

CLAYTON PLANT PROTECTION

CLAYTON BESTOW Safety Data Sheet according to Regulation (EC) No. 1907/2006 and Regulation (EU) No. 453/2010. Version 1/dsc 05/10/2015. This version replaces all previous versions.

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

1.1 Product identifier. Trade name CLAYTON BESTOW

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 Clayton Plant Protection (UK) Ltd., Bracetown Business Park, Clonee, Dublin15. Ireland.

Tel: (00 353) 1 8210127 www.claytonpp.com Email: info@claytonpp.com

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Reproductive toxicity: Category 2. H361d Suspected of damaging the unborn child.

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.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Repr.Cat.3, R63

N Dangerous for the environment, R50/53

2.2 Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- Tebuconazole
- Trifloxystrobin



Signal word: Warning

Hazard statements

H361d Suspected of damaging the unborn child.

H410 Very toxic to aquatic life with long lasting effects.

EUH401 To avoid risks to human health and the environment, comply with the instructions for use. EUH208

Contains Trifloxystrobin, 1,2-Benzisothiazolin-3-one, 5-chloro-2-methyl-isothiazol-3-one/2-methyl-isothiazol-3-one. May produce an allergic reaction.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P308 + P311 IF exposed or concerned: Call a POISON CENTRE/ doctor/ physician.

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 : No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature. Suspension concentrate (=flowable concentrate)(SC) Trifloxystrobin/Tebuconazole 100:200 g/l

Hazardous components

R-phrases according to EC directive 67/548/EEC

Hazard statements according to Regulation (EC) No. 1907/2006

Name	CAS-No. / EC-No	Classification		Conc. [%]
		EC Directive 67/548/EEC	Regulation (EC) No 1272/2008	
Tebuconazole	107534-96-3 403-640-2	Repr.Cat.3 R63 Xn; R22 N; R51/53	Repr. 2, H361d Acute Tox. 4, H302 Aquatic Chronic 2, H411	18.20
Trifloxystrobin	141517-21-7	R43 N; R50/53	Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	9.10
Fatty alcohol polyglycol ether	61791-13-7	Xn; R22 Xi; R41	Acute Tox. 4, H302 Eye Dam. 1, H318	> 1.00 – <25.00

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Ethoxylated polyaryphenol	99734-09-5 619-457-8	R52/53	Aquatic Chronic 3, H412	> 1.00 – <25.00
1,2-Benzisothiazol-3(2H)-one	2634-33-5 220-120-9	Xn; R22 Xi; R38, R41 R43 N; R50	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400	> 0.005 – < 0.05
Mixture of 5-Chlor-2-methyl-3(2H)-isothiazolon and 2-Methyl-2 Hisothiazol-3-on	55965-84-9 611-341-5	T; R23/24/25 C; R34 R43 N; R50/53	Acute Tox. 3, H331 Acute Tox. 3, H311 Acute Tox. 3, H301 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	> 0.0002 – < 0.0015
Urea	57-13-6 200-315-5	Not classified	Not classified	> 1.00

Further information : Trifloxystrobin 141517-21-7 M-Factor: 100 (acute)

For the full text of the R-phrases/ Hazard statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation Move to fresh air. Keep patient warm and at rest. Call a physician or poison control centre immediately.

Skin contact Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Do NOT induce vomiting. Call a physician or poison control centre immediately.

4.2 Most important symptoms and effects, both acute and delayed. No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed. Treat symptomatically. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media. Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture. In the event of fire the following may be released;

Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Nitrogen oxides (NOx), Hydrogen fluoride

5.3 Advice for firefighters. Special protective equipment for fire-fighters. In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

Further information Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

6.2 Environmental precautions. Do not allow to get into surface water, drains and ground water. If spillage enters drains leading to sewage works inform local water company immediately. If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

6.3 Methods and materials for containment and cleaning up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections. Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

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Advice on safe handling No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.

Advice on protection against fire and explosion. No special precautions required.

Hygiene measures Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Wash hands immediately after work, if necessary take a shower.

Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities. Requirements for storage areas and containers. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Store in a place accessible by authorized persons only. Protect from frost. Keep away from direct sunlight. Advice on common storage Keep away from food, drink and animal feeding stuffs. Suitable materials HDPE (high density polyethylene)

7.3 Specific end uses Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No	Control parameters	Update	Basis
Tebuconazole	107534-96-3	0.2 mg/m ³ (TWA)		OES BCS*
Trifloxystrobin	141517-21-7	2.7 mg/m ³ (TWA)		OES BCS*
Urea	57-13-6	10 mg/m ³		OES BCS*

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

8.2 Exposure controls

Refer to COSHH assessment (Control of Substances Hazardous to Health (Amendment) Regulations 2004).

Engineering controls should be used in preference to personal protective equipment wherever practicable. Refer also to COSHH Essentials.

Personal protective equipment. In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection. Respiratory protection is not required under anticipated circumstances of exposure.

Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation.

Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection. Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0,4 mm). Wash when contaminated and dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Eye protection. Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection. Wear standard coveralls and Category 3 Type 6 suit. If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form suspension	Density ca. 1.10 g/cm ³ at 20 °C
Colour white	Partition coefficient: noctanol/ water. Tebuconazole: log Pow: 3.7.
Odour weak, characteristic pH	Trifloxystrobin: log Pow: 4.5 at 25 °C
6 - 8 at 100 % (23 °C)	Viscosity, dynamic 0.12 Pas at 40 °C
Flash point >100 °C	Viscosity, kinematic < 0.001 mm ² /s at 40 °C
No flash point - Determination	Surface tension 34.5 mN/m
conducted up to the boiling point.	Explosivity Not explosive
Autoignition temperature 415 °C	

9.2 Other information Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition Stable under normal conditions.

10.2 Chemical stability Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions. No hazardous reactions when stored and handled according to prescribed instructions.

10.4 Conditions to avoid Extremes of temperature and direct sunlight.

10.5 Incompatible materials Store only in the original container.

10.6 Hazardous decomposition products. No decomposition products expected under normal conditions of use.

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SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity LD50 (rat) ca. 2,500 mg/kg

Acute inhalation toxicity LC50 (rat) > 2.43 mg/l. Exposure time: 4 h. Highest attainable concentration. Determined in the form of a respirable aerosol.

Acute dermal toxicity LD50 (rat) > 4,000 mg/kg

Skin irritation No skin irritation (rabbit)

Eye irritation Slight irritant effect - does not require labelling. (rabbit)

Sensitisation Non-sensitizing. (guinea pig) OECD Test Guideline 406, Magnusson & Kligman test

Assessment repeated dose toxicity

Tebuconazole did not cause specific target organ toxicity in experimental animal studies.

Trifloxystrobin did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity

Tebuconazole was not mutagenic or genotoxic in a battery of in vitro and in vivo tests. Trifloxystrobin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Tebuconazole caused at high dose levels an increased incidence of tumours in mice in the following organ(s): liver.

The mechanism of tumour formation is not considered to be relevant to man.

Trifloxystrobin was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Tebuconazole caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Tebuconazole is related to parental toxicity.

Trifloxystrobin caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Trifloxystrobin is related to parental toxicity.

Assessment developmental toxicity

Tebuconazole caused developmental toxicity only at dose levels toxic to the dams. Tebuconazole caused an increased incidence of post implantation losses, an increased incidence of non-specific malformations.

Trifloxystrobin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Trifloxystrobin are related to maternal toxicity.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 (Rainbow trout (*Oncorhynchus mykiss*)) 0.286 mg/l Exposure time: 96 h

Toxicity to aquatic invertebrates EC50 (Water flea (*Daphnia magna*)) 0.224 mg/l Exposure time: 48 h

Toxicity to aquatic plants EC50 (*Pseudokirchneriella subcapitata*) 0.99 mg/l Growth rate; Exposure time: 72 h 12.2

Persistence and degradability

Biodegradability Tebuconazole: not rapidly biodegradable. Trifloxystrobin: not rapidly biodegradable

Koc Tebuconazole: Koc: 769 Trifloxystrobin: Koc: 2377

12.3 Bioaccumulative potential

Bioaccumulation Tebuconazole: Bioconcentration factor (BCF) 35 – 59 Does not bioaccumulate. Trifloxystrobin:

Bioconcentration factor (BCF) 431 Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil Tebuconazole: Slightly mobile in soils. Trifloxystrobin: Slightly mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment Tebuconazole: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

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

12.6 Other adverse effects. Additional ecological information. No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant. Advice may be obtained from the local waste regulation authority (part of the Environment Agency in the UK).

Contaminated packaging Small containers (< 10 l or < 10 kg) should be rinsed thoroughly using an integrated pressure rinsing device, or, by manually rinsing three times. Add washings to sprayer at time of filling. Dispose of empty and cleaned packaging safely. Large containers (> 25 l or > 25 kg) should not be rinsed or re-used for any other purpose. Return large containers to supplier. Follow advice on product label and/or leaflet. Waste key for the unused product 020108 agrochemical waste containing dangerous substances

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SECTION 14: TRANSPORT INFORMATION ADR/RID/ADN

14.1 UN number 3082

14.2 Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TEBUCONAZOLE, TRIFLOXYSTROBIN SOLUTION)

14.3 Transport hazard class(es) 9

14.4 Packing group III

14.5 Environm. Hazardous Mark YES

Hazard no. 90

Tunnel Code E

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG

14.1 UN number 3082

14.2 Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TEBUCONAZOLE, TRIFLOXYSTROBIN SOLUTION)

14.3 Transport hazard class(es) 9

14.4 Packing group III

14.5 Marine pollutant YES

IATA

14.1 UN number 3082

14.2 Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TEBUCONAZOLE, TRIFLOXYSTROBIN SOLUTION)

14.3 Transport hazard class(es) 9

14.4 Packing group III

14.5 Environm. Hazardous Mark YES

UK 'Carriage' Regulations

14.1 UN number 3082

14.2 Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TEBUCONAZOLE, TRIFLOXYSTROBIN SOLUTION)

14.3 Transport hazard class(es) 9

14.4 Packing group III

14.5 Environm. Hazardous Mark YES. Emergency action code 3Z

14.6 Special precautions for user. See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code. No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture UK and Northern Ireland Regulatory References. This material may be subject to some or all of the following regulations (and any subsequent amendments). Users must ensure that any uses and restrictions as indicated on the label and/or leaflet are followed. Transport

Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No 1348)
Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 (SI 1997 No 2367). Air Navigation Dangerous Goods Regulations 2002 (SI 2002 No 2786)

Supply and Use

Chemical (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No 716). Chemical (Hazard Information and Packaging for Supply) (Northern Ireland) Regulations 2009. Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No 2677). EH40 Occupational Exposure Limits - Table 1 List of approved workplace exposure limits. Control of Pesticide Regulations 1986. Dangerous Substances and Explosive

Atmospheres Regulations 2002

Waste Treatment

Environmental Protection Act 1990, Part II. Environmental Protection (Duty of Care) Regulations 1991

The Waste Management Licensing Regulations 1994 (as amended). Hazardous Waste Regulations 2005 (Replacing Special Waste Regulations 1996 as amended). Landfill Directive. Regulation on Substances That Deplete the Ozone Layer 1994 (EEC/3093/94). Water Resources Act 1991. Anti-Pollution Works Regulations 1999 Further information

WHO-classification: III (Slightly hazardous)

15.2 Chemical Safety Assessment . A chemical safety assessment is not required.

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SECTION 16: OTHER INFORMATION

<p>Text of R-phrases mentioned in Section 3 R22 Harmful if swallowed. R23/24/25 Toxic by inhalation, in contact with skin and if swallowed. R34 Causes burns. R38 Irritating to skin. R41 Risk of serious damage to eyes. R43 May cause sensitisation by skin contact. R50 Very toxic to aquatic organisms. R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R63 Possible risk of harm to the unborn child.</p>	<p>Text of the hazard statements mentioned in Section 3 H301 Toxic if swallowed. H302 Harmful if swallowed. H311 Toxic 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. H331 Toxic if inhaled. H361d Suspected of damaging the unborn child. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.</p>
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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a 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.