



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 WHMIS. 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: MAESTRO[®] 80 DRY FLOWABLE
PMRA REGISTRATION NUMBER: 26408
SYNONYM(S): MAESTRO[®] 80DF

<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	TWA^a OSHA PEL ^b : None ACGIH TLV ^c : 5mg/m ³ NIOSH REL ^d : 5mg/m ³	80	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**: U.S. Occupational Safety and Health Administration Permissible Exposure Limits.

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

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

SECTION 3: HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

DANGER:

- MAY CAUSE IRREVERSIBLE EYE DAMAGE
- MAY CAUSE SENSITIZATION BY SKIN CONTACT
- PREVENT SKIN AND EYE CONTACT
- AVOID INHALATION OF 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 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: Inhalation of dusts from this product 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.

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

SECTION 4: FIRST AID MEASURES

Eyes: Flush eyes immediately with fresh water or eyewash solution for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention immediately.

Skin: Remove contaminated clothing, wash skin with plenty of soap and water. Discard contaminated non-waterproof shoes and boots. Wash contaminated clothing before reuse. Get medical attention if irritation develops and persists.

Ingestion: If swallowed drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with finger. If possible contact a physician, poison control center, or emergency center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take person and product container to the nearest emergency treatment center.

Inhalation: Remove patient from exposure, keep warm and at rest. Obtain medical attention as a precaution.

Notes to Physicians/First Aid Providers: Symptomatic treatment and supportive therapy as indicated.

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:	2
	Flammability:	2
	Reactivity:	2
	Other:	None
Extinguishing Media:		Water, dry chemicals, foam, CO ₂ or dry powder extinguishant
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, for example, temporary earth 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 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. 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 pesticides. When used outdoors, engineering controls are not necessary. If use conditions are different

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NDA - No Data Available

NA - Not Applicable

(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 granules
Odor:	NDA
Physical State:	Solid
pH:	7.5 – 9.5
Boiling Point:	NA
Melting Point:	NDA
Freezing Point:	NA
Vapor Pressure:	NA
Vapor Density:	NA
Specific Gravity:	NA
Evaporation Rate:	NA
Solubility in Water:	Dispersible
Percent Solids by Weight:	NDA
Percent Volatile:	NA
Volatile Organic Compounds:	NA
Molecular Weight:	NDA
Viscosity:	NA

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	Stable at normal temperatures and storage conditions
Hazardous Polymerization:	Will not occur
Flash Point:	NDA
Flammable Point:	NDA
Auto Ignition:	NDA
Incompatibility With Other Materials:	NDA
Hazardous Decomposition Products:	Combustion or thermal decomposition will evolve toxic and irritant vapors

SECTION 11: TOXICOLOGICAL INFORMATION

Acute:

Eye Irritation: Severe/very severe irritant to rabbit eyes.

Skin Irritation: Mild skin 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 expected to be moderately toxic by inhalation. The 4-hour LC₅₀ of Captan Technical in male and female rats is 0.72 mg/L and 0.87 mg/L respectively.

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, 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 \geq 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):

- Bobwhite quail oral LD₅₀ > 2,000 mg/kg
- Bobwhite quail dietary LC₅₀ (5-day feeding) > 5,200 ppm
- Mallard duck oral LD₅₀ > 2,000 mg/kg
- Mallard duck dietary LC₅₀ (5-day feeding) > 5,200 ppm

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 96-hour LC₅₀ = 50 µg/L
- Mirror Carp 96-hour LC₅₀ = 240 µg/L
- Daphnia magna 48-hour EC₅₀ = 4.7 mg/L

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

Toxic to algae

- Green algae (biomass) 96-hour EC₅₀ = 1.6 mg/L
- Green algae (growth rate) 96-hour EC₅₀ = 11 mg/L

Toxic to bacteria

- Pseudomonas putida* EC₅₀ = 0.22 mg/L

Low toxicity to honeybees

- 24-hour contact LD₅₀ \geq 200 µg a.i./bee
- 24-hour oral LD₅₀ \geq 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:	Environmentally Hazardous Substance, solid, N.O.S, (Captan). RQ
Technical Shipping Name:	Captan
Packing Group:	III
D.O.T. Hazard Class:	9 Miscellaneous Dangerous Goods
U.N/N.A. Number:	UN3077
Product RQ (lbs):	12.5 lbs (based on % weight of 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:	NA
IMO Placard:	NA
IMDG Code:	NDA
European Road/Rail:	
Class:	9
Item NO.:	12(c)

SECTION 15: REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

International Regulations:

EEC Classification: IRRITANT

Hazard symbols: Xn

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

Safety Phrases:
 S2: Keep out of reach of children
 S13: Keep away from food, drink and animal feeding stuffs
 S20/21: When using do not eat, drink or smoke
 S24: Avoid contact with skin
 S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
 S37/39: Wear suitable gloves and eye/face protection

This substance is covered by the EEC Dangerous Substances Directive (CPL Regulations). It has therefore been labeled in accordance with these regulations. Users should ensure that they comply with any relevant local, state or national legislation.

SECTION 16: OTHER INFORMATION

Reason for issue:	Changes to stability and reactivity Information (Section 10)
Prepared by:	Ashley R. Brown
Issue date:	08/05/14
Supersedes date:	08/29/11
MSDS number:	00174

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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