



Please read the entire document. This Material Safety Data Sheet contains important environmental, health and toxicology information for your employees, and anyone who will use, transport, store, dispose of or handle this product. Please make sure this information is given to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this MSDS must be given to the buyer or the information contained herein must be incorporated in your MSDS.

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Disarm™ 480 SC Fungicide  
**EPA REGISTRATION NUMBER(S):** 66330-64  
**SYNONYM(S):** Fluoxastrobin 480 SC, Evito™ 480 SC Fungicide, Armor Tech Disarm™ 480 SC

<b>COMPANY</b>
Arysta LifeScience North America LLC 15401 Weston Parkway, Suite 150 Cary, NC 27513

<b>EMERGENCY TELEPHONE NUMBERS</b>	
<b>HEALTH EMERGENCY:</b>	<b>SPILL EMERGENCY:</b>
<b>1-866-303-6952, or 1-651-632-8946</b>	<b>1-800-424-9300, or 1-703-527-3887</b>

## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<b>Active Ingredient(s)/ Hazardous Inert Ingredient(s)</b>	<b>CAS #</b>	<b>Exposure Limits*</b>	<b>% Weight</b>	<b>% Volume</b>
Fluoxastrobin (Methanone, [2-[[6-(2-chlorophenoxy)-5-fluoro-4-pyrimidinyl]-oxy]phenyl](5,6-dihydro-1,4,2-dioxazine-3-yl)-,O-methyloxime,(E)-	361377-29-9	<b>TWA<sup>a</sup></b> OSHA PEL <sup>b</sup> : NA ACGIH TLV <sup>c</sup> : NA NIOSH REL <sup>d</sup> : NA	40.3	NA

Only the identities of the active ingredient(s) and any hazardous inert ingredients are listed. Specific information on all of this product's ingredients can be obtained by the treating medical professional or spill emergency responder for the management of exposures, spills, or safety assessments.

\*Source: *Guide to Occupational Exposure Values 2008*, published by ACGIH

<sup>a</sup>**TWA**: Time-weighted average exposure concentration for a conventional 8-hour (TLV, PEL) or up to a 10-hour (REL) workday and a 40-hour workweek.

<sup>b</sup>**OSHA PEL**: Occupational Safety and Health Administration Permissible Exposure Limits.

<sup>c</sup>**ACGIH TLV**: American Conference of Governmental Industrial Hygienists, Inc., Threshold Limit Values.

<sup>d</sup>**NIOSH REL**: National Institute for Occupational Safety and Health Recommended Exposure Limits.

**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**

**Inhalation:** Call doctor immediately. Remove patient from danger zone. If there is a risk of unconsciousness, position and transport in stable lateral position. Removed soiled or soaked clothing immediately.

**Skin:** Wash skin immediately with copious amounts of water and soap. Remove patient from danger zone. If there is a risk of unconsciousness, position and transport in stable lateral position. Removed soiled or soaked clothing immediately.

**Eyes:** Rinse eyes thoroughly with water. Consult an eye specialist. Remove patient from danger zone. If there is a risk of unconsciousness, position and transport in stable lateral position. Removed soiled or soaked clothing immediately.

**Ingestion:** Call emergency doctor immediately. Remove patient from danger zone. If there is a risk of unconsciousness, position and transport in stable lateral position. Removed soiled or soaked clothing immediately.

**Note to Physician:** Therapeutic measures: Basic aid, decontamination, symptomatic treatment.

## SECTION 5: FIRE FIGHTING MEASURES

<b>Flammable Limits in Air (% by volume):</b>		
	<b>Upper:</b>	NA
	<b>Lower:</b>	NA
<b>Flash Point:</b>		NDA
	<b>Method Used:</b>	NDA
<b>Autoignition Temperature:</b>		NA
<b>LEL/UEL:</b>		NDA
<b>NFPA Hazard Classification:</b>		
	<b>Health:</b>	1
	<b>Flammability:</b>	0
	<b>Reactivity:</b>	0
	<b>Other:</b>	
<b>Extinguishing Media:</b>		Sprayed water jet, foam, extinguishing powder, CO <sub>2</sub> , sand.
<b>Special Fire Fighting Procedures:</b>		Fight fire in early stages if safe to do so. Wear respiratory protection. In well-ventilated areas, full-face mask with combination filter. In enclosed premises, wear respirator with independent air supply. Contain firefighting water.
<b>Hazardous Combustion Products:</b>		In the event of fire, the formation of hydrogen chloride, hydrogen cyanide, hydrogen fluoride, carbon monoxide, and nitrogen oxide must be anticipated.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### EMERGENCY PHONE NUMBERS

**Exposure Calls (PROSAR): 1-866-303-6952 or 1-651-632-8946 (International)**

**Spill Calls (CHEMTREC): 1-800-424-9300 or 1-703-527-3887**

Use personal protective equipment. Do not empty into drains or waters. Take up spilled product with absorbent material and place into closable container. To clean the floor and all objects contaminated by this material, use damp cloth. Also place used cleaning materials into closable receptacles.

## 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

<b>Appearance:</b>	Viscous off-white liquid
<b>Odor:</b>	None
<b>Physical State:</b>	Liquid suspension
<b>pH:</b>	6.8 (10% solution)
<b>Boiling Point:</b>	NDA
<b>Melting Point:</b>	NA
<b>Freezing Point:</b>	NDA
<b>Vapor Pressure:</b>	NA
<b>Vapor Density:</b>	NDA
<b>Bulk Density:</b>	1.19 g/cc at 20°C
<b>Specific Gravity:</b>	NDA
<b>Evaporation Rate:</b>	NDA
<b>Solubility in Water:</b>	NA
<b>Percent Solids by Weight:</b>	NDA
<b>Percent Volatile:</b>	NDA
<b>Volatile Organic Compounds:</b>	NDA
<b>Molecular Weight:</b>	NDA
<b>Viscosity:</b>	822 cps @25°C

## SECTION 10: STABILITY AND REACTIVITY

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

## SECTION 11: TOXICOLOGICAL INFORMATION

### Acute:

**Oral Toxicity:** LD<sub>50</sub> (rat): >5000 mg/kg

**Dermal Toxicity:** LD<sub>50</sub> (rat): >5000 mg/kg

**Inhalation Toxicity:** LC<sub>50</sub> (rat): >2170 mg/m<sup>3</sup>

**Eye Irritation:** Non-irritant.

**Skin Irritation:** Slightly irritating.

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

**Subchronic:** n 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 were 1000 mg/kg/day (maternal) and 1000 mg/kg/day (developmental) (limit dose). The NOEL for rabbits were 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

### Aquatic Organism Toxicity:

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

### Other Non-Target Organism Toxicity:

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

## SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of wastes and empty containers in accordance with local, state and federal regulations, preferably through incineration.

## SECTION 14: TRANSPORT INFORMATION

Only regulated when shipped by water or in bulk package. Describe as : UN3082, Environmentally hazardous substances, liquid, n.o.s. (Fluoxastrobin), 9, PG III, Marine Pollutant.

## SECTION 15: REGULATORY INFORMATION

### U.S Federal Regulations

**FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act):** All pesticides are governed under FIFRA. Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

**CERCLA (Comprehensive Response Compensation, and Liability Act):** NA

**OSHA (Occupational Safety and Health Administration):** This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

**SARA Title III (SUPERFUND Amendments and Reauthorization Act):**

Section 302 (EHS) TPQ: None

Section 304 (EHS) RQ: None

Section 311/312 CATEGORIES

1. Immediate (Acute) Health Effects; **YES**
2. Delayed (Chronic) Health Effect; **NO**
3. Fire Hazard; **NO**
4. Sudden Release of Pressure Hazard; **NO**
5. Reactivity Hazard; **NO**

**TSCA (Toxic Substance Control Act):** This product is exempt from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.

**State Regulations:** Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities.

**International Regulations:**

**Classification:** N Dangerous for the environment

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

**Safety Phrases:** S 60: This material and its container must be disposed of as hazardous waste.  
S 61: Avoid release to the environment. Refer to special instructions/Safety data sheets.

## SECTION 16: OTHER INFORMATION

<b>Reason for issue:</b>	Changes to Section 9 (Physical Properties)
<b>Prepared by:</b>	Ashley R. Brown
<b>Issue date:</b>	10/20/11
<b>Supersedes date:</b>	06/06/11
<b>MSDS number:</b>	00375

The information in this MSDS is based on data available to us as of the issue date given herein, and believed to be correct. Contact Arysta LifeScience North America LLC at (919) 678-4900 to determine if additional data and information have become available since the issue date.

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