

1. Identification

Product identifier	BioPoint Guardian
Other means of identification	
Product code	49013MER
Recommended use	Agricultural/ Horticultural Use- Micronutrient Fertilizer- Refer to product label.
Recommended restrictions	Refer to product label.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	
Company name	NexStar Crop Performance
Address	P.O. Box 151 1949 N. Linn Ave. New Hampton, IA 50659 United States
Telephone	
Website	
E-mail	
Contact person	
Emergency phone number	Customer Service: 800-334-6958

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Reproductive toxicity (the unborn child)	Category 2
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Warning
Hazard statement	Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Suspected of damaging the unborn child. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
Storage	Store locked up.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Manganese Sulfate, monohydrate		10034-96-5	5 - < 10*
Urea		57-13-6	5 - < 10*
Zinc Sulfate		7733-02-0	1 - < 3*
Boric acid (H3BO3) reaction products with ethanolamine		94095-04-2	< 1*
Salicylic acid		69-72-7	< 1*
Other components below reportable levels			80 - < 90

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Use water spray to reduce vapors or divert vapor cloud drift. Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

Store in secured area away from children, feed, and other food products. Store in original container. Store in a well-ventilated area. Storage temperature: 40 F to 100 F.

8. Exposure controls/personal protection**Occupational exposure limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Manganese Sulfate, monohydrate (CAS 10034-96-5)	Ceiling	5 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Manganese Sulfate, monohydrate (CAS 10034-96-5)	TWA	0.1 mg/m ³	Inhalable fraction.
		0.02 mg/m ³	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Manganese Sulfate, monohydrate (CAS 10034-96-5)	STEL	3 mg/m ³	Fume.
	TWA	1 mg/m ³	Fume.

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
Urea (CAS 57-13-6)	TWA	10 mg/m ³	Total particulate.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Liquid.
Physical state	Liquid.
Form	Liquid.
Color	Amber to Brown.
Odor	Not available.
Odor threshold	Not available.
pH	7.4
Melting point/freezing point	50.54 °F (10.3 °C) estimated
Initial boiling point and boiling range	339.44 °F (170.8 °C) estimated
Flash point	186.0 °F (85.6 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.07 hPa estimated
Vapor density	Not available.
Relative density	1.09 g/cm ³ (typical)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	770 °F (410 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Flammability class	Combustible IIIA estimated
Oxidizing properties	Not oxidizing.
Percent volatile	58.09 % estimated
Pounds per gallon	9.09 lb/gal (typical)
VOC	16.45 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.

Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong acids. Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
	Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.

Eye contact Causes serious eye irritation.

Ingestion Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Product	Species	Test Results
HarvestShield Complete		
Acute		
Dermal		
LD50	Rat	73780 mg/kg
Inhalation		
LD50	Rat	6088 mg/l, 4 hours
Oral		
LD50	Rat	9736 mg/kg
Components	Species	Test Results
Manganese Sulfate, monohydrate (CAS 10034-96-5)		
Acute		
Oral		
LD50	Rat	2150 mg/kg
Salicylic acid (CAS 69-72-7)		
Acute		
Dermal		
LD50	Rat	> 2 g/kg
Oral		
LD50	Rat	891 mg/kg
Urea (CAS 57-13-6)		
Acute		
Oral		
LD50	Rat	8471 mg/kg
Zinc Sulfate (CAS 7733-02-0)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Rat	920 mg/kg
		623 mg/kg

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Due to partial or complete lack of data the classification is not possible.
Skin sensitization	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)	
Not listed.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed.	
Reproductive toxicity	Suspected of damaging the unborn child.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Chronic effects	Prolonged inhalation may be harmful. May be harmful if absorbed through skin. Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Product	Species	Test Results
HarvestShield Complete		
Aquatic		
Crustacea	EC50 Daphnia	270.4389 mg/l, 48 hours estimated
Fish	LC50 Fish	435.1049 mg/l, 96 hours estimated
Components		
Manganese Sulfate, monohydrate (CAS 10034-96-5)		
Aquatic		
Crustacea	EC50 Water flea (Daphnia obtusa)	30.8 - 44.1 mg/l, 48 hours
Fish	LC50 Fathead minnow (Pimephales promelas)	36.9 mg/l, 96 hours 29.7 - 52.7 mg/l, 192 hours
Urea (CAS 57-13-6)		
Aquatic		
Crustacea	EC50 Water flea (Daphnia magna)	3910 mg/l, 48 hours
Fish	LC50 Carp (Leuciscus idus melanotus)	> 10000 mg/l, 48 hours
	Guppy (Poecilia reticulata)	16200 - 18300 mg/l, 96 hours
	Harlequinfish, red rasbora (Rasbora heteromorpha)	12000 mg/l, 96 hours
	Mozambique tilapia (Tilapia mossambica)	590 - 730 mg/l, 96 hours
Zinc Sulfate (CAS 7733-02-0)		
Aquatic		
Algae	LC50 Green algae (Chlorella vulgaris)	5 mg/l, 24 hours
Crustacea	EC50 Amphipod (Crangonyx pseudogracilis)	15.1 - 24.5 mg/l, 96 hours
	Rotifer (Philodina acuticornis)	0.5 mg/l, 48 hours

Components	Species	Test Results
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>) 10.62 - 11.3 mg/l, 5 days 0.168 - 0.25 mg/l, 96 hours
	Fish (<i>Lepidocephalichthyes guntea</i>)	76 - 118.8 mg/l, 24 hours
Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.	
Bioaccumulative potential		
Partition coefficient n-octanol / water (log Kow)		
Salicylic acid		2.26
Urea		-2.11
Mobility in soil	No data available.	
Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.	

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
Toxic Substances Control Act (TSCA)		
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)		
Manganese Sulfate, monohydrate (CAS 10034-96-5)		Listed.
Zinc Sulfate (CAS 7733-02-0)		Listed.
SARA 304 Emergency release notification	Not regulated.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)	Not listed.	
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
SARA 302 Extremely hazardous substance	Not listed.	
SARA 311/312 Hazardous chemical	Yes	

Classified hazard categories	Acute toxicity (any route of exposure) Skin corrosion or irritation Serious eye damage or eye irritation Reproductive toxicity
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SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Manganese Sulfate, monohydrate	10034-96-5	5 - < 10
Zinc Sulfate	7733-02-0	1 - < 3

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Manganese Sulfate, monohydrate (CAS 10034-96-5)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

US state regulations

California Proposition 65

WARNING: This product can expose you to chemicals including arsenic, cadmium, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 12-01-2023

Revision date 04-29-2024

Version # 03

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of Manufacturer's knowledge, information and belief at the date of its publication; however, it is provided only as a guidance for safe handling, use, processing, storage, transportation, disposal and release of the Product. No warranties of any kind, either expressed or implied, including warranties of merchantability or fitness for a particular purpose, are made with respect to the Product or the information provided herein, or that the Product or information herein may be used without infringing the intellectual property rights of others. The information provided in this Safety Data Sheet relates only to the specific Product designated and may not be valid if the Product is used in combination with other materials or in any other process, unless specified herein. The user assumes all risk and liability for loss, injury, damage or expense due to any use, handling, storage or disposal of the Product, and Manufacturer recommends that the user conducts its own tests of the Product to determine suitability of the Product for user's particular use.

Revision information

Physical and chemical properties: Color