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

Product information

<table>
<thead>
<tr>
<th>Trade name</th>
<th>TWIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code (UVP)</td>
<td>05584566</td>
</tr>
<tr>
<td>Usage</td>
<td>Fungicide</td>
</tr>
<tr>
<td>Company</td>
<td>Bayer CropScience Limited</td>
</tr>
<tr>
<td></td>
<td>230 Cambridge Science Park</td>
</tr>
<tr>
<td></td>
<td>Milton Road</td>
</tr>
<tr>
<td></td>
<td>Cambridge</td>
</tr>
<tr>
<td></td>
<td>Cambridgeshire CB4 0WB</td>
</tr>
<tr>
<td></td>
<td>Great Britain</td>
</tr>
</tbody>
</table>

| Telephone        | +44(0)1223 226500   |
| Telefax          | +44(0)1223 426240   |
| Responsible Department | Email: ukinfo@bayercropscience.com |

Emergency telephone number
- 0800-220876 (UK 24 hr)
- +44(0)1603-242424 (Overseas 24 hr)

2. HAZARDS IDENTIFICATION

Risk advice to man and the environment

Irritating to eyes.
May cause sensitization by skin contact.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature
Emulsifiable concentrate (EC)
Trifloxystrobin 125 g/l

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No. / EINECS-No.</th>
<th>Symbol(s)</th>
<th>R-phrase(s)</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trifloxystrobin</td>
<td>141517-21-7</td>
<td>Xi, N</td>
<td>R43, R50/53</td>
<td>11.70</td>
</tr>
<tr>
<td>Polyarylphenyl ether phosphate</td>
<td>90093-37-1</td>
<td>Xi</td>
<td>R36</td>
<td>&gt; 1.00 - &lt; 25.00</td>
</tr>
<tr>
<td>N-Methyl-2-pyrrolidone</td>
<td>872-50-4 212-828-1</td>
<td>Xi</td>
<td>R36/38</td>
<td>&gt; 25.00</td>
</tr>
<tr>
<td>Ethoxylated polyarylphenol</td>
<td>99734-09-5</td>
<td></td>
<td>R52/53</td>
<td>&gt; 1.00 - &lt; 25.00</td>
</tr>
</tbody>
</table>

For the full text of the R phrases mentioned in this Section, see Section 16.

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

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

Skin contact
Wash off immediately with soap and plenty of water. Call a physician or poison control center immediately.

Eye contact
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Call a physician or poison control center immediately.

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

Notes to Physician
Treatment
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water spray
Carbon dioxide (CO2)
Foam
Sand

Specific hazards during fire fighting
In the event of fire the following can be released:
Hydrogen cyanide (hydrocyanic acid)
Hydrogen fluoride (HF)
Carbon monoxide (CO)
Nitrogen oxides (NOx)

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

Personal Precautions
Avoid contact with spilled product or contaminated surfaces.
Use personal protective equipment.
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).

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

Additional Advice
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

7. HANDLING AND STORAGE

Handling
Advice on safe handling
Use only in area provided with appropriate exhaust ventilation.

Storage
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.

Advice on common storage
Keep away from food, drink and animal feedingstuffs.

Temperature tolerance
-10 °C to 40 °C

Suitable materials
Tinplate
Coextruded containers with an internal barrier layer made of polyamide (PA).
HDPE (high density polyethylene)
Deformation through oxygen consumption possible.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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.

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trifloxystrobin</td>
<td>141517-21-7</td>
<td>2.7 mg/m3</td>
<td>2005</td>
<td>OES BCS*</td>
</tr>
<tr>
<td>N-Methyl-2-pyrrolidone</td>
<td>872-50-4</td>
<td>103 mg/m3 / 25 ppm</td>
<td>2005</td>
<td>EH40 WEL</td>
</tr>
<tr>
<td>(TWA)</td>
<td></td>
<td>(TWA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-Methyl-2-pyrrolidone</td>
<td>872-50-4</td>
<td>309 mg/m3 / 75 ppm</td>
<td>2005</td>
<td>EH40 WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(STEL)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent. 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 0.40 mm). Wash when contaminated. Dispose of when contaminated inside, when perforated or when contamination outside cannot be removed. Wash hands 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 coverall and type 3 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. If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

Hygiene measures

Avoid contact with skin, eyes and clothing.
Keep working clothes separately.
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).

Protective measures

If product is handled while not enclosed, and if contact may occur:
Complete suit protecting against chemicals

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid, clear, clear to slightly turbid
Colour yellow to brown
Odour aromatic

Safety data

Flash point approx. 86 °C
Density approx. 1.07 g/cm³ at 20 °C
10. STABILITY AND REACTIVITY

Conditions to Avoid
Extremes of temperature and direct sunlight.

Hazardous Reactions
No hazardous reactions when stored and handled according to prescribed instructions. Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity
LD50 (rat) > 3,000 mg/kg
Test conducted with a similar formulation.

Acute Dermal Toxicity
LD50 (rat) > 4,000 mg/kg
Test conducted with a similar formulation.

Skin Irritation
No skin irritation. (rabbit)
Test conducted with a similar formulation.

Eye Irritation
Irritating to eyes. (rabbit)
Test conducted with a similar formulation.

Sensitization
sensitizing (guinea pig)
OECD Test Guideline 406, Buehler test
Test conducted with a similar formulation.

Sensitization
sensitizing (guinea pig)
OECD Test Guideline 406, Magnusson & Kligman test
Test conducted with a similar formulation.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to Fish
LC50 (Brown trout (Salmo trutta)) 0.14 mg/l
Exposure time: 96 h

Toxicity to daphnia
EC50 (Water flea (Daphnia magna)) 0.16 mg/l
Exposure time: 48 h

Toxicity to algae
EC50 (Pseudokirchneriella subcapitata) 0.51 mg/l
Growth rate Exposure time: 72 h

13. DISPOSAL CONSIDERATIONS
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/ADNR**
- UN-Number: 3082
- Labels: 9
- Packaging group: III
- Hazard no.: 90
- Description of the goods: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIFLOXYSTROBIN SOLUTION)

**IMDG**
- UN-Number: 3082
- Labels: 9
- Packaging group: III
- EmS: F-A , S-F
- Marine pollutant: Marine pollutant
- Description of the goods: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIFLOXYSTROBIN SOLUTION)

**IATA**
- UN-Number: 3082
- Labels: 9
- Packaging group: III
- Description of the goods: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIFLOXYSTROBIN SOLUTION)

**UK 'Carriage' Regulations**
- UN-Number: 3082
- Labels: 9
- Packaging group: III
- Hazard no.: 90
- Emergency action code: 3Z
**15. REGULATORY INFORMATION**

This product has been classified in accordance with The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002: CHIP 3 and any subsequent amendments.

Classification:
- Labelling according to EC Directives

Hazardous components which must be listed on the label:
- Trifloxystrobin
- 1-Methylpyrrolidine

Symbol(s)
- Xi: Irritant
- N: Dangerous for the environment

R-phrase(s)
- R36: Irritating to eyes.
- R43: May cause sensitization by skin contact.
- R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)
- S24: Avoid contact with skin.
- S37: Wear suitable gloves.
- S35: This material and its container must be disposed of in a safe way.
- S57: Use appropriate container to avoid environmental contamination.

Exceptional labelling
- To avoid risks to man and the environment, comply with the instructions for use.

Further information
- WHO-classification: III (Slightly hazardous)

**16. OTHER INFORMATION**

Further information

Text of R phrases mentioned in Section 3:
- R36: Irritating to eyes.
- R36/38: Irritating to eyes and skin.
- R43: May cause sensitization by skin contact.
- R50/53: Very 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.

The above information is intended to give general health and safety guidance on the storage and transport of the product. It is not intended to apply to the use of the product for which purposes the product label and any appropriate technical usage literature available should be consulted and any relevant licenses, consents or approvals complied with. The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take
precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given.
The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate.
No liability will be accepted for any injury, loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.