

|                                                                                  |                |                            |              |                                                                                     |
|----------------------------------------------------------------------------------|----------------|----------------------------|--------------|-------------------------------------------------------------------------------------|
|  | Document ID:   | TDS-MCL-048-500ML          | Version:     | 008                                                                                 |
|                                                                                  | Date of Issue: | 10-JAN-2025                | Approved by: | Dr. Iman Kamranfar                                                                  |
|                                                                                  | Review Date:   | 10-JAN-2027                | Signature:   |  |
|                                                                                  | Title:         | <b>TECHNICAL DATASHEET</b> |              |                                                                                     |

## DMEM/Ham's F12

|                       |                                          |
|-----------------------|------------------------------------------|
| Filtration/ Treatment | Without L-Glutamine and with 15 mM HEPES |
| Product Code          | MCL-048-500ML                            |
| Shelf Life            | 24 months from DOM                       |
| Storage Temperature   | +2 to +8°C                               |
| Shipping Temperature  | ambient                                  |

## QC Specifications

| Physical and Chemical Analysis | Method                | Specifications      | Units   |
|--------------------------------|-----------------------|---------------------|---------|
| Appearance                     | Visual                | Clear, red solution | n/a     |
| pH at RT                       | Electronic pH Meter   | 6.9 - 7.5           | n/a     |
| Osmolality                     | Osmometer             | 260 - 340           | mOsm/kg |
| Endotoxin                      | LAL Kinetic           | ≤ 1.0               | EU/ml   |
| <b>Sterility</b>               |                       |                     |         |
| Aerobic Bacteria               | Internally Validated  | Not detected        | n/a     |
| Anaerobic Bacteria             | Internally Validated  | Not detected        | n/a     |
| Fungi (Yeast & Mold)           | Internally Validated  | Not detected        | n/a     |
| Mycoplasma                     | qPCR                  | Not detected        | n/a     |
| <b>Cell culture</b>            |                       |                     |         |
| Cell growth promotion          | Passage test          | 3 passages          | n/a     |
| Viability                      | Trypan Blue Exclusion | ≥75%                | n/a     |

## Formulation

| Amino Acids                             | CAS number  | Concentration (mg/L) |
|-----------------------------------------|-------------|----------------------|
| Glycine                                 | 56-40-6     | 18.75                |
| L-Alanine                               | 56-41-7     | 4.45                 |
| L-Arginine, Hydrochloride               | 1119-34-2   | 147.50               |
| L-Asparagine, Monohydrate               | 5794-13-8   | 7.50                 |
| L-Aspartic Acid                         | 56-84-8     | 6.65                 |
| L-Cysteine, Hydrochloride, Monohydrate  | 7048-04-6   | 17.56                |
| L-Cystine, Dihydrochloride              | 30925-07-6  | 31.29                |
| L-Glutamic acid                         | 56-86-0     | 7.35                 |
| L-Histidine, Hydrochloride, Monohydrate | 5934-29-2   | 31.48                |
| L-Isoleucine                            | 73-32-5     | 54.47                |
| L-Leucine                               | 61-90-5     | 59.05                |
| L-Lysine, Hydrochloride                 | 657-27-2    | 91.25                |
| L-Methionine                            | 63-68-3     | 17.24                |
| L-Phenylalanine                         | 63-91-2     | 35.48                |
| L-Proline                               | 147-85-3    | 17.25                |
| L-Serine                                | 56-45-1     | 26.25                |
| L-Threonine                             | 72-19-5     | 53.45                |
| L-Tryptophan                            | 73-22-3     | 9.02                 |
| L-Tyrosine, Disodium, Dihydrate         | 122666-87-9 | 55.79                |
| L-Valine                                | 72-18-4     | 52.85                |

| Vitamins                  |          |       |
|---------------------------|----------|-------|
| Biotin                    | 58-85-5  | 0.004 |
| Choline Chloride          | 67-48-1  | 8.98  |
| D-Calcium Pantothenate    | 137-08-6 | 2.24  |
| Folic Acid                | 59-30-3  | 2.65  |
| Myo-Inositol              | 87-89-8  | 12.60 |
| Niacinamide               | 98-92-0  | 2.02  |
| Pyridoxine, Hydrochloride | 58-56-0  | 0.03  |
| Pyridoxal HCl             | 65-22-5  | 2.00  |
| Riboflavin                | 83-88-5  | 0.22  |

|                                                                                  |                |                            |              |                                                                                     |
|----------------------------------------------------------------------------------|----------------|----------------------------|--------------|-------------------------------------------------------------------------------------|
|  | Document ID:   | TDS-MCL-048-500ML          | Version:     | 008                                                                                 |
|                                                                                  | Date of Issue: | 10-JAN-2025                | Approved by: | Dr. Iman Kamranfar                                                                  |
|                                                                                  | Review Date:   | 10-JAN-2027                | Signature:   |  |
|                                                                                  | Title:         | <b>TECHNICAL DATASHEET</b> |              |                                                                                     |

|                                          |            |         |
|------------------------------------------|------------|---------|
| Thiamine, Hydrochloride                  | 67-03-8    | 2.17    |
| Vitamin B12                              | 68-19-9    | 0.68    |
| <b>Other Components</b>                  |            |         |
| D-Glucose, Anhydrous                     | 50-99-7    | 3151.00 |
| HEPES                                    | 7365-45-9  | 3574.50 |
| Hypoxanthine, Sodium                     | 45738-97-4 | 2.39    |
| Linoleic Acid                            | 60-33-3    | 0.04    |
| Lipoic Acid (DL-Thiolic Acid)            | 1077-28-7  | 0.11    |
| Phenol Red, Sodium Salt                  | 34487-61-1 | 8.10    |
| Putrescine, Dihydrochloride              | 333-93-7   | 0.08    |
| Pyruvic Acid, Sodium Salt                | 113-24-6   | 55.00   |
| Thymidine                                | 50-89-5    | 0.37    |
| <b>Inorganic Salts</b>                   |            |         |
| Calcium Chloride, Anhydrous              | 10043-52-4 | 116.60  |
| Cupric Sulfate, Pentahydrate             | 7758-99-8  | 0.001   |
| Ferric Nitrate, Nonahydrate              | 7782-61-8  | 0.05    |
| Ferrous Sulfate, Heptahydrate            | 7782-63-0  | 0.42    |
| Magnesium Chloride, Anhydrous            | 7786-30-3  | 28.61   |
| Magnesium Sulfate, Anhydrous             | 7487-88-9  | 48.93   |
| Potassium Chloride                       | 7447-40-7  | 311.80  |
| Sodium Bicarbonate                       | 144-55-8   | 1200.00 |
| Sodium Chloride                          | 7647-14-5  | 6995.50 |
| Sodium Phosphate Dibasic, Anhydrous      | 7558-79-4  | 70.96   |
| Sodium Phosphate, Monobasic, Monohydrate | 10049-21-5 | 62.50   |
| Zinc Sulfate, Heptahydrate               | 7446-20-0  | 0.43    |

**Product Use:** This product is intended for laboratory use only.