

1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name	Dualitas
Use of the Substance/Preparation	Fungicide
Company identification	ProKlass Products Limited 20-22 Wenlock Road London N1 7GU Email: office@proklass-products.com
Poisoning Situations	Call ProKlass Products Limited +44 (0) 1480 810137
Additional information available from	For advice on medical emergencies, fires, spillages or chemical hazards ONLY: +44 (0) 1480 810137

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.

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

H-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.

P-statements

P280: Wear protective gloves/protective clothing/eye protection/face protection.
 P308 + P311: IF exposed or concerned: Call a POISON CENTER/ 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

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

Hazardous components

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

Name	CAS No/ EC No	Conc. (C)	Classification according to CLP
Tebuconazole	107534-96-3 403-640-2	18.2%	Aquatic Chronic 2, H411 Acute Tox. 4, H302 Repr. 2, H361d
Trifloxystrobin	141517-21-7	9.1%	Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Fatty alcohol polyglycol ether	61791-13-7	> 1.00 – <25.00	Acute Tox. 4, H302 Eye Dam. 1, H318
Ethoxylated polyarylphenol	99734-09-5	> 1.00 – < 25.00	Aquatic Chronic 3, H412
1,2-Benzisothiazol-3(2H)-one	2634-33-5 220-120-9	> 0.005 – < 0.05	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 1, H400 Skin Sens. 1, H317
Mixture of 5-Chlor-2-methyl-3(2H)-isothiazolon and 2-Methyl-2H-isothiazol-3-on	55965-84-9	> 0.0002 – < 0.0015	Skin Corr. 1B, H314 Aquatic Chronic 1, H410 Aquatic Acute 1, H400 Skin Sens. 1, H317 Acute Tox. 3, H301 Acute Tox. 3, H331 Acute Tox. 3, H311
Urea	57-13-6 200-315-5	>1.00	Not classified

Further information

Trifloxystrobin	141517-21-7	M-Factor: 100 (acute)
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For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures:

General:

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 center 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 center 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:

Treatment

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.

5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Suitable extinguishing media:

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

Unsuitable extinguishing media:

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 (NO_x), 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.

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 material 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.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

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 feedingstuffs.

Suitable materials

HDPE (high density polyethylene)

7.3 Specific end use(s):

Refer to the label and/or leaflet.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

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

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

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. Wash gloves when contaminated. 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.

Material: Nitrile rubber

Rate of permeability: > 480 min

Glove thickness: >0.4 mm

Protective index: Class 6

Directive: Protective gloves complying with EN 374.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Form: Suspension

Colour: White

Odour: Weak, characteristic

pH: 6 - 8 at 100 % (23 °C)

Flash point: >100 °C - No flash point - Determination conducted up to the boiling point.

Autoignition temperature: 415 °C

Density: ca. 1.10 g/cm³ at 20 °C

Partition coefficient: n-octanol/water

Tebuconazole: log Pow: 3.7

Trifloxystrobin: log Pow: 4.5 at 25 °C

Viscosity, dynamic: 0.12 Pas at 40 °C

Viscosity, kinematic: < 0.001 mm²/s at 40 °C
Surface tension: 34.5 mN/m
Explosivity: Not explosive

9.2 Other information:

Further safety related physical-chemical data are not known.

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.

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
Determined in the form of a respirable aerosol.
During intended and foreseen applications, no respirable aerosol is formed.
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.

Further information

The toxicological data refer to a similar formulation.

12. ECOLOGICAL INFORMATION**12.1 Toxicity:**

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

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

Chronic toxicity to aquatic invertebrates: NOEC (*Daphnia* (water flea)): 0.010 mg/l
Exposure time: 21 d
The value mentioned relates to the active ingredient tebuconazole.

Toxicity to aquatic plants: EC50 (*Raphidocelis subcapitata* (freshwater green alga)) 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:

Tebuconazole: Slightly mobile in soils
Trifloxystrobin: Slightly mobile in soils

12.5 Results of 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.

13. DISPOSAL INFORMATION**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.

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 classes: 9

14.4 Packing group: III

14.5 Environmental 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 classes: 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 classes: 9

14.4 Packing group: III

14.5 Environmental 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 classes: 9

14.4 Packing group: III

14.5 Environmental 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.

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.

16. OTHER INFORMATION

Full text of any H-statements referred to under headings 2 and 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.

Abbreviations and acronyms

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
ATE: Acute toxicity estimate (ATE)
CAS-Nr.: Chemical Abstracts Service number
Conc.: Concentration
EC-No.: European community number
Ecx: Effective concentration to x %
EH40 WEL: Worker Exposure Limit
EINECS: European inventory of existing commercial substances
ELINCS: European list of notified chemical substances
EN: European Standard
EU: European Union
IATA: International Air Transport Association
IBC: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
Icx: Inhibition concentration to x %
IMDG: International Maritime Dangerous Goods
LCx: Lethal concentration to x %
LDx: Lethal dose to x %
LOEC/LOEL: Lowest observed effect concentration/level
MARPOL: MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.: Not otherwise specified
NOEC/NOEL: No observed effect concentration/level
OECD: Organization for Economic Co-operation and Development
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
SI: Statutory Instrument
TWA: Time weighted average
UN: United Nations
WHO: World Health Organisation

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