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

Tradename **BRAVO 500**
 Design Code **A7867A**
 AGI Code **110024**

COMPANY/UNDERTAKING IDENTIFICATION

Company Syngenta Crop Protection UK Ltd
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2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-NO.	EC-NO.	CHEMICAL NAME	CONCENTRATION (% W/W)	HAZARD SYMBOLS	RISK PHRASES (R)
1897-45-6	217-588-1	chlorothalonil	40	T+, N	26, 37, 40, 41, 43, 50/53
57-55-6	200-338-0	propane-1,2-diol	5-10	-	-

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

3. HAZARDS IDENTIFICATION

Harmful by inhalation. Irritating to eyes and 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.

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 Centre or physician, or going for treatment.

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.

Skin contact: Take off immediately all contaminated clothing. Wash skin immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

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.

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Ingestion: If swallowed seek medical advice immediately and show the container, label or this Data Sheet, if possible. Do not induce vomiting.

Medical advice: There is no specific antidote available. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing media – small fires: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media – large fires: Use alcohol-resistant foam or water spray.

Extinguishing media which must 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.

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 and collect spillage 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

Advice on safe handling: No special protective measures required. No special handling advice required. Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8.

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 feeding stuffs.

Other data: Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

Components	Exposure limit(s)	Value type	Source
chlorothalonil	0.1 mg/m ³	8 h TWA	SYNGENTA
propane-1,2-diol	10 mg/m ³ (Particulates)	8 h TWA	UK HSE
	470 mg/m ³ Total (vapour & particulates)		

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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 vapours 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 PROTECTION

When using this product refer to the label for details. In all other cases, use the following 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 combination gas, vapour and particulate 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 changed when breakthrough is suspected. Suitable material: nitrile rubber.

Eye protection: If eye contact is possible, use tight-fitting chemical safety goggles.

Skin and body protection: Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation/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
Colour:	Off-white to light brown.
Odour:	Pungent, weak.
Boiling Point:	>100°C
Melting Point:	-5°C
Explosive Properties:	Not explosive.
Density:	1.24 g/cm ³
Water Solubility:	Miscible.
pH-value (quant.):	6 to 9
Oxidising Properties:	Not oxidising

10. STABILITY AND REACTIVITY

Hazardous decomposition products: Combustion or thermal decomposition will evolve toxic and irritant vapours.

Hazardous reactions: None known. Hazardous polymerisation does not occur. Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD₅₀: Rat: 4,200 mg/kg.

Acute Dermal LD₅₀: Rabbit: >20,000 mg/kg.

Acute Inhalation LC₅₀: Rat: >1.96 mg/l 4 hours

Eye Irritation: Rabbit: Moderately irritating.

Skin Irritation: Rabbit: Slightly irritating.

Sensitisation: Man: Causes sensitisation.

LONG-TERM TOXICITY

Did not show mutagenic effects in animal experiments. Chlorothalonil is reported as a high dose threshold carcinogen in rats and mice. Did not show reproductive toxicity effects in animal experiments. Did not show teratogenic effects in animal experiments.

This is not considered to be a risk to man when handled and used as directed on the label.

This information refers to chlorothalonil.

12. ECOLOGICAL INFORMATION

PERSISTENCE AND DEGRADATION

Chlorothalonil has low potential for bioaccumulation, is not persistent in soil or water and has low to slight mobility in soil.

ECOTOXICITY

Toxicity to Fish, LC₅₀: 96 hours *Oncorhynchus mykiss* (rainbow trout): 0.195 mg/l

Toxicity to Aquatic Invertebrates, EC₅₀: 24 hours *Daphnia magna* (water flea): 0.882 mg/l

Toxicity to Algae, ErC₅₀: 72 hours *Pseudokirchneriella subcapitata* (green algae): 0.521 mg/l

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 for local recycling or waste disposal. Do not re-use empty containers.

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14. TRANSPORT INFORMATION**ROAD TRANSPORT ADR/RID**

UN Number: UN3082
 Class-primary: 9 Miscellaneous Dangerous Goods
 UN Packaging Group: III
 Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.,
 (CHLOROTHALONIL 50%)

MARITIME TRANSPORT IMDG

UN Number: UN3082
 Class-primary: 9 Miscellaneous Dangerous Goods
 UN Packaging Group: III
 Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.,
 (CHLOROTHALONIL 50%)
 Marine pollutant: Yes

AIR TRANSPORT ICAO/IATA

Not dangerous goods

15. REGULATORY INFORMATION

Hazard Symbols/ Classifications	N Xn	DANGEROUS FOR THE ENVIRONMENT HARMFUL
Risk phrases (R)	20	Harmful by inhalation.
	36/37	Irritating to the respiratory system and eyes.
	40	Limited evidence of a carcinogenic effect.
	43	May cause sensitisation by skin contact.
	50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety phrases (S)	2	Keep out of the reach of children.
	13	Keep away from food, drink and animal feeding stuffs.
	20/21	When using do not eat, drink or smoke.
	23	Do not breathe spray.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	35	This material and its container must be disposed of in a safe way.
	36/37	Wear suitable protective clothing and gloves.
	39	Wear suitable eye/face protection.
	57	Use appropriate containment to avoid environmental contamination.

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Special label To avoid risks to man and the environment, comply with the instructions for use.

This preparation is classified as dangerous in accordance with Direct 1999/45/EC.

16. OTHER INFORMATION

Use: A broad spectrum fungicide.

Always read the label. Use pesticides safely.

Product approval number: MAPP 14548.

Based upon SDS version 7, revision date 10/09/2004 with local amendment.

Text of R phrases mentioned in Section 2:

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.