



FONTELIS®

Version 2.0

Revision Date 23.03.2016

Ref. 130000012055

This Safety Data Sheet adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : FONTELIS®

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

Use of the Substance/Mixture : Fungicide

1.3. Details of the supplier of the safety data sheet

Company : Du Pont (UK) Limited
4th Floor, Kings Court, London Road
Stevenage, Herts.
SG1 2NG
United Kingdom

Telephone : +44 (0) 1438 734 000

E-mail address : sds-support@che.dupont.com

1.4. Emergency telephone number

Emergency telephone number : +(44)-870-8200418 (CHEMTREC)
: Poison Centres may only possess information required for products in
accordance with Regulation (EC) No 1272/2008 and national legislation.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Acute aquatic toxicity,
Category 1 H400: Very toxic to aquatic life.

Chronic aquatic toxicity,
Category 1 H410: Very toxic to aquatic life with long lasting effects.

2.2. Label elements



Warning



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H410	Very toxic to aquatic life with long lasting effects.
Special labelling of certain substances and mixtures	Contains: 1,2-Benzisothiazol-3(2H)-one / EUH208: May produce an allergic reaction.,EUH401: To avoid risks to human health and the environment, comply with the instructions for use.,
P273 P280 P391 P501	Avoid release to the environment. Wear protective gloves/ protective clothing. Collect spillage. Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.
SP 1	Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).

2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Registration number	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration (% w/w)
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**Penthiopyrad (CAS-No.183675-82-3)
(M-Factor : 1[Acute] 1[Chronic])**

	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	20 %
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Polyethylene oxide mono[2,4,6-tris(alpha-methylbenzyl)phenyl]ether, bisulfate, ammonium salt (CAS-No.119432-41-6)

	Aquatic Chronic 3; H412	>= 1 - < 5 %
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The above products are compliant to REACH registration obligations; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

For the full text of the H-Statements mentioned in this Section, see Section 16.



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SECTION 4: First aid measures

4.1. Description of first aid measures

- General advice : Never give anything by mouth to an unconscious person. For specialist advice physicians should contact the National Poisons Information Service: Tel. 111 for England and Wales and Tel. 08454 24 24 24 for Scotland.
- Inhalation : Move to fresh air. Consult a physician after significant exposure. Artificial respiration and/or oxygen may be necessary.
- Skin contact : Take off contaminated clothing and shoes immediately. Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions see a physician. Wash contaminated clothing before re-use.
- Eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, consult a specialist.
- Ingestion : Obtain medical attention. DO NOT induce vomiting unless directed to do so by a physician or poison control center. If victim is conscious: Rinse mouth with water.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms : No information available.

4.3. Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray, Dry chemical, Carbon dioxide (CO₂), Foam

- Extinguishing media which shall not be used for safety reasons : High volume water jet, (contamination risk)

5.2. Special hazards arising from the substance or mixture

- Specific hazards during firefighting : Hazardous combustion products: Carbon oxides Nitrogen oxides (NO_x) sulphur oxides Fluorinated compounds

5.3. Advice for firefighters

- 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



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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

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : 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.

6.2. Environmental precautions

Environmental precautions : Prevent further leakage or spillage if safe to do so. Use appropriate container to avoid environmental contamination. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up : 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, 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.

Other information : Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

6.4. Reference to other sections

For personal protection see section 8., For disposal instructions see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Use only according to our recommendations. Wear personal protective equipment. For personal protection see section 8. Use only clean equipment. Provide adequate ventilation. Do not breathe vapours or spray mist. When opening containers, avoid breathing vapours that may be emanating. Prepare the working solution as given on the label(s) and/or the user instructions. Use



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prepared working solution as soon as possible - Do not store. To avoid spills during handling keep bottle on a metal tray. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use. Never return unused material to storage receptacle. Avoid exceeding the given occupational exposure limits (see section 8).

Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Take measures to prevent the build up of electrostatic charge.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a place accessible by authorized persons only. Store in original container. Keep in properly labelled containers. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

Advice on common storage : No special restrictions on storage with other products. Keep away from: Strong oxidizing agents

Other data : Stable under recommended storage conditions.

7.3. Specific end use(s)

Plant protection products subject to Regulation (EC) No 1107/2009.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable.

Components with workplace control parameters

Type Form of exposure	Control parameters	Update	Regulatory basis	Remarks
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Propane-1,2-diol (CAS-No. 57-55-6)

Time Weighted Average (TWA): Particulate.	10 mg/m3	2007	UK. EH40 Workplace Exposure Limits (WELs)	
Time Weighted Average (TWA): Total vapour and particulates.	474 mg/m3 150 ppm	2007	UK. EH40 Workplace Exposure Limits (WELs)	

8.2. Exposure controls

Engineering measures : Ensure adequate ventilation, especially in confined areas.

Eye protection : Safety glasses with side-shields conforming to EN166

Hand protection : Material: Nitrile rubber
Glove thickness: 0.3 mm
Glove length: Standard glove type.
Protection index: Class 6



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Wearing time: > 480 min

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Gauntlets shorter than 35 cm long shall be worn under the combination sleeve. Gauntlets of 35 cm long or longer shall be worn over the combination sleeve. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Before removing gloves clean them with soap and water.

Skin and body protection : Manufacturing and processing work: Full protective clothing Type 6 (EN 13034)

Mixer and loaders must wear: Full protective clothing Type 6 (EN 13034) Nitrile rubber boots (EN 13832-3 / EN ISO 20345).

Spray application - outdoor: Tractor / sprayer without hood: Full protective clothing Type 4 (EN 14605) Nitrile rubber boots (EN 13832-3 / EN ISO 20345).

Backpack / knapsack sprayer: Full protective clothing Type 4 (EN 14605) Nitrile rubber boots (EN 13832-3 / EN ISO 20345).

Tractor / sprayer with hood: No personal body protection normally required.

Mechanical automatized spray application in closed tunnel: No personal body protection normally required.

When exceptional circumstances require an access to the treated area before the end of re-entry periods, wear full protective clothing Type 6 (EN 13034), nitrile rubber gloves class 3 (EN 374) and nitrile rubber boots (EN 13832-3 / EN ISO 20345).

To optimize the ergonomics it may be recommended to use cotton underwear when wearing some fabrics. Take advice from supplier.

Garment materials that are resistant to both water vapour and air will maximise wearing comfort. Materials should be robust to maintain the integrity and barrier in use.

The permeation resistance of the fabric must be verified independently of the « type » protection recommended, to ensure an appropriate performance level of the material adequate to the corresponding agent and type of exposure.

Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated. Only protected handlers may be in the area during application.



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- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing. Keep working clothes separately. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke. Keep away from food, drink and animal feedingstuffs. Remove clothing/PPE immediately if material gets inside. For environmental protection remove and wash all contaminated protective equipment before re-use. Dispose of rinse water in accordance with local and national regulations.
- Respiratory protection : Manufacturing and processing work: Half mask with vapour filter A1 (EN 141)
- Mixer and loaders must wear: Half mask with vapour filter A1 (EN 141)
- Spray application - outdoor: Tractor / sprayer with hood: No personal respiratory protective equipment normally required.
- Tractor / sprayer without hood: Half mask with a particle filter FFP1 (EN149)
- Backpack / knapsack sprayer: Half mask with a particle filter P1 (EN 143).
- Mechanical automatized spray application in closed tunnel: No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Form : liquid
- Colour : off-white
- Odour : slight, ester-like
- Odour Threshold : not determined
- pH : 6.66 at 10 g/l
- Flash point : > 105 °C
- Flammability (solid, gas) : Does not sustain combustion.
- Thermal decomposition : Not available for this mixture.
- Auto-ignition temperature : ca.385 °C
- Oxidizing properties : The product is not oxidizing.
- Explosive properties : Not explosive
- Lower explosion limit/ lower flammability limit : no data available



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Upper explosion limit/ upper flammability limit	: no data available
Vapour pressure	: Not available for this mixture.
Relative density	: 0.9789
Water solubility	: dispersible
Partition coefficient: n-octanol/water	: Not applicable
Viscosity, dynamic	: 770.7 mPa.s , 30 rpm
Relative vapour density	: Not available for this mixture.
Evaporation rate	: Not available for this mixture.

9.2. Other information

Phys.-chem./other information : No other data to be specially mentioned.

SECTION 10: Stability and reactivity

10.1. Reactivity	: No hazards to be specially mentioned.
10.2. Chemical stability	: The product is chemically stable under recommended conditions of storage, use and temperature.
10.3. Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use. Polymerization will not occur. No decomposition if stored and applied as directed.
10.4. Conditions to avoid	: Exposure to sunlight. Decomposes on heating. Protect from frost.
10.5. Incompatible materials	: Strong oxidizing agents
10.6. Hazardous decomposition products	: Carbon oxides Nitrogen oxides (NOx) sulphur oxides Fluorinated compounds

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

LD50 / Rat : > 5,000 mg/kg

Method: OECD Test Guideline 425

(Data on the product itself) Information source: Internal study report



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Acute inhalation toxicity

LC50 / 4 h Rat : > 3.5 mg/l

Method: OECD Test Guideline 403

(Data on the product itself) Information source: Internal study report

Acute dermal toxicity

LD50 / Rat : > 5,000 mg/kg

Method: OECD Test Guideline 402

(Data on the product itself) Information source: Internal study report

Skin irritation

Rabbit

Result: No skin irritation

Method: OECD Test Guideline 404

(Data on the product itself) Information source: Internal study report

Eye irritation

Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

(Data on the product itself) Information source: Internal study report

Sensitisation

Guinea pig Maximisation Test

Result: Animal test did not cause sensitization by skin contact.

Method: OECD Test Guideline 406

(Data on the product itself) Information source: Internal study report

Repeated dose toxicity

- Penthiopyrad

Oral multiple species

The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions., Reduced body weight gain, Liver effects, Thyroid effects, Spleen effects, Gallbladder effects, Liver enlargement, Immune system effects, altered blood chemistry, Organ weight changes, Increased liver weight

Mutagenicity assessment

- Penthiopyrad

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.

Carcinogenicity assessment

- Penthiopyrad



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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

Toxicity to reproduction assessment

- Penthiopyrad
No toxicity to reproduction

Assessment teratogenicity

- Penthiopyrad
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.

STOT - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

The mixture does not have properties associated with aspiration hazard potential.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish

static test / EC50 / 96 h / *Oncorhynchus mykiss* (rainbow trout): 2.2 mg/l
Method: OECD Test Guideline 203
(Data on the product itself) Information source: Internal study report

Toxicity to aquatic plants

ErC50 / 72 h / *Pseudokirchneriella subcapitata* (green algae): > 2.1 mg/l
Method: OECD Test Guideline 201
(Data on the product itself) Information source: Internal study report

Toxicity to aquatic invertebrates

static test / EC50 / 48 h / *Daphnia magna* (Water flea): 0.29 mg/l
Method: OECD Test Guideline 202
(Data on the product itself)

Toxicity to other organisms

LD50 / 2 d / *Apis mellifera* (bees): 0.517 mg/kg
Method: OECD Test Guideline 213



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Oral (Data on the product itself) Information source: Internal study report

LD50 / 2 d / Apis mellifera (bees): 0.482 mg/kg

Method: OECD Test Guideline 214

Contact (Data on the product itself) Information source: Internal study report

Chronic toxicity to fish

- Penthiopyrad

Early Life-Stage / NOEC / 33 d / Pimephales promelas (fathead minnow): 51 µg/l

Method: OECD Test Guideline 210

Information source: Data provided by an external source.

Chronic toxicity to aquatic Invertebrates

Semi-Static-Life-Cycle / NOEC / 21 d / Daphnia magna (Water flea): 0.075 mg/l

Method: OECD Test Guideline 211

(Data on the product itself) Information source: Internal study report

12.2. Persistence and degradability

Biodegradability

Not readily biodegradable. Estimation based on data obtained on active ingredient.

12.3. Bioaccumulative potential

Bioaccumulation

Does not bioaccumulate. Estimation based on data obtained on active ingredient.

12.4. Mobility in soil

Mobility in soil

Under actual use conditions the product has a low potential of mobility in soil.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT). / This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

12.6. Other adverse effects

Additional ecological information

No other ecological effects to be specially mentioned See product label for additional application instructions relating to environmental precautions.

SECTION 13: Disposal considerations

13.1. Waste treatment methods



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- Product : In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not contaminate ponds, waterways or ditches with chemical or used container.
- Contaminated packaging : Do not re-use empty containers.

SECTION 14: Transport information

ADR

- 14.1. UN number: 3082
14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Penthiopyrad)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
14.5. Environmental hazards: Environmentally hazardous
14.6. Special precautions for user: Environmentally hazardous
Tunnel restriction code: (E)

IATA_C

- 14.1. UN number: 3082
14.2. UN proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Penthiopyrad)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
14.5. Environmental hazards : Environmentally hazardous
14.6. Special precautions for user: DuPont internal recommendations and transport guidance: ICAO / IATA cargo aircraft only

IMDG

- 14.1. UN number: 3082
14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Penthiopyrad)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
14.5. Environmental hazards : Marine pollutant
14.6. Special precautions for user: no data available

- 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Other regulations : The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008. Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers. Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. Take note of Directive 96/82/EC on the control of major-accident hazards involving dangerous substances. Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values.



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15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this/these products
The mixture is registered as a plant protection product under Regulation (EC) No. 1107/2009.
Refer to the label for exposure assessment information.

SECTION 16: Other information

Full text of H-Statements referred to under section 3.

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Other information professional use

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
EbC50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm
EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA):
vPvB	very Persistent and very Bioaccumulative

Further information



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Before use read DuPont's safety information., Take notice of the directions of use on the label.

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Significant change from previous version is denoted with a double bar.

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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.