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Title:	**TECHNICAL DATA SHEET**		

Product Name	Minimum Essential Medium (MEM) Alpha Modification
Filtration/Treatment	With L-Glutamine and Nucleosides
Product Codes	MCP-054-50L
Shelf Life	48 months
Storage Temperature	2 to 8 °C
Shipping Temperature	ambient
Substance	**Concentration (mg/L)**
Amino Acids	
Glycine	50.00
L-Alanine	25.00
L-Arginine, Hydrochloride	126.40
L-Asparagine, Monohydrate	50.00
L-Aspartic Acid	30.00
L-Cysteine, Hydrochloride, Monohydrate	100.00
L-Cystine, Dihydrochloride	31.20
L-Glutamine	292.00
L-Histidine, Hydrochloride, Monohydrate	41.90
L-Isoleucine	52.50
L-Leucine	52.50
L-Lysine, Hydrochloride	73.00
L-Methionine	15.00
L-Phenylalanine	32.50
L-Proline	40.00
L-Serine	25.00
L-Threonine	48.00
L-Tryptophan	10.00
L-Tyrosine, Disodium, Dihydrate	52.00
L-Valine	46.00
Vitamins	
Biotin	0.10
Choline Chloride	1.00
D-Calcium Pantothenate	1.00
Folic Acid	1.00
L-Ascorbic Acid	50.00
Myo-Inositol	2.00
Lipoic Acid (DL-Thiotic Acid)	0.20
Niacinamide	1.00
Pyridoxal, Hydrochloride	1.00
Riboflavin	0.10
Thiamine, Hydrochloride	1.00
Vitamin B12	1.40
Ribonucleosides	
Adenosine	10.00
Cytidine	10.00
Thymidine	10.00
Uridine	10.00

Deoxyribonucleosides	
2´-Deoxyadenosine	10.00
2´-Deoxycytidine Hydrochloride	11.00
2´-Deoxyguanosine	10.00
Guanosine	10.00
Inorganic Salts	
Calcium Chloride, Anhydrous	200.00
Magnesium Sulfate, Anhydrous	97.70
Potassium Chloride	400.00
Sodium Chloride	6800.00
Sodium Phosphate, Monobasic, Monohydrate	140.00
Other Components	
D-Glucose, Anhydrous	1000.00
Phenol Red, Sodium Salt	10.00
Pyruvic Acid, Sodium Salt	110.00
Specifications	
Appearance	Light orange to tan powder
Solubility	10.09 g/L in ≤ 30 minutes
Moisture Content	≤ 2.0 %
pH without NaHCO3	3.5 – 5.0
pH with NaHCO3	6.7 - 7.5
Osmolality without NaHCO3	240-280 mM/kg
Osmolality with NaHCO3	280-320 mM/kg
Endotoxin	≤ 1.0 EU/ml
Mycoplasma	Not detected
Cell Culture – Cell Growth Promotion	3 Passages
Viability	≥ 75%

Note: *Sodium Bicarbonate is not included in the powdered media (2200.00 mg/L).*

Instructions for Use

- **Preparation of 1 liter liquid medium**
  1. Suspend 10.09 g in 900 ml tissue culture-grade water with constant, gentle stirring until the powder is completely solubilized. Do not heat the water.
  2. Add 2.2 g of sodium bicarbonate powder for 1 liter of medium and stir until dissolved.
  3. Adjust the pH to 0.1 to 0.3 pH units below the desired pH using 1 N HCl or 1 N NaOH since the pH tends to rise during filtration.
  4. Add tissue culture-grade water to bring the solution to 1000 ml.
  5. Filter Sterilize the medium immediately using a sterile membrane filter with a porosity of 0.22 micron or less. Use positive pressure rather than vacuum to minimize the loss of carbon dioxide.
  6. Aseptically add sterile supplements as required and dispense the desired amount of sterile medium into sterile containers.
  7. Do not autoclave. The product contains heat-labile compounds that can be damaged with autoclaving.
  8. Store liquid medium at +2°C to +8°C and in dark until use.

- **Additional Information**
  - pH and sodium bicarbonate concentration of the prepared medium are critical factors affecting cell growth. This is also influenced by the amount of medium and volume of culture vessel used (surface to volume ratio). For example, in large bottles pH tends to rise perceptibly as a significant volume of carbon dioxide is released. Therefore, optimal conditions of pH, sodium bicarbonate concentration, surface to volume ratio must be determined for each cell type. We recommend stringent monitoring of pH. If needed, pH can be adjusted by using sterile 1 N HCl or 1 N NaOH or by bubbling in carbon dioxide.
  - If required, supplements can be added to the medium prior to or after filter sterilization observing sterility precautions. Shelf life of the medium will depend on the nature of supplement added to the medium.

Storage and Stability

1. All the powdered media and prepared liquid culture media should be stored at 2-8°C. Use before the expiry date.
2. Opened bottles should be capped tightly and kept in a dark, and low-humidity environment. Prepared liquid media should be kept at 4°C and used within a short period of time (max shelf life of the liquid media in proper storage conditions: 12 months).
3. Preparation of concentrated medium is not recommended since free base amino acids and salt complexes having low solubility may precipitate in the concentrated medium.

THIS PRODUCT IS FOR LABORATORY USE ONLY.