



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: CAPTEC® 4L
EPA REGISTRATION NUMBER(S): 66330-239
SYNONYM(S): CAPTAN 4L

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

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

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Active Ingredient(s)/ Hazardous Inert Ingredient(s)	CAS #	Exposure Limits*	% Weight	% Volume
Captan: N- [(trichloromethyl)thio]-4- cyclohexene-1, 2-dicarboximide	133-06-2	<u>TWA</u> ^a OSHA PEL ^b : None ACGIH TLV ^c : 5mg/m ³ NIOSH REL ^d : 5mg/m ³	38.75	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

^a**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.

^b**OSHA PEL**: Occupational Safety and Health Administration Permissible Exposure Limits.

^c**ACGIH TLV**: American Conference of Governmental Industrial Hygienists, Inc., Threshold Limit Values.

^d**NIOSH REL**: National Institute for Occupational Safety and Health Recommended Exposure Limits.

SECTION 3: HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

DANGER:

- **CORROSIVE**
- **CAUSES IRREVERSIBLE EYE DAMAGE**
- **HARMFUL IF SWALLOWED OR ABSORBED THROUGH THE SKIN**
- **DO NOT GET IN EYES OR ON CLOTHING**
- **AVOID BREATHING SPRAY MIST**
- **KEEP OUT OF REACH OF CHILDREN**
- **VERY TOXIC TO FISH**

Acute Health Hazards

Eye: 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 internally 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: No exposure expected from non-volatile liquid formulation.

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.

Teratology (Birth Defects) Information: Captan Technical was fetotoxic (not teratogenic) in animal studies at maternally toxic doses.

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. Call a poison control center or doctor for treatment advice.

Ingestion: Call a 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 by a poison control center or doctor. Do not give anything 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 mouth-to-mouth if possible. Call a poison control center or doctor for further 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.

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

SECTION 5: FIRE FIGHTING MEASURES

Flammable Limits in Air (% by volume):		
	Upper:	NA
	Lower:	NA
Flash Point:		NA
	Method Used:	NA
Autoignition Temperature:		NDA
LEL/UEL:		NA
NFPA Hazard Classification:		
	Health:	3
	Flammability:	0
	Reactivity:	0
	Other:	None
Extinguishing Media:		Foam, CO ₂ , dry powder extinguishant, water-fog
Special Fire Fighting Procedures:		For small fires, use foam, CO ₂ , or dry powder extinguishant. For large fires, use foam or water-fog. Avoid use of water jet. Contain run-off water with temporary earthen barriers. An SCBA and suitable protective clothing should be worn in fire conditions.
Hazardous Combustion Products:		Combustion or thermal decomposition will evolve toxic and irritant vapors.

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

Ensure suitable personal protection during removal of spillage by wearing a facemask that gives protection against toxic dusts, eye protections, 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 and eyes. Do not breathe dust. When using, do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking. Keep in original containers, tightly closed, out of reach of children. Keep away from food, drink, and animal feeding stuffs. Keep away from frost. This product is physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

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 respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. If needed, use MSHA/NIOSH approved respirator for

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MSDS Number: 00310

Issue Date: 08/24/2012

NDA - No Data Available

NA - Not Applicable

pesticides. When used outdoors, engineering controls are not necessary. If use conditions are different (e.g. greenhouse, product reformulation or repackaging) employee exposure should be minimized using traditional techniques such as enclosed system design and/or local exhaust ventilation.

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

Appearance:	Off-white to cream color, viscous liquid
Odor:	No appreciable odor
Physical State:	Liquid
pH:	6-7 (1% suspension in water)
Boiling Point:	NDA
Melting Point:	NA
Freezing Point:	NDA
Vapor Pressure:	NDA
Vapor Density:	NDA
Density:	10.26 lbs/gallon
Evaporation Rate:	NDA
Solubility in Water:	Miscible
Percent Solids by Weight:	NDA
Percent Volatile:	NDA
Volatile Organic Compounds:	NDA
Molecular Weight:	300.6
Viscosity:	NA

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	Stable, however may decompose if heated
Hazardous Polymerization:	Will not undergo hazardous polymerization
Flash Point:	NDA
Flammable Point:	NDA
Auto Ignition:	NDA
Incompatibility With Other Materials:	Alkaline and acidic conditions and materials
Hazardous Decomposition Products:	Combustion or thermal decomposition will evolve toxic and irritant vapors

SECTION 11: TOXICOLOGICAL INFORMATION

Acute:

Eye Irritation: Based on an evaluation of the ingredients and/or similar products, this product is expected to be a severe eye irritant.

Skin Irritation: Moderate irritant.

Skin Sensitization: Captan is a moderate skin sensitizer.

Dermal Toxicity: This product has a low dermal toxicity. The dermal LD₅₀ of Captan is > 2,000 mg/kg.

Oral Toxicity: This product has a low oral toxicity. The oral LD₅₀ of Captan in rats is > 5,000 mg/kg.

Inhalation Toxicity: This product is not expected to be toxic by inhalation. The 4-hour LC₅₀ of Captan 50 WP in male and female rats is greater than 2.3 mg/L.

Subchronic Toxicity (based upon technical material): The dermal 21-day LD₅₀ (rabbits) = 110 mg/kg/day. The inhalation 90-day LC₅₀ (rat) is > 13 mg/L.

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 following repeated high doses, and not a mutagenic effect. The NOEL for tumor formation was 400 ppm Captan technical in diet.

Teratology/Developmental Toxicity: Captan is not teratogenic when tested in rabbits or hamsters. Embryotoxicity and fetotoxicity were observed in animal studies only at maternally toxic doses.

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. A 1-generation study showed decreased pup (rat) weights at 12.5 mg/kg/day.

Mutagenicity: *In vivo*, Captan has been examined in many systems and the overall conclusion is of no significant genotoxic activity. Genotoxicity has been shown *in vitro* primarily for prokaryotic and non-mammalian eukaryotic cells when cellular protective mechanisms (GSH, etc.) are absent.

Neurotoxicity: Captan is not a neurotoxin.

SECTION 12: ECOLOGICAL INFORMATION

Environmental Fate and Distribution:

Solid with moderate volatility
 The substance is sparingly soluble in water
 The substance has low potential for bioaccumulation
 DT₅₀ of < 1 day in aerobic and anaerobic soil
 Rapidly hydrolyzed in natural waters (DT₅₀ < 24 hrs)
 Does not volatilize from soil
 Does not readily leach into groundwater

Avian Toxicity (based upon technical material):

Mallard duck (<i>A. platyrhinchus</i>)	Diet LC ₅₀ > 5,200 ppm
Japanese quail (<i>C. coturnix japonica</i>)	Diet LC ₅₀ > 5,200 ppm
Mallard duck (<i>A. platyrhinchus</i>)	Oral LD ₅₀ > 2,000 mg a.i./kg b.w.
Japanese quail (<i>C. coturnix japonica</i>)	Oral LD ₅₀ > 2,000 mg a.i./kg b.w.

Aquatic Organism Toxicity (based upon technical material):

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

Rainbow trout (<i>S. gairdneri</i>)	96 hr LC ₅₀ = 50 µg/L
Mirror Carp (<i>C. carpio</i>)	96 hr LC ₅₀ = 240 µg/L
Water flea (<i>D. magna</i>)	48 hr EC ₅₀ = 4.7 mg/L

Other Non-Target Organism Toxicity (based upon technical material):

Green algae (<i>S. capricornutum</i>)	E _b C ₅₀ = 1.6 mg/L
Bacteria (<i>P. putida</i>)	EC ₅₀ = 0.22 mg/L
Honeybee (<i>A. mellifera</i> L.)	24 hr contact LD ₅₀ > 200 µg a.i./bee
Honeybee (<i>A. mellifera</i> L.)	24 hr oral LD ₅₀ > 100 µg a.i./bee

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

D.O.T. Shipping Name:	RQ, UN3082, Environmentally hazardous substance, liquid, n.o.s., (Captan 38.75%), 9, III
Technical Shipping Name:	Captan
Packing Group:	III
D.O.T. Hazard Class:	9 Miscellaneous Dangerous Goods
U.N/N.A. Number:	UN3082
Product RQ (lbs):	26 lbs (based on % weight RQ ingredient(s))
D.O.T. Label:	Class 9 "miscellaneous hazardous material"
D.O.T. Placard:	Class 9 "miscellaneous hazardous material"
Marine Pollutant:	Yes
IMO:	
IMO Label:	9, marine pollutant
IMO Placard:	9, marine pollutant
European Road/Rail:	
Class:	9

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 RQ = 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; NDA

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 of Chemicals Known to the State to Cause Cancer or Reproductive Toxicity.

International Regulations:

EEC Classification: Xn Harmful substance

Risk Phrases:
 R36: Irritating to eyes
 R40: Limited evidence of carcinogenic effect
 R43: May cause sensitization by skin contact

Safety Phrases:
 S2: Keep out of reach of children
 S36/37: Wear suitable protective clothing and gloves

SECTION 16: OTHER INFORMATION

Reason for issue:	Changes to physical properties (Section 9)
Prepared by:	Ashley R. Brown
Issue date:	08/24/2012
Supersedes date:	02/22/2011
MSDS number:	00310

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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