Murashige & Skoog Basal Salts	
Safety Data Sheet	**MSP01-SDS**

1. Identification

Production Name: Murashige & Skoog Basal Salts with Macronutrients and Micronutrients

Catalog Number: MSP01

Company: Plant Cell Technology

Address: 836 South 100 East, Smithfield UT 84335

Telephone: 435.534.8700

Emergency Contact, US: CHEMTREC 800.424.9300 (24/7)

Emergency Contact, International: CHEMTREC 703.527.3887 (24/7)

Recommended Use: For research and laboratory use only.

Restrictions on Use: This product is intended for research and laboratory use only. This product is not to be used as human or animal therapeutics, cosmetics, pesticidal products, food additives, or household chemicals.

2. Hazards Identification

Classification of the Substance or Mixture

GHS Classification:

H272 – (Category 3)

H315 – Skin irritation (Category 2)

H319 – Serious Eye Damage (Category 2A)

H335 – Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3)

H360 – Reproductive toxicity (Category 1A, 1B)

H373 – Specific target organ toxicity, repeated exposure (Category 2)

GHS Label Elements, Including Precautionary Statements

Signal Word: Danger

Hazard Statements:

H272 – May intensify fire; oxidizer

H315 – Causes skin irritation

H319 – Causes serious eye irritation.

H335 – May cause respiratory irritation

H360 – May damage fertility or the unborn child

H373 – Causes damage to organs through prolonged or repeated exposure

Precautionary Statements:

P201 – Obtain special instructions before use.

P202 – Do not handle until all safety precautions have been read and understood.

P210 – Keep away from heat, hot surfaces, sparks, open flames and other ignition sources; No smoking.

P220 – Keep away from clothing and other combustible materials.

P221 – Take any precaution to avoid mixing with combustibles/…

P260 – Do not breathe dust/fume/gas/mist/vapors/spray.

P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 – Wash skin thoroughly after handling.

P280 – Wear protective gloves/eye protection/face protection.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313 – IF exposed or concerned: Get medical advice/attention.

P314 – Get medical advice/attention if you feel unwell.

P337 + P313 – If eye irritation persists: Get medical advice/attention

P370+P378 – In case of fire: Use appropriate extinguishing methods to extinguish.

P405 – Store locked up.

P501 – Dispose of contents/container to appropriate waste containers.

Pictograms:



3. Composition / Information on Ingredients

Synonyms: N/A

Formula: N/A

Molecular Weight: N/A

CAS-No: N/A

EC-No: N/A

Component	CAS Number	EC Number	Concentrations (%, w/w)	Classification
Ammonium Nitrate	6484-52-2	229-347-8	38.099%	Oxidizing Solid 3; Skin corrosion 2; Serious eye damage 2 ; Respiratory tract irritation toxicity 3: H272, H315, H319, H335
Boric Acid	10043-35-3	233-139-2	0.143%	Reproductive Toxicity: H360
Calcium Chloride, Anhydrous	10043-52-4	233-140-8	7.671%	Serious eye damage 2: H319
Cobalt Chloride, Hexahydrate	7791-13-1	231-589-4	< 0.001%	Acute toxicity 4; May cause allergic reactions; Respiratory Sensitivity 1; Suspected of causing genetic defects; May cause cancer; May damage fertility or unborn child; Hazardous to aquatic environment, acute; Hazardous to aquatic environment, long-term: H302, H317, H334, H341, H350, H360, H400, H410
Cupric Sulfate, Pentahydrate	7758-99-8	231-847-6	< 0.001%	Acute toxicity 4; Skin corrosion 2; Serious eye damage 2; Hazardous to aquatic environment, acute; Hazardous to aquatic environment, long-term: H302; H315; H319; H400; H410
EDTA, Disodium Salt, Dihydrate	6381-92-6	205-358-3	0.860%	Oral toxicity, acute 5; Skin corrosion 2; Serious eye damage 2; Respiratory tract irritation toxicity 3: H302; H315; H319; H335
Ferrous Sulfate, Heptahydrate	7782-63-0	231-753-5	0.642%	Acute toxicity 4; Skin corrosion 2; Serious eye damage 2: H302; H315: H319
Manganese Sulfate, Monohydrate	10034-96-5	232-089-9	0.390%	Organ toxicity, repeated exposure 2; Hazardous to aquatic environment, long-term 2: H373, H411

Component	CAS Number	EC Number	Concentrations (%, w/w)	Classification
Potassium Iodide	7681-11-0	231-659-4	0.019%	Acute toxicity 4; Skin corrosion 2; Serious eye damage 2: H302; H315: H319
Potassium Nitrate	7757-79-1	231-818-8	43.872%	Oxidizing Solid 3: H272
Zinc Sulfate, Heptahydrate	7446-20-0	231-793-3	0.199%	Acute toxicity 4; Serious eye damage 1; Hazardous to aquatic environment, long-term 1: H302; H318; H410

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 Exposure

If Swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical attention.

In Case of Skin Contact: Wash area thoroughly with soap and water. Remove and wash contaminated clothing. Get medical attention if irritation persists.

In Case of Eye Contact: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Ensure adequate flushing by separating the eyelids. Get medical attention if irritation persists.

If Inhaled: Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway. Get medical attention.

Most Important Symptoms and Effects, Both Acute and Delayed: The most important known symptoms and effects are described in Section 2 (Hazards Identification) and/or in Section 11 (Toxicological Information).

Recommendation for Immediate Medical Care and Special Treatment Needed: No Data Available

5. Firefighting Measures

Suitable Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media: No Data Available

Special Protective Equipment and Precautions for Firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Special Hazards Arising from the Substance or Mixture: Nitrogen oxides, Hydrogen chloride gas, Calcium oxides, Sulfur oxides, Magnesium oxides, Potassium oxides, Phosphorus oxides

Additional Information: No Data Available

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. See Section 2 (Hazards Identification) for more information.

Methods and Material for 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.

7. Handling and Storage

Precautions for Safe Handling: Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

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

Recommended Storage Temperature: 2° to 8°C

Incompatibilities: Reducing agents, Powdered metals, Strong acids, Strong oxidizing agents, Boron oxides, Zinc, Calcium oxide, Methyl vinyl ether, Calcium chloride is attacked by bromine triflouride

8. Exposure Controls / Personal Protection

OSHA Permissible Exposure Limits (PELs): Follow all applicable federal, state, and local regulations in regard to Permissible Exposure Limits (PELs).

ACGIH Threshold Limit Values (TLVs): Follow all applicable federal, state, and local regulations in regard to Threshold Limit Values (TLVs).

Engineering Controls: Practice general industrial hygiene. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment (PPE):

Eye/Face Protection: Face shield or appropriate safety glasses. Use equipment for eye protection tested and approved under appropriate standards.

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory Protection: Respiratory protection is not required. Where protection from nuisance levels of dusts or vapors is desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate standards.

Body Protection: Wear lab coat, gown, or coveralls to protect from exposure.

9. Physical and Chemical Properties

Appearance: White to Yellow Powder

Boiling Point, Initial: No Data Available

Boiling Range: No Data Available

Evaporation Rate: No Data Available

Flammability (Solid, Gas): No Data Available

Flammability Lower Limit: No Data Available

Flammability Upper Limit: No Data Available

Flash Point: No Data Available

Freezing Point: No Data Available

Melting Point: No Data Available

Melting Range: No Data Available

Odor: No Data Available

Odor Threshold: No Data Available

Partition Coefficient: No Data Available

pH: 3.5 – 4.5 (0.43%, H2O)

Relative Density: No Data Available

Solubility: Soluble in Water

Specific Gravity: No Data Available

Temperature, Auto-Ignition: No Data Available

Temperature, Decomposition: No Data Available

Vapor Density: No Data Available

Vapor Pressure: No Data Available

Viscosity: No Data Available

10. Stability and Reactivity

Reactivity: No Data Available

Chemical Stability: Stable under recommended storage conditions.

Possibilities of Hazardous Reactions: No Data Available

Conditions to Avoid: Moisture

Incompatible Materials: Reducing agents, Powdered metals, Strong acids, Strong oxidizing agents, Boron oxides, Zinc, Calcium oxide, Methyl vinyl ether, Calcium chloride is attacked by bromine triflouride

Hazardous Decomposition Products: Hazardous decomposition products formed under fire conditions. – Nitrogen oxides, Hydrogen chloride gas, Calcium oxides, Sulfur oxides, Magnesium oxides, Potassium oxides, Phosphorus oxides

In the event of fire, see Section 5 (Firefighting Measures).

11. Toxicological Information

Toxicity: No Data Available

Carcinogenicity:

> **NTP**: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
>
> **IARC**: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
>
> **OSHA**: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive Toxicity: No Data Available

Immediate Effects of Exposure: No Data Available

Delayed Effects of Exposure: No Data Available

Chronic Effects of Short Term Exposure: No Data Available

Chronic Effects of Long Term Exposure: No Data Available

Symptoms Associated with Overexposure: No Data Available

Specific Target Organ Toxicity – Single Exposure: No Data Available

Specific Target Organ Toxicity – Repeated Exposure: No Data Available

Target Organs: None Identified

Medical Conditions Aggravated by Exposure: None Identified

Likely Routes of Exposure:

Eye Contact: Causes serious eye irritation

Ingestions: No Data Available

Inhalation: May cause respiratory irritation

Skin Contact: Causes skin irritation

NIOSH/RTECS: Not Available

12. Ecological Information

Toxicity: No Data Available

Persistence and Degradability: No Data Available

Bioaccumulative Potential: No Data Available

Mobility in Soil: No Data Available

Results of PBT and vPvB: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

Other Adverse Effects: No Data Available

13. Disposal Considerations

Disposal of Product: Dispose in accordance with all applicable federal, state, and local environmental regulations. See Section 2 (Hazards Identification) for additional guidelines in disposals.

Disposal of Packaging: Dispose of as unused product.

14. Transport Information

DOT (US):

Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)

UN/NA number: N/A Class: N/A Packaging group: N/A Hazard Label: N/A

Reportable Quantity (RQ): N/A

Poison Inhalation Hazard: N/A

IMDG:

Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)

UN number: N/A Class: N/A Packaging group: N/A Hazard Label: N/A

IATA:

Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)

UN Number: N/A Class: N/A Packaging group: N/A Hazard Label: N/A

15. Regulatory Information

TSCA: Not Listed

SARA Title lll:

Section 302 (EHS) Ingredients: None

Section 304 (EHS/CERCLA) Ingredients: None

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

Section 313 Ingredients:

Ammonium Nitrate CAS-No. 6484-52-2	Revision Date 1993-04-24
Potassium Nitrate CAS-No. 7757-79-1	Revision Date 2007-03-01
Cobalt Dichloride Hexahydrate CAS-No.: 7791-13-1	Revision Date: 2009-07-17
Copper Sulfate Pentahydrate CAS-No. 7758-99-8	Revision Date 1993-02-16
Manganese Sulfate Monohydrate CAS-No. 10034-96-5	Revision Date 2015-07-08
Zinc(II) Sulfate Heptahydrate CAS-No. 7446-20-0	Revision Date 1993-02-16

16. Other Information

Further Information: All chemicals may pose unknown hazards and should be used with caution. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Plant Cell Technology, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.

MSP01-SDS Revision Change Summary:

Rev.	Date	CR#	Approved	Change description
00	28-May-25	0080	C. Gallagher	New Document