



Zorvec™ Enicade™

Version 2.0

Revision Date 08.12.2017

Ref. 130000124356

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 : Zorvec™ Enicade™
Synonyms : B13124414
DPX-QGU42 100 g/L OD
Oxathiapiprolin 100 g/L OD

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

+(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

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.
Chronic aquatic toxicity, Category 3 H412: Harmful to aquatic life with long lasting effects.

2.2. Label elements



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Warning

H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.
Special labelling of certain substances and mixtures	EUH401 To avoid risks to human health and the environment, comply with the instructions for use.
P261	Avoid breathing vapours or spray.
P280	Wear protective gloves/ protective clothing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P501	Dispose of contents to an approved incineration plant in accordance with local, regional and national legislations.
P501	Dispose of container to a waste disposal plant in accordance with local, regional and national legislations.
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).
SPe 3	To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies. Refer to the label to know the distance.
SPe 8	Dangerous to bees. Refer to the label to know the recommendation.

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)
2/15		



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Oxathiapiprolin (CAS-No.1003318-67-9) (M-Factor : 1[Acute] 1[Chronic])

	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	10.2 %
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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.

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 : If easy to do, remove contact lens, if worn. Hold eye open and rinse slowly and gently with water for 15-20 minutes. If eye irritation persists, consult a specialist.
- Ingestion : Call a physician or poison control centre immediately. Do not induce vomiting without medical advice. If victim is conscious: Rinse mouth with water. Drink 1 or 2 glasses of water.

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

- Symptoms : No cases of human intoxication are known and the symptoms of experimental intoxication are not known.

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, Foam, Carbon dioxide (CO₂)



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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 decomposition products formed under fire conditions. Carbon dioxide (CO₂) Nitrogen oxides (NO_x)

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 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. Avoid dust formation. Avoid breathing dust. Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

Environmental precautions : Use appropriate container to avoid environmental contamination. Prevent further leakage or spillage if safe to do so. 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 spill area is porous, the contaminated material must be collected for subsequent treatment or disposal. 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 or vacuum up spillage and collect in suitable container 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



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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 : Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

Use only according to our recommendations. Use only clean equipment. Avoid contact with skin, eyes and clothing. Do not breathe dust or spray mist. Wear personal protective equipment. For personal protection see section 8. Prepare the working solution as given on the label(s) and/or the user instructions. Use prepared working solution as soon as possible - Do not store. Provide appropriate exhaust ventilation at places where dust is formed.

Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded.

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.

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.

8.2. Exposure controls



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- Engineering measures : Ensure adequate ventilation, especially in confined areas. Use sufficient ventilation to keep employee exposure below recommended limits.
- Eye protection : Safety glasses with side-shields conforming to EN166
- Hand protection : Material: Nitrile rubber
Glove thickness: 0.4 - 0.7 mm
Glove length: Gauntlets
Protection index: Class 6
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. Gloves must be inspected prior to use. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. 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. Before removing gloves clean them with soap and water.
- Skin and body protection : When exceptional circumstances would 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 2 (EN 374) and nitrile rubber boots (EN 13832-3 / EN ISO 20345).
- Manufacturing and processing work: Full protective clothing Type 6 (EN 13034)
- When exceptional circumstances would 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 2 (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 and face before breaks and immediately after handling the product. 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 a particle filter FFP1 (EN149)
- Mixer and loaders must wear: Half mask with a particle filter FFP1 (EN149)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Form : liquid
- Colour : off-white
- Odour : oily, characteristic
- Odour Threshold : not determined
- pH : 6.5 (1% solution in water)
- Melting point/range : Not available for this mixture.
- Flash point : > 80 °C
- Flammability (solid, gas) : The product is not flammable.
- Thermal decomposition : Not available for this mixture.
- Auto-ignition temperature : 335 °C
- Oxidizing properties : The product is not oxidizing.
- Explosive properties : Not explosive
- Lower explosion limit/ Lower flammability limit : Not available for this mixture.
- Upper explosion limit/ upper flammability limit : Not available for this mixture.
- Vapour pressure : Not applicable



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Density	: 0.99 g/cm ³
Relative density	: Not available for this mixture.
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: Not applicable
Viscosity, dynamic	: not determined
Relative vapour density	: Not applicable
Evaporation rate	: Not applicable

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	: To avoid thermal decomposition, do not overheat.
10.5. Incompatible materials	: No materials to be especially mentioned.
10.6. Hazardous decomposition products	: No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

LD50 / Rat : > 5,000 mg/kg

Method: OECD Test Guideline 425

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

Acute inhalation toxicity

LC50 / Rat : > 5.0 mg/l



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Method: OECD Test Guideline 403

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

Acute dermal toxicity

LD50 / Rat : > 5,000 mg/kg

Method: OECD Test Guideline 402

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

Skin irritation

Rabbit

Result: No skin irritation

Method: OECD Test Guideline 404

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

Eye irritation

Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

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

Sensitisation

Guinea pig Maximisation Test

Result: May cause sensitisation by skin contact.

Method: OECD Test Guideline 406

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

Repeated dose toxicity

- Oxathiapiprolin

Oral - feed Rat

Method: OECD Test Guideline 407

No toxicologically significant effects were found., Organ weight changes, Information source: Internal study report

Oral - feed Dog

Minimal effects that do not meet the threshold for classification., Organ weight changes, Information source: Internal study report

Mutagenicity assessment

- Oxathiapiprolin

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

Carcinogenicity assessment

- Oxathiapiprolin



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Animal testing did not show any carcinogenic effects.

Toxicity to reproduction assessment

- Oxathiapiprolin
No toxicity to reproduction Minimal effects that do not meet the threshold for classification. Slight delays in maturation observed in rats.

Assessment teratogenicity

- Oxathiapiprolin
Animal testing showed no developmental 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

LC50 / 96 h / *Oncorhynchus mykiss* (rainbow trout): > 10 mg/l
Method: OECD Test Guideline 203
Information given is based on tests on the mixture itself. Information source: Internal study report

Toxicity to aquatic plants

ErC50 / 72 h / *Pseudokirchneriella subcapitata* (green algae): > 3.5 mg/l
Method: OECD Test Guideline 201
Information given is based on tests on the mixture itself. Information source: Internal study report

Toxicity to aquatic invertebrates

EC50 / 48 h / *Daphnia magna* (Water flea): > 9.62 mg/l
Method: OECD Test Guideline 202
Information given is based on tests on the mixture itself. Information source: Internal study report

Toxicity to soil dwelling organisms

LD50 / 28 d / *Eisenia fetida* (earthworms): > 1,000 mg/kg Soil
(Data on the product itself) Information source: Internal study report



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Toxicity to other organisms

LC50 / 48 h / *Apis mellifera* (bees): >1348,76 µg/b
Method: OECD Test Guideline 213
Oral (Data on the product itself) Information source: Internal study report

LC50 / 48 h / *Apis mellifera* (bees): >981,35 µg/b
Method: OECD Test Guideline 214
Contact (Data on the product itself) Information source: Internal study report

LD50 / *Colinus virginianus* (Bobwhite quail): > 2,250 mg/kg
Method: US EPA Test Guideline OPPTS 850.2100
(Data on the product itself) Information source: Internal study report

LC50 / 8 d / *Colinus virginianus* (Bobwhite quail): > 5,620 mg/kg
Method: US EPA Test Guideline OPPTS 850.2200
(Data on the product itself) Information source: Internal study report

Chronic toxicity to fish

- Oxathiapiprolin
Early Life-Stage / NOEC / 35 d / *Cyprinodon variegatus* (sheepshead minnow): 0.34 mg/l
Method: US EPA Test Guideline OPPTS 850.1400
Information source: Internal study report

Chronic toxicity to aquatic Invertebrates

- Oxathiapiprolin
Semi-Static-Life-Cycle / NOEC / 21 d / *Daphnia magna* (Water flea): 0.75 mg/l
Method: OECD Test Guideline 211
Information source: Internal study report
- flow-through test / NOEC / 32 d / *Americamysis bahia* (mysid shrimp): 0.058 mg/l
Method: OPPTS 850.1350
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



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Mobility in soil

The product is not expected to be mobile in soils.

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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. (Oxathiapiprolin)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
14.5. Environmental hazards: For further information see Section 12.
14.6. Special precautions for user:
Tunnel restriction code: (-)

IATA_C

- 14.1. UN number: 3082
14.2. UN proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Oxathiapiprolin)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
14.5. Environmental hazards : For further information see Section 12.
14.6. Special precautions for user:
DuPont internal recommendations and transport guidance: ICAO / IATA cargo aircraft only



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IMDG

- | | |
|--|--|
| 14.1. UN number: | 3082 |
| 14.2. UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s.
(Oxathiapiprolin) |
| 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 special precautions required. |
| 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.

This product is in full compliance according to REACH regulation 1907/2006/EC.

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this/these product(s).

The mixture is evaluated within the frame of the provisions of Regulation (EC) No. 1107/2009.

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. |
| Other information | professional use |



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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

™ Trademark of E.I. du Pont de Nemours and Company.

® Registered trademark of E.I. du Pont de Nemours and Company

Take notice of the directions of use on the label.

Note: The classification of substances listed in Annex VI to the CLP regulation are derived from assessment of the best knowledge and information available at the time of its publication or subsequent amendments. The information on components provided in sections 11 and 12 of this safety data sheet may in some cases not align with a legally binding classification on the basis of technical progress and availability of new information.

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



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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.