



# SAFETY DATA SHEET

## Chemurgic's Pacific Multi-Mix Ligno+

### SECTION 1: IDENTIFICATION

**Product Identifier:** Chemurgic's Pacific Multi-Mix Ligno+

**Alternate Names:** Common Name: Fertilizing compound, liquid  
Chemical Description: Lignosulfonate complex, aqueous solution

**Recommended Use:** Agriculture/Horticulture – Liquid Micronutrient – Refer to Product label

**Company Name:** Chemurgic Agricultural Chemicals, Inc.

**Address:** P.O. Box 2106  
Turlock, CA 95381

**Phone Number:** DAYS: (209) 634-2951 EVES: (209) 652-7260

**Email:** info@chemurgic.net

**Emergency Phone Numbers:** INFOTRAC: 1-800-535-5053  
EPA National Response Center: (800) 424-8802

### SECTION 2: HAZARDS IDENTIFICATION

**Hazard Classifications:**

Acute toxicity, oral:	Category 4
Eye damage/irritation:	Category 2A
Specific target organ toxicity, repeated exposure:	Category 2
Hazardous to the aquatic environment, acute hazard:	Category 3
Hazardous to the aquatic environment, long-term hazard:	Category 3

**Signal Word:** WARNING



**Hazard Statements:**

H302: Harmful if swallowed.  
H319: Causes serious eye irritation.  
H373: May cause damage to organs through prolonged or repeated exposure.  
H402: Harmful to aquatic life.  
H412: Harmful to aquatic life with long lasting effects.

**Precautionary Statements:**

- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wear eye protection/face protection.
- Do not breathe mist or vapor.
- Avoid release to the environment.

# SAFETY DATA SHEET

## Chemurgic's Pacific Multi-Mix Ligno+

- IF SWALLOWED: Call a Poison Center or doctor if you feel unwell
- Rinse mouth.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists, get medical advice/attention.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients	CAS No.	Percent by Weight
Ferrous Sulfate	7782-63-0	5-<10
Zinc Sulfate	7446-19-7	5-<10*
Manganese Sulfate	10034-96-5	5-<10*
Citric Acid, Anhydrous	77-92-9	1-<3*
Disodium Octaborate Tetrahydrate	12008-41-2	1-<3*
Copper Sulfate, pentahydrate	7758-99-8	1-<3*
Magnesium Sulfate, heptahydrate	10034-99-8	1-<3*
Other compounds below reportable levels		80-<90

\*Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### SECTION 4: FIRST AID MEASURES

<b>Inhalation</b>	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
<b>Skin</b>	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser. If skin irritation occurs, get medical advice/attention.
<b>Ingestion</b>	If conscious and alert, drink water or milk to dilute, then induce vomiting. Call a physician or Poison Control Center immediately.
<b>Most important symptoms/effects, acute and delayed</b>	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Severe eye irritation. Prolonged exposure may cause chronic effects.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

### SECTION 5: FIRE FIGHTING MEASURES

#### 5.1. Extinguishing media

Water fog, foam, dry chemical, carbon dioxide (CO<sub>2</sub>). Do not use water jet as an extinguisher as this will spread the fire.

# SAFETY DATA SHEET

## Chemurgic's Pacific Multi-Mix Ligno+

### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Thermal degradation at high temperatures above 575° C (1067° F) may produce sulfur trioxide.

### 5.3. Advice for fire-fighters

Wear positive pressure, self-contained breathing apparatus and goggles. Contain any liquid runoff.

Unusual Fire and Explosion Hazards: None known.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8). Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

### 6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Prevent product spillage from entering drinking water supplies or streams.

### 6.3. Methods and material for containment and cleaning up

Collect liquid or absorb onto absorbent material and package for disposal. After removal of spilled product, flush contaminated area thoroughly with water. Do not return spills to original containers for re-use.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Transfer products using chemical-resistant plastic or stainless steel tanks, pumps, valves, etc. Wear the appropriate personal protective equipment when handling this product. Avoid contact with eyes, skin and clothing. Avoid inhalation of spray mists. Wash thoroughly with water after handling.

### 7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage. Incompatible materials: Contact with brass or strong oxidizing agents.

Store in plastic or stainless steel container in a cool, well-ventilated, dry place at temperatures above 40° F.

Keep container tightly closed. Do not store in contact with brass. Do not store near food or feeds. Do not stack pallets more than two high. Keep out of reach of children.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### 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 <sup>3</sup>

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Disodium Octaborate	STEL	6 mg/m <sup>3</sup>	Inhalable fraction

# SAFETY DATA SHEET

## Chemurgic's Pacific Multi-Mix Ligno+

Tetrahydrate (CAS 12008-41-2)

Manganese Sulfate, monohydrate (CAS 10034-96-5)	TWA	2 mg/m <sup>3</sup>	Inhalable fraction
	TWA	0.1 mg/m <sup>3</sup>	Inhalable fraction

**US. NIOSH: Pocket Guide to Chemical Hazards  
Components**

	Type	Value	Form
Copper Sulfate, pentahydrate (CAS 7758-99-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist
Manganese Sulfate, monohydrate (CAS 10034-96-5)	STEL	3 mg/m <sup>3</sup>	Fume
	TWA	1 mg/m <sup>3</sup>	Fume

### 8.2. Exposure controls

**Respiratory** If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

**Eyes** Chemical dust/splash goggles or full-face shield to prevent eye contact. As a general rule, do not wear contact lenses when handling.

**Skin** Impervious gloves and clothes.

**Engineering Controls** Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

**Other Work Practices** Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Dark Brown, viscous liquid
<b>Odor</b>	Slight lignin
<b>Odor threshold</b>	Not available
<b>pH</b>	5.0
<b>Melting point / freezing point</b>	Not available
<b>Initial boiling point and boiling range</b>	Not available
<b>Flash Point</b>	Not available
<b>Evaporation rate (Ether = 1)</b>	Not available
<b>Flammability (solid, gas)</b>	Noncombustible
<b>Upper/lower flammability or explosive limits</b>	<b>Lower Explosive Limit:</b> Not available <b>Upper Explosive Limit:</b> Not available
<b>Vapor pressure (Pa)</b>	0.00001 hPa estimated
<b>Vapor Density</b>	< 1.0
<b>Relative Density</b>	1.18 g/cm <sup>3</sup>
<b>Specific Gravity</b>	1.33
<b>Solubility in Water</b>	Not available

# SAFETY DATA SHEET

## Chemurgic's Pacific Multi-Mix Ligno+

<b>Partition coefficient n-octanol/water (Log Kow)</b>	Not available
<b>Auto-ignition temperature</b>	Not available
<b>Decomposition temperature</b>	Not available
<b>Viscosity (cSt)</b>	Not available
<b>Other information:</b>	
<b>Percent volatile</b>	78% estimated
<b>pH in aqueous solution</b>	5-7
<b>Pounds per gallon</b>	11.1 lbs/gal

### SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability:** Stable under normal circumstances.

**Possibility of hazardous reactions:** Hazardous polymerization will not occur.

**Conditions to avoid:** Avoid contact with incompatible materials.

**Incompatible materials:** Contact with brass or strong oxidizing agents.

**Hazardous decomposition products:** Thermal degradation at high temperatures above 575° C (1067° F) may produce sulfur trioxide.

### SECTION 11: TOXICOLOGICAL INFORMATION

#### Chemurgic's Pacific Multi-Mix Ligno + (CAS Mixture)

##### Acute Toxicity/Irritation Studies:

Acute Oral LD<sub>50</sub> (rat): >5000 mg/kg

Acute Dermal LD<sub>50</sub> (rat): >5000 mg/kg

Acute Inhalation LC<sub>50</sub> (rat): >0.5 mg/l (4 HR)

**Skin corrosion/irritation:** Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation:** Causes serious eye irritation.

**Respiratory sensitization:** Not available

**Skin Sensitization:** This product is not expected to cause skin sensitization.

**Subchronic Effects:** None known.

**Chronic Effects:** Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

**Germ Cell Mutagenicity:** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity:** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Reproductive Toxicity:** This product is not expected to cause reproductive or developmental effects.

**STOT-single exposure:** Not classified.

**STOT-repeated exposure:** May cause damage to organs through prolonged or repeated exposure.

**Aspiration Hazard:** Not available.

### SECTION 12: ECOLOGICAL INFORMATION

#### Aquatic Exotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Chemurgic's Pacific Multi-Mix Ligno + (CAS Mixture)	Not available	Not available	Not available

**Persistence and degradability:** No data is available on the degradability of this product.

# SAFETY DATA SHEET

## Chemurgic's Pacific Multi-Mix Ligno+

**Bioaccumulative potential:** Not available.

**Mobility in soil:** No data available.

**Other adverse effects:** No other adverse environmental effects are expected from this compound.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

### 14. TRANSPORT INFORMATION

**DOT CLASSIFICATION:** Not regulated in domestic (USA ground) transportation in package sizes less than 14,815 lbs (1,512 gallons); 6,719 kg (5,724 liters). The DOT transportation information below is for shipments with package sizes equal to or exceeding this value.

#### DOT Basic Shipping Requirements:

UN Number:	UN3082
UN Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s. (Ferrous Sulfate RQ 14,815 lbs; Zinc Sulfate RQ = 14,952)
Class:	9
Packing Group:	III
Environmental Hazards:	Marine Pollutant

Notes: DOT Shipping Notes: 40 CFR 172.504(f)(9) For Class 9, a CLASS 9 placard is not required for domestic (USA ground) transportation, however shipments with packaging exceeding the Reportable Quantity (RQ) or bulk packaging must be marked with the appropriate identification number on a CLASS 9 placard, an orange panel, or a white square-on-point display configuration as required. Since the Class 9 placard is not required (although it may be used) the hazardous material endorsement is also not required on a Commercial Driver's License.

### 15. REGULATORY INFORMATION

**Regulatory Overview:** The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

**Toxic Substance Control Act (TSCA):** All components of this material are either listed or exempt from listing on the TSCA inventory.

#### **CERCLA Hazardous Substance List:**

FERROUS SULFATE (CAS No. 7782-63-0): Listed.  
Manganese Sulfate, monohydrate (CAS No. 10034-96-5): Listed.  
Zinc Sulfate (CAS No. 7446-19-7): Listed.

**SARA 304 Emergency release notification:** Not regulated.

**OSHA Specifically Regulated Substances:** Not listed.

#### **Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories:**

Immediate Hazard – Yes  
Delayed Hazard – Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard – No

# SAFETY DATA SHEET

## Chemurgic's Pacific Multi-Mix Ligno+

SARA 302 Extremely hazardous substance: Not listed.

SARA 311/312 Hazardous chemical: No

SARA 313 (TRI reporting)

Chemical name	CAS number
Zinc Sulfate	7446-19-7
Manganese Sulfate, monohydrate	10034-96-5

### Other federal regulations

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

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

#### US State Right-To-Know:

Copper Sulfate, pentahydrate(CAS 7758-99-8): MA, NJ, PA,

Disodium Octaborate Tetrahydrate (CAS 12008-41-2): NJ

FERROUS SULFATE (CAS 7782-63-0): MA, PA, RI

Manganese Sulfate, monohydrate (CAS 10034-96-5): NJ, RI

Zinc Sulfate, monohydrate (CAS No. 7446-19-7): FL, MA, NJ, PA, RI

#### US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

## 16. OTHER INFORMATION

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

**This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.**

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