*Phyto*Technology Laboratories®

SAFETY DATA SHEET

1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: *Phyto*Ready™ Murashige & Skoog Multiplication Media

PRODUCT NUMBER: M5860

COMPANY INFO: *Phyto*Technology Laboratories®
PO Box 12205, Shawnee, KS 66282-2205
Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442
www.phytotechlab.com

EMERGENCY PHONE NUMBER (INFOTRAC): 1-800-535-5053 - US Only
1-352-323-3500 - International

RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *Phyto*Technology Laboratories® are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

This is not a hazardous substance or mixture

GHS Label elements, including hazard and precautionary statements:

This is not a hazardous substance or mixture

Hazards not otherwise classified (HNOC) or not covered by GHS: - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: MS Basal Medium

This product is a mixture that contains, but is not limited to, the following components that may cause harm to the user or environment or may be suspected to do so:

Ingredient	CAS Number	Percent	Hazardous
Sucrose	57-50-1	3.0 %	OSHA PEL: 15 mg/m^3, ACGIH TLV: 10 mg/m^3
Ammonium Nitrate	6484-52-2	0.165 %	No exposure limits established by OSHA or ACGIH
Potassium Nitrate	7757-79-1	0.190 %	No exposure limits established by OSHA or ACGIH
EDTA, Disodium Salt, Dihydrate	6381-92-6	0.00373 %	No exposure limits established by OSHA or ACGIH
Ferrous Sulfate, Heptahydrate	7782-63-0	0.00278 %	ACGIH TLV: 1 mg (Fe)/m^3
Cobalt Chloride, Hexahydrate	7791-13-1	0.0000025 %	ACGIH TLV: 0.02 mg (Co)/m^3
Cupric Sulfate, Pentahydrate	7758-99-8	0.0000025 %	NIOSH REL: 1 mg/m^3
Sodium Molybdate(VI), Dihydrate	10102-40-6	0.00002 %	OSHA PEL: 5 mg(Mo)/m^3; ACGIH TLV: 0.5 mg(Mo)/m^3
Manganese Sulfate, Monohydrate	10034-96-5	0.00169 %	OSHA PEL: 5 mg (Mn)/m^3; ACGIH TLV: 0.2 mg (Mn)/m^3
Potassium Iodide	7681-11-0	0.00008 %	ACGIH TLV: 0.01 mg/m^3
Boric Acid	10043-35-3	0.00062 %	ACGIH TLV: 2 mg/m^3
Agar	9000.18-0	0.80 %	No exposure limits established by OSHA or ACGIH

4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Route of Entry	Symptoms	First Aid Procedures
Ingestion	May cause irritation if swallowed	If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. **Get medical attention.**
Inhalation	May cause irritation to respiratory tract	Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. **Get medical attention.**
Eye Contact	Direct contact may cause irritation. May cause redness, tearing, or blurred vision.	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. **Get medical attention if irritation persists.**
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. **Get medical attention if irritation persists.**

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.

Special Protective Equipment and Precaution for Firefighters: In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.

Hazardous Combustion Products: No data available

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method of Containment and Cleanup: Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let products enter drains.

7. HANDLING AND STORAGE

Precaution for Safe Handling: Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Keep away from combustible materials. Wash thoroughly after use.

Conditions for Safe Storage: Keep in a tightly closed container and store in a cool, dry, and well-ventilated area. Protect from moisture.

Incompatibilities: No data available

Recommended Storage Temperature: 2-8 ^{o}C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA's Permissible Exposure Limits (PELs): Manganese Sulfate, Monohydrate : 5 mg (Mn)/m^3
Sodium Molybdate(VI), Dihydrate: 5 mg (Mo)/m^3

	Sucrose: 15 mg/m^3
ACGIH Threshold Limit Values (TLVs):	Sodium Molybdate(VI), Dihydrate: 0.5 mg (Mo)/m^3 Ferrous Sulfate, Heptahydrate: 1 mg (Fe)/m^3 Cobalt Chloride, Hexahydrate: 0.02 mg (Co)/m^3 Manganese Sulfate, Monohydrate: 0.2 mg (Mn)/m^3 Potassium Iodide: 0.01 mg/m^3 Boric Acid: 2 mg/m^3 Sucrose: 10 mg/m^3
Engineering Controls:	Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

Eye/Face Protection:	Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.
Skin Protection:	Protective gloves
Body Protection:	Lab coat
Respiratory Protection:	Respiratory protection is not required. Use N95 (US) or type P1 (EN 143) dust mask where dust level is nuisance. A NIOSH/MSHA approved air purifying respirator is recommended where airborne concentrations are expected to exceed exposure limits. Protection provided by purifying respirators is limited.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gel
pH:	5.6 – 5.8
Solubility:	Soluble in Water
Melting Range:	No data available
Vapor Density:	No data available
Vapor Pressure:	No data available
Specific Gravity:	No data available
Odor:	Odorless
Odor Threshold:	No data available
Viscosity:	No data available
Relative Density:	No data available
Evaporation Rate:	No data available
Initial Boiling Point and Boiling Range:	No data available
Flammability (solid, gas):	No data available
Partition coefficient: n-octanol/water):	No data available
Auto-ignition Temperature:	No data available
Decomposition Temperature:	No data available
Flash Point (Closed Cup):	No data available
Flammable Limits:	Upper (%) – No data available Lower (%) – No data available

10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under normal conditions of use
Possibility of Hazard Reactions:	No data available.

Conditions to Avoid:	No data available.
Incompatibles Materials:	Strong reducing agents, strong acid, finely powdered metals
Hazardous Decomposition Products:	Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas, Potassium oxides, Sodium oxides, Cobalt/cobalt oxides, Molybdenum oxides, Copper oxides

11. TOXICOLOGICAL INFORMATION

Toxicity:	LD_{50} (Oral-Rat)(mg/Kg):	No data available
	LD_{50} (IP-Mouse)(mg/Kg):	No data available
	LD_{50} (Dermal-Rabbit)(mg/Kg):	No data available

Carcinogenicity:	NTP:	No
	IARC:	No
	OSHA Reg:	No

Reproductive Toxicity:	No data available	
Specific Target Organ Toxicity:	Single Exposure:	No data available
	Repeated Exposure:	No data available
Target Organs:	No data available	
Routes of Entry:	Ingestion, inhalation, skin and eye contact	
NIOSH/RTECS NO:	Not listed	

The toxicological properties of this product have not been thoroughly investigated

12. ECOLOGICAL INFORMATION

Ecotoxicity:	No data available
Persistence and Degradability:	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Other Adverse Effects:	No data available

13. DISPOSAL CONSIDERATION

Disposal Procedure:	Dispose in accordance with all applicable federal, state, and local environmental regulations.

14. TRANSPORT INFORMATION

Domestic (D.O.T.):	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

International:

IMDG:	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

IATA:	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

15. REGULATORY INFORMATION

TSCA: No

SARA TITLE III:

Section 302 (EHS) Ingredients: No

Section 313 Ingredients:

	CAS No.
Ammonium Nitrate	6484-52-2
Potassium Nitrate	7757-79-1

Section 304 (EHS/CERCLA) Ingredients: No

Section 311/312 Hazard: Acute Health Hazard, Chronic Health Hazard, Reactivity Hazard

California Proposition 65 List: None of the components in this product are known to cause cancer or reproductive toxicity

Massachusetts Right To Know Components:

	CAS No.
Ammonium Nitrate	6484-52-2
Potassium Nitrate	7757-79-1
Ferrous Sulfate	7782-63-0
Zinc Sulfate	7446-20-0
Sucrose	57-50-1

New Jersey Right to Know Components:

	CAS No.
Ammonium Nitrate	6484-52-2
Potassium Nitrate	7757-79-1
Ferrous Sulfate	7782-63-0
Zinc Sulfate	7446-20-0

Pennsylvania Right to Know Components:

	CAS No.
Ammonium Nitrate	6484-52-2
Potassium Nitrate	7757-79-1
Manganese Sulfate	10034-96-5
Ferrous Sulfate	7782-63-0
Zinc Sulfate	7446-20-0
Sucrose	57-50-1

16. OTHER INFORMATION

HMIS Rating:

Health	Flammability	Physical Hazard	Personal Protection
2	0	0	B

NFPA Rating:

Health	Fire Hazard	Instability	Special Hazard
2	0	0	

***Phyto*Technology Laboratories® provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. The above information is intended to be used only as a guide to the appropriate precautionary handling of this material by a properly trained person. *Phyto*Technology Laboratories® shall not be held liable for any damage resulting from handling or from contact with the above product. This product is intended for LABORATORY USE ONLY. Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticidal products, food additives or as household chemicals.**

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