

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

ARYSTA LifeScience South Africa (Pty) Ltd
Co. Reg. No.: 2009/019713/07
7 Sunbury Office Park, off Douglas Saunders Drive,
La Lucia Ridge, South Africa, 4019

Tel: +27(0)31 514 5600
Fax: +27(0)31 514 5611
e-mail: info@arysta.co.za
web address: arystalifescience.co.za

PRODUCT NAME: DISARM™ 480 SC
PRODUCT USE: Fungicide
CREATION DATE: May 2016
REVISION DATE: August 2019

24 Hr Emergency Number:**In case of Poisoning:**

Poisons Helpline 0861 555 777

In case of Spillage:

Spill Tech Oil & Chemical Pollution Control 086 100 0366 / 083 253 6618

SECTION 2: COMPOSITION/ INFORMATION ON INGREDIENTS

Common Name: Fluoxastrobin
Chemical Name: (E)-{2-[6-(2-chlorophenoxy)-5-fluoropyrimidin-4-yloxy]phenyl}(5,6-dihydro-1,4,2-dioxazin-3-yl)methanone-O-methyloxime (**IUPAC**)
CAS No.: 135410-20-7; 160430-64-8
Chemical family: Dihydrodioxazine
Molecular formula: C₂₁H₁₆ClFN₄O₅
Use: A fungicide for the control of various diseases in roses and beans.
Formulation: Fluoxastrobin: 480 g/l
Suspension Concentrate

Hazardous ingredients of toxicological concern:

<u>Inert:</u>	<u>concern:</u>	<u>% present:</u>
fluoxastrobin:		± 48 %
other inerts		± 52 %

Symbol: N
Indication of Danger: Dangerous to the environment

RISK-PHRASE(S) R50/53

SECTION 3: HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

CAUTION:

- KEEP OUT OF REACH OF CHILDREN
- VERY TOXIC TO AQUATIC ORGANISMS
- MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

Acute Health Hazards

Eye: This product is considered practically non-irritant to the eyes.

Skin: This product is considered practically non-irritant to the skin.

Ingestion: This product is considered practically non-toxic if swallowed.

Inhalation: This product is considered practically non-toxic if inhaled.

Chronic Health Hazards (Including Cancer): Fluoxastrobin 480 SC is not a carcinogen.

Reproductive and Developmental Toxicity: Fluoxastrobin 480 SC is not a reproductive or development toxicant.

SECTION 4: FIRST AID MEASURES AND PRECAUTIONS

Inhalation: Call doctor immediately. Immediately remove source of contamination or move victim to fresh air. If breathing has stopped, perform artificial respiration and administer oxygen. Do not give mouth-to-mouth resuscitation if victim ingested or inhaled the substance. If there is a risk of unconsciousness, position and transport in stable lateral position. Keep person warm and at rest. Treat symptomatically and supportively as and when required.

Skin: Remove contaminated clothing, shoes and leather goods immediately. Gently wipe off excess chemical. Wash skin gently and thoroughly with non-abrasive soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). Seek medical advice if irritation develops and persists.

Eye contact: Immediately flush the eyes with gently flowing lukewarm water or sodium bicarbonate solution for 20 to 30 minutes, occasionally lifting the upper and lower lids. If irritation persists, seek medical advice immediately.

Ingestion: Do not induce vomiting. Never induce vomiting or give anything to drink to an unconscious person. If the person is alert, rinse mouth thoroughly with water and give one or two glasses of water to drink. Treat symptomatically and supportively. Call a physician or Poison Control Center.

Advice on treatment: No specific antidote available. Treat symptomatically and supportively.

SECTION 5: FIRE FIGHTING MEASURES

Flash point: NOT APPLICABLE

Extinguishing agents:

Extinguish fires with carbon dioxide, sand, dry powder, or alcohol-resistant foam. Water spray as a fog can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Contain water used for fire-fighting for later disposal.

Avoid the accumulation of polluted run-off from the site.

Fire fighting:

Remove spectators from surrounding area. Remove container from fire area if possible without risk. Eliminate all ignition sources in immediate area. Fight fire from maximum distance. For massive fire, use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours. Keep upwind.

This product will emit toxic fumes when burned, including fumes of SO₄. May produce irritating or poisonous mists or other products of combustion. The formation of hydrogen chloride, hydrogen cyanide, hydrogen fluoride, carbon monoxide, and nitrogen oxide must be anticipated.

Personal protective equipment:

Fire-fighters and others that may be exposed should wear full protective impervious clothing, including gloves and eye protection, and self-contained breathing apparatus. Contact with the fumes and vapours should be avoided by staying upwind.

Clean all clothing before re-use. Severely contaminated clothing cannot be adequately decontaminated, and must be disposed as a hazardous waste. Shower with soap and water after contact with this product.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions:

Avoid contact with skin and eyes. Do not inhale spray or fumes. For personal protection see Section 8.

Environmental precautions:

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

Occupational spill:

For small liquid spills, soak up with lime, damp earth or sand, or other non-combustible absorbent material and place into containers for later disposal. For large liquid spills, contain the liquid for later disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. Keep spectators away.

SECTION 7: HANDLING AND STORAGE

Store in a dry place. Keep away from food, drink and animal feeding stuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Wear eye protection, goggles.

Skin Protection: Wear long-sleeved shirt, long pants, protective gloves for chemicals, shoes and socks. Keep the place of work clean. Avoid contact with product. Keep working clothes separate. Change badly soiled or soaked clothing. Wash hands before breaks and at end of work.

Respiratory/Ventilation Requirements: NDA

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Viscous off-white liquid
Odor:	Has a slight latex paint odour
Physical State:	Liquid suspension
pH:	6.8 (10% solution)
Boiling Point:	NDA
Melting Point:	NA
Freezing Point	NDA
Vapor Pressure:	NA
Vapor Density:	NDA
Bulk Density:	1.19 g/cc at 20°C
Specific Gravity:	NDA
Evaporation Rate:	NDA
Solubility in Water:	NA
Percent Solids by Weight:	NDA
Percent Volatile:	NDA
Volatile Organic Compounds:	NDA
Molecular Weight:	NDA
Viscosity:	822 cps @25°C

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	NA
Hazardous Polymerization:	NDA
Flash Point:	NA
Flammable Point:	NA
Auto Ignition:	NA
Incompatibility With Other Materials:	NA
Decomposition Products:	NDA

SECTION 11: TOXICOLOGICAL INFORMATION

Acute:

Oral Toxicity: LD₅₀ (rat): >5000 mg/kg

Dermal Toxicity: LD₅₀ (rat): >5000 mg/kg

Inhalation Toxicity: LC₅₀ (rat): >2170 mg/m³

Eye Irritation: Non-irritant.

Skin Irritation: Slightly irritating.

Skin Sensitization: Moderate skin sensitization (guinea pig) (via the Buehler Test).

Subchronic: subchronic studies with Fluoxastrobin Technical, the NOEL for rat were 1000 ppm (M) and 2000 ppm (F), for mice was not assigned, and for dog 100 ppm. Reduced body weight gain and food intake, calculi in the urethra and kidney, urinary bladder, and urethra, vacuolation in the zona fasciculata in rats. There were no dose related toxicity effects in mice. Reduced net body weight gain and food efficiency in addition to toxicity findings in the liver in dogs.

Chronic Toxicity: In the dog chronic study with Fluoxastrobin Technical, the NOEL was 50 ppm. Reduced body weight and hepatocytomegaly and cytoplasmic changes associated with increased serum liver alkaline phosphatase indicative of cholestasis.

Carcinogenicity: No evidence of carcinogenicity.

Mutagenicity: Fluoxastrobin Technical is negative in the following genotoxicity assays: *In vitro* bacterial reverse gene mutation, *In vitro* mammalian chromosome aberration in Chinese hamster lung (V79) cells, mammalian cytogenetics-micronucleus assay (mouse).

Developmental Toxicity: In the developmental studies with Fluoxastrobin Technical the NOEL for rats was 1000 mg/kg/day (maternal) and 1000 mg/kg/day (developmental) (limit dose). The NOEL for rabbits was 100 mg/kg/day (maternal) based on cold years, transient body weight loss and decreased food consumption, and 400 mg/kg/day (developmental).

Reproduction: In the reproduction study with Fluoxastrobin Technical in rats were 1000 ppm (parental) based on decreased pre-mating body weight gain and decrease pre-mating absolute body weight; >10000 ppm (reproductive); 1000 ppm (offspring) based on decrease body weights, delayed preputial separation, and incomplete ossification.

Neurotoxicity: No evidence of neurotoxicity.

SECTION 12: ECOLOGICAL INFORMATION

Birds:

Bobwhite quail	LD ₅₀ mg/kg >2000 mg/kg food
Mallard duck	LD ₅₀ mg/kg >5000 mg/kg food

Aquatic Organism Toxicity:

Trout (<i>Oncorhynchus mykiss</i>)	96 hr LC ₅₀ = 0.435 mg/L
Carp (<i>Cyprinus carpio</i>)	96 hr LC ₅₀ = 0.57 mg/L
Bluegill sunfish (<i>Lepomis macrochirus</i>)	96 hr LC ₅₀ = 0.97 mg/L
Water flea (<i>D. magna</i>)	48 hr EC ₅₀ = 0.48 mg/L
Mysid (<i>M. bahia</i>)	96 hr LC ₅₀ = 0.053 mg/L

Other Non-Target Organism Toxicity:

Green algae (<i>Selenastrum capricornutum</i>)(biomass):	72-hour EC ₅₀ = 0.45 mg/L
Green algae (<i>Selenastrum capricornutum</i>)(growth rate):	72-hour EC ₅₀ = 2.67 mg/L
Bacteria (activated sludge):	EC ₅₀ > 10000 mg/L

Bees:

LD ₅₀ µg/bee	Oral: > 843 µg/bee
	Contact: > 200 µg/bee

Earthworm: LC₅₀ (14d) for *Eisenia foetida* > 1000 mg/kg dry soil

SECTION 13: DISPOSAL CONSIDERATIONS

Pesticide and container disposal:

Open dumping or burning of this pesticide is prohibited. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers.

Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed.

TRIPLE RINSE empty containers in the following manner. Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container in the prescribed manner.

Do not re-use the empty container for any other purpose. Destroy it by perforation and flattening and bury in an approved dump site. Prevent contamination of food, feedstuffs, drinking water and eating utensils.

SECTION 14: TRANSPORT INFORMATION

UN No.: 3082

Road Transport ADR/IRD:

Class: 9

Packing group: III

Shipping name: Environmentally hazardous substance, liquid, N.O.S. (fluoxastrobin 480 g/ℓ)

AIR IATA:

Class: 9

Packing group: III

Shipping name: Environmentally hazardous substance, liquid, N.O.S. (fluoxastrobin 480 g/ℓ)

Maritime Transport IMDG/IMO:

Class: 9

Packing group: III

Shipping name: Environmentally hazardous substance, liquid, N.O.S. (fluoxastrobin 480 g/ℓ)

SECTION 15: REGULATORY INFORMATION

Symbol : N
Indication of danger: Dangerous to the environment

Risk phrase(s):

R 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 16: OTHER INFORMATION

Packaging:

Packed in 500 mL, 1 L, 2 L, 5 L, 10 L, 20 L, 50 L and 200 L HDPE plastic containers and labelled according to South African regulations and guidelines.

Disclaimer:

THIS MSDS SUMMARIZES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS.

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECTED TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using the product.
This MSDS is prepared in accordance with SANS.