

1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

Product Identifiers

Product Name: Murashige & Skoog Basal Medium with Vitamins
Product Number: M519

Other means of identification

Synonyms: MS Basal Medium, MS Medium

Recommended Use For Research/Laboratory Use ONLY

Restrictions on Use Products manufactured by PhytoTechnology Laboratories and supplied by Austratec Pty Ltd 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.

Details of Importer/Supplier

Company: Austratec Pty Ltd, Factory 12/49 Corporate Blvd, Bayswater VIC 3153, AUSTRALIA
Telephone: +61 3 9729 4528
Fax: +61 3 9729 4578
Website: www.austratec.com.au

Emergency phone number 13 11 26 (24 hour – Poisons Information Centre)

2. HAZARD(S) IDENTIFICATION

GHS Classification Oxidizing Solids (Category 3)
Skin Irritation (Category 2)
Serious Eye Damage/Eye Irritation (Category 2/2A)
Specific target organ toxicity, single exposure: Respiratory system (Category 3)

GHS Label elements, including precautionary statements

Pictogram:  Signal Word: **WARNING**

Hazard Statement(s) H272 – May intensify fire; oxidizer.
H315 – Causes skin irritation.
H319 – Causes serious eye irritation.
H335 – May cause respiratory irritation.

Precautionary statement(s)

Prevention: P210 – Keep away from heat.
P220 – Keep/Store away from clothing/combustible materials.
P221 – Take precaution to avoid mixing with combustibles.
P261 – Avoid breathing dust.
P264 – Wash hands thoroughly after handling.
P270 – Do not eat, drink or smoke when using this product

P271 – Use only outdoors or in a well-ventilated area.
P280 – Wear protective gloves/protective clothing/eye protection.

Response: P302 + P352 – IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water. Remove contact lenses if present and easy to do. Continue rinsing.
P312 – Call a POISON CENTRE or doctor/physician if you feel unwell
P332 + P313 – If skin irritation occurs: Get medical advice/attention.
P337 + P313 – If eye irritation persists: Get medical advice/attention
P362 – Take off contaminated clothing and wash before reuse.
P370 + P378 – In case of fire: Use water or fire extinguisher for extinction.

Storage: P403 + P233 – Store in a well ventilated place. Keep container tightly closed.
P405 – Store locked up.

Disposal: P501 - Dispose of contents/container to an approved chemical waste disposal plant.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

CAS Number: N/A EC Number: N/A
Formula: N/A Molecular Weight: N/A

This product in 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.	PERCENTAGE	HAZARDOUS
Ammonium Nitrate	6484-52-2	37.21%	No exposure limits established by OSHA or ACGIH
Potassium Nitrate	7757-79-1	42.85%	No exposure limits established by OSHA or ACGIH
EDTA, Disodium Salt, Dihydrate	6381-92-6	0.84%	No exposure limits established by OSHA or ACGIH
Cobalt Chloride, Hexahydrate	7791-13-1	0.0006%	No exposure limits established by OSHA or ACGIH
Cupric Sulfate, Pentahydrate	7758-99-8	0.0006%	No exposure limits established by OSHA or ACGIH
Sodium Molybdate (VI), Dihydrate	10102-40-6	0.006%	OSHA PEL: 5mg (Mo)/m ³ ; ACGIH TLV: 5mg (Mo)/m ³
Manganese Sulfate, Monohydrate	10034-96-5	0.38%	OSHA PEL: 5mg (Mn)/m ³
Potassium Iodide	7681-11-0	0.019%	No exposure limits established by OSHA or ACGIH
Boric Acid	10043-35-3	0.14%	No exposure limits established by OSHA or ACGIH

4. FIRST AID MEASURES

Description of first aid measures

General advice: Consult a doctor/physician. Show this safety data sheet to the doctor in attendance.

Ingestion: MAY CAUSE IRRITATION IF SWALLOWED. If swallowed, wash mouth out with water. Never give anything by mouth to an unconscious person. Seek medical attention.

Inhalation: MAY CAUSE IRRITATION TO RESPIRATORY TRACT. Safely remove person to fresh air. If not breathing, begin cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. Seek medical attention.

Eye contact: DIRECT CONTACT MAY CAUSE IRRITATION, REDNESS, TEARING, OR BLURRED VISION. Flush eye out immediately with water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical attention if irritation persists.

Skin contact: MAY CAUSE IRRITATION, REDDENING, ITCHING OR INFLAMATION. Wash area thoroughly with soap and water. Remove and wash contaminated clothing. Seek medical attention.

Most important symptoms and effects, both acute and delayed

See section 2 and/or section 11

Recommendation for immediate medical attention and special treatment needed

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.
Specific hazards arising from the chemical	
Hazardous combustion products:	May emit toxic fumes under fire conditions.
Toxic gases produced:	Carbon oxides, nitrogen oxides, sulphur oxides, hydrogen chloride gas, potassium oxides, sodium oxides, cobalt oxides, molybdenum oxides and copper oxides..
Special protective equipment and precaution for firefighters	In the event of fire, wear full protective clothing and NIOSH (US) or EN145 (EU) approved self contained breathing apparatus. Evacuate the area and fight fire from a safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use personal protection equipment (PPE) recommended in Section 8. Avoid dust formation. Avoid breathing vapors, 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.
Methods and materials for containment and cleanup	Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place in a dry container and cover. Remove from area for safe disposal (see section 13). Flush spill area with water. Do not let product enter drain.

7. HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Provide appropriate exhaust ventilation where dust is formed. Wash thoroughly after use.
Conditions for safe storage	Keep in a tightly closed container and store in a cool, dry and well ventilated area. Product is hygroscopic, protect from moisture.
Recommended Storage Temperature	2 to 6 °C
Incompatibilities	Strong oxidizing agent.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure control measures

Workplace Exposure Standards (TWA;STEL):	Manganese Sulfate, Monohydrate:	1mg (Mn)/m ³ ; 3mg (Mn)/m ³
OSHA's permissible exposure limits (PEL's):	Manganese Sulfate, Monohydrate:	5mg (Mn)/m ³ .
	Sodium Molybdate (VI), Dihydrate:	5mg (Mo)/m ³ .
ACGIH threshold limit values (TLV's):	Sodium Molybdate (VI), Dihydrate:	5mg (Mo)/m ³ .

Engineering controls Handle in accordance to general industrial hygiene and chemical safety practice.

Personal protective equipment (PPE)

Eye Face Protection: Chemical safety shield, glasses or goggles approved under NIOSH (US) or EN166 (EU). Have eye washing facilities readily available where eye contact can occur.

Skin Protection:	Suitable protective gloves.
Body Protection:	Lab coat or protective chemical suit. Protective equipment must be selected in accordance to the amount of dangerous substance within the specific workplace.
Respiratory Protection:	Use an appropriate dust mask. Use N95 (US) or type P1 (EN143) dust mask where dust level is a nuisance. Appropriate respirator approved under NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Off-white to yellow powder.
Odour	Odorless.
Odour threshold	No data available.
pH (4.43 g/L)	3.5 – 4.5.
Melting point	No data available
Initial boiling point/boiling range	No data available
Flash point (closed cup)	No data available.
Evaporation rate	No data available.
Flammability (solid, gas)	No data available.
Flammable limits (upper %)	No data available.
Flammable limits (lower %)	No data available.
Vapour pressure	No data available.
Vapour density	No data available.
Relative density	No data available
Solubility	Soluble in water.
Partition coefficient (n-octanol/water)	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	No data available.

10. STABILITY AND REACTIVITY

Reactivity	No data available.
Chemical stability	Stable under normal conditions of use and recommended storage conditions. Product is hygroscopic.
Possibility of hazardous reactions	No data available.
Conditions to avoid	Moist air, excessive heat.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides, nitrogen oxides, sulphur oxides, hydrogen chloride gas, potassium oxides, sodium oxides, cobalt oxides, molybdenum oxides and copper oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity	LD ₅₀ (Oral, Rat)(mg/Kg): LD ₅₀ (Oral, Mouse)(mg/Kg): LD ₅₀ (Dermal, Rabbit)(mg/Kg):	No data available. No data available. No data available.
Skin corrosion/irritation	No data available	
Serious eye damage/irritation	No data available	
Respiratory or skin sensitisation	Inhalation and skin contact may cause sensitization.	
Germ cell mutagenicity	No data available	
Carcinogenicity	NTP: IARC: Z List: OSHA Reg:	No No No No
Reproductive toxicity	No data available.	
Specific target organ toxicity (STOT)	Single Exposure: Repeated Exposure:	No data available No data available
Aspiration hazard	No data available	
Target organs	None identified.	
Medical conditions aggravated by exposure	No data available	
Routes of entry	Inhalation, ingestion, mouth, skin and eyes.	
Symptoms associated with overexposure	Irritation, sneezing, gastrointestinal upset.	
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 CONSIDERATIONS

Disposal procedure	Dispose in accordance with all applicable government, state, and environmental chemical safety practices.
EPA hazardous waste number	No data available.

14. TRANSPORT INFORMATION

UN number	ADG: N/A IMDG: N/A IATA: N/A
Proper shipping/technical name	CHEMICALS, N.O.S (NON-REGULATED)
Hazard Class	N/A
Packing group	N/A
Environmental hazards	N/A
Special precautions	N/A
Hazchem	N/A

15. REGULATORY INFORMATION

Notification Status

Australia (AICS):	Not Listed
New Zealand (NZIoC):	Not determined
USA (TSCA):	Not Listed
SARA TITLE III:	Section 302 (EHS) Ingredients: No Section 313 Ingredients: No Section 304 (EHS/CERCLA) Ingredients: No Section 311/312 Hazard: Chronic health hazard.

16. OTHER INFORMATION

HMIS Rating:	Health Hazard	Personal Protection	Flammability	Physical Hazard
	2	B	0	2
NFPA Rating:	Health Hazard	Fire Hazard	Instability	Special Hazard
	2	0	2	OX

***Chronic Hazard:** Chronic (long-term) health effects may result from repeated overexposure.

OX: Oxidiser

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