

ALTO 100SL

Version 7 - This version replaces all previous versions.

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

1.1 Product identifier

Product name : ALTO 100SL**Design code** : A9898A

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 tele-
phone number** : +44 1484 538444

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008

Reproductive toxicity	Category 1B	H360D
Chronic aquatic toxicity	Category 2	H411

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

T, Toxic**R61: May cause harm to the unborn child.****R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.**

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2.2 Label elements

Labelling: Regulation (EC) No. 1272/2008

Hazard pictograms



Signal word	:	Danger	
Hazard statements	:	H360D H411	May damage the unborn child. Toxic to aquatic life with long lasting effects.
Precautionary statements	:	P102 P201 P273 P308 + P313 P391 P501	Keep out of reach of children. Obtain special instructions before use. Avoid release to the environment. IF exposed or concerned: Get medical advice/ attention. Collect spillage. 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:

- 1-methyl-2-pyrrolidone

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

Symbol(s)



Toxic

R-phrases	:	R61 R52/53	May cause harm to the unborn child. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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S-phrases(s)	:	S53	Avoid exposure - obtain special instructions before use.
		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:

- 1-methyl-2-pyrrolidone

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
cyproconazole	94361-06-5 94361-06-5	Xn, N R22 R50/53 R63	Acute Tox.4; H302 Repr.2; H361d Aquatic Acute1; H400 Aquatic Chronic1; H410	8.9 % WW
1-methyl-2-pyrrolidone	872-50-4 872-50-4 212-828-1 212-828-1 01-2119472430-46-0 017	T R61 R36/37/38	Skin Irrit.2; H315 Eye Irrit.2; H319 STOT SE3; H335 Repr.1B; H360D	5 - 10 % WW
2-(2-nonylphenoxy)ethanol; phosphoric acid	51811-79-1	Xi R38 R41 R53	Skin Irrit.2; H315 Eye Dam.1; H318 Aquatic Chronic3; H412	5 - 10 % WW

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.

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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.

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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.

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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.

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

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
cyproconazole	0.5 mg/m ³	8 h TWA	SYNGENTA
1-methyl-2-pyrrolidone	20 ppm 20 ppm, 80 mg/m ³ 40 ppm, 160 mg/m ³ 25 ppm, 103 mg/m ³ (Skin) 75 ppm, 309 mg/m ³ (Skin) 10 ppm, 40 mg/m ³ (Skin) 20 ppm, 80 mg/m ³	8 h TWA 8 h TWA Short term exposure limit 8 h TWA 15 min STEL 8 h TWA 15 min STEL	DFG SUVA SUVA UK HSE UK HSE IOELV IOELV

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

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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 gas and vapor 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** : Suitable material: Nitrile rubber
Break through time: > 480 min
Glove thickness: 0.5 mm
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.
- 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 / 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

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Physical state	: liquid
Form	: liquid
Colour	: yellow to brown
Odour	: weak
Odour Threshold	: No data available
pH	: 3.8 at 1 % w/v
Melting point/range	: No data available
Boiling point/boiling range	: No data available
Flash point	: 131 °C at 1,013 hPa DIN EN 22719
Evaporation 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	: 1.12 g/cm ³ at 25 °C
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: 325 °C
Thermal decomposition	: No data available
Viscosity, dynamic	: 104 mPa.s at 20 °C : 40.3 mPa.s at 40 °C
Viscosity, kinematic	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: not oxidizing

9.2 Other information

Miscibility	: Miscible
Surface tension	: 32.3 mN/m at 20 °C

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

See section 10.3 "Possibility of hazardous reactions".

10.2 Chemical stability

The product is stable when used in normal conditions

10.3 Possibility of hazardous reactions

No hazardous reactions by normal handling and storage according to provisions.

10.4 Conditions to avoid

No decomposition if used as directed.

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10.5 Incompatible materials

No substances are known which lead to the formation of hazardous substances or thermal reactions.

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 and female Rat, > 2,000 mg/kg
- Acute inhalation toxicity** : Based on available data, the classification criteria are not met.
- Acute dermal toxicity** : LD50 male and female Rat, > 4,000 mg/kg
- Skin corrosion/irritation** : Rabbit: Non-irritating
- Serious eye damage/eye irritation** : Rabbit: Non-irritating
- Respiratory or skin sensitisation** : Maximisation Test (GPMT) Guinea pig: Not a skin sensitizer in animal tests.
- Germ cell mutagenicity
- cyproconazole : Did not show mutagenic effects in animal experiments.
 - 1-methyl-2-pyrrolidone : Did not show mutagenic effects in animal experiments.
- Carcinogenicity
- cyproconazole : Did not show carcinogenic effects in animal experiments.
 - 1-methyl-2-pyrrolidone : Did not show carcinogenic effects in animal experiments.
- Reproductive toxicity
- cyproconazole : Maternal and fetal toxicity were observed at high dose levels in studies on rats.
 - 1-methyl-2-pyrrolidone : Experiments have shown reproductive toxicity effects on laboratory animals.
- STOT - repeated exposure
- cyproconazole : No adverse effect has been observed in chronic toxicity tests.

SECTION 12: ECOLOGICAL INFORMATION

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12.1 Toxicity

- Toxicity to fish** : LC50 *Cyprinus carpio* (Carp), 64.5 mg/l , 96 h
: LC50 *Oncorhynchus mykiss* (rainbow trout), 141 mg/l , 96 h
- Toxicity to aquatic invertebrates** : EC50 *Daphnia magna* (Water flea), 59 mg/l , 48 h
: NOEC *Daphnia magna* (Water flea), 5.6 mg/l , 21 d
- Toxicity to aquatic plants** : ErC50 *Pseudokirchneriella subcapitata* (green algae), > 10 mg/l , 72 h
: NOErC *Pseudokirchneriella subcapitata* (green algae), 1 mg/l , 72 h

12.2 Persistence and degradability

Stability in water

- cyproconazole : Degradation half life: 5 d at 20 °C
Not persistent in water.

Stability in soil

- cyproconazole : Degradation half life: 100 - 124 d
Not persistent in soil.

12.3 Bioaccumulative potential

- cyproconazole : Does not bioaccumulate.

12.4 Mobility in soil

- cyproconazole : Low to medium mobility in soil.

12.5 Results of PBT and vPvB assessment

- cyproconazole : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
This substance is not considered to be very persistent and 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.

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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. (CYPROCONAZOLE)
14.3 Transport hazard class(es): 9
14.4 Packing group: III
Labels: 9
14.5 Environmental hazards : Environmentally hazardous
Tunnel restriction code: E

Sea transport(IMDG)

14.1 UN number: UN 3082
14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CYPROCONAZOLE)
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. (CYPROCONAZOLE)
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-Labeling

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Hazard pictograms



Signal word	:	Danger	
Hazard statements	:	H360D H411	May damage the unborn child. Toxic to aquatic life with long lasting effects.
Precautionary statements	:	P102 P201 P273 P308 + P313 P391 P501	Keep out of reach of children. Obtain special instructions before use. Avoid release to the environment. IF exposed or concerned: Get medical advice/ attention. Collect spillage. Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

- 1-methyl-2-pyrrolidone

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.
R36/37/38	Irritating to eyes, respiratory system and skin.
R38	Irritating to skin.
R41	Risk of serious damage to eyes.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	May cause long-term adverse effects in the aquatic environment.
R61	May cause harm to the unborn child.
R63	Possible risk of harm to the unborn child.

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

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H360D	May damage the unborn child.
H361d	Suspected of damaging the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

ADR:	European Agreement Concerning the International Carriage of Dangerous Goods by Road	RID:	Regulations concerning the International Carriage of Dangerous Goods by Rail
IMDG:	International Maritime Code for Dangerous Goods	IATA-DGR:	International Air Transport Association Dangerous Goods Regulations
LC50:	Lethal concentration, 50%	LD50:	Lethal dose, 50%
EC50:	Effective dose, 50%	GHS:	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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