Ham's F12

(Ham's Nutrients Mixture F12)

Cat. No. CPF111

With L-Glutamine
With Sodium Bicarbonate
Without HEPES

1. Product Description

Ham's F12 Medium was originally formulated for the growth of CHO cells, supplemented with nutrients, growth factors, and hormones for low-serum or serum-free applications. It is widely used either alone with serum or mixed with DMEM to culture various cell types, serving as a standard basal medium for developing low-serum or serum-free media. This product does not contain HEPES, which can be aseptically added if needed for enhanced pH buffering capacity.

2. Composition

Concentration: mg/L

Amino Acids	mg/L
L-Alanine	8.90
L-Arginine·HCl	211.00
L-Asparagine·H_2O	15.00
L-Aspartic Acid	13.00
L-Cysteine·HCl·H_2O	35.00
L-Glutamic Acid	14.70
L-Glutamine	146.00
Glycine	7.50
L-Histidine·HCl·H_2O	21.00
L-Isoleucine	4.00
L-Leucine	13.00
L-Lysine·HCl	36.50
L-Methionine	4.50
L-Phenylalanine	5.00
L-Proline	34.50
L-Serine	10.50
L-Threonine	12.00
L-Tryptophan	2.00
L-Tyrosine·2Na·2H_2O	7.80
L-Valine	11.70

Vitamins	mg/L
Biotin	0.007
D-Ca Pantothenate	0.50
Choline Chloride	14.00
Folic Acid	1.30
i-Inositol	18.00
Niacinamide	0.04
Pyridoxine·HCl	0.06
Riboflavin	0.04
Thiamine·HCl	0.30
Vitamin B12	1.40

Others

Others	mg/L
D-Glucose	1802.00
HEPES	—
Hypoxanthine, Na	4.77
Linoleic Acid	0.08
Lipoic Acid	0.21
Phenol Red	1.20
Putrescine·2HCl	0.161
Sodium Pyruvate	110.00
Thymidine	0.70

Inorganic Salts	mg/L
$CaCl_2$	33.20
$CuSO_4·5H_2O$	0.0025
$FeSO_4·7H_2O$	0.83
KCl	223.6
$MgCl_2$	57.22
Na_2HPO_4	142.00
NaCl	7599.00
$NaHCO_3$	1176.00
$ZnSO_4·7H_2O$	0.86

3. Product Quality Specifications

Appearance	pH	Osmolality	Endotoxin	Sterility
Light red clear liquid	pH 7.3 ± 0.3	299 ± 15 mOsm/kg H_2O	< 1 EU/mL	Sterile

4. Storage Conditions and Precautions

Protect from direct light and store refrigerated (2–8°C). Product degradation may appear as precipitates, floating particles, turbidity, or color change; discard if any are observed. Storing against the inner walls of a refrigerator where temperatures may approach 0°C can cause degradation.

5. Usage Instructions and Precautions

This product is a sterile solution. Open the cap only in a sterile environment (e.g., a clean bench) using aseptic technique. It is recommended to use the entire contents after opening; otherwise, aliquot into a suitable sterile container and store refrigerated (2–8°C).