

**MEM Alpha Modification**

w/ Earle's Salts, w/ L-Glutamine, w/o Sodium Bicarbonate

CAT N° : P0440

**Theoretical pH** :  $3.7 \pm 0.3$ **Osmolality** : 255 mOsm/kg  $\pm$  10%**Storage conditions** : Store dry powder medium at +2°C to +8°C  
Store hydrated medium at +2°C to +8°C, protected from light**Shelf life** : 36 months**Endotoxin** : < 1 EU/ml**Composition** : Displayed on website and in catalogue; also available on request.**Recommended use :**

- Respect storage conditions of the product
- Do not use the product after its expiry date
- Store the product in a dry area
- Wear clothes adapted to the manipulation of the product to avoid contamination (e.g. : gloves, mask, hygiene cap, overall...)
- Protect the product from any form of humidity
- Use, in one time, after opening, the entire quantity of product of the container, without making a concentrated solution (to avoid the formation of precipitates). If it is not possible, close the container immediately after sampling the quantity of powder required.
- Supplements can be added prior to sterile filtration of the medium or aseptically introduced to sterile medium (respect the final concentration of the media). The nature of the supplements may affect storage conditions and shelf life of the medium.

The product is intended to be used in vitro, in laboratory only. Do not use it in therapy, human or veterinary applications.

**Application :**

Minimum Essential Medium (MEM), developed by Harry Eagle, is one of the most widely used of all synthetic cell culture media. Early attempts to cultivate normal mammalian fibroblasts and certain subtypes of HeLa cells revealed that they had specific nutritional requirements that could not be met by Eagle's Basal Medium (BME).

Subsequent studies using these and other cells in culture indicated that additions to BME could be made to aid growth of a wider variety of fastidious cells. MEM, which incorporates these modifications, includes higher concentrations of amino acids so that the medium more closely approximates the protein composition of cultured mammalian cells. MEM has been used for cultivation of a wide variety of cells grown in monolayers. Optional supplementation of non-essential amino acids to the formulations that incorporate either Hanks' or Earle's salts has broadened the usefulness of this medium. The formulation has been further modified by optional elimination of calcium to permit growth of cells in suspension culture.

**Preparation instructions :**

- 1) Measure 80 - 90% of final required volume of water. Water temperature should be 15-30°C.
- 2) While gently stirring the water, add the powdered medium (10.131g/l) . 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) For each liter being prepared, add 2.20g sodium bicarbonate (CAT N° : P2060) or 29.3 ml of 7.5% sodium bicarbonate solution (CAT N° : L0680)
- 5) While stirring, adjust the pH of the medium to 6.9 – 7.1 using 1 N HCl or 1 N NaOH
- 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.

**Indications of deterioration :**

Dry powder medium should be free flowing. Do not use if powder caked. Prepared medium should be cleared of particulates and flocculent material. Do not use if liquid medium is cloudy or contains precipitate. Other evidence of deterioration may include color change or degradation of physical or performance characteristics.

**Product code : P0440**

**Product name : MEM Alpha Modification w/ Earle's Salts w/ L-Glutamine w/o Sodium Bicarbonate**

CAS Number	Components	Quantity in g/l
10035-04-8	Calcium Chloride Dihydrate	0.26500000
7487-88-9	Magnesium Sulfate Anhydrous	0.09767000
7447-40-7	Potassium Chloride	0.40000000
7647-14-5	Sodium Chloride	6.80000000
7558-80-7	Sodium Phosphate Monobasic Anhydrous	0.12200000
50-99-7	D-Glucose Anhydrous	1.00000000
56-40-6	Glycine	0.05000000
56-41-7	L-Alanine	0.02500000
1119-34-2	L-Arginine Monohydrochloride	0.12600000
5794-13-8	L-Asparagine Monohydrate	0.05000000
56-84-8	L-Aspartic acid	0.03000000
7048-04-6	L-Cysteine Monohydrochloride Monohydrate	0.10000000
30925-07-6	L-Cystine Dihydrochloride	0.03130000
56-86-0	L-Glutamic Acid	0.07500000
56-85-9	L-Glutamine	0.29200000
5934-29-2	L-Histidine Monohydrochloride Monohydrate	0.04200000
73-32-5	L-Isoleucine	0.05200000
61-90-5	L-Leucine	0.05200000
657-27-2	L-Lysine Monohydrochloride	0.07250000
63-68-3	L-Methionine	0.01500000
63-91-2	L-Phenylalanine	0.03200000
147-85-3	L-Proline	0.04000000
56-45-1	L-Serine	0.02500000
72-19-5	L-Threonine	0.04800000
73-22-3	L-Tryptophan	0.01000000
69847-45-6	L-Tyrosine Disodium Salt Dihydrate	0.05190000
72-18-4	L-Valine	0.04600000
50-81-7	Ascorbic Acid	0.05000000
67-48-1	Choline Chloride	0.00100000
58-85-5	D-Biotin	0.00010000
137-08-6	D-Ca Pantothenate	0.00100000
59-30-3	Folic Acid	0.00100000
87-89-8	Myo-Inositol	0.00200000
98-92-0	Nicotinamide (Nicotinic acid amide)	0.00100000
65-22-5	Pyridoxal Hydrochloride	0.00100000
83-88-5	Riboflavin	0.00010000
67-03-8	Thiamine Hydrochloride	0.00100000
68-19-9	Vitamine B12	0.00136000
34487-61-1	Phenol Red Sodium Salt	0.01100000
113-24-6	Sodium Pyruvate	0.11000000
1077-28-7	Thioctic Acid	0.00020000
WATER		989.86887000