION 16. OTHER INFORMATION**

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.