



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name ECHELON 0.30 TCS 18-0-4 25%SCU
Revision date 28-Mar-2008
CAS # Mixture
Manufacturer information Turf Care Supply Corp.
50 Pearl Road
Suite 200
Brunswick, OH 44212 US
Emergency TCSC (Business Hours): (877)-220-1014
PERS (24 HR Emergency Number): (800)-633-8253

2. Hazards Identification

Emergency overview Harmful in contact with eyes. Cancer hazard. Irritating to skin. Irritating to respiratory system. Prolonged exposure may cause chronic effects. CAUTION

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Routes of exposure Inhalation. Skin contact.

Eyes Eye contact may result in corneal injury. Contact may irritate or burn eyes. Avoid contact with eyes.

Skin Irritating to skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). Avoid contact with the skin.

Inhalation Prolonged inhalation may be harmful. Irritating to respiratory system. May cause cancer by inhalation. Do not breathe vapor.

Ingestion May cause delayed lung damage. Do not ingest. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Target organs Eyes. Respiratory system. Skin.

Chronic effects Shortness of breath. Conjunctiva. May cause delayed lung damage. Prolonged skin contact may defat the skin and produce dermatitis.

Signs and symptoms Discomfort in the chest. Shortness of breath. Corneal damage. Cough. Conjunctivitis. Defatting of the skin. Rash. Irritation.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
CALCIUM CARBONATE	1317-65-3	40 - 60
SULFUR	7704-34-9	2.5 - 10
QUARTZ	14808-60-7	0.1 - 1
Non-hazardous components	CAS #	Percent
UREA	57-13-6	40 - 60

4. First Aid Measures

First aid

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin contact Remove and isolate contaminated clothing and shoes. Wash off with warm water and soap. Get medical attention if irritation develops or persists. For minor skin contact, avoid spreading material on unaffected skin.

Inhalation Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.

Ingestion

Get medical attention immediately. Have victim rinse mouth thoroughly with water. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to physician

In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General advice

In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Call a physician if symptoms develop or persist. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Unusual fire & explosion hazards

Not a fire hazard. The product is not flammable.

Suitable extinguishing media

Water.

Specific methods

In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

Flammable properties

Not a fire hazard. The product is not flammable.

Hazardous combustion products

May include oxides of carbon. May include oxides of nitrogen. May include oxides of sulphur. May include oxides of phosphorus.

Protection of firefighters**Protective equipment and precautions for firefighters**

Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

6. Accidental Release Measures

Personal precautions

Local authorities should be advised if significant spillages cannot be contained. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep unnecessary personnel away. Stay upwind. Keep out of low areas.

Containment procedures

Prevent entry into waterways, sewers, basements or confined areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so.

Methods for containment

Prevent entry into waterways, sewers, basements or confined areas.

Methods for cleaning up

Dike far ahead of liquid spill for later disposal. Sweep up or gather material and place in appropriate container for disposal. Avoid dust formation. After removal flush contaminated area thoroughly with water.

7. Handling and Storage

Handling

Do not breathe gas/fumes/vapor/spray. Use only with adequate ventilation. Wear personal protective equipment. Do not get this material in contact with eyes. Do not get this material in contact with skin. Handle and open container with care. Wash thoroughly after handling. Avoid prolonged exposure.

Storage

Keep container tightly closed. Store in cool place. Keep in a well-ventilated place. Keep this material away from food, drink and animal feed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Exposure limits**ACGIH****Material****CAS #****TWA****STEL****Ceiling**

ECHELON 0.30 TCS 18-0-4
25%S CU

Mixture

Not established

Not established

Not established

Components

CALCIUM CARBONATE

1317-65-3

Not established

Not established

Not established

UREA

57-13-6

Not established

Not established

Not established

SULFUR

7704-34-9

Not established

Not established

Not established

QUARTZ

14808-60-7

0.025 mg/m3

Not established

Not established

OSHA

Material	CAS #	TWA	STEL	Ceiling
ECHELON 0.30 TCS 18-0-4 25%S CU	Mixture	Not established	Not established	Not established

Components

CALCIUM CARBONATE	1317-65-3	15 mg/m3	Not established	Not established
UREA	57-13-6	Not established	Not established	Not established
SULFUR	7704-34-9	Not established	Not established	Not established
QUARTZ	14808-60-7	Not established	Not established	Not established

Engineering controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal protective equipment**Eye / face protection**

Avoid contact with eyes. Wear chemical goggles.

Skin protection

Avoid contact with the skin. Wear appropriate chemical resistant gloves. Wear appropriate chemical resistant clothing.

Hand protection

Protective gloves.

Respiratory protection

Wear positive pressure self-contained breathing apparatus (SCBA). When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General hygiene considerations

Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

General

Avoid contact with skin. Avoid contact with eyes.

9. Physical & Chemical Properties

Appearance	Solid.
Color	Light yellow.
Odor	Slightly. Ammoniacal.
Odor threshold	Not available.
Physical state	Solid.
Form	Solid. Granular.
pH	Not available.
Melting point	289.4 °F (143 °C) estimated
Freezing point	Not available.
Boiling point	32 °F (0 °C)
Flash point	32 °F (0 °C)
Evaporation rate	Not available.
Flammability	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Specific gravity	11.15 estimated
Relative density	11.1458 g/cm3 estimated
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	47.92 % estimated

10. Chemical Stability & Reactivity Information

Stability

Stable at normal conditions.

Chemical stability	Stable at normal conditions.
Hazardous decomposition products	May include oxides of carbon. May include oxides of nitrogen. May include oxides of sulphur. May include oxides of phosphorus.

11. Toxicological Information

Local effects	Contact may irritate or burn eyes. Irritating to skin. Irritating to respiratory system. Components of the product may be absorbed into the body through the skin.
Sensitization	Not expected to be hazardous by OSHA criteria.
Eye contact	Not available.
Skin contact	Not available.
Acute toxicity	Acute LD50: 10204 mg/kg estimated, Rat, Oral Acute LD50: 67907 mg/kg estimated, Rat, Dermal Acute LC50: 204 mg/l/4h estimated, Rat, Inhalation
Chronic toxicity	Hazardous by OSHA criteria. Prolonged or repeated exposure may cause lung injury. Prolonged exposure may cause chronic effects.
Corrosivity	Not expected to be hazardous by OSHA criteria.
Carcinogenicity	Hazardous by OSHA criteria.
Neurological effects	Not expected to be hazardous by OSHA criteria.
Mutagenicity	Not expected to be hazardous by OSHA criteria.
Reproductive effects	Not expected to be hazardous by OSHA criteria.
Teratogenicity	Not expected to be hazardous by OSHA criteria.
Epidemiology	Hazardous by OSHA criteria.

12. Ecological Information

Ecotoxicity	LC50 5253 mg/L estimated, Fish, 96.00 Hours, EC50 13407 mg/L estimated, Daphnia, 48.00 Hours, IC50 40629 mg/L estimated, Algae, 72.00 Hours, Components of this product have been identified as having potential environmental concerns.
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13. Disposal Considerations

Waste codes	D001: Waste Flammable material with a flash point <140 F
Disposal instructions	If discarded, this product is considered a RCRA ignitable waste, D001. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Dispose in accordance with all applicable regulations.

14. Transport Information

Department of Transportation (DOT) Requirements

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. All components are on the U.S. EPA TSCA Inventory List. CERCLA/SARA Hazardous Substances - Not applicable.
Occupational Safety and Health Administration (OSHA)	
29 CFR 1910.1200 hazardous chemical	Yes
CERCLA (Superfund) reportable quantity	None
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Hazard categories	Immediate Health Hazard - Yes Delayed Health Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Inventory status

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

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

State regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

16. Other Information

HMIS® ratings Health: 2*
Flammability: 0
Physical hazard: 0

NFPA ratings Health: 2
Flammability: 0
Instability: 0

Issue date 28-Mar-2008