

SAFETY DATA SHEET

Section 1: IDENTIFICATION

Product Name:	ALTO 100 SL
Design Code:	A9898A
Recommended Use:	Fungicide
Company Details:	Syngenta Crop Protection Limited
Address:	Tower II, Level 7, 110 Symonds Street Private Bag 92618, Symonds Street AUCKLAND NEW ZEALAND
Telephone number:	(weekdays) 09 306 1500
Emergency Telephone number:	(24 Hours) 0800 734 607
National Poisons & Hazchem Information Centre :	0800 POISON (0800 764 766)

Section 2: HAZARDS IDENTIFICATION

Hazard classification:	6.4A, 6.8A, 6.9B, 9.1A, 9.3C
Priority Identifier:	WARNING KEEP OUT OF REACH OF CHILDREN
Secondary Identifiers:	6.4A = May cause eye irritation. 6.8A = May cause reproductive or development damage from repeated oral exposure. 6.9B = May cause liver damage from repeated oral exposure. 9.1A = Very toxic to aquatic organisms. 9.3C = Harmful to terrestrial vertebrates.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Mixture:		
Chemical Identity of ingredients:		
Ingredient	CAS no.	Content (% w/w)
Cyproconazole	94361-06-5	10
N-methyl-2-pyrrolidone	872-50-4	>=5 - <10
2-(2-nonylphenoxy)ethanol; phosphoric acid	51811-79-1	>=3 - <10
other ingredients determined not to be hazardous	-	to 100%

Section 4: FIRST AID MEASURES

Description of First Aid measures:	
General Advice:	For advice contact the National Poisons Centre on 0800 POISON (0800 764 766) or a doctor immediately. Begin artificial respiration if the victim is not breathing. Use mouth to nose rather than mouth to mouth. Obtain medical attention.
If inhaled:	Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a Doctor or the National Poisons Centre immediately.
In case of skin contact:	Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a doctor. Wash contaminated clothing before re-use.

In case of eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses (if present). Immediate medical attention is required.
If swallowed:	If swallowed seek medical advice immediately and show the container or label. DO NOT induce vomiting.
Important symptoms and effects, both acute and delayed:	
Symptoms:	None specific. No symptoms known or expected.
Indication of any immediate medical attention and special treatment needed:	
Treatment:	There is no specific antidote available. Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

Extinguishing media:	
Suitable extinguishing media:	Small fires: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Large Fires: Alcohol resistant foam or water spray.
Unsuitable extinguishing media:	Do not use a solid water stream as it may scatter and spread fire.
Special hazards arising from the substance or mixture:	
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.
Advice for firefighters:	
Special protective equipment for firefighters:	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.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	
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. If the product contaminates rivers and lakes or drains inform respective authorities.	
Methods and material for containment and cleaning up:	
Contain spillage, and the collect with non-combustible absorbent material (eg, sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents. Retain and dispose of contaminated wash water.	
Reference to other sections:	Refer to disposal considerations listed in Section 13. Refer to protective measures listed in sections 7 and 8.

Section 7: HANDLING AND STORAGE

Precautions for Safe 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.
Conditions for safe storage, including any incompatibilities:	
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 reach of children. Keep away from food, drink and animal feeding stuffs.
Further information on storage stability:	Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.
Specific end use(s)	
Specific use(s)	For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

Control Parameters				
Occupational Exposure Limits:				
Components	CAS No	Value type (form of exposure)	Control Parameter	Source
Poly(oxy-1,2-ethanediyl), alpha-hydro-omega-hydroxy	25322-68-3	TWA	1,000 mg/m ³	CH SUVA
Cyproconazole	94361-06-5	TWA	0.5 mg/m ³	Syngenta
N-methyl-2-pyrrolidone	872-50-4	TWA	25 ppm 103 mg/m ³	WES
N-methyl-2-pyrrolidone	872-50-4	STEL	75 ppm 309 mg/m ³	WES

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. Maintain air concentrations below occupational exposure standards. Where necessary, seek additional occupational hygiene advice.
Personal Protective Protection:	
Eye protection:	No special protective equipment required. Wear face shield when handling, mixing or applying.
Hand protection:	
Material:	Chemical resistant, such as nitrile rubber
Break through time:	>480 min
Glove thickness:	0.5 mm

Remarks:	<p>Wear protective gloves. The choice of an appropriate glove does not only depend on its material also on other quality features and is different from one producer to the other.</p> <p>Please observe the instructions regarding permeability and break through time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there any indication of degradation or chemical break through.</p>
Skin and body protection:	<p>Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.</p> <p>Remove and wash contaminated clothing before re-use.</p> <p>Wear as appropriate: Impervious protective suit.</p>
Respiratory protection:	<p>When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.</p> <p>Suitable respiratory equipment: Respirator with combination filter for vapour / particulate The filter class for the respirator much be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.</p> <p>Filter type: organic vapour type</p>
Protective measures:	<p>The use technical measures should always have priority over the use of personal protective equipment.</p> <p>When selecting personal protective equipment, seek appropriate professional advice.</p>

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:	Liquid
Colour:	Yellow to brown
Odour:	weak
Odour threshold:	No data
pH value	3.8, concentration: 1% w/v
Melting point / freezing point:	No data
Initial boiling point and boiling range:	No data
Flash point:	131°C (1,013 hPa) Method: DIN EN 22719 131°C Method: Pensky-martens closed cup
Flammability:	No data
Upper / lower flammability / explosive limits:	No data
Vapour pressure:	No data
Vapour Density:	No data
Density:	1.12 g/cm ³ (25°C)
Solubility:	No data
Partition co-efficient: n-octanol / water:	Log Pow: 3.1 (25°C)
Autoignition temperature	No data
Decomposition temperature:	No data
Viscosity, dynamic:	104 mPa.s (20°C) 40.3 mPa.s (40°)
Kinematic viscosity:	No data

Explosive properties:	Not explosive
Oxidising properties:	Not oxidising
Surface tension:	32.3 mNm, 20°C

Section 10: STABILITY AND REACTIVITY

Reactivity:	None reasonably foreseeable.
Chemical Stability:	Stable under normal conditions.
Possibility of Hazardous Reactions:	No dangerous reaction known under conditions of normal use.
Conditions to Avoid	No decomposition if used as directed.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	No hazardous decomposition products are known.

Section 11: TOXICOLOGICAL INFORMATION

HSNO Classifications:
6.4A = May cause eye irritation.
6.8A = May cause reproductive or development damage from repeated oral exposure.
6.9A = May cause liver damage from repeated oral exposure.

Acute toxicity (product)	
Oral:	LD ₅₀ >2000 mg/kg (rat, male and female)
Dermal absorption:	LD ₅₀ >4000 mg/kg (rat, male and female)
Inhaled:	LD ₅₀ (4 h) >5000 mg/m ³ (dust / mist)
Aspiration hazard:	Not classified
Respiratory irritation:	Not classified
Skin corrosion / irritation:	NON-IRRITANT (rabbit)
Eye damage / irritation:	IRRITANT (rabbit) (HSNO Classification)
Respiratory or Skin Sensitisation:	NOT A SENSITISER (skin - guinea pig)
Chronic / Long Term Effects (active ingredient)	
Germ cell mutagenicity:	Animal testing did not show any mutagenic effects.
Carcinogenicity:	No evidence of carcinogenicity in animal studies.
Reproductive toxicity:	Some evidence of adverse effects on development, based on animal experiments.
Specific Organ toxicity:	<i>Single exposure:</i> The substance or mixture is not classified as specific target organ toxicant, single exposure. <i>Repeated exposure:</i> The substance or mixture is classified as specific target organ toxicant, repeated exposure, Class 6.9B (GHS: Category 2), liver damage.
Narcotic Effects:	Not classified

Section 12: ECOLOGICAL INFORMATION

HSNO Classifications:	
9.1A = Very toxic to aquatic organisms.	
9.3C = Harmful to terrestrial vertebrates.	
Ecotoxicity Effects – aquatic (product)	
Acute toxicity to fish:	LC ₅₀ (96 h) = 64.5 mg/L (<i>Cyprinus carpio</i> (carp)) LC ₅₀ (96 h) = 141 mg/L (<i>Onchorhynchus mykiss</i> [rainbow trout])
Toxicity to daphnia and other aquatic invertebrates:	EC ₅₀ (48h) = 59 mg/L (<i>Daphnia magna</i> (water flea)) Chronic: NOEC (21 d) growth rate = 5.6 mg/L (<i>Daphnia magna</i> (water flea))
Toxicity to algae:	E _r C ₅₀ (72 h) = >10 mg/L (<i>Pseudokirchneriella subcapitata</i> [green algae]) NOEC (72h) Growth rate = 1 mg/L (<i>Pseudokirchneriella subcapitata</i> [green algae])
Ecotoxicity Effects – terrestrial (active ingredient unless otherwise specified)	
Toxicity to Birds:	Active ingredient: LC ₅₀ (8 d dietary) = 1292 ppm (bobwhite quail) Active ingredient: LD ₅₀ (8 d dietary) = 1197 mg/kg (mallard duck)
Toxicity to soil dwelling organisms:	Product: LC ₅₀ (14 days) = 748 mg/kg (earthworms)
Toxicity to Bees:	Product: LD ₅₀ (48 h, oral) = >10,000 mg/bee Product: LD ₅₀ (48 h, contact) = 130 mg/bee
Persistence and degradability:	
Biodegradability:	Cyproconazole: Not readily biodegradable
Stability in water:	Cyproconazole: Degradation half-life: 5 d (20°C) Not persistent in water.
Bioaccumulative potential:	
Bioaccumulation:	Cyproconazole: Does not bioaccumulate.
Partition co-efficient: n-octanol/water:	Log Pow: 3.1 (25°C)
Mobility in soil:	
Distribution among environmental compartments:	Low to medium mobility in soil.
Stability in soil:	DT ₅₀ : 100 – 124 d Percentage dissipation: 50% (DT ₅₀) Product is not persistent in soil.
Other adverse effects:	
Results of PBT and vPvB assessment (product):	This substance contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 13: DISPOSAL CONSIDERATIONS

Product Disposal:	DO NOT contaminate ponds, waterways or ditches with chemical or used containers. DO NOT dispose of waste into sewer. Dispose of this product only by using according to the label. Otherwise, dispose of waste at an approved landfill or other approved facility that will ensure the substance does not exceed the tolerable exposure limit (TEL) or environmental exposure limit (EEL), where relevant, or will treat the substance so that it is rendered no longer hazardous.
Container Disposal:	Ensure the container is empty. Triple rinse empty container and add rinsate to the spray tank. Recycle empty container through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose.

Section 14: TRANSPORT INFORMATION

Rail / Road (NZS 5433)	UN-No:	3082
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cyproconazole)
Sea (IMDG-Code)	UN-No:	3082
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cyproconazole)
	EmS Code:	F-A, S-F
	MARINE POLLUTANT:	Yes
Air (ICAO/IATA)	UN-No:	3082
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cyproconazole)
	Packing Instructions:	Y964 (cargo and passenger aircraft)

Section 15: REGULATORY INFORMATION

HSNO Approval Number:	HSR000518
Tolerable Exposure Limit or Environmental Exposure Limit:	None set
Required Regulatory Controls:	
Certified handler:	No
Tracking:	No
Record Keeping:	Yes, 9.1A substance
ACVM Registration:	P 3943
ACVM Controls:	See www.foodsafety.govt.nz/industry/acvm for registration conditions.
International Agreements related to the substance (eg, Montreal Protocol, Stockholm Convention or Rotterdam Convention):	

Section 16: OTHER INFORMATION

Date of SDS Preparation / Review:	6 March 2018
Version number of SDS:	5
Key / Legend to abbreviations and acronyms used:	
AICS - Australian Inventory of Chemical Substances;	MARPOL - International Convention for the Prevention of Pollution from Ships;
ANTT - National Agency for Transport by Land of Brazil;	n.o.s. - Not Otherwise Specified;
ASTM - American Society for the Testing of Materials;	Nch - Chilean Norm;
bw - Body weight;	NO(A)EC - No Observed (Adverse) Effect Concentration;
CMR -Carcinogen, Mutagen or Reproductive Toxicant;	NO(A)EL - No Observed (Adverse) Effect Level;
CPR - Controlled Products Regulations;	NOELR - No Observable Effect Loading Rate;
DIN - Standard of the German Institute for Standardisation;	NOM - Official Mexican Norm;
DSL - Domestic Substances List (Canada);	NTP - National Toxicology Program;
ECx - Concentration associated with x% response;	

ELx - Loading rate associated with x% response;
EmS - Emergency Schedule;
ENCS - Existing and New Chemical Substances (Japan);
ErCx - Concentration associated with x% growth rate response;
ERG - Emergency Response Guide;
GHS - Globally Harmonized System;
GLP - Good Laboratory Practice;
IARC - International Agency for Research on Cancer;
IATA - International Air Transport Association;
IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;
IC50 - Half maximal inhibitory concentration;
ICAO - International Civil Aviation Organization;
IECSC - Inventory of Existing Chemical Substances in China;
IMDG - International Maritime Dangerous Goods;
IMO - International Maritime Organization;
ISHL - Industrial Safety and Health Law (Japan);
ISO - International Organisation for Standardization;
KECI - Korea Existing Chemicals Inventory;
LC50 - Lethal Concentration to 50 % of a test population;
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose);

NZIoC - New Zealand Inventory of Chemicals;
OECD - Organization for Economic Co-operation and Development;
OPPTS - Office of Chemical Safety and Pollution Prevention;
PBT - Persistent, Bioaccumulative and Toxic substance;
PICCS - Philippines Inventory of Chemicals and Chemical Substances;
(Q)SAR - (Quantitative) Structure Activity Relationship;
REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals;
SADT - Self-Accelerating Decomposition Temperature;
SDS - Safety Data Sheet;
TCSI - Taiwan Chemical Substance Inventory;
TDG - Transportation of Dangerous Goods;
TSCA - Toxic Substances Control Act (United States);
UN - United Nations;
UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods;
vPvB - Very Persistent and Very Bioaccumulative;
WHMIS - Workplace Hazardous Materials Information System

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 test.

This version replaces all previous versions.

PRODUCT NAMES are a trademark or registered trademark of a Syngenta Group Company.