



Material Safety Data Sheet

EMESTO SILVER

MSDS Number: 102000022709

MSDS Version 1.0

Revision Date: 03/19/2012

Print Date: 03/20/2012

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name	EMESTO SILVER
MSDS Number	102000022709
Product code (UVP)	79521642
Product Use	Seed treatment

Bayer CropScience Inc
#200, 160 Quarry Park Blvd, SE
Calgary, Alberta T2C 3G3
Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
For Product Information call: 1-888-283-6847

SECTION 2. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

<u>Emergency Overview</u>	Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes and clothing. Do not take internally. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before re-use.
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Physical State	suspension
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Odor	weak characteristic
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Appearance	red
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Exposure routes	Skin contact, Eye contact, Inhalation
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Immediate Effects skin	Harmful if absorbed through skin. Avoid contact with skin, eyes and clothing.
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Potential Environmental Effect	Toxic to aquatic organisms. This product may cause adverse effects on non-target plants.
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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Penflufen	494793-67-8	9.35
Prothioconazole	178928-70-6	1.68
1,2-Propanediol	57-55-6	10.50
Synthetic amorphous silica	112926-00-8	1.00

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	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 physician or poison control center immediately.
skin	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Notes to physician Treatment	Treat symptomatically. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 100 °C / 212 °F No flash point - Determination conducted up to the boiling point.
Autoignition temperature	510 °C / 950 °F
Lower Flammability Limit	no data available
Upper Flammability Limit	no data available



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Explosiveness	Not explosive 92/69/EEC, A.14 / OECD 113
Fire and Explosion Hazards	In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid) Carbon monoxide (CO) Nitrogen oxides (NOx) Hydrogen fluoride Sulphur oxides Hydrogen chloride (HCl)
Suitable extinguishing media	Water spray, Carbon dioxide (CO ₂), Foam, Sand
Fire Fighting Instructions	Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses. Contain the spread of the fire-fighting media. Do not allow water to come into direct contact with the product. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
Methods for cleaning up	Clean contaminated floors and objects thoroughly, observing environmental regulations. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.
Additional advice	Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

SECTION 7. HANDLING AND STORAGE

Handling procedures	Use only in area provided with appropriate exhaust ventilation. Keep away from heat and sources of ignition.
Storing Procedures	Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.



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Work/Hygienic Procedures

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.
	Follow all label instructions. Train employees in safe use of the product.
Eye/Face Protection	Tightly fitting safety goggles
Hand protection	Chemical resistant nitrile rubber gloves
Body Protection	Wear long-sleeved shirt and long pants and shoes plus socks.
Respiratory protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

Prothioconazole	178928-70-6	OES BCS*	TWA	1.4 mg/m3
1,2-Propanediol	57-55-6	CAD ON OEL	TWAEV	50 ppm
		CAD ON OEL	TWAEV	10 mg/m3
Synthetic amorphous silica	112926-00-8	OEL (QUE)	TWA	6 mg/m3
		CAD AB OEL	TWA	10 mg/m3
		CAD BC OEL	TWA	4 mg/m3
		CAD BC OEL	TWA	1.5 mg/m3
		CAD ON OEL	TWAEV	10 mg/m3
		OEL (QUE)	TWA	6 mg/m3

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	red
Physical State	suspension



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Odor	weak characteristic
pH	5.0 - 6.5 (100 %) at 23 °C
Vapor Pressure	not applicable
Vapor Density (Air = 1)	not applicable
Density	ca. 1.07 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	no data available
Water solubility	dispersible
Minimum Ignition Energy	no data available
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	not applicable
Viscosity	70 - 250 mPa.s at 20 °C Velocity gradient 20 /s 65 - 90 mPa.s at 20 °C Velocity gradient 100 /s

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatibility	no data available
Hazardous Decomposition Products	Thermal decomposition can lead to release of: Hydrogen cyanide (hydrocyanic acid) Carbon monoxide Nitrogen oxides (NOx)
Hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Chemical Stability	Stable under normal conditions.

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MSDS Version 1.0**SECTION 11. TOXICOLOGICAL INFORMATION**

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredients.

Acute oral toxicity	rat: LD50: > 2,000 mg/kg
Acute dermal toxicity	rat: LD50: > 2,000 mg/kg
Acute inhalation toxicity	rat: LC50: > 3.875 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. Highest attainable concentration. rat: LC50: > 15.5 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
Skin irritation	rabbit: No skin irritation
Eye irritation	rabbit: No eye irritation
Sensitisation	mouse: Non-sensitizing. OECD Test Guideline 429, local lymph node assay (LLNA)
Chronic toxicity	Penflufen did not cause specific target organ toxicity in experimental animal studies. Prothioconazole did not cause specific target organ toxicity in experimental animal studies.

Assessment Carcinogenicity

Penflufen was not carcinogenic in lifetime feeding studies in rats and mice.

Prothioconazole was not carcinogenic in lifetime studies in rats and mice.

ACGIH

None.

NTP

None.

IARC**OSHA**

None.

Reproductive toxicity	Penflufen did not cause reproductive toxicity in a two-generation study in rats. Prothioconazole caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity
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seen with Prothioconazole is related to general toxicity.

Developmental Toxicity

Penflufen did not cause developmental toxicity in rats and rabbits.

Prothioconazole caused developmental toxicity only at doses toxic to the dams. The developmental effects seen with Prothioconazole are related to maternal toxicity.

Mutagenicity

Penflufen was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Prothioconazole was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish

Cyprinus carpio (Carp)
LC50: 1.41 mg/l
Exposure time: 96 h

Toxicity to aquatic plants

Pseudokirchneriella subcapitata
Growth rate
EC50: 71.3 mg/l
Exposure time: 72 h

Acute Toxicity to Aquatic Invertebrates

Water flea (Daphnia magna)
EC50: 40.7 mg/l
Exposure time: 48 h

Environmental precautions

Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.

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MSDS Version 1.0**SECTION 13. DISPOSAL CONSIDERATIONS**

General Disposal Guidance	Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations. Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.
Container Disposal	Do not re-use empty containers. Triple rinse containers. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION

TDG	Not dangerous goods / not hazardous material
49CFR	Not dangerous goods / not hazardous material
IMDG	
UN-Number	3082
Class	9
Packaging group	III
Marine pollutant	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PENFLUFEN SOLUTION)
IATA	
UN-Number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PENFLUFEN SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15. REGULATORY INFORMATION**US Federal Regulations****TSCA list**

1,2-Propanediol

57-55-6

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information



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None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

1,2-Propanediol	57-55-6	MN, RI
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Canadian Regulations

Canadian Domestic Substance List

1,2-Propanediol	57-55-6
Synthetic amorphous silica	112926-00-8

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1	Flammability - 0	Instability - 0	Others - none
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HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1	Flammability - 0	Physical Hazard - 0	PPE -
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0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: New Material Safety Data Sheet.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 03/19/2012

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