



# Comparative Formulation

## Ham's F-10 Nutrient Mixtures

 Powdered Media	HFP02	HFP03
Amino Acids	mg/L	mg/L
Glycine	7.5000	7.5000
L-Alanine	9.0000	9.0000
L-Arginine	211.0000	211.0000
L-Asparagine, Monohydrate	15.0000	15.0000
L-Aspartic Acid	13.0000	13.0000
L-Cysteine, Hydrochloride, Monohydrate	36.2500	36.2500
L-Glutamic Acid	14.7000	14.7000
L-Glutamine		146.0000
L-Histidine, Hydrochloride, Monohydrate	23.0000	23.0000
L-Isoleucine	2.6000	2.6000
L-Leucine	13.0000	13.0000
L-Lysine, Hydrochloride	29.0000	29.0000
L-Methionine	4.5000	4.5000
L-Phenylalanine	5.0000	5.0000
L-Proline	11.5000	11.5000
L-Serine	10.5000	10.5000
L-Threonine	3.6000	3.6000
L-Tryptophan	0.6000	0.6000
L-Tyrosine, Disodium, Dihydrate	2.6200	2.6200
L-Valine	3.5000	3.5000

 Powdered Media	HFP02	HFP03
<b>Inorganic Salts</b>	<b>mg/L</b>	<b>mg/L</b>
Calcium Chloride, Anhydrous	33.3000	33.3000
Cupric Sulfate, Pentahydrate	0.0020	0.0020
Ferrous Sulfate, Heptahydrate	0.8300	0.8300
Magnesium Sulfate, Anhydrous	74.6000	74.6000
Potassium Chloride	285.0000	285.0000
Potassium Phosphate, Monobasic, Anhydrous	83.0000	83.0000
Sodium Chloride	7400.0000	7400.0000
Sodium Phosphate Dibasic, Anhydrous	153.7000	153.7000
Zinc Sulfate, Heptahydrate	0.0300	0.0300
<b>Other Components</b>	<b>mg/L</b>	<b>mg/L</b>
D-Glucose, Anhydrous	1100.0000	1100.0000
Hypoxanthine, Sodium	4.7000	4.7000
Lipoic Acid (DL-Thiolic Acid)	0.2000	0.2000
Phenol Red, Sodium Salt	1.2000	1.2000
Pyruvic Acid, Sodium Salt	110.0000	110.0000
Thymidine	0.7000	0.7000
<b>Vitamins</b>	<b>mg/L</b>	<b>mg/L</b>
Biotin	0.0240	0.0240
Choline Chloride	0.7000	0.7000
D-Calcium Pantothenate	0.7000	0.7000
Folic Acid	1.3000	1.3000
Myo-Inositol	0.5000	0.5000
Niacinamide	0.6000	0.6000
Pyridoxine, Hydrochloride	0.2000	0.2000
Riboflavin	0.4000	0.4000
Thiamine, Hydrochloride	1.0000	1.0000
Vitamin B12	1.4000	1.4000



## Liquid Media

HFL01

HFL02

HFL08

HFL09

### Amino Acids

mg/L

mg/L

mg/L

mg/L

Glycine	7.5000			7.5000
L-Alanine	9.0000			9.0000
L-Arginine	211.0000			211.0000
L-Asparagine, Monohydrate	15.0000			15.0000
L-Aspartic Acid	13.0000			13.0000
L-Cysteine, Hydrochloride, Monohydrate	36.2500			36.2500
L-Glutamic Acid	14.7000			14.7000
L-Glutamine	146.0000			
L-Histidine, Hydrochloride, Monohydrate	23.0000			23.0000
L-Isoleucine	2.6000			2.6000
L-Leucine	13.0000			13.0000
L-Lysine, Hydrochloride	29.0000			29.0000
L-Methionine	4.5000			4.5000
L-Phenylalanine	5.0000			5.0000
L-Proline	11.5000			11.5000
L-Serine	10.5000			10.5000
L-Threonine	3.6000			3.6000
L-Tryptophan	0.6000			0.6000
L-Tyrosine, Disodium, Dihydrate	2.6200			2.6200
L-Valine	3.5000			3.5000

 Liquid Media	HFL01	HFL02	HFL08	HFL09
<b>Inorganic Salts</b>	mg/L	mg/L	mg/L	mg/L
Calcium Chloride, Anhydrous	33.3000			33.3000
Cupric Sulfate, Pentahydrate	0.0020			0.0020
Ferrous Sulfate, Heptahydrate	0.8300			0.8300
Magnesium Sulfate, Anhydrous	74.6000			74.6000
Potassium Chloride	285.0000			285.0000
Potassium Phosphate, Monobasic, Anhydrous	83.0000			83.0000
Sodium Bicarbonate	1200.0000			1200.0000
Sodium Chloride	7400.0000			7400.0000
Sodium Phosphate Dibasic, Anhydrous	153.7000			153.7000
Zinc Sulfate, Heptahydrate	0.0300			0.0300
<b>Other Components</b>	mg/L	mg/L	mg/L	mg/L
D-Glucose, Anhydrous	1100.0000			1100.0000
Hypoxanthine, Sodium	4.7000			4.7000
Lipoic Acid (DL-Thiolic Acid)	0.2000			0.2000
Phenol Red, Sodium Salt	1.2000			1.2000
Pyruvic Acid, Sodium Salt	110.0000			110.0000
Thymidine	0.7000			0.7000



## Liquid Media

HFL01

HFL02

HFL08

HFL09

### Vitamins

mg/L

mg/L

mg/L

mg/L

Biotin

0.0240

0.0240

Choline Chloride

0.7000

0.7000

D-Calcium Pantothenate

0.7000

0.7000

Folic Acid

1.3000

1.3000

Myo-Inositol

0.5000

0.5000

Niacinamide

0.6000

0.6000

Pyridoxine, Hydrochloride

0.2000

0.2000

Riboflavin

0.4000

0.4000

Thiamine, Hydrochloride

1.0000

1.0000

Vitamin B12

1.4000

1.4000