

# MATERIAL SAFETY DATA SHEET

## Plant Pack Fundamentals

### Section I: MANUFACTURER'S NAME, ADDRESS, AND CONTACT INFORMATION

Seachem Laboratories, Inc.  
1000 Seachem Drive  
Madison, GA 30650

Emergency Telephone Number: 706-343-6060  
Telephone Number for Information: 706-343-6060  
Date Prepared: 11 July 2006

Plant Pack Fundamentals contains Flourish, Flourish Iron, and Flourish Excel. The MSDS for these three products are attached.

# MATERIAL SAFETY DATA SHEET

## Flourish

### Section I: MANUFACTURER'S NAME, ADDRESS, AND CONTACT INFORMATION

Seachem Laboratories, Inc.  
1000 Seachem Drive  
Madison, GA 30650

Emergency Telephone Number: 706-343-6060  
Telephone Number for Information: 706-343-6060  
Date Prepared: 11 July 2006

### SECTION II: CHEMICAL INGREDIENTS/IDENTITY INFORMATION

Components (Chemical Identity; Common Names (s))	OSHA PEL	ACGIH TLV	Other Limits
Proprietary aqueous solution of potassium chloride, calcium chloride, copper sulfate, magnesium chloride, ferrous gluconate, cobalt sulfate, magnesium sulfate, manganese sulfate, boric acid, sodium molybdate, zinc sulfate, and protein hydrolyzates.	ND	ND	NA

### SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	ND	Specific Gravity (H <sub>2</sub> O = 1)	1.01
Vapor Pressure (mm Hg)	23.8@25 <sup>o</sup> C	Melting Point	NA
Vapor Density (AIR = 1)	<1 H <sub>2</sub> O	Evaporation Rate (Butyl Acetate = 1)	0.3
Solubility in Water	Soluble	Appearance and Odor	Clear brown liquid, faint odor

### SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	NA
Flammable Limits	NA
LEL	NA
UEL	NA
Extinguishing Media	NA
Special Fire Fighting Procedures	NA
Unusual Fire and Explosion Hazards	NA

## SECTION V: REACTIVITY DATA

Stability	Stable under normal conditions of use
Conditions to Avoid	None
Incompatibility (Materials to Avoid)	None
Hazardous Decomposition or Byproducts	None
Hazardous Polymerization	Will Not Occur
Polymerization Conditions to Avoid	None

## SECTION VI: HEALTH HAZARD DATA

Route(s) of Entry: Ingestion, Skin, Eyes
Health Hazards (Acute and Chronic): Large oral doses may cause irritation to the gastrointestinal tract. Irritation to the skin and eyes may occur.
Carcinogenicity: NA
Signs and Symptoms of Exposure: NA
Medical Conditions Generally Aggravated by Exposure: No information found.
Emergency and First Aid Procedures: Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice. For skin exposure, wash with soap and water. For eye exposure, flush with water for 15 minutes.

## SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled: Dilute with water and flush to drain.
Waste Disposal Method: No special disposal method required, except that it be in accordance with current local authority regulations.
Precautions to Be Taken in Handling and Storing: None
Other Precautions: All materials should be handled under good housekeeping practices.

## SECTION VIII: CONTROL MEASURES

Respiratory Protection	Not required
Ventilation	Not required
Protective Gloves	Recommended
Eye Protection	Recommended
Other Protective Clothing or Equipment	None

**ABBREVIATIONS**

ACGIH: The American Conference of Governmental Industrial Hygienists, Inc.

IARC: The International Agency for Research on Cancer

LEL: Lower Explosive Limit (or Lower Flammable Limit)

NA: Not Applicable

ND: Not Determined

NTP: The National Toxicology Program

OSHA: The Occupational Health and Safety Administration

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

UEL: Upper Explosive Limit (or Upper Flammable Limit)

**MATERIAL SAFETY DATA SHEET****Flourish Iron****Section I: MANUFACTURER'S NAME, ADDRESS, AND CONTACT INFORMATION**

Seachem Laboratories, Inc.  
1000 Seachem Drive  
Madison, GA 30650

Emergency Telephone Number: 706-343-6060  
Telephone Number for Information: 706-343-6060  
Date Prepared: 10 July 2006

**SECTION II: CHEMICAL INGREDIENTS/IDENTITY INFORMATION**

Components (Chemical Identity; Common Names (s))	OSHA PEL	ACGIH TLV	Other Limits
Aqueous solution of ferrous gluconate.	NA	NA	NA

**SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS**

Boiling Point	101 <sup>o</sup> C	Specific Gravity (H <sub>2</sub> O = 1)	1.03
Vapor Pressure (mm Hg)	23.8@25 <sup>o</sup> C	Melting Point	NA
Vapor Density (AIR = 1)	<1 H <sub>2</sub> O	Evaporation Rate (Butyl Acetate = 1)	0.3
Solubility in Water	Soluble	Appearance and Odor	Clear, yellow liquid with a slight odor

#### SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	NA
Flammable Limits	NA
LEL	NA
UEL	NA
Extinguishing Media	NA
Special Fire Fighting Procedures	NA
Unusual Fire and Explosion Hazards	NA

#### SECTION V: REACTIVITY DATA

Stability	Stable under normal conditions of use
Conditions to Avoid	None
Incompatibility (Materials to Avoid)	None
Hazardous Decomposition or Byproducts	None
Hazardous Polymerization	Will Not Occur
Polymerization Conditions to Avoid	None

#### SECTION VI: HEALTH HAZARD DATA

Route(s) of Entry: Ingestion, Skin, Eyes, Inhalation
Health Hazards (Acute): Ingestion-Hazardous, will cause gastrointestinal irritation; Skin-May cause irritation; Eyes-May cause eye irritation; Inhalation-May cause pulmonary irritation.
Carcinogenicity: NA
Signs and Symptoms of Exposure: See health hazards above.
Medical Conditions Generally Aggravated by Exposure: ND
Emergency and First Aid Procedures: Ingestion-Do not induce vomiting, give several glasses of water, loosen tight clothing (collar, tie, belt, etc.), contact a physician; Skin-Wash with soap and water; Eyes-flush with water for 15 minutes; Inhalation-Remove to fresh air.

#### SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled: Dilute with water and wash to drain.
Waste Disposal Method: No special disposal method required, except that it be in accordance with current local authority regulations.
Precautions To Be Taken in Handling and Storing: NA
Other Precautions: All materials should be handled under good housekeeping practices.

#### SECTION VIII: CONTROL MEASURES

Respiratory Protection	Not required
Ventilation	Not required
Protective Gloves	Recommended

Eye Protection	Recommended
Other Protective Clothing or Equipment	None
Work/Hygienic Practices	Good housekeeping practices

## ABBREVIATIONS

ACGIH: The American Conference of Governmental Industrial Hygienists, Inc.

IARC: The International Agency for Research on Cancer

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PEL: Permissible Exposure Limit

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## MATERIAL SAFETY DATA SHEET

### Flourish Excel

#### Section I: MANUFACTURER'S NAME, ADDRESS, AND CONTACT INFORMATION

Seachem Laboratories, Inc.  
1000 Seachem Drive  
Madison, GA 30650

Emergency Telephone Number: 706-343-6060  
Telephone Number for Information: 706-343-6060  
Date Prepared: 07 July 2006

#### SECTION II: CHEMICAL INGREDIENTS/IDENTITY INFORMATION

Components (Chemical Identity; Common Names (s))	OSHA PEL	ACGIH TLV	Other Limits
Aqueous solution of polycycloglutacetel	ND	ND	NA

#### SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	100° C	Specific Gravity (H <sub>2</sub> O = 1)	1.00
Vapor Pressure (mm Hg)	23.8@25° C	Melting Point	NA
Vapor Density (AIR = 1)	<1 H <sub>2</sub> O	Evaporation Rate (Butyl Acetate = 1)	0.3

Solubility in Water	Soluble	Appearance and Odor	Clear, slightly blue liquid, faint sweet odor
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#### SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	NA
Flammable Limits	NA
LEL	NA
UEL	NA
Extinguishing Media	NA
Special Fire Fighting Procedures	NA
Unusual Fire and Explosion Hazards	NA

#### SECTION V: REACTIVITY DATA

Stability	Stable under normal conditions of use
Conditions to Avoid	None
Incompatibility (Materials to Avoid)	None
Hazardous Decomposition or Byproducts	Carbon monoxide or carbon dioxide
Hazardous Polymerization	Will Not Occur
Polymerization Conditions to Avoid	Temperatures above 100 <sup>o</sup> C

#### SECTION VI: HEALTH HAZARD DATA

Route(s) of Entry: Inhalation, Skin, Eyes, Ingestion
Health Hazards (Acute): Inhalation-Irritation to respiratory tract; Skin-Itching, pain; Eyes-Conjunctivitis; Ingestion-Moderately toxic
Carcinogenicity: NA
Signs and Symptoms of Exposure: Inhalation-Stinging sensation in nose or throat, possible bleeding from the nose, coughing, difficulty with breathing; Skin-Itching, redness, swelling, pain; Eyes-Redness, swelling, discharge; Ingestion-Irritation of digestive tract, pain, nausea, vomiting
Medical Conditions Generally Aggravated by Exposure: Dermatitis, asthma, inflammatory or fibrotic pulmonary disease
Emergency and First Aid Procedures: Inhalation-Remove to fresh air; Skin-Remove contaminated clothing, wash with soap and water; Eyes-Flush with water for at least 15 minutes and seek medical attention; Ingestion-DO NOT INDUCE VOMITING, do not give water to drink, seek medical help immediately. NOTE TO PHYSICIAN-Due to the moderately irritating or corrosive nature of the material, and the potential for lung injury from material aspirated during vomiting, the stomach should be evacuated carefully, with a method least likely to cause aspiration (e.g., gastric lavage after endotracheal intubation.)

#### SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled: Dilute with large quantities of water and flush to drain.
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Waste Disposal Method: Consistent with local, state, and Federal regulations.
Precautions to Be Taken in Handling and Storing: Store tightly sealed.
Other Precautions: Avoid eye contact

## SECTION VIII: CONTROL MEASURES

Respiratory Protection	NA
Ventilation	Local Exhaust, Mechanical Ventilation
Protective Gloves	Recommended
Eye Protection	Required
Other Protective Clothing or Equipment	NA
Work/Hygienic Practices	Good house keeping practices

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TWA: Time Weighted Average

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