BI
Biological Industries
Culture of Excellence

LIFE TECH
Life Technologies™
Your Molecular & Cell Technology Partner

Classic Media And Reagents

Sterile Filtration and Aseptic Filling

Biological Industries' medium products are prepared by a sterile filtration process and aseptic filling. The process has been validated to ensure that the production of solutions meets the sterility assurance level of 10^3.
The filtration step includes the use of sterilizing grade membrane filters. After filtration, the medium is dispensed into bottles by an aseptic filling process which has been validated to insure sterility of the final product. Medium products are produced in a controlled environment (clean rooms) designed to carefully control air pressure and particulate matter.
The manufacturing area is a class 100,000 (ISO 8) environment. The sterile bottles and equipment are stored in a class 10,000 (ISO 7) environment, and the filling room is a class 1000 (ISO 6) environment with class 100 (ISO 5) laminar air flow sterile bench.
Clean rooms are monitored on a regular basis for particulate and microbial levels to ensure that the air handling system, cleaning protocols and personnel maintain required standards. After filling, the final product is held in quarantine until all quality control tests have been completed.

Quality Control

The quality of our liquid media is confirmed by testing representative samples from each lot.

Physicals Tests
pH & osmolality are measured to verify compliance with accepted specifications.

Endotoxins
Endotoxin concentrations are routinely measured with the Limulus Amebocyte Lysate (LAL) test using the kinetic turbidimetric method.

Sterility Testing
The absence of fungal and bacterial contamination is confirmed by sterility tests using the direct inoculation method or membrane filtration method with microbiological media. All media containing products of animal origin are tested for the absence of mycoplasma.

Cell Growth Promotion
The growth promotion activity and the absence of cytotoxicity of all medium products are tested using appropriate cell lines. Cells are examined for doubling time and cell morphology.

Expiration Date
Refer to product label for expiration date.

Storage
For optimal performance, store medium products under the conditions specified on the label.
Avoid light exposure of liquid medium products.

Certificate of Analysis and Safety Data
A Certificate of Analysis for each product lot is available upon request as well as a Material Safety Data Sheet (MSDS).

Single-Strength Liquid Media

Product Name	Catalogue No.	Unit Size	Storage Temp.	Formulation Page
Basal Medium-Eagle (BME) Earle's Salts Base Without L-Glutamine	01-015-1A	500ml	2-8°C	95
Minimum Essential Medium-Eagle (MEM-E) Earle's Salts Base Without L-Glutamine	01-025-1A 01-025-1B	500ml 100ml	2-8°C 2-8°C	99 99
Minimum Essential Medium-Eagle (MEM-H) Hanks' Salts Base Without L-Glutamine	01-035-1A	500ml	2-8°C	99
Minimum Essential Medium-Eagle (MEM-NEAA) Earle's Salts Base With Non-Essential Amino Acids Without L-Glutamine	01-040-1A	500ml	2-8°C	99
Minimum Essential Medium-Alpha (MEM-A) With 1g/l D-Glucose (Low Glucose) With L-Glutamine Without Ribonucleosides and Deoxyribonucleosides	01-042-1A	500ml	2-8°C	96
Minimum Essential Medium Alpha (MEM-A) With 4.5 g/l D-Glucose (High Glucose) With L-Glutamine Without Ribonucleosides and Deoxyribonucleosides	01-043-1A	500ml	2-8°C	
Minimum Essential Medium (MEM) for suspension cultures Without L-Glutamine	01-045-1A	500ml	2-8°C	99

Product Name	Catalogue No.	Unit Size	Storage Temp.	Formulation Page
Dulbecco's Modified Eagle Medium (DMEM) With 1g/l D-Glucose (Low Glucose) With Sodium Pyruvate 110mg/l Without L-Glutamine	01-050-1A 01-050-1B	500ml 100ml	2-8ºC 2-8ºC	95-96 95-96
Dulbecco's Modified Eagle Medium (DMEM) With 4.5g/l D-Glucose (High Glucose) Without Sodium Pyruvate Without Phenol Red Without L-Glutamine	01-053-1A	500ml	2-8ºC	
Dulbecco's Modified Eagle Medium (DMEM) With 4.5g/l D-Glucose (High Glucose) Without Sodium Pyruvate Without L-Methionine Without L-Glutamine	01-054-1A	500ml	2-8ºC	
Dulbecco's Modified Eagle Medium (DMEM) With 4.5g/l D-Glucose (High Glucose) Without Sodium Pyruvate Without L-Glutamine	01-055-1A	500ml	2-8ºC	95-96
Dulbecco's Modified Eagle Medium (DMEM) With 4.5g/l Glucose (High Glucose) Without Sodium Pyruvate With stable Glutamine	01-056-1A	500ml	2-8ºC	
Dulbecco's Modified Eagle Medium (DMEM) Without D-Glucose Without Sodium Pyruvate Without L-Glutamine	01-057-1A	500ml	2-8ºC	
Iscove's Modified Dulbecco's Medium (IMDM) With L-Glutamine Without Alpha-Thioglycerol Without Beta Mercaptoethanol	01-058-1A	500ml	2-8ºC	95-96
MCDB-153 (Modified)	01-059-1A	500ml	2-8ºC	
McCoy's 5A Medium (Modified) Without Serum With L-Glutamine	01-075-1A 01-075-1B	500ml 100ml	2-8ºC 2-8ºC	97 97
Medium M-199 (M199E) Earle's Salts Base With L-Glutamine	01-080-1A 01-080-1B	500ml 100ml	2-8ºC 2-8ºC	98 98
Medium M-199 (M199H) Hanks' Salts Base With L-Glutamine	01-085-1A 01-085-1B	500ml 100ml	2-8ºC 2-8ºC	98 98
Nutrient Mixture F-10 (Ham's) With L-Glutamine	01-090-1A 01-090-1B	500ml 100ml	2-8ºC 2-8ºC	100 100
Nutrient Mixture F-12 (Ham's) With L-Glutamine	01-095-1A	500ml	2-8ºC	100
RPMI Medium 1640 With L-Glutamine	01-100-1A 01-100-1B	500ml 100ml	2-8ºC 2-8ºC	97 97
RPMI Medium 1640 Without D-Glucose Without L-Glutamine	01-101-1A 01-101-1B	500ml 100ml	2-8ºC 2-8ºC	
RPMI Medium 1640 Without Phenol Red Without L-Glutamine	01-103-1A 01-103-1B	500ml 100ml	2-8ºC 2-8ºC	
RPMI Medium 1640 Without L-Glutamine	01-104-1A 01-104-1B	500ml 100ml	2-8ºC 2-8ºC	
RPMI Medium 1640 With 25mM Hepes With L-Glutamine	01-106-1A 01-106-1B	500ml 100ml	2-8ºC 2-8ºC	97 97
Waymouth's MB 752/1 Medium With L-Glutamine	01-110-1A	500ml	2-8ºC	101
Leibovitz L-15 Medium With L-Glutamine	01-115-1A	500ml	2-8ºC	99
Dulbecco's Modified Eagle Medium (DMEM): Nutrient Mixture F-12 (Ham's) (1:1) Without L-Glutamine With Sodium Bicarbonate 1.2g/l With Hepes 15mM With Sodium Pyruvate 55mg/l	01-170-1A	500ml	2-8ºC	100
Mouse Embryonic Stem Cells (ESC) Basal Medium With Stable Glutamine	01-171-1A	500ml	2-8ºC	

Two Fold Concentration Media

Product Name	Catalogue No.	Unit Size	Storage Temp.	Formulation Page
Minimum Essential Medium-Eagle (MEM-E) 2X Conc. Earle's Salts Base Without L-Glutamine With Sodium Bicarbonate	01-025-9A	500ml	2-8ºC	
Dulbecco Modified Eagle Medium (DMEM), 2X Conc. 4.5g/l D-Glucose (High Glucose) Without L-Glutamine With Sodium Bicarbonate	01-055-9A	500ml	2-8ºC	

Five-Fold and Ten Fold Concentration Media

Product Name	Catalogue No.	Unit Size	Storage Temp.	Formulation Page
Basal Medium Eagle (BME) 10X Conc. Earle's Salts Base Without L-Glutamine Without Sodium Bicarbonate	01-015-5A	500ml	2-8ºC	95
Minimum Essential Medium Eagle (MEM-E) 10X Conc. Earle's Salts Base Without L-Glutamine Without Sodium Bicarbonate	01-025-5A	500ml	2-8ºC	99
Dulbecco Modified Eagle Medium (DMEM) 5X Conc. 1g/l D-Glucose (Low Glucose) Without L-Glutamine Without Sodium Bicarbonate	01-050-4A	500ml	AMB	95-96
Dulbecco Modified Eagle Medium (DMEM) 5X Conc. 4.5g/l D-Glucose (High Glucose) Without L-Glutamine Without Sodium Bicarbonate	01-055-4A 01-055-4B	500ml 100ml	AMB AMB	95-96 95-96
Medium M-199 10X Conc. Earle's Salts Base With L-Glutamine Without Sodium Bicarbonate	01-080-5A	500ml	2-8ºC	98
Nutrient Mixture F-10 (Ham's) 10X Conc. With L-Glutamine Without Sodium Bicarbonate	01-090-5A	500ml	2-8ºC	
Nutrient Mixture F-12 (Ham's) 10X Conc. With L-Glutamine Without Sodium Bicarbonate	01-095-5A	500ml	2-8ºC	
RPMI Medium 1640 10X Conc. Without L-Glutamine Without Sodium Bicarbonate	01-104-5A	500ml	2-8ºC	97

Media Preparation

Directions for the Preparation of Single Strength Synthetic Liquid Media (1x) from Concentrated Media.

1. Measure out sterile culture - grade water (Catalogue No. 03-055-1) to approximately 70% of desired total volume of media. Pour water into an appropriate sterile mixing container that is close to the desired final volume. The water should be at room temperature.
2. Add the amount of the concentrated medium or concentrated medium components.
3. Add the desired amount of L-Glutamine Solution 200 mM (Catalogue No. 03-020-1) if required.
4. Add the desired amount of Sodium Bicarbonate Solution 7.5% (Catalogue No. 03-040-1).
5. Add antibiotics solution if desired.
6. Add water to the final volume. During the dilution, stir gently into equilibrium. If necessary, adjust pH with sterile 1 N NaOH or HCl.
7. Add the desired amount of serum, if required.
8. Store at 2°C to 8°C.

Important

The above procedures are carried out under strict sterile conditions. Do not use mouth pipetting.

Example 1

Preparation of Basal Medium-Eagle, Earle's Salt Base, one liter

1. 700 ml sterile water (Catalogue No.03-055-1).
2. 100 ml Basal Medium-Eagle, Earle's Salts Base, concentrate 10X, without Sodium Bicarbonate and L-Glutamine (Catalogue No. 01-015-5).
3. 10 ml L-Glutamine Solution 200 mM (Catalogue No. 03-020-1).
4. 29.4 ml Sodium Bicarbonate Solution 7.5%. (Catalogue No. 03-040-1).
5. 10ml Penicillin-Streptomycin Solution (Catalogue No. 03-031-1).
6. Sterile water to final volume, Adjust pH if necessary.

Example 2

Preparation of RPMI from Concentrate

Our RPMI Concentrate is prepared by a special method which enhances the stability of the product. Therefore in this case proceed as follows:

1. 700 ml distilled water.
2. Add 100 ml RPMI Concentrate 10X.
3. Adjust pH to 6.5-7.0 with 1N NaOH.
4. Add 10.3 ml L-Glutamine Solution 200 mM.
5. Add 26.7 ml Sodium Bicarbonate Solution 7.5%.
6. Adjust pH with 1N NaOH or 1N HCl to pH 7.0-7.4.
7. Add distilled water to final volume. Adjust pH if necessary.
8. Filter the medium into sterile containers using a 0.2 µm membrane filter.

Recommended Amounts of Sodium Bicarbonate and L-Glutamine To Be Added In The Preparation of Single Strength Liquid Media (1x) from Concentrated Media (5x, 10x)

Desired product Cat. No. / Description	**Prepared From product Cat. No. / Description**	**Quantity Sodium Bicarbonate Solution 7.5% Cat. No. 03-040-1 ml/Liter**	**Quantity L-Glutamine Solution 200mM Cat. No. 03-020-1 ml/Liter**
01-015-1 Basal Medium-Eagle Earle's Salts Base (1x)	01-015-5 Basal Medium-Eagle Earle's Salts Base (10x)	29.4	10
01-025-1 Minimum Essential Medium Eagle Earle's Salts Base (1x)	01-025-5 Minimum Essential Medium Eagle Earle's Salts Base (10x)	29.4	10
01-050-1 Dulbecco's Modified Eagle Medium Low Glucose (1x)	01-050-4 Dulbecco's Modified Eagle Medium Low Glucose (5x)	49.4	20
01-055-1 Dulbecco's Modified Eagle Medium High Glucose (1x)	01-055-4 Dulbecco's Modified Eagle Medium High Glucose (5x)	49.4	20
01-080-1 Medium M-199 Earle' Salt Base (1x)	01-080-5 Medium M-199 Earle' Salt Base (10x)	29.4	
01-085-1 Medium M-199 Hanks' Salt Base (1x)	01-085-5 Medium M-199 Hanks' Salt Base (10x)	4.7	
01-090-1 Nutrient Mixture F-10 (HAM) (1x)	01-090-5 Nutrient Mixture F-10 (HAM) (10x)	16	
01-095-1 Nutrient Mixture F-12 (HAM) (1x)	01-095-5 Nutrient Mixture F-12 (HAM) (10x)	15.7	
01-100-1 RPMI-1640 (1x)	01-104-5 RPMI-1640 (10x)	26.7	10.3
01-170-1 DMEM:F-12(1:1) (1x)	01-170-5 DMEM:F-12(1:1) (10x)	16	12.5

We recommend using cell culture grade water Cat. No. 03-055-1

L-Alanyl L-Glutamine Solution

Product Name	Catalogue No.	Unit Size	Storage Temp.
L-Alanyl-L-Glutamine (Stable Glutamine) 200 mM in 0.85% NaCl	03-022-1B	100ml	-20°C
	03-022-1C	20ml	-20°C

L-Alanyl L-Glutamine is a dipeptide substitute for L-Glutamine.

- Can be used as a direct substitute for L-Glutamine at equimolar concentrations in mammalian cell culture systems.
- Eliminates problems associated with the spontaneous breakdown of L-Glutamine during incubation.
- Highly soluble in aqueous solution and is heat stable.

Expiration
24 months

Storage
-20°C

Media for Insect Cells

Product Name	Catalogue No.	Unit Size	Storage Temp.	Formulation Page
BIOINSECT-1 Serum-Free medium With Glutamine	05-050-1A	500ml	2-8°C	
Schneider's Drosophila Medium With L-Glutamine	01-150-1A	500ml	2-8°C	101
Grace's Insect Cell Medium Without Insect Haemolymph Without Lactalbumin Hydrolysate Without Yeastolate With L-Glutamine	01-155-1A	500ml	2-8°C	101

Powdered Media

Product Name	Catalogue No.	Unit Size	Storage Temp.	Formulation Page
Minimum Essential Medium-Eagle (MEM-E) Powder Earle's Salts Base With L-Glutamine Without Sodium Bicarbonate	11-025-1N	1x50 lt	2-8°C	103
	11-025-1M	1x10 lt	2-8°C	103
	11-025-1G	1x5 lt	2-8°C	103
	11-025-1K	1x1 lt	2-8°C	103
Minimum Essential Medium-Eagle (MEM-E) Powder, Earle's Salts Base With Non-Essential Amino Acids With L-Glutamine Without Sodium Bicarbonate	11-040-1N	1x50 lt	2-8°C	105
	11-040-1M	1x10 lt	2-8°C	105
	11-040-1G	1x5 lt	2-8°C	105
Minimum Essential Medium-Alpha (MEM-A) Powder With 1g/l D-Glucose (Low Glucose) Without Ribonucleosides and Deoxyribonucleosides With L-Glutamine Without Sodium Bicarbonate	11-042-1N	1x50 lt	2-8°C	103
	11-042-1M	1x10 lt	2-8°C	103
	11-042-1G	1x5 lt	2-8°C	103
	11-042-1K	1x1 lt	2-8°C	103
Dulbecco's Modified Eagle Medium (DMEM) Powder With 1g/l D-Glucose (Low Glucose) With Sodium Pyruvate 110mg/l With L-Glutamine Without Sodium Bicarbonate	11-050-1N	1x50 lt	2-8°C	103
	11-050-1M	1x10 lt	2-8°C	103
	11-050-1G	1x5 lt	2-8°C	103
	11-050-1K	1x1 lt	2-8°C	103
Dulbecco's Modified Eagle Medium (DMEM) Powder With 4.5g/l D-Glucose (High Glucose) Without Sodium Pyruvate With L-Glutamine Without Sodium Bicarbonate	11-055-1N	1x50 lt	2-8°C	103
	11-055-1M	1x10 lt	2-8°C	103
	11-055-1G	1x5 lt	2-8°C	103
	11-055-1K	1x1 lt	2-8°C	103
Iscove's Modified Dulbecco Medium (IMDM) Powder With Hepes With L-Glutamine Without Sodium Bicarbonate	11-058-1N	1x50 lt	2-8°C	105
	11-058-1M	1x10 lt	2-8°C	105
	11-058-1G	1x5 lt	2-8°C	105
Medium M-199 (M199E) Powder Earle's Salts Base With L-Glutamine Without Sodium Bicarbonate	11-080-1N	1x50 lt	2-8°C	103-104
	11-080-1M	1x10 lt	2-8°C	103-104
	11-080-1G	1x5 lt	2-8°C	103-104
	11-080-1K	1x1 lt	2-8°C	103-104
Nutrient Mixture F-10 (Ham's) Powder With L-Glutamine Without Sodium Bicarbonate	11-090-1N	1x50 lt	2-8°C	103-104
	11-090-1M	1x10 lt	2-8°C	103-104
	11-090-1G	1x5 lt	2-8°C	103-104
	11-090-1K	1x1 lt	2-8°C	103-104

Product Name	Catalogue No.	Unit Size	Storage Temp.	Formulation Page
Nutrient Mixture F-12 (Ham's) Powder With L-Glutamine Without Sodium Bicarbonate	11-095-1N 11-095-1M 11-095-1G 11-095-1K	1x50 lt 1x10 lt 1x5 lt 1x1 lt	2-8°C 2-8°C 2-8°C 2-8°C	103-104 103-104 103-104 103-104
RPMI Medium 1640, Powder With L-Glutamine Without Sodium Bicarbonate	11-100-1N 11-100-1M 11-100-1G 11-100-1K	1x50 lt 1x10 lt 1x5 lt 1x1 lt	2-8°C 2-8°C 2-8°C 2-8°C	105 105 105 105
Dulbecco's Modified Eagle Medium (DMEM): Nutrient Mixture F-12 (Ham's) (1:1), Powder With Hepes 15mM With L-Glutamine Without Sodium Bicarbonate	11-170-1N 11-170-1M 11-170-1G 11-170-1K	1x50 lt 1x10 lt 1x5 lt 1x1 lt	2-8°C 2-8°C 2-8°C 2-8°C	103-104 103-104 103-104 103-104
Dulbecco's Phosphate Buffered Saline (DPBS), Powder Without Calcium Chloride Without Magnesium Chloride With L-Glutamine Without Sodium Bicarbonate	11-223-1M 11-223-1G 11-223-1K	1x10 lt 1x5 lt 1x1 lt	2-8°C 2-8°C 2-8°C	

Unit Sizes: 1 liter, 5 liters, 10 liters and 50 liters.
Other products and package sizes are available by special order.

Powdered Media Preparation Procedure:

1. To a mixing container that is as close to the final volume as possible, add 10% less distilled water than the desired total volume of medium.
2. Add powdered medium to room temperature water with gentle stirring. Do not heat water.
3. Rinse inside of package to remove all trace of powder.
4. Add Sodium Bicarbonate as required.
5. Dilute the medium to the desired volume with distilled water and stir until dissolved. Do not overmix.
6. Adjust the pH to between 0.2-0.3 below the desired final working pH by slowly adding, with stirring, 1N NaOH HCl. The pH usually will rise 0.2 -0.3 units upon filtration. Keep the container closed until the medium is filtered.
7. Process the medium immediately into sterile containers by membrane filtration using 0.2µ membrane filter.

See L-Alanyl L-Glutamine Solution on previous page.

Sodium Bicarbonate Concentrations:

Catalogue No.	Sodium Bicarbonate gram/liter	Sodium Bicarbonate ml/liter from 7.5% Solution
11-025-1	2.2	29.3
11-040-1	2.2	29.3
11-042-1	2.2	29.3
11-050-1	3.7	49.3
11-055-1	3.7	49.3
11-058-1	3.024	40.32
11-075-1	2.2	29.3
11-080-1	2.2	29.3
11-090-1	1.2	16
11-095-1	1.176	15.68
11-100-1	2.0	26.67
11-170-1	1.2	16

Example

RPMI 1640 (11-100-1) – 1 liter

1. Prepare 900ml of distilled water in clean glass beaker. Water temperature should be 15-30°C. Put the beaker on a stirrer and add a stirring bar.
2. Add the 1-liter powder to the water and stir gently. Fill some distilled water into the empty package, stir and pour the remains into the beaker. Stir untill completely dissolved.
3. Add 2.0 gram Sodium Bicarbonate (or 26.67 ml of 7.5% Sodium Bicarbonate Solution).
4. Adjust pH to 0.1-0.3 units below the required pH using 1N HCl or 1N NaOH. The pH will rise by 0.1-0.3 units after filtration.
5. Add distilled water up to 1 liter.
6. Filter for sterility with 0.2µ membrane filter into sterile bottles.
7. For the preparation of 10 liters multiply by 10.

Reagents and Supplements

Biological Industries' reagents and supplements are specifically designed for cell culture allowing for the growth and propagation of a wide spectrum of cell types under controlled conditions. In vitro cell culture systems provide the researcher with the appropriate means for effectively studying cell growth and differentiation, in order to understand the cellular response to specific environmental stimuli. Each and every cell culture system is designed to meet its nutritional and metabolic niche requirements once a basic medium is chosen. In order to realize maximum yields, the cell culture must have a large reserve of not only the basic nutrients, but also the essential requirements which provide an energy source, amino acids, vitamins and other various supplementations to enhance cell growth and performance. Biological Industries' reliable and proven products will help you reach your goals.

Biological Industries' products are not only well-known in many medical centers and hospitals nationally and internationally, but also in many prominent and renowned research laboratories in such diverse fields as cell culture and biology, immunology and oncology, virology, microbiology and parasitology, as well as in vitro fertilization among many other specialized fields. Customized solutions and media formulations are manufactured to exact specifications under strict and rigorous Quality Assurance/Quality Control Guidelines and supplied to numerous biotech and biopharmaceutical firms and corporations, from small-volume to large-scale operations, in order to meet your needs and requirements. All media are performance tested with applicable documentation that meets international standards, in order to ensure lot-to-lot uniformity and the highest quality. Bulk pricing is available upon request.

The following is a list of reagents and supplements that all undergo extensive and vigorous Quality Control Protocols.

Product Name	Conc.	Catalogue No.	Unit Size	Storage Temp.
BME Amino Acids Solution [1] Without L-Glutamine	100X	01-315-1B	100ml	2-8°C
BME Vitamins Solution [1]	100X	01-316-1B	100ml	-20°C
MEM Amino Acids Solution Without L-Glutamine	50X	01-325-1B	100ml	2-8°C
MEM Vitamins Solution [1]	100X	01-326-1B	100ml	-20°C
MEM Non-Essential Amino Acids Solution [1]	100X	01-340-1B	100ml	2-8°C
Ribonucleosides and Deoxyribonucleosides for MEM-Alpha [2]	500X	01-343-1D	10ml	-20°C
Lactalbumin Hydrolysate Solution, 166.6 gr/liter	50X	01-356-1B	100ml	2-8°C
Yeastolate Solution, 166.6 gr/liter	50X	01-357-1B	100ml	2-8°C
Human Recombinant Insulin Solution, (~3.5 mg/ml)	100 Units/ml	01-818-1H	5ml	2-8°C
Gelatin Solution	0.1%	01-944-1A 01-944-1B	500ml 100ml	2-8°C
Bovine Albumin Solution, Fraction V in saline	10%	03-010-1B	100ml	-20°C
Ethylenediaminetetraacetic Acid (EDTA) Disodium Salt Solution, in DPBS	0.05%	03-015-1B	100ml	AMB
L-Glutamine Solution, 29.2 mg/ml in Saline	200mM	03-020-1A 03-020-1B 03-020-1C	500ml 100ml 20ml	-20°C -20°C -20°C
L-Alanyl L-Glutamine (Stable Glutamine)	200 mM	03-022-1B 03-022-1C	100ml 20ml	-20°C -20°C
HEPES Buffer Solution, pH 7.3 at 37°C	1M	03-025-1B 03-025-1C	100ml 20ml	AMB AMB
Sodium Bicarbonate Solution	7.5%	03-040-1A 03-040-1B	500ml 100ml	AMB AMB
Sodium Bicarbonate Solution	5%	03-041-1A 03-041-1B	500ml 100ml	AMB AMB
Sodium Pyruvate Solution, 11.0 mg/ml	100mM	03-042-1B	100ml	-20°C
Water, Cell Culture Grade		03-055-1A	500ml	AMB
SPGA EDTA Solution		03-060-1A	500ml	-20°C
SPGA Solution		03-061-1A	500ml	-20°C
HAT Supplement, (Hypoxanthine 680.5 mg/l, Aminopterin 8.81 mg/l, Thymidine 193.8 mg/l), in DPBS	50X	03-080-1B	100ml	-20°C
HT Supplement (Hypoxanthine 680.5mg/l, Thymidine 193.8mg/l), in DPBS	50X	03-085-1B 03-085-1C	100ml 20ml	-20°C -20°C
Bovine Fibronectin Solution	1mg/ml	03-090-1-01 03-090-1-05	1ml 5ml	2-8°C 2-8°C
Phenol Red Solution, in DPBS	5mg/ml	03-100-1B	100ml	AMB
Trypan Blue Solution, in Saline	5mg/ml	03-102-1B	100ml	AMB
Human Fibronectin Solution	1mg/ml 1mg/ml	05-750-1H 05-750-1F	1ml 5ml	2-8°C 2-8°C

[1] See formulation on page 102
[2] See formulation on page 96

Biochemicals

These cell culture-tested chemicals are regularly being used by Biological Industries for the manufacture of cell culture products and can be purchased separately.

Product Name	Catalogue No.	Unit Size
L-Alanine	41-239-25 41-239-100	25 gr 100 gr
L-Arginine Free Base	41-219-25 41-219-100	25 gr 100 gr
L-Arginine Hydrochloride	41-201-25 41-201-100	25 gr 100 gr
L-Asparagine Monohydrate	41-215-25 41-215-100	25 gr 100 gr
L-Aspartic Acid	41-216-25 41-216-100	25 gr 100 gr
L-Cysteine Hydrochloride Hydrate	41-241-25 41-241-100	25 gr 100 gr
L-Cystine	41-223-25 41-223-100	25 gr 100 gr
L-Glutamic Acid	41-217-25 41-217-100	25 gr 100 gr
L-Glutamine	41-218-25 41-218-100	25 gr 100 gr
Glycine	41-202-25 41-202-100	25 gr 100 gr
L-Histidine Hydrochloride Monohydrate	41-203-25 41-203-100	25 gr 100 gr
L-Isoleucine	41-204-25 41-204-100	25 gr 100 gr
L-Leucine	41-205-25 41-205-100	25 gr 100 gr
L-Lysine Monohydrochloride	41-206-25 41-206-100	25 gr 100 gr
L-Methionine	41-207-25 41-207-100	25 gr 100 gr
L-Phenylalanine	41-208-25 41-208-100	25 gr 100 gr
L-Proline	41-221-25 41-221-100	25 gr 100 gr
L-Serine	41-209-25 41-209-100	25 gr 100 gr
L-Threonine	41-210-25 41-210-100	25 gr 100 gr
L-Tryptophan	41-211-25 41-211-100	25 gr 100 gr
L-Tyrosine	41-222-25 41-222-100	25 gr 100 gr
L-Valine	41-212-25 41-212-100	25 gr 100 gr
Bovine Serum Albumin Fraction V	41-903-25 41-903-100	25 gr 100 gr
EDTA Disodium Dihydrate	41-922-25 41-922-100	25 gr 100 gr
Gentamycin Sulfate	41-503-1 41-503-5	1 gr 5 gr
Glucose Anhydrous	41-302-500	500 gr
Hepes	41-122-25 41-122-100	25 gr 100 gr
Insulin, Human Recombinant	41-975-100	100 gr
Kanamycin Sulfate	41-507-1 41-507-5	1 gr 5 gr
MOPS	41-811-50 41-811-100	50 gr 100 gr
Neomycin Sulfate	41-505-1 41-505-5	1 gr 5 gr
Nystatin	41-506-1 41-506-5	1 gr 5 gr
Penicillin G Sodium	41-501-10 41-501-25 41-501-100	10 gr 25 gr 100 gr
Streptomycin Sulfate	41-502-25 41-502-100	25 gr 100 gr
Collagen Type I, Rat Tail	01-990-100	100 gr
Transferrin, Human, Substantially Iron-Free	41-951-100	100 gr
Transferrin, Human, Iron-Saturated	41-951-500	500 gr
Trypsin, Porcine Pancreas (1:250)	41-920-25 41-920-100	25 gr 100 gr

Balanced Salt Solutions

Balanced Salt Solutions, for all intents and purposes, are inorganic salt solutions that form the basis of many complex media formulations. They may contain varying amounts of NaCl, KCl, $MgCl_2$, $NaHCO_3$, $MgSO_4$, $CaCl_2$ and other salts, and have since been modified and enriched along with amino acids, vitamins, fatty acids and lipids and as well as other nutrients that segue into a final medium based upon application and technique to meet the cells unique niche requirements. These precise media formulations are now optimized to the nth degree to support a wide array of cell lines. The current role of a balanced salt solution in cell culture is multi-faceted and may be divided into four principal functions.

- Functions as a diluent, as an irrigating medium or transporting fluid while maintaining osmoregulation, the optimal and constant balance of osmotic pressure gradients between the intracellular and extracellular compartments.
- Provides cells with fluids and certain bulk inorganic ions essential for normal cell metabolism.
- When combined with a carbohydrate, such as Glucose ($C_6H_{12}O_6$), it provides a primary energy source for cell metabolism.
- When provided with a buffering system, it facilitates the maintenance of physiological pH within an acceptable range of 7.1-7.5.

Biological Industries offers a wide range of various formulations to meet all the requirements for cell culture. Each batch undergoes extensive and vigorous Quality Control Protocols to verify compliance with product specifications. Each batch undergoes a series of Chemical, Microbiological, Stability, and Performance Testing.

Product Name	Conc.	Catalogue No.	Unit Size	Storage Temp.
Gey's Balanced Salt Solution	1X	01-919-1A	500ml	AMB
Earle's Balanced Salt Solution	1X	02-010-1A	500ml	AMB
		02-010-1B	100ml	AMB
Earle's Balanced Salt Solution Without Sodium Bicarbonate	10X	02-010-5A	500ml	AMB
		02-010-5B	100ml	AMB
Earle's Balanced Salt Solution Without Phenol Red	1X	02-011-1A	500ml	AMB
		02-011-1B	100ml	AMB
Earle's Balanced Salt Solution Without Phenol Red Without Sodium Bicarbonate	10X	02-011-5A	500ml	AMB
		02-011-5B	100ml	AMB
Hanks' Balanced Salt Solution	1X	02-015-1A	500ml	AMB
		02-015-1B	100ml	AMB
Hanks' Balanced Salt Solution Without Sodium Bicarbonate	10X	02-015-5A	500ml	AMB
		02-015-5B	100ml	AMB
Hanks' Balanced Salt Solution Without Phenol Red	1X	02-016-1A	500ml	AMB
		02-016-1B	100ml	AMB
Hanks' Balanced Salt Solution Without Calcium and Magnesium	1X	02-017-1A	500ml	AMB
		02-017-1B	100ml	AMB
Hanks' Balanced Salt Solution Without Calcium and Magnesium Without Phenol Red	1X	02-018-1A	500ml	AMB
		02-018-1B	100ml	AMB
Dulbecco's Phosphate Buffered Saline (DPBS)	1X	02-020-1A	500ml	2-8°C
		02-020-1B	100ml	2-8°C
Dulbecco's Phosphate Buffered Saline (DPBS) Without Calcium and Magnesium	1X	02-023-1A	500ml	AMB
		02-023-1B	100ml	AMB
Dulbecco's Phosphate Buffered Saline (DPBS) Without Calcium and Magnesium	10X	02-023-5A	500ml	AMB
		02-023-5B	100ml	AMB
Spinner Modified Salt Solution	1X	02-030-1A	500ml	AMB
Alsever's Solution	1X	02-045-1A	500ml	AMB
		02-045-1B	100ml	AMB

See formulations on page 102

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