



Catalog Number: 1010124

Minimum Essential Medium Eagle (Modified) with Earle's Salts (EMEM), with L-glutamine, without sodium bicarbonate

Description: MEM, originally prepared by Harry Eagle, is one of the most popular cell culture media. Upon his attempts to cultivate normal mammalian fibroblasts and certain HeLa cell subtypes, it was revealed that the nutritional needs of these cell types could not be met by BME. Further studies led to the development of MEM incorporating specific modifications such as higher amino acid concentrations for the cultivation of fastidious cells. MP's MEM may be used to support the growth of cells in monolayers, in suspension and wide variety of other cell types with proper supplementation. MP offers MEM with either Earle's or Hanks' salts. Storage Temperature 2-8°C.

The formulation differs from the original in that the concentrations of some of the vitamins have been increased slightly; and in some, the amino acids differ by decimal amounts. In some formulation, the MgSO₄ concentration differs from that of Eagle but agrees with that quoted by Parker (Parker quotes 200.00 mg/liter MgSO₄·7H₂O).

References:

1. Eagle, H., *Science*, **v. 130**, 342 (1959).
2. Parker, R.C., *Methods of Tissue Culture 3rd Ed.*, Harper and Row, New York. (1961).

Formulation:

Components	mg/L	Mol. Wt.	Mol. (mM)
Amino Acids			
L-Arginine HCl	126.40	174.2	0.73
L-Cystine 2HCl	31.20	313.2	0.10
L-Glutamine	292.00	146.1	2.00
L-Histidine HCl H ₂ O	41.90	209.6	0.20
L-Isoleucine	52.50	131.2	0.40
L-Leucine	52.50	131.2	0.40
L-Lysine HCl	72.50	182.6	0.40
L-Methionine	15.00	149.2	0.10
L-Phenylalanine	32.50	165.2	0.20

L-Threonine	47.60	119.1	0.40
L-Tryptophan	10.00	204.2	0.05
L-Tyrosine 2Na 2H ₂ O	51.90	261.2	0.20
L-Valine	46.80	117.1	0.40
Vitamins			
Choline Chloride	1.00	139.6	0.0072
D-Calcium Pantothenate	1.00	238.3	0.0042
Folic Acid	1.00	441.4	0.0023
myo-Inositol	2.00	180.2	0.0111
Nicotinamide	1.00	122.13	0.0082
Pyridoxine HCl	1.00	205.6	0.0049
Riboflavin	0.10	376.4	0.0003
Thiamine HCl	1.00	337.3	0.0030
Inorganic Salts			
Calcium Chloride [CaCl ₂]	200.00	111	1.80
Magnesium Sulfate [MgSO ₄]	97.70	120.4	0.81
Potassium Chloride [KCl]	400.00	74.55	5.37
Sodium Chloride [NaCl]	6800.00	58.44	116.36
Sodium Phosphate Monobasic [NaH ₂ PO ₄ H ₂ O] Monohydrate	140.00	159.96	0.88
Other			
Dextrose	1000.00	180.2	5.55
Phenol Red Sodium Salt	10.00	376.4	0.03
Add			
NaHCO ₃ Powder (g/L)		2.20	
NaHCO ₃ 7.5% Solution (mL/L)		29.40	

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