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Revision Date: 13.09.2010

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**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING****Product information**

Trade name	PISTOL
Product code (UVP)	05923883, 06424104
Usage	Herbicide
Company	Bayer Environmental Science 230 Cambridge Science Park Milton Road Cambridge Cambridgeshire CB4 0WB Great Britain
Telephone	+44(0)1223 226500
Telefax	+44(0)1223 426240
Responsible Department	Email: <a href="mailto:ukinfo@bayercropscience.com">ukinfo@bayercropscience.com</a>
Emergency telephone nr.	0800-220876 (UK 24 hr) +44(0)1603-242424 (Overseas 24 hr)

**2. HAZARDS IDENTIFICATION****Risk advice to man and the environment**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Chemical nature**Suspension concentrate (=flowable concentrate)(SC)  
Diflufenican/Glyphosate 40:250 g/l**Hazardous components**

Chemical Name	CAS-No. / EC-No.	Symbol(s)	R-phrase(s)	Concentration [%]
Diflufenican	83164-33-4		R52/53	3.40
Glyphosate, isopropylamine salt	38641-94-0 254-056-8	N	R51/53	28.90
Alcohols, C11-14-iso-, C13-rich	68526-86-3 271-235-6	N	R50	> 0.25 - < 2.50
1,2-Propanediol	57-55-6 200-338-0			> 1.00
Diatomaceous earth	61790-53-2			> 1.00

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

**4. FIRST AID MEASURES**



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### General advice

Move out of dangerous area. Remove contaminated clothing immediately and dispose of safely.

### Skin contact

Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water.

### Eye contact

In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation develops and persists.

### Ingestion

Do NOT induce vomiting. Rinse mouth, ingest activated charcoal. Obtain medical attention.

### Notes to physician

#### Symptoms

Nausea, Vomiting, Diarrhoea, Salivation, If large amounts are ingested, the following symptoms may occur: abnormally decreased blood volume (hypovolaemia), acidosis, Liver disorders, Kidney disorders

#### Treatment

Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate.  
Treat symptomatically.  
There is no specific antidote.

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## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

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

### Extinguishing media which should not be used for safety reasons

High volume water jet

### Specific hazards during fire fighting

Dangerous gases are evolved in the event of a fire.

### Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

### Further information

Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat.

Whenever possible, contain fire-fighting water by diking area with sand or earth.

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Keep people away from and upwind of spill/leak.  
Avoid contact with spilled product or contaminated surfaces.  
When dealing with a spillage do not eat, drink or smoke.

### 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

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telephone number 0800 807060).

**Methods for cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Collect and transfer the product into a properly labelled and tightly closed container.

Clean contaminated surface thoroughly.

**Additional advice**

Information regarding safe handling, see section 7.

Information regarding personal protective equipment, see section 8.

Information regarding waste disposal, see section 13.

Check also for any local site procedures.

**7. HANDLING AND STORAGE****Handling**

Advice on safe handling

No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice.

Use only in area provided with appropriate exhaust ventilation.

Advice on protection against fire and explosion

No special precautions required.

**Storage**

Requirements for storage areas and containers

Store in a place accessible by authorized persons only.

Keep away from direct sunlight.

Keep containers tightly closed in a dry, cool and well-ventilated place.

Advice on common storage

Keep away from food, drink and animal feedingstuffs.

**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**

Components	CAS-No.	Control parameters	Update	Basis
Diflufenican	83164-33-4	1.1 mg/m <sup>3</sup> (TWA)		OES BCS*
1,2-Propanediol (Particulate.)	57-55-6	10 mg/m <sup>3</sup> (TWA)	2007	EH40 WEL
1,2-Propanediol (Total vapour and particulates.)	57-55-6	474 mg/m <sup>3</sup> / 150 ppm (TWA)	2007	EH40 WEL
Diatomaceous earth (Respirable dust.)	61790-53-2	1.2 mg/m <sup>3</sup> (TWA)	2007	EH40 WEL

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

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**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	No personal respiratory protective equipment normally required. 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 6 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.
Hygiene measures	When using, do not eat, drink or smoke. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove soiled clothing immediately and clean thoroughly before using again. Contaminated work clothing should not be allowed out of the workplace. Wash hands immediately after work, if necessary take a shower.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	liquid, suspension
Colour	white
Odour	almost odourless

**Safety data**

Flash point	no data available
Density	ca. 1.17 g/cm <sup>3</sup> at 20 °C
Water solubility	miscible
Viscosity, dynamic	236 mPa.s at 20 °C Shearstress of 20/sec
Viscosity, dynamic	102 mPa.s at 20 °C Shearstress of 100/sec



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Viscosity, kinematic	66.1 mm <sup>2</sup> /s at 40 °C Shearstress of 100/sec
Surface tension	37.2 mN/m at 20 °C Determined as a 0,1% solution in distilled water (1 g/l).

**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) > 2,000 mg/kg
Acute dermal toxicity	LD50 (rat) > 2,000 mg/kg
Skin irritation	Slight irritant effect - does not require labelling. (rabbit)
Eye irritation	No eye irritation (rabbit)
Sensitisation	Non-sensitizing. (guinea pig) OECD Test Guideline 406, Buehler test
Sensitisation	Non-sensitizing. (mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

**12. ECOLOGICAL INFORMATION**

**Elimination information (persistence and degradability)**

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) Bioconcentration factor (BCF): 1,596 The value mentioned relates to the active ingredient diflufenican.
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**Ecotoxicity effects**

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) > 109 µg/l Exposure time: 96 h The value mentioned relates to the active ingredient diflufenican. Aquatic toxicity is unlikely due to low solubility.
Toxicity to fish	LC50 (Rainbow trout (Oncorhynchus mykiss)) 86 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient glyphosate-isopropylamine salt.



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Toxicity to aquatic invertebrates	EC50 (Water flea (Daphnia magna)) > 240 µg/l Exposure time: 48 h The value mentioned relates to the active ingredient diflufenican. No acute toxicity was observed at its limit of water solubility.
Toxicity to aquatic invertebrates	EC50 (Daphnia) 930 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient glyphosate-isopropylamine salt.
Toxicity to aquatic plants	EC50 (Scenedesmus subspicatus) 0.015 mg/l Exposure time: 72 h Test conducted with a similar formulation.
Toxicity to aquatic plants	EC50 (Lemna minor) > 100 mg/l Exposure time: 7 d

**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	<b>3082</b>
Labels	9
Packaging group	III
Hazard no.	90
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIFLUFENICAN SOLUTION)
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**

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UN-Number	<b>3082</b>
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. (DIFLUFENICAN SOLUTION)

**IATA**

UN-Number	<b>3082</b>
Labels	9
Packaging group	III
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIFLUFENICAN SOLUTION )

**UK 'Carriage' Regulations**

UN-Number	<b>3082</b>
Labels	9
Packaging group	III
Hazard no.	90
Emergency action code	3Z
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIFLUFENICAN SOLUTION)

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**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:

Classified as hazardous for supply/use.

Hazardous components which must be listed on the label:

- Diflufenican
- Glyphosate

Symbol(s)

N Dangerous for the environment

R-phrase(s)

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

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: II (Moderately hazardous)

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**16. OTHER INFORMATION**



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### Further information

Text of R-phrases mentioned in Section 3

R50	Very toxic to aquatic organisms.
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.

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.