

**MISSION CONTROL™**  
**Blood Gas and Electrolyte Control**

LOT: MC-1012-EU  
 Exp: 2010/09

**Level 3**

PN: DD-92003D

Expected Ranges Chart

Blood Gas/ISE Analyzers	pH			pCO <sub>2</sub> mmHg			pO <sub>2</sub> mmHg			Na <sup>+</sup> mmol/L			K <sup>+</sup> mmol/L			Ca <sup>++</sup> mmol/L			Cl <sup>-</sup> mmol/L			Li <sup>+</sup> mmol/L			tCO <sub>2</sub> mmol/L		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
<b>AVL Scientific</b>																											
945, 947	7.603	7.573 - 7.633		21	18 - 24		148	136 - 160																			
990, 995	7.656	7.573 - 7.633		21	18 - 24		144	133 - 155																			
Compact Series	7.613	7.571 - 7.643		21	18 - 24		141	133 - 149																			
982, 983, 985										162	157 - 167	7.1	6.6 - 7.6					119	114 - 124	2.08	1.90 - 2.30						
986										162	157 - 167	7.1	6.6 - 7.6					119	114 - 124				25	21 - 29			
984, 987	7.623	7.593 - 7.653								162	157 - 167	7.1	6.6 - 7.6	0.66	0.51 - 0.81												
OMNI	7.613	7.583 - 7.643		21	18 - 25		134	123 - 144		160	155 - 165	7.0	6.5 - 7.5	0.59	0.49 - 0.69			120	115 - 125								
9110, 9140	7.623	7.593 - 7.653								160	155 - 165	7.0	6.5 - 7.5	0.65	0.50 - 0.80												
9120, 9130										157	152 - 162	7.0	6.5 - 7.5					120	115 - 125								
9180, 9181										154	149 - 159	7.0	6.5 - 7.5	0.59	0.49 - 0.69			118	113 - 123	2.22	2.04 - 2.44						
<b>Ciba-Corning/Bayer</b>																											
238	7.633	7.603 - 7.663		21	17 - 25		128	119 - 135																			
248	7.633	7.603 - 7.663		21	17 - 25		129	120 - 136																			
348	7.643	7.613 - 7.673		21	18 - 24		139	131 - 146		163	158 - 168	7.0	6.5 - 7.5	0.54	0.44 - 0.64			117	112 - 122								
278	7.643	7.613 - 7.673		21	18 - 24		139	131 - 146																			
280	7.643	7.613 - 7.673		21	18 - 24		139	131 - 146																			
288	7.643	7.613 - 7.673		20	17 - 24		140	132 - 146		162	157 - 167	7.0	6.5 - 7.5	0.54	0.44 - 0.64			117	112 - 122								
664										162	157 - 167	6.8	6.3 - 7.3					118	113 - 123				25	21 - 29			
614, 644										162	157 - 167	6.8	6.3 - 7.3					118	113 - 123								
634	7.64	7.61 - 7.67												0.57	0.47 - 0.67												
654										162	157 - 167	6.9	6.4 - 7.4							2.08	1.90 - 2.30						
800 Series*	7.663	7.633 - 7.693		21	17 - 25		135	125 - 143		162	157 - 167	6.9	6.4 - 7.4	0.51	0.36 - 0.66			118	113 - 123								
Rapid 400, 405	7.663	7.633 - 7.693		21	17 - 25		135	125 - 143		162	157 - 167	6.9	6.4 - 7.4	0.51	0.36 - 0.66			118	113 - 123								
<b>Diamond</b>																											
<b>Gemlyte</b>										152	144 - 160	6.53	6.01 - 7.06	0.66	0.55 - 0.78			112	103 - 121	2.00	1.76 - 2.24						
proLYTE										159	151 - 167	6.50	5.98 - 7.02					112	103 - 121								
<b>IL</b>																											
1304, 1306, 1312	7.613	7.583 - 7.643		22	19 - 26		137	128 - 145																			
BG3	7.623	7.593 - 7.653		21	18 - 24		137	128 - 145																			
BGE	7.633	7.603 - 7.663		22	19 - 25		136	128 - 143		159	154 - 164	6.6	6.1 - 7.1	0.60	0.50 - 0.70			114	109 - 119								
1610, 1620	7.633	7.603 - 7.663		20	17 - 24		137	126 - 146																			
1630, 1640, 1650	7.633	7.603 - 7.663		20	17 - 23		135	126 - 143		159	154 - 164	6.6	6.1 - 7.1	0.59	0.49 - 0.69			114	109 - 119								
Synthesis 10, 15, 20, 25	7.613	7.583 - 7.643		22	19 - 26		137	129 - 146		159	154 - 164	6.7	6.2 - 7.2	0.59	0.49 - 0.69			114	109 - 119								
Gem Premier	7.633	7.603 - 7.663		20	17 - 23		140	130 - 149		159	154 - 164	6.6	6.1 - 7.1	0.59	0.49 - 0.69												
GEM 3000	7.633	7.603 - 7.663		20	17 - 23		140	130 - 149		159	154 - 164	6.6	6.1 - 7.1	0.59	0.49 - 0.69												
<b>ITC</b>																											
IRMA TRUpoint	7.68	7.63 - 7.73		20	14 - 26		147	132 - 162																			
<b>NOVA</b>																											
Electrolyte Systems	7.650	7.620 - 7.680								165	160 - 170	7.7	7.2 - 8.2	0.56	0.41 - 0.71			117	112 - 122	2.11	1.93 - 2.33		27	23 - 31			
Stat Profile 1-5	7.633	7.603 - 7.663		21	17 - 25		140	134 - 145		163	158 - 168	6.9	6.4 - 7.4	0.59	0.49 - 0.69			117	112 - 122								
<b>Osmetech</b>																											
Opti 1	7.72	7.69 - 7.75		21	16 - 26		138	123 - 153																			
Opti CCA	7.72	7.69 - 7.75		21	16 - 26		136	121 - 151		162	157 - 167	7.5	7.0 - 8.0	0.59	0.44 - 0.74			118	113 - 123								
<b>Radiometer</b>																											
ABL 3, 30	7.643	7.613 - 7.673		20	17 - 24		144	136 - 151																			
ABL 300, 330	7.643	7.613 - 7.673		21	18 - 25		141	133 - 149																			
ABL 5	7.623	7.593 - 7.653		20	17 - 24		140	130 - 149																			
ABL, 50, 500, 510, 520	7.612	7.582 - 7.642		24	20 - 28		142	133 - 151																			
ABL 505	7.633	7.603 - 7.663		20	17 - 24		140	131 - 149		160	155 - 165	6.8	6.3 - 7.3	0.60	0.50 - 0.70												
ABL 555	7.633	7.603 - 7.663		20	17 - 24		140	131 - 149		160	155 - 165	6.8	6.3 - 7.3	0.60	0.50 - 0.70												
ABL 600, 610, 620	7.633	7.603 - 7.663		20	17 - 25		140	131 - 149		160	155 - 165	6.7	6.2 - 7.2	0.60	0.50 - 0.70			112	107 - 117								
ABL 70	7.65	7.62 - 7.68		21	17 - 25		128	120 - 136		157	152 - 162	6.7	6.2 - 7.2	0.60	0.50 - 0.70			115	110 - 120								
ABL 77	7.65	7.62 - 7.68		21	17 - 25		128	120 - 136		157	152 - 162	6.7	6.2 - 7.2	0.60	0.50 - 0.70			115	110 - 120								
EML-100										159	154 - 165	6.7	6.2 - 7.2	0.61	0.51 - 0.71			112	107 - 117								
ABL 700 Series**	7.633	7.603 - 7.663		20	17 - 24		140	131 - 149		160	155 - 165	6.8	6.3 - 7.3	0.60	0.50 - 0.70			112	107 - 117								
<b>i-STAT</b>																											
BG, E+	7.663	7.633 - 7.693		21	17 - 25		134	125 - 143		160	155 - 165	6.8	6.3 - 7.3	0.60	0.50 - 0.70			112	107 - 117								
<b>Medica, iLyte, Menarini</b>																											
EasyLyte Na/K, Na/K/Cl, Na/K/Li, Na/K/Cl/Li										155	150 - 160	6.6	6.1 - 7.1					118	113 - 123	2.22	1.94 - 2.54						

**Manufacturer and Product Information**

Diamond Diagnostics, 333 Fiske Street, Holliston, MA.  
**For Technical Assistance call:**  
Diamond Diagnostics Technical Services at 1-508-429-0450

- Intended Use:** MISSION CONTROL™ Blood Gas and Electrolyte Control is an assayed quality control material intended for monitoring the measurements of pH pCO<sub>2</sub>, pO<sub>2</sub> in blood gas analyzers and sodium, potassium, chloride, lithium, ionized calcium and total carbon dioxide in ISE electrolyte analyzers.
- Product Description:** This control material is provided for monitoring analyzer performance. It is packaged in sealed glass ampules, each containing approximately 2 ml of solution. Ampules are packaged 10 per tray with each box containing 3 trays, for a total of 30 ampules per box.
- Active Ingredients:** MISSION CONTROL™ is a buffered solution of electrolytes (Na<sup>+</sup>, K<sup>+</sup>, Cl<sup>-</sup>, Ca<sup>++</sup>, Li<sup>+</sup>, HCO<sub>3</sub><sup>-</sup>/CO<sub>3</sub><sup>-2</sup>). It has been equilibrated with specific levels of CO<sub>2</sub>, O<sub>2</sub>, and N<sub>2</sub>. This control contains no human-based materials.

**For in vitro diagnostics use.**

**Directions for Use**

The control should be brought to a temperature of 20-23°C before use (see instructions regarding Expected Ranges). Allow at least four (4) hours for ampules to equilibrate to this temperature prior to testing.

For pH/blood gas values, the control should be analyzed within one (1) minute of opening. For electrolyte measurements, this product is stable for up to one (1) hour after opening.

Follow the procedures listed below:

1. Before use, hold the ampule at the top and bottom (with forefinger and thumb) and shake 15-20 times (about 10 seconds) to mix the solution. Tap the ampule to restore the liquid to the bottom on the ampule.
2. Open the ampule by snapping off the tip at the score. Use gauze, tissue, gloves, or an appropriate ampule opener to protect fingers from cuts.
3. Immediately introduce the liquid from the ampule to the analyzer. Follow the manufacturer's instructions for sampling a control material. Depending on the sampling procedure chosen, the following instructions apply:
  - a. Direct Aspiration: Sample the control directly from the ampule.
  - b. Syringe Transfer:
    - i. Use a clean, gas-tight syringe attached to a clean, blunt syringe needle (if available).
    - ii. Prime the syringe by slowly aspirating a small amount (0.2-0.3 ml) of solution from the ampule.
    - iii. Discard this liquid, leaving the dead space of the syringe filled with the control.
    - iv. Aspirate the control from the ampule into the primed syringe. Be careful that air is not drawn in with the liquid. Expel 1 to 2 drops, detach the needle and immediately inject the control into the analyzer sample port.
  - c. Ampule Injector/Dispenser: Assemble and fill the ampule injector following the manufacturer's instructions. Expel one or two drops to rinse the outlet tip and inject the control into the analyzer sample port.
  - d. Capillary Mode:
    - i. Install the appropriate adapter for micro sampling onto the instrument.
    - ii. Sample the contents of the ampule following the recommendations of the instrument manufacturer. Be certain to keep the sampling tip of the adapter below the surface of the liquid during aspiration.

**Limitations****Limitation:**

1. This control is sensitive to many instrument related factors that affect analytical results. Because it is not a blood-based material, it may not detect certain malfunctions, which would affect the testing of blood.
2. This product is intended for use as a quality control material and can assist in evaluating the performance of laboratory instruments. It is not for use as a calibration standard and its use should not replace other aspects of a complete quality control program.

**Storage:**

Store at 18-25°C. Avoid freezing and exposure to temperatures greater than 30°C. You may also store at 4-25°C without adverse effect.

**Expected Ranges:**

The values for each control analyte on the enclosed Expected Ranges Chart are based on multiple determinations performed on randomly selected samples from each lot. The listing for each instrument represents the expected range for these ampules when tested at 23°C. (Note: pO<sub>2</sub> values will vary inversely by about one percent (1%) per degree C that the temperature of the ampules varies from 23°C.

The Expected Ranges are provided as a guide in evaluating analyzer performance. Since instrument design and operating conditions may vary, each laboratory should establish its own expected values and control limits. The mean value established should fall within the Expected Ranges shown on the chart.

