



## MINIMUM ESSENTIAL MEDIUM [MEM]

Alpha Modification  
 With L-Glutamine, Without Ribonucleosides,  
 Deoxyribonucleosides and Sodium Bicarbonate  
 Product Number **M0894**

### Product Description

Minimum Essential Medium (MEM), developed by Harry Eagle, is one of the most widely used of all synthetic cell culture media. MEM has been used for cultivation of a wide variety of cells grown in monolayers.

### Precautions and Disclaimer

REAGENT

For R&D use only. Not for drug, household or other uses.

### Components

	<u>g/L</u>
Calcium Chloride (anhydrous)	0.2
Magnesium Sulfate (anhydrous)	0.09767
Potassium Chloride	0.4
Sodium Chloride	6.8
Sodium Phosphate Monobasic (anhydrous)	0.122
L-Alanine	0.025
L-Arginine•HCl	0.126
L-Asparagine• H <sub>2</sub> O	0.05
L-Aspartic Acid	0.03
L-Cysteine•HCl• H <sub>2</sub> O	0.1
L-Cystine•2HCl	0.0313
L-Glutamic Acid	0.075
L-Glutamine	0.292
Glycine	0.05
L-Histidine•HCl• H <sub>2</sub> O	0.042
L-Isoleucine	0.052
L-Leucine	0.052
L-Lysine•HCl	0.0725
L-Methionine	0.015
L-Phenylalanine	0.032
L-Proline	0.04
L-Serine	0.025
L-Threonine	0.048
L-Tryptophan	0.01
L-Tyrosine 2Na•2 H <sub>2</sub> O	0.0519
L-Valine	0.046
L-Ascorbic Acid	0.05
Biotin	0.0001
Choline Chloride	0.001
Folic Acid	0.001
myo-Inositol	0.002
Niacinamide	0.001
D-Pantothenic Acid (hemicalcium)	0.001
Pyridoxal•HCl	0.001
Riboflavin	0.0001
Thiamine•HCl	0.001
Vitamin B-12	0.00136
Glucose	1.0
Phenol Red•Na	0.011
Pyruvic Acid•Na	0.11
Thioctic Acid	0.0002

### Preparation Instructions

Powdered media are hygroscopic and should be protected from moisture. The entire contents of each package should be used immediately after opening. Preparing a concentrated solution of medium is not recommended as precipitates may form. Supplements can be added prior to filtration or introduced aseptically to sterile medium.

1. Measure out 90% of final required volume of water. Water temperature should be 15-20°C.
2. While gently stirring the water, add the powdered medium. Stir until dissolved. Do NOT heat.
3. Rinse original package with a small amount of water to remove all traces of powder. Add to solution in step 2.
4. To the solution in step 3, add 2.2 g sodium bicarbonate or 29.3 ml of sodium bicarbonate solution [7.5%w/v] for each liter of final volume of medium being prepared. Stir until dissolved.
5. While stirring, adjust the pH of the medium to 0.1-0.3 pH units below the desired pH since it may rise during filtration. The use of 1N HCl or 1N NaOH is recommended.
6. Add additional water to bring the solution to final volume.
7. Sterilize immediately by filtration using a membrane with a porosity of 0.22 microns.
8. Aseptically dispense medium into sterile container.

### Storage and Stability

Store the dry powdered medium at 2-8 °C under dry conditions and liquid medium at 2-8 °C in the dark. Deterioration of the powdered medium may be recognized by any or all of the following: [1] color change, [2] granulation/clumping, [3] insolubility. Deterioration of the liquid medium may be recognized by any or all of the following: [1] pH change, [2] precipitate or particulates, [3] cloudy appearance [4] color change. The nature of supplements added may affect storage conditions and shelf life of the medium. Product label bears expiration date.

### Procedure

Materials Required but Not Provided  
 Water for tissue culture use [W3500]  
 Sodium Bicarbonate [S5761] or  
 Sodium Bicarbonate Solution, 7.5% [S8761]  
 1N Hydrochloric Acid [H9892]  
 1N Sodium Hydroxide [S2770]  
 Medium additives as required

## References

1. Stanners, C.P., Eliceiri, G.L. and Green, H. (1971). Two Types of Ribosome in Mouse-Hampster Hybrid Cells. Nature New Biology. 230,52-54.

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