SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name : **FOLIO GOLD**

Design code : A9652B

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use : Fungicide

1.3 Details of the supplier of the safety data sheet

Company : Syngenta Crop Protection AG
Postfach
CH-4002 Basel
Switzerland

Telephone : +41 61 323 11 11

Telefax : +41 61 323 12 12

E-mail address : sds.ch@syngenta.com

1.4 Emergency telephone number

Emergency telephone number : +44 1484 538444

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008

Acute toxicity (Inhalation)	Category 4	H332
Skin irritation	Category 2	H315
Eye irritation	Category 2	H319
Specific target organ toxicity - single exposure	Category 3	H335
Skin sensitisation	Sub-category 1A	H317
Carcinogenicity	Category 2	H351
Acute aquatic toxicity	Category 1	H400
Chronic aquatic toxicity	Category 1	H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn, Harmful
N, Dangerous for the environment
R20: Harmful by inhalation.
R36/37/38: Irritating to eyes, respiratory system and skin.
R40: Limited evidence of a carcinogenic effect.
R43: May cause sensitisation by skin contact.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environ-

ment.

2.2 Label elements

Labelling: Regulation (EC) No. 1272/2008

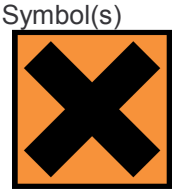
Hazard pictograms

Signal word	:	Warning	
Hazard statements	:	H315	Causes skin irritation.
		H317	May cause an allergic skin reaction.
		H319	Causes serious eye irritation.
		H332	Harmful if inhaled.
		H335	May cause respiratory irritation.
		H351	Suspected of causing cancer.
		H410	Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P102	Keep out of reach of children.
		P201	Obtain special instructions before use.
		P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
		P281	Use personal protective equipment as required.
		P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P308 + P313	IF exposed or concerned: Get medical advice/ attention.
		P391	Collect spillage.
		P501	Dispose of contents/ container to an approved waste disposal plant.
Supplemental information	:	EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Hazardous components which must be listed on the label:
- chlorothalonil

Labelling: EU Directives 67/548/EEC or 1999/45/EC

Symbol(s)



Harmful

Dangerous for the environment

R-phrase(s)	:	R20	Harmful by inhalation.
		R36/37/38	Irritating to eyes, respiratory system and skin.
		R40	Limited evidence of a carcinogenic effect.
		R43	May cause sensitisation by skin contact.
		R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrase(s)	:	S 2	Keep out of the reach of children.
		S13	Keep away from food, drink and animal feedingstuffs.
		S20/21	When using do not eat, drink or smoke.
		S35	This material and its container must be disposed of in a safe way.
		S36/37	Wear suitable protective clothing and gloves.
		S57	Use appropriate container to avoid environmental contamination.

Additional Labelling : To avoid risks to man and the environment, comply with the instructions for use.

Hazardous components which must be listed on the label:
- chlorothalonil

2.3 Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration
chlorothalonil	1897-45-6 217-588-1	T+, N R26 R37 R40 R41 R43 R50/53	Skin Sens.1; H317 Eye Dam.1; H318 Acute Tox.2; H330 STOT SE3; H335 Carc.2; H351 Aquatic Acute1; H400 Aquatic Chronic1; H410	39.7 % W/W
propane-1,2-diol	57-55-6 200-338-0	-	-	2 - 10 % W/W
metalaxyl-M	70630-17-0	Xn R22 R41	Acute Tox.4; H302 Eye Dam.1; H318	3 % W/W
naphthalenesulfonic acid, polymer with formaldehyde, sodium salt	9084-06-4 68891-38-3 01-2119488639-16-0006	Xi R38 R41	Skin Irrit.2; H315 Eye Dam.1; H318	1 - 5 % W/W

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

SECTION 4. FIRST AID MEASURES

4.1 Description of 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.

Inhalation : Move the victim 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.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	No information available.

4.3 Indication of any immediate medical attention and special treatment needed

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

SECTION 5. FIREFIGHTING MEASURES

5.1 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

Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

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.

5.3 Advice for firefighters

Wear full protective clothing and self-contained breathing apparatus.

Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so.

Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and 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).

If the product contaminates rivers and lakes or drains inform respective authorities.

6.4 Reference to other sections

Refer to protective measures listed in sections 7 and 8.
Refer to disposal considerations listed in section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for 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.

7.2 Conditions for safe storage, including any incompatibilities

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.

7.3 Specific end use(s)

Registered Crop Protection products:For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	Exposure limit(s)	Type of exposure limit	Source
metalaxyl-M	10 mg/m3	8 h TWA	SYNGENTA
chlorothalonil	0.1 mg/m3	8 h TWA	SYNGENTA
propane-1,2-diol	10 mg/m3 (Particulates) 150 ppm, 470 mg/m3 (Total (vapour & particulates))	8 h TWA 8 h TWA	UK HSE UK HSE

The following recommendations for exposure controls/personal protection are intended for the manufacture, formulation and packaging of the product.

8.2 Exposure controls

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.
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	:	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: Dust impervious protective suit

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Form	:	liquid
Colour	:	beige to grey
Odour	:	no data available
Odour Threshold	:	no data available
pH	:	5 - 9 at 1 % w/v
Melting point/range	:	no data available
Boiling point/boiling range	:	no data available
Flash point	:	>= 90 °C
Evapouration rate	:	no data available
Flammability (solid, gas)	:	no data available
Lower explosion limit	:	no data available
Upper explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Density	:	1.26 g/cm3 at 20 °C
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature		no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	66.3 - 165 mPa.s at 40 °C
	:	83.1 - 199 mPa.s at 20 °C
Viscosity, kinematic	:	no data available
Explosive properties	:	Not explosive
Oxidizing properties	:	no data available

9.2 Other information

Miscibility	:	Miscible
Surface tension	:	40.0 mN/m at 20 °C

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

No information available.

10.2 Chemical stability

No information available.

10.3 Possibility of hazardous reactions

None known.
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

No information available.

10.6 Hazardous decomposition products

Combustion or thermal decomposition will evolve toxic and irritant vapors.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	:	LD50 male rat, > 3,000 mg/kg
	:	LD50 female rat, > 2,000 - < 3,000 mg/kg
Acute inhalation toxicity	:	LC50 rat, > 1.20 mg/l , 4 h
Acute dermal toxicity	:	LD50 rat, > 4,000 mg/kg
Skin corrosion/irritation	:	rabbit: irritating
Serious eye damage/eye irritation	:	rabbit: irritating
Respiratory or skin sensitisation	:	guinea pig: A skin sensitizer

Germ cell mutagenicity

chlorothalonil	:	Did not show mutagenic effects in animal experiments.
metalaxyl-M	:	Did not show mutagenic effects in animal experiments.

Carcinogenicity

chlorothalonil	:	Chlorothalonil causes kidney tumours in rats and mice via a non-gentoxic mode of action secondary to target organ toxicity.
metalaxyl-M	:	Did not show carcinogenic effects in animal experiments.

Teratogenicity

metalaxyl-M	:	Did not show teratogenic effects in animal experiments.

Reproductive toxicity

chlorothalonil	:	Did not show reproductive toxicity effects in animal experiments.
metalaxyl-M	:	Did not show reproductive toxicity effects in animal experiments.

STOT - single exposure

chlorothalonil	:	May cause respiratory irritation.

STOT - repeated exposure

chlorothalonil	:	No adverse effect has been observed in chronic toxicity tests.
metalaxyl-M	:	No adverse effect has been observed in chronic toxicity tests.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	:	LC50 Salmo trutta (trout), 0.09 mg/l , 96 h
Toxicity to aquatic invertebrates	:	EC50 Daphnia magna (Water flea), 0.58 mg/l , 48 h
Toxicity to aquatic plants	:	ErC50 Desmodesmus subspicatus (green algae), 57 mg/l , 72 h

12.2 Persistence and degradability

Stability in water

chlorothalonil	:	Degradation half life: < 5 d at 20 °C Not persistent in water.
metalaxyl-M	:	Degradation half life: 22.4 - 47.5 d Not persistent in water.

Stability in soil

chlorothalonil	:	Degradation half life: ca. 7 d Not persistent in soil.
metalaxyl-M	:	Degradation half life: < 50 d Not persistent in soil.

12.3 Bioaccumulative potential

chlorothalonil	:	Chlorothalonil has low potential for bioaccumulation.
metalaxyl-M	:	Low bioaccumulation potential.

12.4 Mobility in soil

chlorothalonil	:	Chlorothalonil has low to slight mobility in soil.
metalaxyl-M	:	Metalaxyl has a range from low to very high mobility in soil depending on soil type.

12.5 Results of PBT and vPvB assessment

chlorothalonil	:	This substance is not considered to be very persistent nor very bioaccumulating (vPvB). This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
metalaxyl-M	:	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

None known.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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.

SECTION 14. TRANSPORT INFORMATION

Land transport (ADR/RID)

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CHLOROTHALONIL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9
14.5 Environmental hazards :	Environmentally hazardous

Sea transport(IMDG)

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CHLOROTHALONIL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9
14.5 Environmental hazards :	Marine pollutant

Air transport (IATA-DGR)

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CHLOROTHALONIL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9

14.6 Special precautions for user

none

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS-Labelling

Hazard pictograms

Signal word	:	Warning	
Hazard statements	:	H315	Causes skin irritation.
		H317	May cause an allergic skin reaction.
		H319	Causes serious eye irritation.
		H332	Harmful if inhaled.
		H335	May cause respiratory irritation.
		H351	Suspected of causing cancer if inhaled.
		H410	Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P102	Keep out of reach of children.
		P201	Obtain special instructions before use.
		P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
		P281	Use personal protective equipment as required.
		P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P308 + P313	IF exposed or concerned: Get medical advice/ attention.
		P391	Collect spillage.
		P501	Dispose of contents/ container to an approved waste disposal plant.
Supplemental information	:	EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Remarks	:	Classified using all GHS hazard classes and categories. Where the GHS contains options, the most conservative option has been chosen. Regional or national implementations of GHS may not implement all hazard classes and categories.

Hazardous components which must be listed on the label:
- chlorothalonil

15.2 Chemical Safety Assessment
A Chemical Safety Assessment is not required for this substance.

SECTION 16. OTHER INFORMATION

Further information

Full text of R-phrases referred to under sections 2 and 3:

R22	Harmful if swallowed.
R26	Very toxic by inhalation.
R37	Irritating to respiratory system.
R38	Irritating to skin.
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.

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

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.