Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

SECTION 1. IDENTIFICATION

Product name : Hi Moly / Captan®-D

Product code : 40000004215

Manufacturer or supplier's details

Company: MacDermid Agricultural Solutions, Inc

245 Freight St Waterbury, CT

United States of America

06702

Telephone: +1 800 423 8569

Prepared by sds.request@arysta.com

Further information for the safety data sheet:

sds.request@arysta.com

1.4 Emergency telephone number

Emergency telephone number: Agriphar Crop Solutions: +1 800 423 8569(24 hours) 800-424-9300

For additional emergency telephone numbers see section 16 of the

Safety Data Sheet.

Recommended use of the chemical and restrictions on use

Recommended use : Fungicide

Seed treatment

Restrictions on use : Agriculture, For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Eye irritation : Category 2A

Skin sensitisation : Category 1

Carcinogenicity : Category 1A

Acute aquatic toxicity : Category 1

Hi Moly / Captan®-D

VersionRevision Date:MSDS Number:Country: US1.1410/08/2015400000004215Language: EN

GHS Label element

Hazard pictograms







Signal word : Danger

Hazard statements : H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H350 May cause cancer. H400 Very toxic to aquatic life.

Precautionary statements : **Prevention:**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read

and understood.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.

P272 Contaminated work clothing should not be allowed out of

the workplace.

P273 Avoid release to the environment. P280 Wear eye protection/ face protection.

P280 Wear protective gloves.

P281 Use personal protective equipment as required.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/

attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/

attention.

P337 + P313 If eye irritation persists: Get medical advice/ atten-

tion.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste dis-

posal plant.

Other hazards

Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

Chemical nature : Fungicide

Hazardous components

Chemical Name	CAS-No.	Concentration (% w/w)
captan	133-06-2	48.92
disodium molybdate	7631-95-0	25.5
graphite	7782-42-5	>= 10 - < 20
Talc (Mg3H2(SiO3)4)	14807-96-6	>= 5 - < 10

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.

Give oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/ physician.

In case of skin contact : Remove contaminated clothing and shoes.

Wash off immediately with plenty of water for at least 15

minutes.

Call a POISON CENTER or doctor/ physician.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,

for at least 15 minutes.

Remove contact lenses, if present, after the first 5 minutes, then

continue rinsing eye.

Call a POISON CENTER or doctor/ physician.

If swallowed : Call a physician or poison control centre immediately.

If swallowed, DO NOT induce vomiting unless directed to do so by

medical personnel.

Never give anything by mouth to an unconscious person.

Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed

irritant effects

Symptoms may be delayed.

sensitising effects

May cause an allergic skin reaction. Causes serious eye irritation.

May cause cancer.

Notes to physician : The first aid procedure should be established in consultation

with the doctor responsible for industrial medicine.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Extinguishing media - large fires

Alcohol-resistant foam

(on small fires)

Carbon dioxide (CO2)

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

Dry chemical Water spray

Unsuitable extinguishing media : Water spray jet

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circum-

stances and the surrounding environment.

Further information : Do not discharge extinguishing waters into streams, rivers and lakes.

Special protective equipment for

firefighters

: Body covering protective clothing, full "turn-out" gear.

Self-contained breathing apparatus (EN 133)

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency pro-

cedures

Evacuate unnecessary personnel.
 Avoid all contact with material.
 Wear suitable protective equipment.

Environmental precautions : Prevent leaks and prevent soil / water pollution caused by leaks.

Methods and materials for containment and cleaning up

: Sweep up and shovel into suitable containers for disposal.

Avoid dust formation.

In accordance with local and national regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Wear suitable protective equipment.

Warn personnel about the dangers of the product.

Keep container tightly closed.

Avoid formation of dust and aerosols. Wash thoroughly after handling.

Conditions for safe storage : Keep in a dry, cool place.

Technical measures/Precautions : Do not store near food, feed or fertilizers.

Keep only in the original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type	Control parameters	Basis
		(Form of ex-	/ Permissible con-	
		posure)	centration	
captan	133-06-2	TWA (Inhala-	5 mg/m3	ACGIH
		ble fraction)		
		TWA	5 mg/m3	OSHA P0
		TWA	5 mg/m3	NIOSH REL
disodium molybdate	7631-95-0	TWA (total	15 mg/m3	OSHA Z-1

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

		dust)	(Molybdenum)	
		TWA (Inhala-	10 mg/m3	ACGIH
		ble fraction)	(Molybdenum)	
		TWA (Respir-	3 mg/m3	ACGIH
		able fraction)	(Molybdenum)	
		TWA (Total)	10 mg/m3	OSHA P0
			(Molybdenum)	
graphite	7782-42-5	TWA (total	15 mg/m3	OSHA Z-1
		dust)		
		TWA (respir-	5 mg/m3	OSHA Z-1
		able fraction)		
		TWA (Respir-	2 mg/m3	ACGIH
		able fraction)		
		TWA (Respir-	2.5 mg/m3	NIOSH REL
		able)		
		TWA (Dust)	15 Million particles	OSHA Z-3
			per cubic foot	
		TWA (Total	10 mg/m3	OSHA P0
		dust)		
		TWA (respir-	5 mg/m3	OSHA P0
		able dust frac-		
		tion)		
		TWA (respir-	2.5 mg/m3	OSHA P0
		able dust frac-		
		tion)		
Talc (Mg3H2(SiO3)4)	14807-96-6	TWA	0.1 fibre/cm3	ACGIH
		TWA (Respir-	2 mg/m3	ACGIH
		able fraction)		
		TWA (Dust)	20 Million particles	OSHA Z-3
			per cubic foot	
		TWA (Respir-	2 mg/m3	NIOSH REL
		able)		
		TWA (respir-	2 mg/m3	OSHA P0
		able dust frac-		
		tion)		

Personal protective equipment

Respiratory protection : When workers are facing concentrations above the exposure

limit they must use appropriate certified respirators.

Hand protection

Remarks : Impervious gloves

Eye protection : Face-shield

Skin and body protection : Impervious clothing

Hygiene measures : Provide adequate ventilation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

Appearance : powder

Colour : grey

Odour : pungent

Odour Threshold : No data available

pH : Not applicable

: No data available

Boiling point/boiling range : Not applicable

Flash point : Not applicable

Evaporation rate : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : Not applicable

Relative vapour density : Not applicable

Relative density : No data available

Bulk density : 41 kg/m3

Solubility(ies)

Water solubility : insoluble

Solubility in other solvents : No data available

Partition coefficient: n-

octanol/water

: No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : Not applicable

Viscosity, kinematic : Not applicable

Self-Accelerating decomposition

temperature (SADT)

: Method: No information available.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reac- : Hazardous polymerisation does not occur.

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

tions

Incompatible materials : Oxidizing agents

Strong acids and strong bases

Hazardous decomposition prod-

ucts

: Burning produces noxious and toxic fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact Skin contact

Acute toxicity

Product:

Acute inhalation toxicity : LC50: > 8.16 mg/l

Exposure time: 4 h

Components:

captan:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 1.12 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Skin corrosion/irritation

Product:

Result: No skin irritation

Components:

captan:

Species: Rabbit Result: Skin irritation

Talc (Mg3H2(SiO3)4):

Species: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Product:

Result: Eye irritation

Remarks: May cause irreversible eye damage.

Components:

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

captan:

Species: Rabbit Result: Eye irritation

Talc (Mg3H2(SiO3)4): Species: Rabbit

Result: No eye irritation

Respiratory or skin sensitisation

Components:

captan:

Species: Guinea pig

Assessment: May cause sensitisation by skin contact. Result: May cause sensitisation by skin contact.

Germ cell mutagenicity

Components:

Talc (Mg3H2(SiO3)4):

Genotoxicity in vitro : Test Type: Unscheduled DNA synthesis (UDS)

Result: negative

GLP: yes

: Test Type: Ames test Result: negative

Genotoxicity in vivo : Test Type: in vivo assay

Species: Rat

Application Route: Oral Result: negative

Germ cell mutagenicity -

Assessment

: Animal testing did not show any mutagenic effects.

Carcinogenicity

Components:

Talc (Mg3H2(SiO3)4):

Species: Rat

Carcinogenicity - Assess-

ment

: Animal testing did not show any carcinogenic effects.

IARC Group 1: Carcinogenic to humans

Talc (Mg3H2(SiO3)4) 14807-96-6

OSHANo component of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential carcino-

gen by OSHA.

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

NTP Known to be human carcinogen

Talc (Mg3H2(SiO3)4) 14807-96-6

Reproductive toxicity

Components:

Talc (Mg3H2(SiO3)4):

Reproductive toxicity - As- : 1

sessment

: No effects on or via lactation

STOT - single exposure

Product:

Remarks: No data available

STOT - repeated exposure

Components:

Talc (Mg3H2(SiO3)4):

Exposure routes: Inhalation

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Talc (Mg3H2(SiO3)4):

Toxicity to fish : LC50 (Danio rerio (Zebra fish)): > 5,000 mg/l

Exposure time: 24 h Test Type: semi-static test

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Pro-

tection of Stratospheric Ozone - CAA Section 602 Class I

Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Sec-

tion 602 (40 CFR 82, Subpt. A, App.A + B).

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

Additional ecological infor-

mation

: Toxic to aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

(captan)

Class : 9
Packing group : III
Labels : 9

IATA-DGR

UN/ID No. : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S., Environmentally hazardous substance, solid, n.o.s.

(captan)

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo : 956

aircraft)

Packing instruction (passen: 956

ger aircraft)

Remarks : RQ appllies

IMDG-Code

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S. (captan)

Class : 9
Packing group : III
Labels : 9

EmS Code : F-A, S-F Marine pollutant : yes

Remarks : RQ appllies

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S., ENVIRONMENTALLY HAZARDOUS SUBSTANCES,

SOLID, N.O.S.

(captan)

Class : 9 Packing group : III

Labels : CLASS 9 ERG Code : 171

Marine pollutant : yes(captan)

Remarks : RQ appllies if package greater than 20.44 Lbs (9.27 kg), Not

regulated by DOT and TDG if shipped or transported in packaging < 20.44 Lbs (9.27 kg) by road and/or rail. Please refer

to 49 CFR for any details.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Component RQ (lbs)
captan	133-06-2	10	21

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SSARA 311/312 Hazards : Acute Health Hazard

Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting require-

ments of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

captan 133-06-2 48.0596 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Hi Moly / Captan®-D

Version Revision Date: MSDS Number: Country: US 1.14 10/08/2015 400000004215 Language: EN

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

captan 133-06-2 48.0596 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

captan 133-06-2 48.0596 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

California Prop. 65 WARNING! This product contains a chemical known to the

State of California to cause cancer. 133-06-2

captan 133-06-2 Talc (Mg3H2(SiO3)4) 14807-96-6

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

FIFRA Hazard Information:

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

The hazard information required on the pesticide label is reproduced below.

DANGER

Corrosive. Causes irreversible eye damage. Harmful if swallowed. Do not get in eyes or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

This chemical is toxic to fish. Do not contaminate water by disposing of equipment washwaters.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentra-

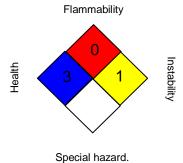
Hi Moly / Captan®-D

VersionRevision Date:MSDS Number:Country: US1.1410/08/2015400000004215Language: EN

tion; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods: IMO - International Maritime Organization: ISO - International Organisation for Standardization: LC50 - Lethal Concentration to 50 % of a test population: LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

Further information

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	0
PHYSICAL HAZARD	1

0 = not significant, 1 = Slight,

2 = Moderate, 3 = High

4 = Extreme, * = Chronic

Revision Date : 10/08/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN

Hi Moly / Captan®-D

VersionRevision Date:MSDS Number:Country: US1.1410/08/2015400000004215Language: EN

Carechem24 International Worldwide Coverage

Emergency Phone Number

Europe:	All European Countries	+44 (0) 1235 239 670 (NCEC)
Asia Pacific:	East / South East Asia – Regional Number	+65 3158 1074
	Australia	+61 2801 44558
	New Zealand	+64 9929 1483
	China	+86 532 8388 9090
	China Taiwan	+86 10 5100 3039
	Japan	+81 345 789 341
	Indonesia	00780 3011 0293
	Malaysia	+60 3 6207 4347
	Thailand	001800 1 2066 6751
	Korea	+65 3158 1285 +82 (0)234 798 401
	Vietnam	+65 3158 1255
	India	+65 3158 1198 0800 100 7479
	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
Middle East / Africa:	Arabic speaking countries	+44 (0) 1235 239 671
	South Africa	+27 21 300 2732
	All other countries	+44 (0) 1235 239 670
<u>America</u>	United States of America and Canada	+1866 928 0789 +1 215 207 0061
Latin America:	Brazil	+55 113 711 9144
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670