



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:** CaptEvote™ 68 WDG  
**EPA REGISTRATION NUMBER(S):** 66330-48  
**SYNONYM(S):** TM-450, TM-45001, TM-45002

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

<u>EMERGENCY TELEPHONE NUMBERS</u>	
<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>
Captan: N- [(trichloromethyl)thio]-4- cyclohexene-1, 2-dicarboximide	133-06-2	<b>TWA<sup>a</sup></b> OSHA PEL <sup>b</sup> : None ACGIH TLV <sup>c</sup> : 5mg/m <sup>3</sup> NIOSH REL <sup>d</sup> : 5mg/m <sup>3</sup>	53.6	NA
Fenhexamid: N-(2,3-dichloro-4- hydroxyphenyl) -1-methyl- cyclohexanecarboxamide	126833-17-8	<b>TWA</b> OSHA PEL: None ACGIH TLV: None NIOSH REL: None	14.3	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**

**DANGER:**

- CAUSES IRREVERSIBLE EYE DAMAGE
- HARMFUL IF SWALLOWED OR INHALED
- MAY CAUSE SENSITIZATION BY SKIN CONTACT
- DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING
- VERY TOXIC TO FISH
- KEEP OUT OF REACH OF CHILDREN

**Acute Health Hazards**

**Eye:** Corrosive to eyes. Severe eye irritation can be expected. The degree of injury will depend on the amount and duration of the contact and the speed and thoroughness of the first aid treatment.

**Skin:** Short contact periods may irritate skin slightly; prolonged contact could increase the severity of irritation. Repeated exposure may cause dermal sensitization. Captan is poorly absorbed through the skin and is minimally toxic via dermal exposure.

**Ingestion:** This product is expected to be minimally toxic if ingested. The degree of injury will depend on the amount of material absorbed and the speed and thoroughness of first aid treatment.

**Inhalation:** This product is not expected to pose an inhalation hazard due to its physical form as water-soluble granules. Inhalation of Captan may cause respiratory irritation. Short-term inhalation is expected to be only minimally toxic. The degree of any injury will depend upon the amount of material inhaled, duration of exposure, and the speed and thoroughness of first aid treatment.

**Chronic Health Hazards (Including Cancer):** Captan Technical was not oncogenic in the rat in a lifetime dietary study. In a lifetime mouse dietary study Captan Technical did produce a significant increase in tumors of the small intestine (especially the duodenum) after repeated exposure at high doses. The threshold oncogenic response results from a chemical irritation to the intestinal mucosa and not a genotoxic effect. Fenhexamid is not a carcinogen.

**Teratology (Birth Defects) Information:** Captan Technical was fetotoxic (not teratogenic) in animal studies at maternally toxic doses. Fenhexamid is not a reproductive or developmental toxicant.

**SECTION 4: FIRST AID MEASURES**

**Eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**Skin:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**Ingestion:** Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**Inhalation:** Move person to fresh air. If person is not breathing, call 9-1-1 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**Notes to Physicians/First Aid Providers:** Probable mucosal damage may contraindicate the use of

gastric lavage. Treatment is symptomatic.

## 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>		
	<b>Method Used:</b>	NA
<b>Autoignition Temperature:</b>		
Captan Technical does not self-ignite. Fenhexamid spontaneous ignition temperature = 295°C.		
<b>LEL/UEL:</b>		
NDA		
<b>NFPA Hazard Classification:</b>		
	<b>Health:</b>	4
	<b>Flammability:</b>	2
	<b>Reactivity:</b>	2
	<b>Other:</b>	None
<b>Extinguishing Media:</b>		
Foam, CO <sub>2</sub> , dry powder or halon extinguishant, water-fog		
<b>Special Fire Fighting Procedures:</b>		
Keep fire-exposed containers cool by spraying with water. Contain run-off water with temporary earthen barriers. An SCBA and suitable protective clothing should be worn in fire conditions.		
<b>Hazardous Combustion Products:</b>		
Captan Technical can form flammable dust clouds at elevated temperatures. In small-scale thermal stability tests, exothermic decomposition was detected at a temperature of 155°C.		

## 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

Wear suitable personal protection during cleanup of any spill. Wear a respirator, eye protection, chemically resistant gloves, boots and coveralls. Avoid runoff into storm sewers or other bodies of water. Clean up spill immediately. Cover spillage with moist sand, soil or sawdust. Transfer to a container for disposal. Wash the spillage area with water. Washings must be prevented from entering surface water drains. This material is very toxic to fish. Spillage or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body. Remove contaminated water for removal or treatment.

## SECTION 7: HANDLING AND STORAGE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Read entire label. Use strictly in accordance with label precautionary statements and directions. Avoid contact with skin. Do not get in eyes. When not being used, keep container tightly closed and in a cool, dry, well ventilated place away from flammable materials and sources of heat or flames. Do not store or transport near feed or food.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Eye Protection:** Do not get this material in your eyes. The use of chemical safety eyewear is recommended when handling this material.

**Respiratory/Ventilation Requirements:** Wear suitable MSA/NIOSH approved respiratory protective equipment if exposure to levels above the occupational exposure limit is likely.

EMERGENCY TELEPHONE #: 1-866-303-6952 or 1-651-632-8946

MSDS Number: 00015

Issue Date: 08/25/11

NDA = No Data Available

NA = Not Applicable

**Skin Protection:** Avoid skin contact by wearing suitable protective clothing, gloves and eye/face protection. Remove contaminated clothing and wash before re-wearing.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Brown colored fine granule
<b>Odor:</b>	NDA
<b>Physical State:</b>	Solid
<b>pH:</b>	7.9 (1% w/v suspension at 26.8°C)
<b>Boiling Point:</b>	NA
<b>Melting Point:</b>	NDA
<b>Freezing Point</b>	NA
<b>Vapor Pressure:</b>	NDA
<b>Vapor Density:</b>	NDA
<b>Bulk Density:</b>	0.75-0.82 g/ml
<b>Specific Gravity:</b>	NA
<b>Evaporation Rate:</b>	NA
<b>Solubility in Water:</b>	NDA
<b>Percent Solids by Weight:</b>	NDA
<b>Percent Volatile:</b>	NA
<b>Volatile Organic Compounds:</b>	NA
<b>Molecular Weight:</b>	NDA
<b>Viscosity:</b>	NA

## SECTION 10: STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable at ambient temperature and atmospheric pressure. Decomposes at or near its melting point.
<b>Hazardous Polymerization:</b>	NDA
<b>Flash Point:</b>	NA
<b>Flammable Point:</b>	NDA
<b>Auto Ignition:</b>	NDA
<b>Incompatibility With Other Materials:</b>	Relatively non-reactive, but is decomposed by caustic chemicals.
<b>Hazardous Decomposition Products:</b>	Combustion or thermal decomposition will evolve toxic and irritant vapors such as hydrogen chloride, carbonyl sulfide, carbon disulfide, thiophosgene

## SECTION 11: TOXICOLOGICAL INFORMATION

### Acute:

**Eye Irritation:** CaptEvate™ 68 WDG is expected to be highly irritating to the eyes. Captan Technical is classified as a severe to very severe irritant in the rabbit eye irritation study. Fenhexamid Technical is not irritating in laboratory tests.

**Skin Irritation:** CaptEvate™ 68 WDG is a slight skin irritant.

**Skin Sensitization:** CaptEvate™ 68 WDG is expected to be a skin sensitizer. Captan Technical is a moderate skin sensitizer. Fenhexamid Technical is negative in the Magnusson/Kligman and modified Buehler Guinea Pig Sensitization tests.

**Dermal Toxicity:** The dermal LD<sub>50</sub> of CaptEvate™ 68 WDG is > 5,000 mg/kg (Category IV).

**Oral Toxicity:** The oral LD<sub>50</sub> of CaptEbate™ 68 WDG is > 2,000 mg/kg (Category III).

**Inhalation Toxicity:** CaptEbate™ 68 WDG is not expected to pose an inhalation hazard due to its physical form as water-soluble granules. The 4-hour LC<sub>50</sub> of Captan Technical in male and female rats is 0.72 mg/L and 0.87 mg/L respectively. The 4-hour inhalation LC<sub>50</sub> (dust) of Fenhexamid Technical in rats is > 5,057 mg/m<sup>3</sup>.

**Subchronic Toxicity:** For Captan Technical the dermal 21-day LD<sub>50</sub> (rabbits) = 110 mg/kg/day and the inhalation 90-day LC<sub>50</sub> (rat) is > 13 mg/L. For Fenhexamid Technical the NOEL in mice is 267mg/kg/d (male) or 454 mg/kg/d (female) in a 14-week feeding study based upon kidney effects; the NOEL in dogs is 25 mg/kg/d in a 52-week study based upon liver effects; and no changes in clinical signs, mortality, clinical pathology, food consumption, pathology or organ weights.

**Chronic/Carcinogenicity:** Captan Technical is not carcinogenic to rats or dogs following chronic dietary exposure. In mice, chronic dietary exposure to Captan Technical produced increased tumors of the small intestine, but only at high doses. The tumors are a result of chemical irritation of the intestine, and not a mutagenic effect. The NOEL for tumor formation was 400 ppm Captan Technical in diet. Fenhexamid Technical is not carcinogenic in laboratory animals.

**Teratology/Developmental Toxicity:** Captan Technical is not teratogenic when tested in rabbits or hamsters and embryotoxicity and fetotoxicity were observed in animal studies only at maternally toxic doses. For Fenhexamid Technical the NOEL in rats is 1,000 mg/kg/d for maternal and developmental effects; and the NOEL in rabbits is 100 mg/kg/d for maternal (decreased body weight and food consumption) and developmental (resorptions, abortions, placental weight) effects.

**Reproduction:** In a 3-generation rat study, Captan Technical had no effects on fertility, gestation length or litter size; pup survival was reduced at doses ≥ 250 mg/kg/day; and a 1-generation study showed decreased pup (rat) weights at 12.5 mg/kg/day. For Fenhexamid Technical no reproduction toxicity was observed in a study with rats exposed to this product for two generations.

**Mutagenicity:** *In vivo*, Captan Technical has been examined in many systems and the overall conclusion is of no significant genotoxic activity; and genotoxicity has been shown *in vitro* primarily for prokaryotic and non-mammalian eukaryotic cells when cellular protective mechanisms (GSH, etc.) are absent. Fenhexamid Technical was negative in the following genotoxicity assays: Salmonella/microsome test (Ames test), mouse micronucleus test, V79-HGPRT assay *in vitro*, rat primary hepatocyte UDS assay. Fenhexamid Technical does not present a genetic hazard to intact animal systems.

**Neurotoxicity:** Captan Technical is not a neurotoxin.

## SECTION 12: ECOLOGICAL INFORMATION

### Environmental Fate and Distribution (based on Captan Technical):

- Solid with moderate volatility
- The substance is sparingly soluble in water
- The substance has low potential for bioaccumulation
- DT<sub>50</sub> of < 1 day in aerobic and anaerobic soil
- Rapidly hydrolyzed in natural waters (DT<sub>50</sub> < 24 hrs)
- Does not volatilize from soil
- Does not readily leach into groundwater

### (based on Fenhexamid Technical):

- Does not leach into ground water.
- Low soil mobility.
- Rapid degradation in soil (DT<sub>50</sub> of < 1 day)
- Rapid depuration in fish and mammals.

**Avian Toxicity:**Captan Technical:

Bobwhite quail oral LD<sub>50</sub> > 2,000 mg/kg  
Bobwhite quail dietary LC<sub>50</sub> (5-day feeding) > 5,200 ppm  
Mallard duck oral LD<sub>50</sub> > 2,000 mg/kg  
Mallard duck dietary LC<sub>50</sub> (5-day feeding) > 5,200 ppm

Fenhexamid Technical:

Bobwhite quail oral LD<sub>50</sub> = > 2,000 mg/kg bw  
Bobwhite quail dietary LC<sub>50</sub> = > 5,000 mg/kg diet  
Mallard duck dietary LC<sub>50</sub> = > 5,000 mg/kg diet

**Aquatic Organism Toxicity:**Captan Technical:

Toxic to fish. Due to short persistence in water this product is unlikely to be hazardous to aquatic life.

Rainbow Trout 96-hour LC<sub>50</sub> = 50 µg/L  
Mirror Carp 96-hour LC<sub>50</sub> = 240 µg/L  
*Daphnia magna* 48-hour EC<sub>50</sub> = 4.7 mg/L

Fenhexamid Technical:

Sheephead minnow 96-hour LC<sub>50</sub> = 11 mg/L  
Rainbow trout 96-hour LC<sub>50</sub> = 2.66 mg/L  
*Daphnia magna* 48-hour EC<sub>50</sub> > 18.8 mg/L

**Other Non-Target Organism Toxicity:**Captan Technical:

Green algae (biomass) 96-hour EC<sub>50</sub> = 1.6 mg/L  
Green algae (growth rate) 96-hour EC<sub>50</sub> = 11 mg/L  
*Pseudomonas putida* EC<sub>50</sub> = 0.22 mg/L  
24-hour contact LD<sub>50</sub> > 200 µg a.i./bee  
24-hour oral LD<sub>50</sub> > 100 µg a.i./bee

Fenhexamid Technical:

Honeybees LD<sub>50</sub> (oral) = >100 ug/bee  
Honeybees LD<sub>50</sub> (contact) = >200 ug/bee  
Earthworm LC<sub>50</sub> = >1,000 mg/kg dry soil  
Green algae (growth rate) 120-hour EC<sub>50</sub> = 8.81 mg/L

**SECTION 13: DISPOSAL CONSIDERATIONS**

End users must dispose of any unused product as per the label recommendations and in accordance with all applicable laws and regulations. Check governmental regulations and local authorities for approved disposal of this material.

## SECTION 14: TRANSPORT INFORMATION

<b>D.O.T. Shipping Name:</b>	Environmentally Hazardous Substances, Solid, N.O.S.
<b>Technical Shipping Name:</b>	Captan
<b>Packing Group:</b>	III
<b>D.O.T. Hazard Class:</b>	9
<b>U.N/N.A. Number:</b>	UN3077
<b>Product RQ (lbs):</b>	18.8 lbs (based on % weight of RQ ingredient(s))
<b>D.O.T. Label:</b>	9
<b>D.O.T. Placard:</b>	9
<b>Marine Pollutant:</b>	Yes
<b>IMO :</b>	
<b>Proper Shipping Name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
<b>Technical Name</b>	CAPTAN
<b>Packing Group:</b>	III
<b>Hazard Class:</b>	9
<b>UN Number</b>	UN3077

## 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):** Captan Reportable Quantity = 10 lbs.

**EPCRA (Emergency Planning and Community Right-to-Know Act) Section 313:** Yes

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

**RCRA (Resource Conservation and Recovery Act):** NA

**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; **YES**
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.

**California Proposition 65:** "WARNING. This product contains a chemical known to the State of California to cause cancer." Captan is on the June 13, 2003 list titled "CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER OR REPRODUCTIVE TOXICITY" under the section titled "CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER."

**International Regulations:**

**EEC Classification:** IRRITANT

**Risk Phrases:**  
 R43: May cause sensitization by skin contact  
 R36: Irritating to eyes  
 R40: Possible risk of irreversible effects

**Safety Phrases:** S36/37: Wear suitable protective clothing and gloves

## SECTION 16: OTHER INFORMATION

<b>Reason for issue:</b>	Changes to Transport Information (Section 14)
<b>Prepared by:</b>	Ashley R. Brown
<b>Issue date:</b>	08/25/11
<b>Supersedes date:</b>	03/04/06
<b>MSDS number:</b>	00015

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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