



Mirror[®]

syngenta.

GROUP M04 FUNGICIDE

PCS number 06425
UF: 5PF0-VOQD-700F-5MGN



A suspension concentrate formulation containing 500 g/l (39.5% w/w) folpet. Contains folpet and hexamethyl tetramine: may produce an allergic reaction.

A fungicide for protection against leaf spot (*Zymoseptoria tritici*) on wheat and triticale, leaf blotch (*Rhynchosporium secalis*) on barley and triticale and net blotch (*Pyrenophora teres*) and ramularia leaf spot (*Ramularia collo-cygni*) on barley.

In case of toxic or transport emergency ring +44 (0) 1484 538444 any time

SHAKE WELL BEFORE USE. PROTECT FROM FROST.

SAFETY INFORMATION FOR PROFESSIONAL USE ONLY

MIRROR is a suspension concentrate formulation containing 500 g/L (39.5% w/w) folpet

Warning

May cause an allergic skin reaction.

Suspected of causing cancer.

Very toxic to aquatic life with long lasting effects.

Obtain special instructions before use.

Avoid breathing mist or vapours.

Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

IF exposed or concerned: Get medical advice/ attention.

If skin irritation or rash occurs: Get medical advice/attention.

Collect spillage.

Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.

To avoid risks to human health and the environment, comply with the instructions for use.



PCS: 06425

UF: 5PF0-VOQD-700F-5MGN

Authorisation holder

Adama Agricultural Solutions UK Ltd
Third Floor East, 1410 Arlington Business
Park, Theale, Reading, RG7 4SA
Tel: + 44 (0)1635 860555

Marketing Company

Syngenta Ireland Ltd.,
Block 6, Cleaboy Business Park,
Old Kilmeaden Road, Waterford, Ireland
Tel: (051) 377203

Lxxxxxx IREL/09B PPE xxxxxxx

5 litres

Product names marked © or ™, the ALLIANCE FRAME the SYNGENTA Logo and the PURPOSE ICON are Trademarks of a Syngenta Group Company

IMPORTANT INFORMATION

FOR PROFESSIONAL USE ONLY AS AN AGRICULTURAL FUNGICIDE

Crop	Maximum individual dose (litres of product/ha)	Maximum total dose (litres of product/ha/crop)	Latest time of application
Winter wheat, spring wheat, winter barley, spring barley and triticale	1.5	3	Before end of heading/ inflorescence fully emerged (GS 59)

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

SAFETY PRECAUTIONS**(a) Operator Protection**

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling the concentrate or handling contaminated surfaces. WASH CONCENTRATE from skin or eyes immediately. WASH HANDS AND EXPOSED SKIN before eating or drinking and after work. IF YOU FEEL UNWELL, seek medical advice immediately (show the label where possible).

(b) Environmental Protection

To protect aquatic organisms respect an unsprayed buffer of 5 metres to surface water bodies.

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.

(c) Storage and Disposal

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.
DO NOT RE-USE CONTAINER FOR ANY PURPOSE.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be carefully read in order to obtain safe and successful use of this product.

Resistance

MIRROR® contains folpet, a protectant fungicide from the phthalimide chemical group with multi-site contact activity. For resistance management purposes, it's mode of action is classified as M4 under the FRAC* code which indicates low-risk without any signs of resistance or cross-resistance developing.

For current advice on resistance management contact your agronomist or specialist advisor, and visit the FRAG-UK website.

Disease control in wheat, barley and triticale

For the reduction of leaf spot (*Zymoseptoria tritici*) in winter and spring wheat and triticale and leaf blotch (*Rhynchosporium secalis*) in winter and spring barley and triticale; and moderate control of net blotch (*Pyrenophora teres*) and ramularia leaf spot (*Ramularia collo-cygni*) in winter and spring barley. MIRROR may be applied in a programme of 2 suitably timed sprays.

Dose rate

1.5 L/ha per application

Septoria leaf spot (*Zymoseptoria tritici*) in winter and spring wheat and triticale

As MIRROR is a protectant fungicide with contact activity, it is important to apply the first spray before the disease becomes established in the crop (normally GS 30-33). A second spray should be timed to protect new growth from disease and therefore needs to be applied prior to further infection. This is normally 3 weeks after the first application but may be sooner under conditions of rapid growth and high disease pressure. Where disease infection or re infection has occurred prior to application, MIRROR should be mixed with alternative chemistry to provide curative activity (see Compatibility section).

Leaf blotch (*Rhynchosporium secalis*) in winter and spring barley and triticale; and net blotch (*Pyrenophora teres*) and ramularia leaf spot (*Ramularia collo-cygni*) in winter and spring barley

As MIRROR is a protectant fungicide with contact activity, it is important to apply the first spray before the disease becomes established in the crop (normally GS 30-33). A second spray should be timed to protect new growth from disease infection. This is normally 3 weeks after the first application but may be sooner under conditions of rapid growth and high disease pressure. Where disease infection or re infection has occurred prior to application, MIRROR should be mixed with alternative chemistry to provide curative activity (see Compatibility section).

Water volume

Apply MIRROR in a water volume of 200-400 L/ha.

Qualified recommendation: lower water volumes of 150 L/ha may also be used*; however, these have not been supported by effectiveness or crop safety data.

*or the equivalent of a 1% v/v dilution.

As MIRROR has contact activity, it is important to achieve a good coverage of the crop when spraying.

Mixing and spraying

For use by tractor mounted/trailed sprayer only.

Before spraying it is important to check all hoses, filters and nozzles, and to ensure that the sprayer is clean and correctly calibrated to give an accurate application at the correct volume. Half fill sprayer tank with clean water. Add the required amount of MIRROR to the water and commence agitation. On emptying the container, RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of container safely. Add the remainder of the water whilst continuing to agitate the mixture until spraying is complete.

Apply MIRROR as a medium spray (as defined by the BCPC) in cereals.

Thoroughly clean the sprayer and measuring equipment after using MIRROR.

Crops should not be re-entered until spray residues are dry.

Compatibility

Consult SYNGENTA IRL Ltd or your distributor for details on the products which may be mixed with MIRROR in Ireland.

Maintain agitation during the mixing process and continue until the spraying is complete. Do not leave in spray tank for long periods without using.

Caution

After spraying a herbicide, sprayer tanks and equipment should be thoroughly cleaned before using MIRROR.

DISCLAIMER/CONDITIONS OF SUPPLY

The specified properties of our products and the mode of application stated on this label have been established on the basis of research and experience. Products conform to specification at the time of delivery but, as we exercise no control over their subsequent storage, handling, mixing or use or the weather conditions before, during and after application, all of which may affect the performance of the products, no responsibility or liability will be accepted by us or our re-sellers for any failure in performance, damage or injury to person or property whatsoever arising from the storage, handling, application or use of the products. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in or make recommendations concerning the use of such products. We recommend you contact your dealer to request advice on the suitability of this product for any new and/or unusual growing methods or for new varieties not listed on this label.

SAFETY DATA SHEET - v1.2

SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1 Product Identifier

Tradename: MIRROR

Design Code: A12947B

Product Registration Number: PCS 06425

Unique Formula Identifier (UFI): 5PF0-VOQD-700F-5MGN

1.2 Relevant Identified Uses of the substance or mixture and uses advised against

Use of the Substance/Mixture: Fungicide

Recommended restrictions on use: professional use

1.3 Details of the supplier of the safety data sheet

Company: Syngenta Ireland Limited

Block 6 Cleaboy Business Park, Old Kilmeaden Road, Waterford, Ireland

Telephone: (051) 377203

Telefax: (051) 354748

E-mail address of person responsible for the SDS: cropsales.ie@syngenta.com

1.4 Emergency telephone number

Emergency telephone number: Syngenta +44 1484 538444

Poisons Information Centre of Ireland

Members of Public: +353 (1) 809 2166. (8.00 a.m. to 10.00 p.m. 7 days a week)

Healthcare Professionals: +353 (1) 809 2566 (24-hour service)

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Category 1 - H317: May cause an allergic skin reaction.

Carcinogenicity, Category 2 - H351: Suspected of causing cancer.

Short-term (acute) aquatic hazard, Category 1 - H400: Very toxic to aquatic life.

Long-term (chronic) aquatic hazard, Category 1 - H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard Pictograms



Signal Word

Warning

Hazard Statements

H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

P201 Obtain special instructions before use.
P261 Avoid breathing mist or vapours.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
P308+P313 IF exposed or concerned: Get medical advice/ attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P391 Collect spillage.
P501 Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.

Hazardous components which must be listed on the label:

folpet (ISO)

methenamine

1,2-benzisothiazol-3(2H)-one

Additional Labelling

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures

Components

Chemical Name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
folpet (ISO)	133-07-3 205-088-6 613-045-00-1	Acute Tox. 4; H332 Eye Irrit. 2; H319 Skin Sens. 1; H317 Carc. 2; H351 Aquatic Acute 1; H400 M-Factor (Acute aquatic toxicity): 10	>= 30 - < 50
Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts	68425-94-5	Skin Irrit. 2; H315 Eye Dam. 1; H318	>= 3 - < 10
fumaric acid	110-17-8 203-743-0 607-146-00-X 01-2119485492-81	Eye Irrit. 2; H319	>= 1 - < 10
methenamine	100-97-0 202-905-8 612-101-00-2	Flam. Sol. 2; H228 Skin Sens. 1; H317	>= 0.1 - < 1

For explanation of abbreviations see section 16.

SECTION 4. FIRST-AID MEASURES

4.1 Description of first aid measures

General advice: Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

If inhaled: Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control centre immediately.

If exposed or if you feel unwell: call a POISON CENTRE or doctor/physician.

In case of skin contact: Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

In case of eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

If swallowed: If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.

4.2 Most Important symptoms and effects, both acute and delayed

Symptoms: Nonspecific. No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: There is no specific antidote available. Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Extinguishing media - small fires

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media - large fires

Alcohol-resistant foam or Water spray

Unsuitable extinguishing media:

Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting: As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.

5.3 Advice for fire-fighters

Special protective equipment for firefighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: 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. Do not flush into surface water or sanitary sewer system. 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: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents. Retain and dispose of contaminated wash water.

6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling: No special protective measures against fire required. Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: No special storage conditions required. 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.

7.3 Specific end use(s)

Specific use(s): For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
folpet (ISO)	133-07-3	TWA	0.4 mg/m ³	SYNGENTA

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
fumaric acid	Workers	Inhalation	Long-term systemic effects	175 mg ³
	Workers	Inhalation	Acute systemic effects	175 mg ³
	Workers	Dermal	Long-term systemic effects	50 mg/kg
	Workers	Dermal	Acute systemic effects	50 mg/kg
	Consumers	Inhalation	Long-term systemic effects	53 mg/m ³
	Consumers	Inhalation	Acute systemic effects	53 mg/m ³
	Consumers	Dermal	Long-term systemic effects	30 mg/kg
	Consumers	Dermal	Acute systemic effects	30 mg/kg
	Consumers	Oral	Long-term systemic effects	30 mg/kg
	Consumers	Oral	Acute systemic effects	30 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
fumaric acid	Fresh water	0.1 mg/l
	Marine water	0.01 mg/l
	Intermittent release	1 mg/l
	Sewage treatment plant	3 mg/l

8.2 Exposure controls

Engineering measures: Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. The extent of these protection measures depends on the actual risks in use. If airborne dust is generated, use local exhaust ventilation controls. Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit. Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Eye/face protection: No special protective equipment required.

Hand protection

Material: Nitrile rubber

Break through time: > 480 min

Glove thickness: 0.5 mm

Remarks: Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. 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 break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Remove and wash contaminated clothing before re-use.

Wear as appropriate: Impervious clothing.

Respiratory protection: No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Protective measures: The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice.

Environmental exposure controls

Water: Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state: liquid

Colour: beige to white

Odour: slight

Odour Threshold: No data available

Melting point/range: No data available

Boiling point/boiling range: No data available

Flammability: No data available

Upper explosion limit / Upper flammability limit: No data available

Lower explosion limit / Lower flammability limit: No data available

Flash point: does not flash

Auto-ignition temperature: No data available

Decomposition temperature: No data available

pH: 4.5 - 6, Concentration: 1 %w/v

Viscosity, kinematic: 1500 mm²/s (40 °C)

Water solubility: No data available

Solubility in other solvents: No data available

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

Vapour pressure: No data available

Density: 1.25 g/cm³ (25 °C)

Relative vapour density: No data available

Particle size: No data available

9.2 Other information

Explosives: Not explosive

Oxidizing properties: The substance or mixture is not classified as oxidizing.

Self-ignition: > 400 °C

Evaporation rate: No data available

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

None reasonably foreseeable.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions: No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid: No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid: None known.

10.6 Hazardous decomposition products

Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure: Ingestion, Inhalation, Skin contact, Eye contact

Acute toxicity

Product:

Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity: LC50 (Rat): > 5.28 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity: LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Components:

folpet (ISO):

Acute oral toxicity: LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity: LC50 (Rat): 1.89 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

Species: Rabbit
Result: No skin irritation

Components:

folpet (ISO):

Species: Rabbit
Result: No skin irritation

Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

Method: in vitro skin corrosion test
Result: Irritating to skin.

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: No eye irritation

Components:

folpet (ISO):

Species: Rabbit
Result: Eye irritation

Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

Method: in vitro eye irritation test
Result: Risk of serious damage to eyes.

fumaric acid:

Result: Eye irritation

Respiratory or skin sensitisation

Product:

Test Type: mouse lymphoma cells
Species: Mouse
Result: May cause sensitisation by skin contact.

Components:

folpet (ISO):

Species: Guinea pig

Result: May cause sensitisation by skin contact.

methenamine:

Result: May cause sensitisation by skin contact.

Germ cell mutagenicity

Components:

folpet (ISO):

Germ cell mutagenicity- Assessment: Animal testing did not show any mutagenic effects.

fumaric acid:

Germ cell mutagenicity- Assessment: Animal testing did not show any mutagenic effects., In vitro tests did not show mutagenic effects

Carcinogenicity

Components:

folpet (ISO):

Carcinogenicity - Assessment: Limited evidence of carcinogenicity in animal studies

fumaric acid:

Carcinogenicity - Assessment: No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:

folpet (ISO):

Reproductive toxicity - Assessment: No toxicity to reproduction

fumaric acid:

Reproductive toxicity - Assessment: No toxicity to reproduction

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Product:

Toxicity to fish:	LC50 (<i>Oncorhynchus mykiss</i> (rainbow trout)): 0.017 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 (<i>Daphnia magna</i> (Water flea)): 3.9 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants:	EC50 (<i>Pseudokirchneriella subcapitata</i> (green algae)): 48.4 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity):	NOEC: 0.0375 mg/l Exposure time: 28 d Species: <i>Oncorhynchus mykiss</i> (rainbow trout)

Components:

folpet (ISO):

Toxicity to fish:	LC50 (<i>Salmo trutta</i> (brown trout)): 0.098 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 (<i>Daphnia magna</i> (Water flea)): 0.68 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants:	ErC50 (<i>Desmodesmus subspicatus</i> (green algae)): > 10 mg/l Exposure time: 72 h

M-Factor (Acute aquatic toxicity): 10

fumaric acid:

Toxicity to microorganisms: EC10 (*Pseudomonas putida*): 23.2 mg/l
Exposure time: 16 h
EC50 (activated sludge): > 300 mg/l
Exposure time: 3 h

12.2 Persistence and degradability

Components:

folpet (ISO):

Biodegradability: Result: Readily biodegradable.
Stability in water: Degradation half life: < 0.05 d
Remarks: Product is not persistent.

Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

Biodegradability: Result: Not readily biodegradable.

12.3 Bioaccumulative potential

Components:

folpet (ISO):

Bioaccumulation: Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water: log Pow: 3.017 (20 °C)

12.4 Mobility in soil

Components:

folpet (ISO):

Distribution among environmental compartments: Remarks: Moderately mobile in soils
Stability in soil: Dissipation time: 4.3 d
Percentage dissipation: 50% (DT50)
Remarks: Product is not persistent.

12.5 Results of PBT and vPvB assessment

Product:

Assessment: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

folpet (ISO):

Assessment: This substance is not considered to be very persistent and very bioaccumulating (vPvB). This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

fumaric acid:

Assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:

Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging: Empty remaining contents. Triple rinse containers. Empty containers should be taken for local recycling or waste disposal. Do not re-use empty containers.

Waste Code: uncleaned packagings 150110, packaging containing residues of or contaminated by dangerous substances.

SECTION 14. TRANSPORT INFORMATION

14.1 UN number

ADN	ADR	RID	IMDG	IATA
UN 3082	UN 3082	UN 3082	UN 3082	UN 3082

14.2 UN proper shipping name

ADR: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FOLPET)

RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FOLPET)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FOLPET)

IATA: Environmentally hazardous substance, liquid, n.o.s. (FOLPET)

14.3 Transport hazard class(es)

ADN	ADR	RID	IMDG	IATA
9	9	9	9	9

14.4 Packing group

ADR

Packing group: III

Classification Code: M6

Hazard Identification Number: 90

Labels: 9

Tunnel restriction code: (-)

Remarks: This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

RID

Packing group: III

Classification Code: M6

Hazard Identification Number: 90

Labels: 9

Remarks: This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IMDG

Packing group: III

Labels: 9

EmS Code: F-A, S-F

Remarks: This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IATA (Cargo)

Packing instruction (cargo aircraft): 964

Packing instruction (LQ): Y964

Packing group: III

Labels: Class 9 - Miscellaneous dangerous substances and articles

Remarks: This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IATA (Passenger)

Packing instruction (passenger aircraft): 964

Packing instruction (LQ): Y964

Packing group: III

Labels: Class 9 - Miscellaneous dangerous substances and articles

Remarks: This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

14.5 Environmental hazards**ADR**

Environmentally hazardous: yes

RID

Environmentally hazardous: yes

IMDG

Marine pollutant: yes

IATA (Passenger)

Environmentally hazardous: yes

IATA (Cargo)

Environmentally hazardous: yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet.

Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture**

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII): Conditions of restriction for the following entries should be considered: Number on list 3 methenamine

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast): Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable

REACH - List of substances subject to authorisation (Annex XIV): Not applicable

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

methenamine (ANNEX II)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major accident hazards involving dangerous substances. E1 ENVIRONMENTAL HAZARDS

Other regulations:

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. Use plant protection products safely. Always read the label and product information before use. Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable. Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

SECTION 16. OTHER INFORMATION

Full text of H-statements

H228: Flammable solid.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H351: Suspected of causing cancer.
H400: Very toxic to aquatic life.

Full text of other abbreviations

Acute Tox.: Acute toxicity
Aquatic Acute: Acute aquatic toxicity
Carc.: Carcinogenicity
Eye Dam.: Serious eye damage
Eye Irrit.: Eye irritation
Flam. Sol.: Flammable solids
Skin Irrit.: Skin irritation
Skin Sens.: Skin sensitisation
Syngenta: Syngenta Occupational Exposure Limit
Syngenta / TWA: Time weighted average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; Elx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative.

Further information

Classification of the mixture: Classification procedure:

Skin Sens. 1	H317	Based on product data or assessment
Carc. 2	H351	Calculation method
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Based on product data or assessment

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.