

## Medium 199 (M199)

Catalog No.	10-060 1X, Liquid M199E	50-050 Powder M199E	50-051 Powder M199H	90-050 Powder M199E
<b>Inorganic Salts</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>	<b>mg/L</b>
CaCl <sub>2</sub> (anhydrous)	200.00	200.00	140.00	200.00
Fe(NO <sub>3</sub> ) <sub>3</sub> • 9H <sub>2</sub> O	0.72	0.72	0.72	0.72
KCl	400.00	400.00	400.00	400.00
KH <sub>2</sub> PO <sub>4</sub>	--	--	60.00	--
MgSO <sub>4</sub> (anhydrous)	97.70	97.70	97.70	97.70
NaCl	6800.00	6800.00	8000.00	6800.00
NaH <sub>2</sub> PO <sub>4</sub> • H <sub>2</sub> O	140.00	140.00	--	140.00
Na <sub>2</sub> HPO <sub>4</sub> (anhydrous)	--	--	47.50	--
NaHCO <sub>3</sub>	2200.00	--	--	--
<b>Amino Acids</b>				
L-Alanine	25.00	25.00	25.00	25.00
L-Arginine • HCl	70.00	70.00	70.00	70.00
L-Aspartic acid	30.00	30.00	30.00	30.00
L-Cysteine • HCl • H <sub>2</sub> O	0.11	0.11	0.11	0.11
L-Cystine • 2HCl	26.00	26.00	26.00	26.00
L-Glutamic acid	75.00	75.00	75.00	75.00
L-Glutamine	100.00	100.00	100.00	--
Glycine	50.00	50.00	50.00	50.00
L-Histidine • HCl • H <sub>2</sub> O	21.88	21.88	21.88	21.88
Hydroxy-L-proline	10.00	10.00	10.00	10.00
L-Isoleucine	20.00	20.00	20.00	20.00
L-Leucine	60.00	60.00	60.00	60.00
L-Lysine • HCl	70.00	70.00	70.00	70.00
L-Methionine	15.00	15.00	15.00	15.00
L-Phenylalanine	25.00	25.00	25.00	25.00
L-Proline	40.00	40.00	40.00	40.00
L-Serine	25.00	25.00	25.00	25.00
L-Threonine	30.00	30.00	30.00	30.00
L-Tryptophan	10.00	10.00	10.00	10.00
L-Tyrosine • 2Na • 2H <sub>2</sub> O	57.87	57.87	57.87	57.87
L-Valine	25.00	25.00	25.00	25.00
<b>Vitamins</b>				
DL-alpha-Tocopherol • PO <sub>4</sub> • Na	0.01	0.01	0.01	0.01
Ascorbic acid	0.05	0.05	0.05	0.05
Biotin	0.01	0.01	0.01	0.01
Calciferol	0.10	0.10	0.10	0.10
D-Calcium pantothenate	0.01	0.01	0.01	0.01
Choline chloride	0.50	0.50	0.50	0.50
Folic acid	0.01	0.01	0.01	0.01
i-Inositol	0.05	0.05	0.05	0.05
Menadione • NaHSO <sub>3</sub> • 3H <sub>2</sub> O	0.019	0.019	0.019	0.019
Nicotinic acid	0.025	0.025	0.025	0.025
Nicotinamide	0.025	0.025	0.025	0.025
<i>Para</i> -Aminobenzoic acid	0.05	0.05	0.05	0.05
Pyridoxine • HCl	0.05	0.05	0.05	0.05
Riboflavin	0.01	0.01	0.01	0.01
Thiamine • HCl	0.01	0.01	0.01	0.01
Vitamin A acetate	0.14	0.14	0.14	0.14
<b>Other</b>				
Adenine sulfate	10.00	10.00	10.00	10.00
5-Adenylic acid • H <sub>2</sub> O	0.20	0.20	0.20	0.20
ATP, 2Na • 3H <sub>2</sub> O	1.00	1.00	1.00	1.00

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Other	mg/L	mg/L	mg/L	mg/L
Cholesterol	0.20	0.20	0.20	0.20
2-Deoxy-D-ribose	0.50	0.50	0.50	0.50
D-Glucose	1000.00	1000.00	1000.00	1000.00
Glutathione (reduced)	0.05	0.05	0.05	0.05
Guanine • HCl	0.30	0.30	0.30	0.30
Hypoxanthine, Na	0.354	0.354	0.354	0.354
Phenol red, Na	10.00	10.00	10.00	--
D-Ribose	0.50	0.50	0.50	0.50
Sodium Acetate	50.00	50.00	50.00	50.00
Thymine	0.30	0.30	0.30	0.30
Tween 80	20.00	20.00	20.00	20.00
Uracil	0.30	0.30	0.30	0.30
Xanthine, Na	0.34	0.34	0.34	0.34
<b>Add</b>				
NaHCO <sub>3</sub> Powder (g/L)	--	2.20	0.34	2.12
7.5% Solution (mL/L)	--	29.33	4.70	29.33
L-Glutamine Powder (mg/L)	--	--	--	100.00
200 mM Solution (mL/L)	--	--	--	3.40
<b>Specifications</b>				
pH (before buffer)	--	4.5 ± 0.5	5.25 ± 0.6	4.5 ± 0.5
pH (after buffer)	7.2 ± 0.2	7.5 ± 0.5	6.9 ± 0.2	7.5 ± 0.5
Osmolality (mOsm/kg)	290 ± 30			
Before adjustment	--	INFO	295 ± 20	INFO
After adjustment	--	290 ± 30	INFO	290 ± 30
Grams of powder required to prepare 1L (1X Solution)	--	9.50	10.63	9.39