SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

1.1 Product Identifier

Trade Name Astron

SDS Date 15 April 2024

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Use: Foliar nutrient

Uses Advised Against: To be used only where there is a recognized need. Do not exceed the appropriate dose rates.

1.3 Details of the Supplier of the Substance or Mixture

Manufacturer:
Floratine Products Group, Inc.
355 East South Street
Collierville, TN 38017
+1 901-853-2898

Importer:
Turfcare Australia
Shane Summerhayes
115 PITTOWN RD. MCGRATHS HILL
SYDNEY NSW Australia 6400
+61 (425) 280300
shane@turfcareaus.com.au

1.4 Emergency Telephone Number

Emergency Spill Information 1(800) 535-5053 for US and Canada (INFOTRAC)
+1(352) 323-3500 for International Calls (call INFOTRAC collect)

Other Product Information: cs@floratine.com

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

CLP/GHS Classification (1272/2008):
Eye Damage Category 1 (H318)
Skin Irritation Category 2 (H315)
Aquatic Chronic Toxicity Category 3 (H412)

2.2 Label Elements

Danger!

Contains Copper Salt, Calcium Salt

Hazard Phrases
H315 Causes skin irritation.
H318 Causes serious eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Phrases:
P264 Wash thoroughly after handling.
P280 Wear protective gloves and eye protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 If skin irritation occurs: Get medical attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P310 Immediately call a POISON CENTER.
P273 Avoid release to the environment
P501 Dispose of contents and container in accordance with national regulations.

2.3 Other Hazards: None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical Name	**CAS Number / EINECS Number / REACH Reg. Number**	**% (w/w)**	**CLP/GHS Classification (1272/2008)**
Calcium Salt	Proprietary	5-15%	Acute Tox 4 (H302) Eye Dam. 1 (H318)
Magnesium Salt	Proprietary	5-10%	Not hazardous
Iron Compound	Proprietary	5-10%	Skin Irrit. 2 (H315) Eye Irrit 2 (H319)
Boric Acid	10043-35-3 / 233-139-2	<2%	Repr. 1B (H360)
Copper Salt	Proprietary	<2%	Skin Corr. 1B (H314) Eye Dam 1 (H318) Aquatic Acute 1 (H400) M factor 10 Aquatic Chronic 2 (H411) M factor
Zinc Compound	Proprietary	<2%	Aquatic Acute 1 (H400)

See Section 16 for full text of GHS Classifications.

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

First Aid

Eye contact: In case of contact with eyes, flush immediately with water for 20 minutes while lifting the upper

and lower lids. Get immediate medical attention.

Skin contact: Wash with soap and water. Get medical attention if irritation develops or persists.

Inhalation: Remove victim to fresh air. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If the person is alert, have them rinse their mouth with water and sip one glass of water. Call a poison center or physician for advice. Never give anything by mouth to an unconscious or drowsy person.

See Section 11 for more detailed information on health effects.

4.2 Most Important symptoms and effects, both acute and delayed: Causes severe eye irritation or damage. Causes skin irritation. Swallowing may cause nausea and diarrhea.

4.3 Indication of any immediate medical attention and special treatment needed: If eye contact occurs, get immediate medial attention.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media: Use media appropriate for the surrounding fire. Cool fire exposed containers with water.

5.2 Special Hazards Arising from the Substance or Mixture
Unusual Fire and Explosion Hazards: None
Combustion Products: Oxides of carbon, sulfur, magnesium, copper, zinc and iron.

5.3 Advice for Fire-Fighters: Self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

SECTION 6: ACCIDENTAL RELEASE MEASURES

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6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Wear appropriate protective equipment. Avoid direct contact with spilled material.

6.2 Environmental Precautions:

Prevent entry in storm sewers and waterways. Report spill as required by local and national regulations.

6.3 Methods and Material for Containment and Cleaning Up:

Collect with an inert absorbent material and place in an appropriate container for disposal. Wash spill site with water. Contain large spills and collect as much liquid as possible into containers for use.

6.4 Reference to Other Sections:
Refer to Section 8 for personal protective equipment and Section 13 for disposal information.

SECTION 7: HANDLING and STORAGE

7.1 Precautions for Safe Handling:
Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Use reasonable care in handling. Do not eat, drink or smoke while using product. Wash thoroughly with soap and water after handling.

7.2 Conditions for Safe Storage, Including any Incompatibilities:
Protect containers from physical damage. Keep from freezing. Keep containers closed. Empty containers retain product residues. Follow all SDS precautions in handling empty containers. Store away from food and feed.

7.3 Specific end use(s):
Industrial uses: None identified
Professional uses: Foliar nutrient

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters:

Chemical Name	US OEL	EU IOEL	UK OEL	Biological Limit Value
Calcium Salt	None Established	None Established	None Established	None Established
Magnesium Salt	None Established	None Established	None Established	None Established
Iron Compound (as Iron soluble salts)	1 mg/m3 TWA ACGIH TLV	None Established	1 mg/m3 TWA. 2 mg/m3 STEL	None Established
Boric Acid (as borate compounds)	2 mg/m3 (inhalable) TWA ACGIH TLV 6 mg/m3 (inhalable) STEL ACGIH TLV	None Established	None Established	None Established
Copper Salt	None Established	None Established	None Established	None Established
Zinc Compound	None Established	None Established	None Established	None Established

8.2 Exposure Controls:

Recommended Monitoring Procedures: None established.

Appropriate Engineering Controls: Good outdoor ventilation should be adequate under normal conditions of use.

Personal Protective Measures

Eye/face Protection: Chemical goggles recommended to avoid eye contact.

Skin Protection: Impervious clothing is recommended if needed to avoid skin contact.

Hands: Impervious gloves are recommended if needed to avoid skin contact.

Respiratory Protection: None needed under normal use conditions with adequate ventilation. If mists are excessive, an approved particulate respirator can be used. Use respirators in accordance with local and national regulations.

Other protection: Suitable washing facilities should be available in the work area.

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

9.1 Information on basic Physical and Chemical Properties

Appearance: Black Liquid
Odor Threshold: Not available
Melting/Freezing Point: Not determined
Flash Point: Not flammable
Lower Flammability Limit: Not applicable
Upper Flammability Limit: Not applicable
Vapor Density(Air=1): Not applicable
Solubility: Complete
Autoignition Temperature: None
Viscosity: Not applicable
Oxidizing Properties: None
Molecular Formula: Mixture

Odor: Sweet odor.
pH: 4.8-5.0
Boiling Point: 104-110°C
Evaporation Rate: Not applicable
Vapor Pressure: Greater than 1

Relative Density: 1.18
Octanol/Water Partition Coefficient: Not determined
Decomposition Temperature: Not determined
Explosive Properties: None
Specific Gravity (H_2O= 1): 1.18
Molecular Weight: Mixture

9.2 Other Information: None available

SECTION 10: STABILITY and REACTIVITY

10.1 Reactivity: Not reactive under normal conditions.

10.2 Chemical Stability: Stable.

10.3 Possibility of Hazardous Reactions: None known.

10.4 Conditions to Avoid: Avoid excessive heat.

10.5 Incompatible Materials: Incompatible with oxidizing agents.

10.6 Hazardous Decomposition Products: Decomposition may produce oxides of carbon, sulfur, magnesium, copper, zinc and iron.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Potential Health Effects:

Eye Contact: Causes irritation or burns with redness, tearing and stinging. Permanent damage may occur.

Skin contact: Causes redness and itching of the skin.

Inhalation: Excessive inhalation may cause upper respiratory tract irritation.

Ingestion: Swallowing may cause gastrointestinal effects including nausea and diarrhea.

Acute toxicity: No acute toxicity data available for the product.
Calculated ATE for the mixture: Oral LD50 4949 mg/kg

Calcium salt: Oral rat LD50 1000 mg/kg
Magnesium Salt: Oral rat LD50 >2000 mg/kg; Dermal rat LD50 >5000 mg/kg (structurally similar chemical)
Zinc Compound: Oral rat LD50 >2000 mg/kg, Dermal rat LD50 >2000 mg/kg
Copper Salt: Oral rat LD50 940 mg/kg
Iron Compound: No data available
Boric Acid: Oral rat LD50 2,660 mg/kg, Dermal rabbit LD50 >2,000 mg/kg; Inhalation rat LC50 >0.16 mg/L 4 hr

Skin corrosion/irritation: Copper salt is corrosive to rabbit skin. Iron compounds are irritating to rabbit skin.

Eye damage/ irritation: Calcium salt cause irreversible damage to rabbit eyes. Copper salt is corrosive to rabbit eyes. Iron compound cause moderate eye irritation.

Respiratory Irritation: No data available. Expected to cause only temporary irritation.

Respiratory Sensitization: No data available.

Skin Sensitization: Calcium salt was negative in a mouse local lymph node assay (based on structurally similar chemicals). Magnesium salt was negative in a mouse local lymph node assay. Boric acid was negative in the Buehler test with guinea pigs.

Germ Cell Mutagenicity: Calcium salt was negative in the AMES test, in vitro mammalian chromosome aberration test and an in vitro mammalian cell gene mutation assay (based on structurally similar chemicals). Magnesium salt

and copper salt were negative in the AMES test. Boric acid was negative in an in vitro sister chromatid exchange assay in mammalian cells, AMES test and in an in vivo mammalian erythrocyte micronucleus test.

Carcinogenicity: No data available. None of the components of this product are listed as carcinogens by IARC or the EU CLP.

Reproductive Toxicity: Ingestion of boric acid is presumed to produce adverse effects on male fertility and sexual function, and on the development of unborn child based on animal testing.

Specific Target Organ Toxicity:

Single Exposure: No data available.

Repeat Exposure: No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity: No toxicity data available for the product.
Calcium salt: 96 hr LC50 Oncorhynchus mykiss >98.9 mg/L; 48 hr EC50 daphnia magna 490 mg/kg (based on structurally similar chemical)
Magnesium Salt: 96 hr LC50 Poecilia reticulata 1378 mg/L, 48 hr EC50 daphnia magna 490 mg/L (based on structurally similar chemical)
Copper Salt: 96 hr LC50 Rainbow trout 0.0138; 48 hr LC50 daphnia magna 0.0094 mg/L; 72 hr EC50 Chlamydomonas reinhardtii 0.233 mg/L
Zinc Compound: 96 hr LC50 Oncorhynchus mykiss 0.136 mg/L, 48 hr EC50 daphnia magna 0.068 mg/L
Iron Compound: No toxicity data available
Boric Acid: 96 hr Limanda limanda 74 mg/L; 48 hr LC50 daphnia magna 133 mg/L;

12.2 Persistence and degradability: Biodegradation is not applicable to inorganic substances.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: In the soil, product follows natural cycle to provide plant nutrients.

12.5 Results of PBT and vPvB assessment: Not required.

12.6 Other Adverse Effects: No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:
Dispose in accordance with local/ and national regulations. Not considered hazardous waste according to EU regulations.

SECTION 14: TRANSPORTATION INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT	None	Not Regulated			
Canadian TDG	None	Not Regulated			
EU ADR/RID	None	Not Regulated			
IMDG	None	Not Regulated			
IATA/ICAO	None	Not Regulated			

14.6 Special Precautions for User: None

14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code: Not determined.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

EU Regulations:
This product is sold as an EC Fertilizer in accordance with Directive 2003/2003.

International Chemical Inventories

US EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory or exempt.

Australia: All of the components in this product are listed on the Australian Inventory of Chemical Substances (AICS) or exempt.

Canadian Environmental Protection Act: All of the components in this product are listed on the Domestic Substances List (DSL) or exempt.

China: All of the components in this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or exempt.

Korea: All of the components in this product are listed on the Korean Existing Chemicals List (KECL) or exempt.

New Zealand: All of the components in this product are listed on the New Zealand Inventory of Chemicals (NZIoC) or exempt.

SECTION 16: OTHER INFORMATION

Date: January 20, 2016
Revision History: Section 2: Classification, Labeling Elements, Section 3: Composition, Section 4: Eyes, Most Important symptoms and effects, Section 7: Precautions for Safe Handling, Section 11: Skin Contact, Inhalation, Acute Toxicity, Skin corrosion/irritation, Eye damage/ irritation, Section 12: Toxicity, Section 14 Transportation, Section 16: CLP/GHS Classification and H Phrases for Reference

Date of Previous SDS: January 5, 2016

CLP/GHS Classification and H Phrases for Reference (See Section 3)
Acute Tox. 4 Acute Toxicity Category 4
Eye Dam 1 Eye Damage Category 1
Eye Irrit. 2 Eye Irritation Category 2
Skin Corr. 1B Skin Corrosion Category 1B
Skin Irrit. 2 Skin Irritation Category 2
Repro. 1B Reproductive Toxicity Category 1B
Aquatic Acute 1 Aquatic Acute Toxicity Category 1
Aquatic Chronic 2 Aquatic Chronic Toxicity Category 2

H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting results.

This safety data sheet provides health and safety information. The product is to be used in applications consistent with best farming practice. Individuals handling this product should be informed under COSHH of the recommended safety precautions and should have access to this information. The product information data sheet is to the best of Floratine's knowledge correct as at the date of publication. Neither Floratine, importer nor local supplier accepts liability for any loss or damage resulting from reliance on this information. Further information on this product may be obtained from the supplier whose name, address and telephone number will be found on the product container. The information provided herein is offered solely for your consideration, investigation and verification. This information herein is provided by Floratine in good faith as accurate at the time of writing but without guarantee. This information includes information which has been generated by other parties and provided to Floratine and which Floratine has not independently verified. The information provided herein relates only to the specific product designated and may not be valid if the product is used in combination with any other materials or in any process