



Fungicide



Product registration number:  
MAPP 13536 PCS No. 05062



Water dispersible granule formulation containing  
500g/kg azoxystrobin.

A systemic strobilurin fungicide for the control of Fusarium  
patch, Take-all patch, Anthracnose, Brown patch, Leaf spot /  
Melting out, Rust diseases and Type 2 Fairy Rings.

The (COSHH) Control of Substances Hazardous to Health  
Regulations may apply to the use of this product at work.

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

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

**500 g**

This product label is compliant  
with the CPA Voluntary Initiative  
(VI) guidance.



## HERITAGE

### FOR PROFESSIONAL USE ONLY

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

Contains 500g/kg azoxystrobin as a water dispersible granule.



### Warning.

**Very toxic to aquatic life with long lasting effects.**

Avoid release to the environment.

Collect spillage.

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

**MAPP 13536 PCS 05062**

## IMPORTANT INFORMATION

FOR USE ONLY AS A HORTICULTURAL FUNGICIDE.  
For use on managed Amenity Turf.

Maximum individual dose: 0.5kg product per hectare  
Maximum number of treatments: Four per annum  
Latest time of application: Not applicable

**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.**

### Approval Holder and UK Marketing Company

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### Ireland Marketing Company

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Old Kilmeaden Road, Waterford  
Tel: (051) 3777203

PROTECT FROM FROST.  
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## **ADDITIONAL SAFETY INFORMATION**

### **(a) Operator protection**

Engineering controls of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate or handling contaminated surfaces.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when applying by hand-held equipment

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH HANDS before eating and drinking and after work.

### **(b) Environmental protection**

RISK TO NON-TARGET INSECTS OR OTHER ARTHROPODS. See Directions for Use.

To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing waterbody, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 m of the top of a ditch which is dry at the time of application. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1 m of the top of the bank of a static or flowing water body. Aim spray away from water. This product qualifies for inclusion within the Local Environmental Risk Assessment for Pesticides (LERAP) Scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with CRD's published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for inspection for three years.

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**

Store away from seeds, fertilizers and composts.

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank and dispose of safely.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

## **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.

### **RESTRICTIONS**

Prevent spray drift on to surrounding areas. Do not apply when ground is frozen or during drought.

Avoid spraying within 5m of the field boundary to reduce effects on non-target insects or other arthropods.

Do not use HERITAGE where there is a risk of spray drift onto neighbouring apple, crab apple, cherry, plum trees or privet. DO NOT use equipment used to apply HERITAGE to treat these crops as unacceptable damage may occur.

### **DISEASES CONTROLLED**

HERITAGE is an effective systemic fungicide, providing control of Fusarium Patch disease caused by *Microdochium nivale*, Take-All Patch disease caused by *Gaeumannomyces graminis*, Anthracnose caused by *Colletotrichum graminicola* (moderate control), Brown patch caused by *Rhizoctonia solani*, Leaf spot / Melting out caused by *Drechslera poae*, Rust diseases caused by *Puccinia* spp. and Type 2 Fairy Rings \* in managed established amenity turf and amenity grassland.

\* QUALIFIED MINOR USE RECOMMENDATION. On the basis of limited evidence HERITAGE will reduce the effects of Type 2 Fairy Rings.

HERITAGE contains the strobilurin fungicide azoxystrobin (QoI).

### **RESISTANCE MANAGEMENT**

Some turf disease pathogens are known to have developed resistance to products used repeatedly for their control. To ensure best control, HERITAGE should be applied at full use rates following the guidance below.

Do not apply more than 2 sequential applications of HERITAGE or any product containing a QoI fungicide.

Alternate with a fungicide having a different mode of action.

Do not apply more than 4 applications per year of any product containing a QoI fungicide.

For further advice on resistance management in turf contact your agronomist or specialist advisor and visit the FRAG-UK website.

## **CROP SPECIFIC INFORMATION**

Best results will be achieved when HERITAGE is applied as a preventive treatment at the very earliest stages of disease symptom expression.

Begin applications when conditions are favourable for disease infection, at the beginning of disease symptom expression.

Fusarium Patch (*Microdochium nivale*), Anthracnose (*Colletotrichum graminicola*) – moderate control, Brown patch (*Rhizoctonia solani*), Leaf spot / Melting out (*Drechslera poae*), Rust diseases (*Puccinia spp.*)

Use HERITAGE in a disease control programme, alternating applications of HERITAGE with fungicides with different modes of action.

The total number of HERITAGE applications applied per annum must not exceed a third of the total number of fungicide applications, up to a maximum of 4 applications. Do not apply more than 2 sequential HERITAGE applications.

Take All Patch (*Gaeumannomyces graminis*)

Apply HERITAGE as a preventative treatment at the full label use rate. Begin application when conditions are favourable for disease infection prior to disease symptom development. Make 2 applications 14 days apart in the spring and 2 applications 14 days apart in the autumn. In addition, utilise management practices, which encourage healthy turf and reduce turf stress.

Type 2 Fairy Rings

On the basis of limited evidence, HERITAGE will reduce the effects of Type 2 Fairy Rings. For best results applications should be made with the addition of a wetting agent to sufficiently wet the soil to allow the HERITAGE to get to the basidiomycete.

## **Timing**

Repeat at minimum intervals of 2 weeks. The maximum number of HERITAGE applications per annum is 4 OR as described in the Resistance Management section of this label.

## **Rate of Use**

Apply 0.5 kg HERITAGE in 125 – 1000 L per hectare (UK only) or 800 -1000 L per hectare (Ireland). For spot treatments, use 5 grams HERITAGE per 8 - 10 L of water. For optimum control of take-all patch, repeat application at the minimum interval.

## **MIXING AND SPRAYING**

HERITAGE fungicide may be applied with all types of spray equipment commonly used for making ground applications. Do not apply through ULV sprayers.

Ensure that the sprayer is clean and set to give the correct volume and an even deposit. Do not allow spray mixture to stand overnight or for prolonged periods. Make up only the amount of spray required for immediate use.

Thoroughly wash all spraying equipment immediately after use using two to three rinses of clean water. Do not use silicone-based products with HERITAGE.

Tractor-mounted/trailed sprayers: Half fill the spray tank with water and begin agitation. Add the required quantity of HERITAGE to the tank and complete filling. Continue agitation until spraying is completed.

Hand-held sprayers: Half fill the spray tank with clean water and add the required quantity of HERITAGE to the tank. Complete filling, mix thoroughly and use immediately.

## **Good Field Practice**

As part of our Product Stewardship policy, Syngenta Crop Protection recommends the following precautions should also be observed:- Wear appropriate clothing - coveralls and protective gloves, when handling the concentrate. HERITAGE® is a Registered Trademark of a Syngenta Group Company.

For further information please see [www.greencast.co.uk](http://www.greencast.co.uk) or [www.greencast.ie](http://www.greencast.ie)

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**Section 6 of the Health and Safety at Work Act**  
**Additional Product Safety Information (UK only)**

(This section does not form part of the product label under the Plant Protection Products Regulations 1995.)

The product label provides information on a specific pesticidal use of the product; do not use otherwise, unless you have assessed any potential hazard involved, the safety measures required and that the particular use has 'Extension of Use' approval or is otherwise permitted under the Plant Protection Products Regulations. (UK only)

The information on this label is based on the best available information including data from test results.

**SAFETY DATA SHEET**

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

**1.1 Product Identifier**

**Product Name:** HERITAGE  
**Design Code:** A12704A

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

**Use:** Fungicide

**1.3 Details of the supplier of the safety data sheet**

**Company:** Syngenta UK Limited  
CPC4, Capital Park,  
Fulbourn, Cambridge  
**Phone:** (01223) 883400  
**Fax:** (01223) 882195  
**Website:** www.syngenta.co.uk

**1.4 Emergency telephone number**

**Emergency phone No.:** +44 (0) 1484 538444

**SECTION 2. HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

Classification according to Regulation (EU) 1272/2008

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**

Labelling: Regulation (EC) No. 1272/2008

Hazard pictograms



Signal Word

Warning

Hazard Statements

H410

Very toxic to aquatic life with long lasting effects.

Supplemental Hazard

EUH401

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

Statements

Precautionary Statements

**Response:**

P391

Collect spillage.

**Disposal:**

P501

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.

**2.3 Other hazards**

None known.

## SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

### 3.2 Mixtures

#### Hazardous Components

Chemical Name	CAS No. EC No. Registration Number	Classification (REGULATION (EC) No. 1272/2008)	Concentration (%)
azoxystrobin	131860-33-8	Acute Tox.3; H331 Aquatic Acute1; H400 Aquatic Chronic1; H410	>= 50 - < 70
naphthalenesulfonic acid, dimethyl-, polymer with formaldehyde and methyl- naphthalenesulfonic acid, sodium salt	Not Assigned	Eye Irrit.2; H319 Skin Irrit.2; H315	>= 5 - < 10
sulfuric acid, mono-C12-18-alkyl esters, sodium salts	68955-19-1 273-257-1 01-2119490225-39	Skin Irrit.2; H315 Eye Dam.1; H318	>= 1 - < 3

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 Syngenta 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.

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 : No information available.

### 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

Use 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 firefighting: 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. Avoid dust formation.

### 6.2 Environmental precautions

Environmental precautions : 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, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13). Do not create a powder cloud by using a brush or compressed air. Clean contaminated surface thoroughly.

### 6.4 Reference to other sections

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

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## 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.

Other data : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

### 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.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
azoxystrobin	131860-33-8	TWA	4 mg/m <sup>3</sup>	Syngenta
kaolin	1332-58-7	TWA (alveolate dust)	3 mg/m <sup>3</sup>	CH SUVA
Further information	If the kaoline contains quartz, take its limit value into account			

### 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 protection : No special protective equipment required.

Hand protection

Remarks : No special protective equipment required.

Skin and body protection : No special protective equipment required. Select skin and body protection based on the physical job requirements.

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. Personal protective equipment should be certified to appropriate standards.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance :	solid
Colour :	yellow to light brown
Odour :	none
pH :	4 - 8, Concentration: 1 % w/v
Density :	0.54 g/cm <sup>3</sup>
Explosive properties :	Classification Code: Not explosive
Oxidizing properties :	not oxidizing

### 9.2 Other Information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

See section 10.3 "Possibility of hazardous reactions".

### 10.2 Chemical stability

The product is stable when used in normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : No hazardous reactions by normal handling and storage according to provisions.

### 10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

### 10.5 Incompatible materials

Materials to avoid : No substances are known which lead to the formation of hazardous substances or thermal reactions.

### 10.6 Hazardous decomposition products

Combustion or thermal decomposition will evolve toxic and irritant vapors.

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Product:

Acute oral toxicity :	LD50 (Rat, male and female): > 5,000 mg/kg Remarks: The toxicological data has been taken from products of similar composition.
Acute inhalation toxicity :	LC50 (Rat): > 4.67 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity Remarks: The toxicological data has been taken from products of similar composition.
Acute dermal toxicity :	LD50 (Rat, male and female): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity Remarks: The toxicological data has been taken from products of similar composition.

##### Components:

##### azoxystrobin:

Acute oral toxicity :	LD50 (Rat, male and female): > 5,000 mg/kg Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity :	LC50 (Rat, female): 0.7 mg/l Exposure time: 4 h Test atmosphere: dust/mist LC50 (Rat, male): 0.9 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity :	LD50 (Rat, male and female): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

##### naphthalenesulfonic acid, dimethyl-, polymer with formaldehyde and methylnaphthalenesulfonic acid, sodium salt:

Acute oral toxicity :	LD50 Oral (Rat): > 5,000 mg/kg
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**sulfuric acid, mono-C12-18-alkyl esters, sodium salts:**

Acute oral toxicity : LD50 (Rat, male and female): 2,600 mg/kg  
Assessment: The substance or mixture has no acute oral toxicity  
Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

**Product:**

Species: Rabbit  
Result: No skin irritation  
Remarks: The toxicological data has been taken from products of similar composition.

**Components:**

**azoxystrobin:**

Species: Rabbit  
Result: No skin irritation

**naphthalenesulfonic acid, dimethyl-, polymer with formaldehyde and methylnaphthalenesulfonic acid, sodium salt:**

Species: Rabbit  
Result: Irritating to skin.

**sulfuric acid, mono-C12-18-alkyl esters, sodium salts:**

Species: Rabbit  
Result: Irritating to skin.

**Serious eye damage/eye irritation**

**Product:**

Species: Rabbit  
Result: No eye irritation  
Remarks: The toxicological data has been taken from products of similar composition.

**Components:**

**azoxystrobin:**

Species: Rabbit  
Result: No eye irritation

**naphthalenesulfonic acid, dimethyl-, polymer with formaldehyde and methylnaphthalenesulfonic acid, sodium salt:**

Species: Rabbit  
Result: Irritation to eyes, reversing within 21 days  
**sulfuric acid, mono-C12-18-alkyl esters, sodium salts:**  
Species: Rabbit  
Result: Risk of serious damage to eyes.

**Respiratory or skin sensitisation**

**Product:**

Species: Guinea pig  
Result: Did not cause sensitisation on laboratory animals.  
Remarks: The toxicological data has been taken from products of similar composition.

**Components:**

**azoxystrobin:**

Species: Guinea pig  
Result: Did not cause sensitisation on laboratory animals.

**sulfuric acid, mono-C12-18-alkyl esters, sodium salts:**

Species: Guinea pig  
Result: Did not cause sensitisation on laboratory animals.

**Germ cell mutagenicity**

**Components:**

**azoxystrobin:**

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

**sulfuric acid, mono-C12-18-alkyl esters, sodium salts:**

Germ cell mutagenicity- Assessment: In vitro tests did not show mutagenic effects



## Carcinogenicity

### Components:

#### azoxystrobin:

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

## Reproductive toxicity

### Components:

#### azoxystrobin:

Reproductive toxicity - Assessment: No toxicity to reproduction

## Repeated dose toxicity

### Components:

#### azoxystrobin:

Remarks: No adverse effect has been observed in chronic toxicity tests.

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## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

#### Product:

Toxicity to fish :	LC50 ( <i>Oncorhynchus mykiss</i> (rainbow trout)): 1.1 mg/l Exposure time: 96 h LC50 ( <i>Lepomis macrochirus</i> (Bluegill sunfish)): 2.4 mg/l Exposure time: 96 h
Toxicity to daphnia and other : aquatic invertebrates	EC50 ( <i>Daphnia magna</i> (Water flea)): 0.0018 mg/l Exposure time: 48 h
Toxicity to algae :	EbC50 ( <i>Pseudokirchneriella subcapitata</i> (green algae)): 0.12 mg/l Exposure time: 72 h ErC50 ( <i>Pseudokirchneriella subcapitata</i> (green algae)): 0.95 mg/l Exposure time: 72 h

### Components:

#### azoxystrobin:

Toxicity to fish :	LC50 ( <i>Oncorhynchus mykiss</i> (rainbow trout)): 0.47 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 ( <i>Daphnia magna</i> (Water flea)): 0.28 mg/l Exposure time: 48 h EC50 ( <i>Americamysis bahia</i> (Mysid shrimp)): 0.055 mg/l Exposure time: 96 h ErC50 ( <i>Pseudokirchneriella subcapitata</i> (green algae)): 2 mg/l Exposure time: 96 h NOErC ( <i>Pseudokirchneriella subcapitata</i> (green algae)): 0.038 mg/l Exposure time: 96 h ErC50 ( <i>Navicula pelliculosa</i> (Freshwater diatom)): 0.301 mg/l Exposure time: 96 h
Toxicity to algae :	10 IC50 ( <i>Pseudomonas putida</i> ): > 3.2 mg/l Exposure time: 6 h NOEC: 0.16 mg/l Exposure time: 28 d Species: <i>Oncorhynchus mykiss</i> (rainbow trout) NOEC: 0.147 mg/l Exposure time: 33 d Species: <i>Pimephales promelas</i> (fathead minnow)
M-Factor (Acute aquatic toxicity): Toxicity to bacteria :	10 IC50 ( <i>Pseudomonas putida</i> ): > 3.2 mg/l Exposure time: 6 h NOEC: 0.16 mg/l Exposure time: 28 d Species: <i>Oncorhynchus mykiss</i> (rainbow trout) NOEC: 0.147 mg/l Exposure time: 33 d Species: <i>Pimephales promelas</i> (fathead minnow)
Toxicity to fish (Chronic toxicity):	NOEC: 0.044 mg/l Exposure time: 21 d Species: <i>Daphnia magna</i> (Water flea) NOEC: 0.0095 mg/l Exposure time: 28 d Species: <i>Americamysis bahia</i> (Mysid shrimp)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	NOEC: 0.044 mg/l Exposure time: 21 d Species: <i>Daphnia magna</i> (Water flea) NOEC: 0.0095 mg/l Exposure time: 28 d Species: <i>Americamysis bahia</i> (Mysid shrimp)
M-Factor (Chronic aquatic toxicity):	10

**sulfuric acid, mono-C12-18-alkyl esters, sodium salts:**

Toxicity to fish : LC50 : 17 mg/l  
Exposure time: 96 h  
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates: EC50 (*Daphnia magna* (Water flea)): 15 mg/l  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae : ErC50 (Algae): 20 mg/l  
Exposure time: 72 h  
NOErC (Algae): 3 mg/l  
Exposure time: 72 h

Toxicity to bacteria : EC50 (Bacteria): 680 mg/l  
Exposure time: 3 h

Toxicity to fish (Chronic toxicity): NOEC: 0.11 - 0.35 mg/l  
Exposure time: 34 d  
Species: Fish

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: 0.419 mg/l  
Exposure time: 7 d  
Species: *Daphnia* (water flea)

**Ecotoxicology Assessment**

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

**12.2 Persistence and degradability****Components:****azoxystrobin:**

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 214 d

Remarks: The substance is stable in water.

**sulfuric acid, mono-C12-18-alkyl esters, sodium salts:**

Biodegradability : Result: Readily biodegradable

**12.3 Bioaccumulative potential:****Components:****azoxystrobin:**

Bioaccumulation : Remarks: Does not bioaccumulate.

**12.4 Mobility in soil:****Components:****azoxystrobin:**

Distribution among environmental compartments: Remarks: Azoxystrobin has low to very high mobility in soil.

Stability in soil : Percentage dissipation: 50 % (DT50: 80 d)

Remarks: Not persistent in soil.

**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:****azoxystrobin:**

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:****Components:****azoxystrobin:**

Additional ecological information: Remarks: No data available

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## 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.

## SECTION 14. TRANSPORT INFORMATION

### Land transport (ADR/RID)

14.1 UN Number	UN 3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID N.O.S. (AZOXYSTROBIN)
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
Labels	9
14.5 Environmental hazards	Environmentally hazardous

### Sea transport (IMDG)

14.1 UN Number	UN 3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID N.O.S. (AZOXYSTROBIN)
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
Labels	9
14.5 Environmental hazards	Marine pollutant

### Air transport (IATA-DGR)

14.1 UN Number	UN 3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID N.O.S. (AZOXYSTROBIN)
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
Labels	9
14.6 Special precautions for user	None

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15. REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture

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.

### 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

### Approval number, MAPP 13536, PCS No. 05062.

Use plant protection products safely. Always read the label and product information before use.

Based upon SDS release dated 17/02/2016, version 12 with local amendment.

### Full text of H-statements:

H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

H331	Toxic if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

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.

Product names are a trademark or registered trademark of a Syngenta Group Company.





L1025604 GBR/1V PPE 4072965 1858/2016



Fungicide

syngenta®

Product registration number:  
MAPP 13536 PCS No. 05062



Water dispersible granule formulation containing  
500g/kg azoxystrobin.

A systemic strobilurin fungicide for the control of Fusarium patch, Take-all patch, Anthracnose, Brown patch, Leaf spot / Melting out, Rust diseases and Type 2 Fairy Rings.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

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

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

**500 g**

This product label is compliant with the CPA Voluntary Initiative (VI) guidance.



### HERITAGE

#### FOR PROFESSIONAL USE ONLY

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

Contains 500g/kg azoxystrobin as a water dispersible granule.



#### Warning.

**Very toxic to aquatic life with long lasting effects.**

Avoid release to the environment.

Collect spillage.

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

**MAPP 13536 PCS 05062**

### IMPORTANT INFORMATION

FOR USE ONLY AS A HORTICULTURAL FUNGICIDE.

For use on managed Amenity Turf.

Maximum individual dose: 0.5kg product per hectare

Maximum number of treatments: Four per annum

Latest time of application: Not applicable

**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.**

#### Approval Holder and UK Marketing Company

Syngenta UK Limited  
CPC 4, Capital Park, Fulbourn  
Cambridge CB21 5XE  
Tel: +44 (0)1223 883400

#### Ireland Marketing Company

Syngenta Ireland Ltd.  
Block 6, Cleaboy Business Park,  
Old Kilmeaden Road, Waterford  
Tel: (051) 3777203

PROTECT FROM FROST.

© Syngenta AG, 2017.







**GROUP 12 FUNGICIDE**

Product registration number:  
**MAPP 15287**  
**UFI 6EU0-708S-6008-TDAG**

MEDALLION® TL is a suspension concentrate formulation containing 125 g/l fludioxonil.

A broad spectrum foliar fungicide with protectant and contact properties for control of Fusarium patch (*Microdochium nivale*), useful levels of control of leaf spot (*Drechslera* spp.) and reduction of Anthracnose (*Colletotrichum graminicola*) on managed amenity turf and amenity grassland.

*The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.*

Syngenta UK Limited  
Jealott's Hill International Research Centre, Bracknell, Berkshire, RG42 6EY  
Tel: +44 (0) 1223 883400

**In case of toxic or transport emergency ring +44 (0)1484 538444 anytime.**

**3 litres**

This product label is compliant with the CPA  
Voluntary Initiative (VI) guidance. (UK only)

**IMPORTANT INFORMATION**

FOR USE ONLY AS A HORTICULTURAL FUNGICIDE

For use on:

Crops	Maximum individual dose (product/ha)	Maximum number of treatments
Managed amenity turf and amenity grassland	3 litres	4 per year

**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.**

**PROTECT FROM FROST  
SHAKE WELL BEFORE USE**

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

L1128296 GBRI/11C PPE 4220566



**The  
Voluntary  
Initiative**

**MEDALLION® TL**

A suspension concentrate formulation containing 125 g/l fludioxonil.

**Warning**

**Very toxic to aquatic life with long lasting effects.**

Avoid release to the environment.

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.

Contains 1,2-benzisothiazol-3-one. May produce an allergic reaction.

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

**MAPP 15287 UFI 6EU0-708S-6008-TDAG**



**(b) Environmental protection**



To protect aquatic organisms, respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements.

**DO NOT ALLOW DIRECT SPRAY** from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing waterbody, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 m of the top of a ditch which is dry at the time of application. **DO NOT ALLOW DIRECT SPRAY** from hand-held sprayers to fall within 1 m of the top of the bank of a static or flowing water body. Aim spray away from water. This product qualifies for inclusion within the Local Environmental Risk Assessment for Pesticides (LERAP) Scheme. Before each spraying operation from a horizontal boom sprayer or broadcast air assisted sprayer either a LERAP must be carried out in accordance with CRD published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for inspection for three years.

Do not contaminate water with the product or its container.

Do not clean application equipment near surface water.

Avoid contamination via drains from yards and roads.

**(c) Storage and disposal**

**KEEP IN ORIGINAL CONTAINER**, tightly closed in a safe place.

**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 safely. **DO NOT RE-USE CONTAINER** for any other purpose.

**SAFETY PRECAUTIONS**

**(a) Operator Protection**

**WASH HANDS AND EXPOSED SKIN** before eating and drinking and after work.

This leaflet is part of the approved Product Label.

### **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.

### **GENERAL INFORMATION**

MEDALLION TL is a suspension concentrate formulation containing 125 g/l fludioxonil. Fludioxonil is a long lasting contact fungicide belonging to the phenylpyrrole chemistry group, that provides broad-spectrum activity against a wide range of turf diseases. It is believed to inhibit transport-associated phosphorylation of glucose, which subsequently results in the inhibition of fungal mycelial growth.

### **RESTRICTIONS**

Prevent spray drift on to surrounding areas Do not apply when ground is frozen or during drought.

DO NOT apply to turf under heat or moisture stress.

### **DISEASES CONTROLLED**

MEDALLION TL is a broad spectrum foliar fungicide with protectant and contact properties for the control of the following diseases in managed amenity turf and amenity grassland:

- Fusarium Patch (*Microdochium nivale*)
- Leaf Spot (*Drechslera spp.*)\* [useful levels of control]
- Anthracnose (*Colletotrichum graminicola*) [reduction]

\* Qualified minor use recommendation made on the basis of limited data.

For optimum turf quality and disease control, use MEDALLION TL in conjunction with turf management practices that promote good plant health.

Correct identification of the disease(s) is essential in selecting the most appropriate control measures.

### **CROP SPECIFIC INFORMATION**

Begin applications when conditions are favourable for disease infection, at the very beginning of disease symptom expression.

## **Rates of Use**

Apply 3 litres MEDALLION TL per hectare in 125-500 litres water per hectare.

For spot treatments, use 30 ml of MEDALLION TL in 1.25-5 litres of water to treat an area of 100 square metres.

## **Timing**

Apply in a preventative spray programme, starting when conditions become favourable for disease development. Apply 3 litres MEDALLION TL per hectare with a maximum number of 4 sprays per year. A minimum interval of 14 days should be observed between applications.

## **RESISTANCE MANAGEMENT**

Some turf disease pathogens are known to have developed resistance to products used repeatedly for their control. In order to minimise the likelihood of the development of resistance, it is recommended that MEDALLION TL should be used in a programme with products of different chemical groups.

Use MEDALLION TL in a disease control programme, alternating treatments with other fungicides having different modes of action.

MEDALLION TL contains fludioxonil (a phenylpyrrole) and applications should be made in accordance with FRAC guidelines.

Apply MEDALLION TL at full recommended rates. Utilize management practices which encourage healthy turf and reduce turf stress.

## **APPLICATION**

### **VOLUME OF WATER AND SPRAYING**

MEDALLION TL may be applied through all types of spray equipment commonly used for making ground applications. Application equipment should be calibrated before use. MEDALLION TL is recommended to be applied in 125-500 litres water/ha with all application methods.

### **MIXING AND SPRAYING**

Tractor-mounted/trailed sprayers: Make sure the sprayer is clean and set to give an even application at the correct volume and an even deposit. Half fill the spray tank with the required volume of clean water and start agitation. Add the required amount of MEDALLION TL to the spray tank. Agitate the mixture thoroughly before use and continue agitation during spraying.

Thoroughly wash all spray equipment with water immediately after use.

Hand-held and knapsack sprayers: Half fill the spray tank with clean water and add the required quantity of MEDALLION TL to the tank. Complete filling, mix thoroughly and use immediately.

Thoroughly wash all spraying equipment immediately after use.

Wash out containers thoroughly, preferably using an integrated pressure rinsing device, or manually rinse three times. Add washings to the sprayer at the time of filling. Complete filling to the required volume and continue to agitate throughout the spraying operation.

Do not leave the spray liquid in the sprayer for long periods (such as during meal breaks or overnight). Make up only the amount of spray required for immediate use.

For further information please see [www.greencast.co.uk](http://www.greencast.co.uk) or [www.greencast.ie](http://www.greencast.ie)

## **COMPANY ADVISORY INFORMATION**

1. Some diseases can quickly damage turf. Treatment at a late stage of disease development will be more difficult and can leave bare soil patches needing renovation.
2. Use preventative sprays, especially against diseases which occur in winter and early spring.
3. If diseases recur regularly, check management practices, especially fertilizer treatment as this can affect disease occurrence if either in excess or deficient.

## **Good Field Practice**

As part of our Product Stewardship policy, Syngenta Crop Protection recommend the following precautions should also be observed:

- Wear appropriate clothing - coveralls and protective gloves, when handling the concentrate.

This product is to be used only in accordance with the recommendations and instructions given on the labels provided with this pack. Use in any other circumstances is entirely at user's risk.

## **SAFETY PRECAUTIONS**

### **(a) Operator Protection**

WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.

### **(b) Environmental protection**

To protect aquatic organisms, respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing waterbody, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 m of the top of a ditch which is dry at the time of application.

DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1 m of the top of the bank of a static or flowing water body. Aim spray away from water.

This product qualifies for inclusion within the Local Environmental Risk Assessment for Pesticides (LERAP) Scheme. Before each spraying operation from a horizontal boom sprayer or broadcast air assisted sprayer either a LERAP must be carried out in accordance with CRD published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for inspection for three years. Do not contaminate water with the product or its container.

Do not clean application equipment near surface water. Avoid contamination via drains from yards and roads.

### **(c) Storage and disposal**

KEEP IN ORIGINAL CONTAINER, tightly closed in a safe place.

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 safely.

DO NOT RE-USE CONTAINER for any other purpose.

To access the Safety Data Sheet for this product, scan QR code:



Alternatively, contact your supplier



syngenta.

A turf pigment.

*The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.*

Syngenta UK Ltd  
CPC4, Capital Park, Fulbourn  
Cambridge CB21 5XE  
Tel: Cambridge (01223) 883400

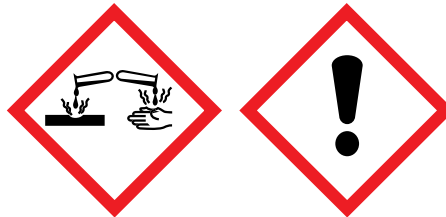
**In case of toxic or transport emergency ring  
+44 (0)1484 538444 any time**

**PROTECT FROM FROST  
SHAKE WELL BEFORE USE**

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

**1 Litre**

**RYDER®**  
A turf pigment.



**Danger**  
**May cause an allergic skin reaction.**  
**Causes serious eye damage.**  
**Harmful to aquatic life with long lasting effects.**

Avoid breathing mist or vapours.  
Wear protective gloves/ eye protection/ face protection.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.  
If skin irritation or rash occurs: Get medical advice/ attention.  
Take off contaminated clothing and wash it before reuse.  
Collect spillage.  
Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for triple rinsed clean containers which can be disposed of as non-hazardous waste.

UFI: 3C55-T012-0008-QXD4

#### SAFETY PRECAUTIONS

Keep out of reach of children.  
Keep away from food, drink and animal feeding stuffs.  
When using do not eat drink or smoke.  
To avoid risks to human health and the environment, comply with the instructions for use.  
KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.  
WASH OUT CONTAINER THOROUGHLY, and dispose of safely.  
DO NOT RE-USE CONTAINER for any other purpose.

## **DIRECTIONS FOR USE**

### **GENERAL INFORMATION**

RYDER® is a highly concentrated and stable green pigment designed for use on managed turf to improve its appearance and to help protect against UV radiation and excessive light intensities.

RYDER delivers a lasting and natural looking green colour for an enhanced, more uniform, appearance.

RYDER is safe to use on all turf species. For optimum turf quality RYDER should be used in conjunction with turf management practices that promote good turf health.

### **RESTRICTIONS**

Prevent spray drift onto surrounding areas. Stone, paths and pavements will be stained if contacted.

Avoid product drift to open water bodies:

Apply vegetative buffer zones to water bodies of 3-5 m. Product application must be done using drift preventing practices and equipment (weather conditions during application, spraying equipment calibration)

### **Rates of Use**

#### **Greens and turf maintained at under 12mm**

Apply at a rate of 0.75 to 1.5 l/ha in a water volume of 250-500 litres per hectare. Use higher rates for deeper green colour and higher heights of cut.

#### **Turf maintained above 12mm**

Apply at a rate of 1.0 to 2.0 l/ha in a water volume of 250-500 litres per hectare. Use higher rates for deeper green colour and higher heights of cut.

For superior coverage apply 0.5 – 1.0 l/ha in each of two directions (90° opposite directions)

### **Timing**

Apply RYDER at approximately 2 to 3 week intervals during the main growing season and at 4- 6 week intervals when turf growth slows and mowing frequency drops.

RYDER can be applied throughout the year as required.

Apply after mowing.

### **MIXING AND SPRAYING**

Use of PPE for mixing/loading and application: Impermeable clothing (long sleeves shirt, long trousers), footwear. Hand protection: nitrile gloves. Eye protection: Tightly fitting safety goggles, Face shield. During handling of concentrated product: respiratory protection.

Make sure the sprayer is clean and set to give an even application at the correct volume and an even deposit. Half fill the spray tank with clean water and commence agitation. Add the required quantity of RYDER to the spray tank. Complete filling to the required volume and continue to agitate throughout the spraying operation. Wash out containers thoroughly, preferably using an integrated pressure rinsing device, or manually rinse three times. Add washings to the sprayer at the time of filling. Complete filling to the required volume and continue to agitate throughout the spraying operation.

Do not leave the spray liquid in the sprayer for long periods (such as during meal breaks (>1 hour) or overnight). Make up only the amount of spray required for immediate use.

Thoroughly wash all spray equipment with water immediately after use.

Thoroughly wash out sprayer according to manufacturer's guidelines and dispose of washing and clean containers according to DEFRA Code of Practice and local water authority guidelines.

### **Good Field Practice**

As part of our Product Stewardship policy, Syngenta Crop Protection recommends the following precautions should also be observed:

- Wear appropriate clothing – coveralls, eye protection and protective gloves, when handling the concentrate.

For further information please see [www.greencast.co.uk](http://www.greencast.co.uk) or [www.greencast.ie](http://www.greencast.ie)

RYDER® is a trademark of a Syngenta Group Company.

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### **Section 6 of the Health and Safety at Work Act** **Additional Product Safety Information**

(This section does not form part of the product label under the Plant Protection Products Regulations 1995.)

The product label provides information on a specific pesticidal use of the product; do not use otherwise, unless you have assessed any potential hazard involved, the safety measures required and that the particular use has 'extensions of use' approval or is otherwise permitted under the Plant Protection Products Regulations.

The information on this label is based on the best available information including data from test results.

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## SAFETY DATA SHEET - V1.0

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

#### 1.1 Product Identifier

Trade name : RYDER

Design code : A22884A

Unique Formula Identifier (UFI): 3C55-T012-0008-QXD4

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

Use of the Substance/Mixture: Colouring agents, pigments

Recommended restrictions on use: professional use

#### 1.3 Details of the supplier of the safety data sheet

**Company:** Syngenta UK Ltd, CPC4, Capital Park, Fulbourn, Cambridge, CB21 5XE

**Telephone:** +44 (0) 1223 883400

**Telefax:** +44 (0) 1223 882195

E-mail address of person responsible for the SDS: customer.services@syngenta.com

#### 1.4 Emergency telephone number

Emergency phone No.: +44 (0) 1484 538444

### SECTION 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

Serious eye damage, Category 1 - H318: Causes serious eye damage.

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

Long-term (chronic) aquatic hazard, Category 3 - H412: Harmful to aquatic life with long lasting effects.

#### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

Hazard pictograms



Signal Word Danger

Hazard H317 May cause an allergic skin reaction.

Statements H318 Causes serious eye damage.

H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements	P261	Avoid breathing mist or vapours.
	P280	Wear protective gloves/ eye protection/ face protection.
	P305+P351+P338+P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
	P333+P313	IF skin irritation or rash occurs: Get medical advice/ attention.
	P362+P364 P501	Take off contaminated clothing and wash it before reuse. 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:

- alcohols, C12-15,ethoxylated
- reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

#### 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.

### SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### 3.2 Mixtures

##### Components

Chemical Name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
alcohols, C12-15,ethoxylated	68131-39-5 500-195-7	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 10 - < 20
Fatty acids, tall-oil, diesters with polypropylene glycol	68648-12-4	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 1 - < 10
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9 613-167-00-5	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 2; H310 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100 specific concentration limit Skin Corr. 1C; H314 >= 0.6 % Skin Irrit. 2; H315 >= 0.06 - < 0.6 % Eye Irrit. 2; H319 >= 0.06 - < 0.6 % Skin Sens. 1A; H317 >= 0.0015 % Eye Dam. 1; H318 >= 0.6 %	>= 0.0025 - < 0.025

Chemical Name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Substances with a workplace exposure limit :			
C.I. pigment green 7	1328-53-6 215-524-7	Eye Irrit. 2; H319	>= 50 - < 70
carbon black	1333-86-4 215-609-9		>= 1 - < 10

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.

**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

Use 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 material 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 tight-ly 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): Refer to protective measures listed in sections 7 and 8.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
C.I. pigment green 7	1328-53-6	TWA (Dusts and mists)	1 mg/m <sup>3</sup> (Copper)	GB EH40
		STEL (Dusts and mists)	2 mg/m <sup>3</sup> (Copper)	GB EH40
carbon black	1333-86-4	TWA	3.5 mg/m <sup>3</sup>	GB EH40
		STEL	7 mg/m <sup>3</sup>	GB EH40
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	STEL	0.2 mg/m <sup>3</sup>	

**Derived No Effect Level (DNEL):**

Substance name	End Use	Exposure routes	Potential health effects	Value
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Workers	Inhalation	Local effects	0.02 mg/m <sup>3</sup>
	Consumers	Inhalation	Local effects	0.02 mg/m <sup>3</sup>
	Consumers	Oral	Systemic effects	0.09 mg/kg bw/day

**Predicted No Effect Concentration (PNEC):**

Substance name	Environmental Compartment	Value
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one(3:1)	Fresh water	3.39 µg/l
	Marine water	3.39 µg/l
	Sewage treatment plant	0.23 mg/l
	Fresh water sediment	0.027 mg/kg dry weight (d.w.)
	Marine sediment	0.027 mg/kg dry weight (d.w.)
	Soil	0.01 mg/kg dry weight (d.w.)

**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. Maintain air concentrations below occupational exposure standards. Where necessary, seek additional occupational hygiene advice.

**Personal protective equipment**

**Eye protection:** Tightly fitting safety goggles

Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded. Use eye protection according to EN 166.

**Hand protection**

**Material:** Nitrile rubber

**Break through time:** > 480 min

**Glove length:** 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 EU Directive 89/686/EEC 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:** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Suitable respiratory equipment: Respirator with combination filter for vapour/particulate (EN 141)

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Filter type: Combined particulates and organic vapour type (A-P)

**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.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

Appearance : liquid

Colour : green

Odour : characteristic

Odour Threshold : No data available

pH : 7.7. Concentration: 100 % w/v

Melting point/range : No data available

Boiling point/boiling range : >= 100 °C

Flash point : Method: Setta closed cup, does not flash

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit / Upper flammability limit: No data available

Lower explosion limit / Lower flammability limit: No data available

Vapour pressure : No data available

Relative vapour density : No data available

Density : 1.33 - 1.35 g/cm<sup>3</sup> (20 °C)

Water solubility : soluble

Solubility in other solvents : No data available

Partition coefficient: noctanol/ water: No data available

Auto-ignition temperature : 433 °C

Decomposition temperature : No data available

Viscosity, kinematic : No data available

Explosive properties : Not explosive

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

**9.2 Other Information**

Particle size : 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 oral toxicity:

##### Product:

Acute oral toxicity: Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

##### Components:

#### alcohols, C12-15,ethoxylated:

Acute oral toxicity: LD50 (Rat): 1,000 - 2,000 mg/kg  
Remarks: Information given is based on data obtained from similar substances.

#### Fatty acids, tall-oil, diesters with polypropylene glycol:

Acute oral toxicity: Assessment: The component/mixture is minimally toxic after single ingestion.

#### reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Acute oral toxicity: Assessment: The component/mixture is toxic after single ingestion.

Acute inhalation toxicity: Assessment: The component/mixture is highly toxic after short term inhalation.

Acute dermal toxicity: Assessment: The component/mixture is highly toxic after single contact with skin.

#### Skin corrosion/irritation

##### Components:

#### Fatty acids, tall-oil, diesters with polypropylene glycol:

Result : Irritating to skin.

#### reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Result : Corrosive after 1 to 4 hours of exposure

#### Serious eye damage/eye irritation

##### Components:

#### alcohols, C12-15,ethoxylated:

Species: Rabbit

Result: Risk of serious damage to eyes.

Remarks: Information given is based on data obtained from similar substances.

#### Fatty acids, tall-oil, diesters with polypropylene glycol:

Result: Eye irritation

#### Respiratory or skin sensitisation

##### Components:

#### reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Result : The product is a skin sensitiser, sub-category 1A.

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

#### Components:

#### reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 0.22 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (*Daphnia* (water flea)): 0.1 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants: ErC50 (*Raphidocelis subcapitata* (freshwater green alga)): 0.048 mg/l  
Exposure time: 72 h  
NOEC (*Raphidocelis subcapitata* (freshwater green alga)): 0.0012 mg/l  
End point: Growth rate  
Exposure time: 72 h  
ErC50 (*Skeletonema costatum* (marine diatom)): 0.0052 mg/l  
Exposure time: 48 h  
NOEC (*Skeletonema costatum* (marine diatom)): 0.00064 mg/l  
End point: Growth rate  
Exposure time: 48 h

M-Factor (Acute aquatic toxicity): 100

Toxicity to fish (Chronic toxicity): NOEC: 0.098 mg/l  
Exposure time: 28 d  
Species: *Oncorhynchus mykiss* (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates

(Chronic toxicity): NOEC: 0.004 mg/l  
Exposure time: 21 d  
Species: *Daphnia* (water flea)

M-Factor (Chronic aquatic toxicity): 100

#### C.1. pigment green 7:

Toxicity to fish : LC50 (*Danio rerio* (zebra fish)): > 1,000 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (*Daphnia magna* (Water flea)): > 5,600 mg/l  
Exposure time: 24 h

Toxicity to algae/aquatic plants: EC50 (*Desmodesmus subspicatus* (green algae)): > 10,000 mg/l  
Exposure time: 72 h

### 12.2 Persistence and degradability

#### Components:

#### reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Biodegradability : Result: Readily biodegradable.

### 12.3 Bioaccumulative potential

No data available

## 12.4 Mobility in soil

No data available

## 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.

## 12.6 Other adverse effects

### Product:

Endocrine disrupting potential: 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 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Product:** Where possible recycling is preferred to disposal or incineration. It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

**Contaminated packaging:** Dispose of as unused product.

## SECTION 14. TRANSPORT INFORMATION

### 14.1 UN number

Not regulated as a dangerous good

### 14.2 UN proper shipping name

Not regulated as a dangerous good

### 14.3 Transport hazard class(es)

Not regulated as a dangerous good

### 14.4 Packing group

Not regulated as a dangerous good

### 14.5 Environmental hazards

Not regulated as a dangerous good

### 14.6 Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17) : Conditions of restriction for the following entries should be considered: Number on list 3

UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation: Not applicable  
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain): Not applicable

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

UK REACH List of substances subject to authorisation (Annex XIV): Not applicable  
GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation: Not applicable  
Control of Major Accident Hazards Regulations 2015 (COMAH): Not 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

H301 : Toxic if swallowed.

H302 : Harmful if swallowed.

H310 : Fatal in contact with skin.

H314 : Causes severe skin burns and eye damage.

H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction.

H318 : Causes serious eye damage.

H319 : Causes serious eye irritation.

H330 : Fatal if inhaled.

H400 : Very toxic to aquatic life.

H410 : Very toxic to aquatic life with long lasting effects.

### Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Acute : Short-term (acute) aquatic hazard

Aquatic Chronic : Long-term (chronic) aquatic hazard

Eye Dam. : Serious eye damage

Eye Irrit. : Eye irritation

Skin Corr. : Skin corrosion

Skin Irrit. : Skin irritation

Skin Sens. : Skin sensitisation

GB EH40 : UK. EH40 WEL - Workplace Exposure Limits

GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)

GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

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-da); 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:**

Eye Dam. 1	H318	Calculation method
Skin Sens. 1	H317	Calculation method
Aquatic Chronic 3	H412	Calculation method

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.