

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

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

PRODUCT INFORMATION

Product name : BRAVO 720 SC
Design Code : A12531B
Use : Fungicide
Company : Syngenta Crop Protection AG
 Postfach
 CH-4002 Basel
 Switzerland
Telephone : +41 61 323 11 11
Telefax : +41 61 323 12 12
Emergency telephone : +44 1484 538444
E-mail address : safetydatasheetcoordination@syngenta.com



Harmful



Dangerous for the environment

2. HAZARDS IDENTIFICATION

Harmful by inhalation and if swallowed.
 Irritating to respiratory system.
 May cause sensitization by skin contact.
 Limited evidence of a carcinogenic effect.
 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical Name	CAS-No.	EC-No.	Symbol(s)	R-phrases(s)	Concentration
chlorothalonil	1897-45-6	217-588-1	T+, N	R26 R37 R40 R41 R43 R50/53	54 % W/W
1,2-propanediol	57-55-6	200-338-0			1 - 5 % W/W

* indicates substances for which there are Community workplace exposure limits.
 For the full text of the R-phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

General advice : Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control center or physician, or going for treatment.

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

- Inhalation** : Remove 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.
- 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.
- 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.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.
- Medical advice** : There is no specific antidote available. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media** : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray
- Extinguishing media which shall not be used for safety reasons** : Do not use a solid water stream as it may scatter and spread fire.
- 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.
- Special protective equipment for fire-fighters** : 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.

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions** : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.
- 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).
- Additional advice** : If the product contaminates rivers and lakes or drains inform respective authorities.

7. HANDLING AND STORAGE**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.

STORAGE

- 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.

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	Exposure limit(s)	Type of exposure limit	Source
chlorothalonil	0.1 mg/m ³	8 h TWA	SYNGENTA
1,2-propanediol	10 mg/m ³ 150 ppm 470 mg/m ³	Particulates Total (vapour & particulates)	8 h TWA UK HSE

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 mists or vapors are 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

- 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.
- Respiratory protection** : A particulate filter respirator may be necessary until effective technical measures are installed. Protection provided by air-purifying respirators is limited. Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection** : Chemical resistant gloves should be used. Gloves should be certified to an appropriate standard. Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure. The breakthrough time of gloves varies according to the thickness, material and manufacturer. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Suitable material
Nitrile rubber
- Eye protection** : Eye protection is not usually required. Follow any site specific eye protection policies.
- Skin and body protection** : Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation /

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

penetration characteristics of the clothing material.
Wash with soap and water after removing protective clothing.
Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.)
Wear as appropriate:
impervious protective suit

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: suspension
Melting point/range	: -5 °C
Boiling point/boiling range	: 100 °C
Oxidizing properties	: not oxidizing
Explosive properties	: Not explosive
Density	: 1.333 g/cm ³ at 20 °C

10. STABILITY AND REACTIVITY

Hazardous decomposition products	: Combustion or thermal decomposition will evolve toxic and irritant vapors.
Hazardous reactions	: None known. Hazardous polymerization does not occur. Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: Median lethal dose female Rat, 2,000 mg/kg GHS-Classification Category 4 The toxicological data has been taken from products of similar composition.
Acute inhalation toxicity	: Median lethal concentration male Rat, > 1.5 mg/l, 4 h : Median lethal concentration female Rat, 0.86 - 1.5 mg/l, 4 h GHS-Classification Category 3 The toxicological data has been taken from products of similar composition. : Irritating to respiratory system. GHS-Classification Category 3 The toxicological data has been taken from products of similar composition.

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

- Acute dermal toxicity** : LD50 Rabbit, > 2,000 mg/kg
GHS-Classification
None
The toxicological data has been taken from products of similar composition.
- Skin irritation** : Rabbit: Mildly Irritating
GHS-Classification
None
The toxicological data has been taken from products of similar composition.
- Eye irritation** : Rabbit: Mildly Irritating
GHS-Classification
None
- Sensitisation** : guinea pig: A skin sensitizer in animal tests.
GHS-Classification
Category 1
The toxicological data has been taken from products of similar composition.
- Long term toxicity**
- Did not show mutagenic effects in animal experiments.
- Chlorothalonil causes kidney tumours in rats and mice via a non-genotoxic mode of action secondary to target organ toxicity.
- Did not show reproductive toxicity effects in animal experiments.
- Did not show teratogenic effects in animal experiments.
- No adverse effects in humans are expected at levels below the occupational exposure limit and when the product is handled and used according to the label.
This information refers to Chlorothalonil.

12. ECOLOGICAL INFORMATION**ELIMINATION INFORMATION (PERSISTENCE AND DEGRADABILITY)**

- Bioaccumulation** : Chlorothalonil has low potential for bioaccumulation.
- Stability in water** : Degradation half life: 20 - 59 d at 20 °C
Chlorothalonil is not persistent in water.
- Stability in soil** : Degradation half life : 1 - 12 d
Chlorothalonil is not persistent in soil.
- Mobility** : Chlorothalonil has low to slight mobility in soil.

ECOTOXICITY EFFECTS

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

- Toxicity to fish** : LC50 Oncorhynchus mykiss (rainbow trout), 61 µg/l , 96 h
GHS-Classification
Category 1
Based on test results obtained with similar product.
- Toxicity to daphnia and other aquatic invertebrates.** : EC50 Daphnia magna (Water flea), 180 µg/l , 48 h
GHS-Classification
Category 1
Based on test results obtained with similar product.
- Toxicity to algae** : EbC50 Pseudokirchneriella subcapitata (green algae), 0.13 mg/l , 72 h
Derived from components.
- : ErC50 Pseudokirchneriella subcapitata (green algae), 0.24 mg/l , 72 h
GHS-Classification
Category 1
Derived from components.

13. DISPOSAL CONSIDERATIONS

- 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 to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

14. TRANSPORT INFORMATION**Land transport***ADR/ RID:*

UN-Number: 3082
Class: 9
Labels: 9
Packaging group III
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(CHLOROTHALONIL)

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

Sea transport*IMDG:*

UN-Number: 3082
Class: 9
Labels: 9
Packaging group: III
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(CHLOROTHALONIL)

Marine pollutant : Marine pollutant

Air transport*IATA-DGR*

UN-Number: 3082
Class: 9
Labels: 9
Packaging group: III
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(CHLOROTHALONIL)

15. REGULATORY INFORMATION**Labelling according to EC Directives**

Hazardous components which must be listed on the label:

- chlorothalonil

Symbol(s)	: Xn N	Harmful Dangerous for the environment
R-phrases(s)	: R20/22 R37 R40 R43 R50/53	Harmful by inhalation and if swallowed. Irritating to respiratory system. Limited evidence of a carcinogenic effect. May cause sensitisation by skin contact. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

BRAVO 720 SC

Version 1

Revision Date 05.08.2008

Print Date 05.08.2008

S-phrases(s)	:	S 2 S13 S20/21 S35 S36/37 S57	Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs. When using do not eat, drink or smoke. This material and its container must be disposed of in a safe way. Wear suitable protective clothing and gloves. Use appropriate container to avoid environmental contamination.
Special labelling of certain preparations	:	To avoid risks to man and the environment, comply with the instructions for use.	
Note	:	The product is classified and labelled in accordance with Directive 1999/45/EC.	

16. OTHER INFORMATION**Further information**

Text of R-phrases mentioned in Section 3:

R26	Very toxic by inhalation.
R37	Irritating to respiratory system.
R40	Limited evidence of a carcinogenic effect.
R41	Risk of serious damage to eyes.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.

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

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