



Comparative Formulation

Ham's F-12 Nutrient Mixtures

Powdered Media		HFP05
Amino Acids	mg/L	
Glycine	7.5000	
L-Alanine	8.9000	
L-Arginine	211.0000	
L-Asparagine, Monohydrate	15.0000	
L-Aspartic Acid	13.0000	
L-Cysteine, Hydrochloride, Monohydrate	35.0000	
L-Glutamic Acid	14.7000	
L-Glutamine	146.0000	
L-Histidine, Hydrochloride, Monohydrate	21.0000	
L-Isoleucine	4.0000	
L-Leucine	13.0000	
L-Lysine, Hydrochloride	36.5000	
L-Methionine	4.5000	
L-Phenylalanine	5.0000	
L-Proline	34.5000	
L-Serine	10.5000	
L-Threonine	12.0000	
L-Tryptophan	2.0000	
L-Tyrosine, Disodium, Dihydrate	7.8000	
L-Valine	11.7000	



Powdered Media

HFP05

Inorganic Salts

mg/L

Calcium Chloride, Anhydrous	33.2000
Cupric Sulfate, Pentahydrate	0.0020
Ferrous Sulfate, Heptahydrate	0.8300
Potassium Chloride	223.6000
Sodium Chloride	7599.0000
Sodium Phosphate Dibasic, Anhydrous	142.0000
Zinc Sulfate, Heptahydrate	0.8600

Other Components

mg/L

D-Glucose, Anhydrous	1802.0000
Hypoxanthine, Sodium	4.7000
Linoleic Acid	0.0800
Lipoic Acid (DL-Thiolic Acid)	0.2100
Phenol Red, Sodium Salt	1.2000
Putrescine, Dihydrochloride	0.1600
Pyruvic Acid, Sodium Salt	110.0000
Thymidine	0.7000

Vitamins

mg/L

Biotin	0.0070
Choline Chloride	14.0000
D-Calcium Pantothenate	0.5000
Folic Acid	1.3000
Myo-Inositol	18.0000
Niacinamide	0.0400
Pyridoxine, Hydrochloride	0.0600
Riboflavin	0.0400
Thiamine, Hydrochloride	0.3000



Liquid Media

HFL04

HFL05

HFL06


Amino Acids

mg/L

mg/L

mg/L

Glycine	7.5000	7.5000	
L-Alanine	8.9000	8.9000	18.0000
L-Arginine	211.0000	211.0000	422.0000
L-Asparagine, Monohydrate	15.0000	15.0000	30.0000
L-Aspartic Acid	13.0000	13.0000	26.0000
L-Cysteine, Hydrochloride, Monohydrate	35.0000	35.0000	70.0000
L-Glutamic Acid	14.7000	14.7000	29.4000
L-Glutamine	146.0000	146.0000	292.0000
L-Histidine, Hydrochloride, Monohydrate	21.0000	21.0000	45.8000
L-Isoleucine	4.0000	4.0000	8.0000
L-Leucine	13.0000	13.0000	26.0000
L-Lysine, Hydrochloride	36.5000	36.5000	73.0000
L-Methionine	4.5000	4.5000	9.0000
L-Phenylalanine	5.0000	5.0000	10.0000
L-Proline	34.5000	34.5000	69.0000
L-Serine	10.5000	10.5000	21.0000
L-Threonine	12.0000	12.0000	24.0000
L-Tryptophan	2.0000	2.0000	4.0000
L-Tyrosine, Disodium, Dihydrate	7.8000	7.8000	13.5000
L-Valine	11.7000	11.7000	23.4000

 Liquid Media	HFL04	HFL05	HFL06
Inorganic Salts	mg/L	mg/L	mg/L
Calcium Chloride, Anhydrous	33.2000	33.2000	102.0000
Cupric Sulfate, Pentahydrate	0.0020	0.0020	
Ferrous Sulfate, Heptahydrate	0.8300	0.8300	
Magnesium Chloride, Anhydrous	57.2200		49.7000
Magnesium Sulfate, Anhydrous			192.0000
Potassium Chloride	223.6000	223.6000	285.0000
Potassium Phosphate, Monobasic, Anhydrous			59.0000
Sodium Bicarbonate	1176.0000	1176.0000	1176.0000
Sodium Chloride	7599.0000	7599.0000	7530.0000
Sodium Phosphate Dibasic, Anhydrous	142.0000	142.0000	115.5000
Zinc Sulfate, Heptahydrate	0.8600	0.8600	
Other Components	mg/L	mg/L	mg/L
D-Glucose, Anhydrous	1802.0000	1802.0000	1260.0000
Hypoxanthine, Sodium	4.7700	4.7000	4.0000
Linoleic Acid	0.0800	0.0800	
Lipoic Acid (DL-Thiolic Acid)	0.2100	0.2100	0.2100
Phenol Red, Sodium Salt	1.2000		3.0000
Putrescine, Dihydrochloride	0.1600	0.1600	0.1600
Pyruvic Acid, Sodium Salt	110.0000	110.0000	220.0000
Thymidine	0.7000	0.7000	0.7000



Liquid Media

HFL04

HFL05

HFL06

Vitamins

mg/L

mg/L

mg/L

Biotin	0.0070	0.0070	0.0070
Choline Chloride	14.0000	14.0000	14.0000
Cupric Sulfate, Pentahydrate			0.0020
D-Calcium Pantothenate	0.5000	0.5000	0.5000
Ferrous Sulfate, Heptahydrate			0.8300
Folic Acid	1.3000	1.3000	1.3000
Glycine			15.0000
Myo-Inositol	18.0000	18.0000	18.0000
Niacinamide	0.0400	0.0400	0.0400
Pyridoxine, Hydrochloride	0.0600	0.0600	0.0600
Riboflavin	0.0400	0.0400	0.0400
Thiamine, Hydrochloride	0.3000	0.3000	
Vitamin B12	1.4000		1.4000