

**1. TO BEGIN**

- Switch the instrument on by connecting the power supply and pressing the red power touch key on the front panel, the LCD screen will be displayed after a few seconds
- Ensure the sample, blank and waste tubing are present and configured correctly:
  - PORT A (from front of instrument) – calibrant / sample line
  - PORT B (front port "B" on left side) – blank line
  - Waste (rear port "W" on left side) – waste line with empty waste container

**2. SELECT THE COD RANGE**

Press the MENU button on the touch screen:

- Select SET UP / ANALYSIS METHOD / CODRANGE and press the ENTER button
- Use the arrow up/down buttons to select the appropriate COD range for your samples, then press the ENTER button

Advanced Blue.....< 25mg/L  
 Green.....< 150 mg/L  
 Yellow.....< 1,500 mg/L  
 Red..... < 15,000 mg/L

**3. PREPARE THE SAMPLE, BLANK AND CALIBRANT SOLUTIONS**

Select the appropriate electrolyte and calibrant for your COD range:

- Prepare your Blank Solution by mixing COD-free water with electrolyte
- Prepare your Calibrant Solution by mixing the calibrant with electrolyte
- **Ensure that your samples do NOT contain particulates >50um and are within the specified pH (4-10) and chloride limits, adjust as necessary**
- Automated pH adjustment can be added to automated and online systems, for added convenience

Advanced Blue..... 3 parts with 1 part blue electrolyte  
 Green..... 1 part with 1 part green electrolyte  
 Yellow..... 1 part with 9 parts yellow electrolyte  
 Red ..... 1 part with 49 parts red electrolyte

<b>Chloride Limits:</b>	Advanced Blue.....<266 mg/L	Green.....< 400mg/L	Yellow.....<2000 mg/L	Red.....<10,000mg/L
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**4. CALIBRATE**

- Load a timetable or create a template that will calibrate the peCOD and run a QC check on the Calibrant Solution.
- For beaker style systems, the sampler will move to the rinse station and prime the peCOD with DI water. For L100 Online systems and automated systems with a TitraSip, the rinse pump will turn on to fill the analysis vessel, and the peCOD will prime.
- The system will then prime with Calibrant and Blank Solution and run at least TWO calibrations and one QC check.
- Once the calibration and QC check are complete, the QC check will be evaluated to determine if it is within acceptable limits. If it is not, the system will recalibrate, followed by another QC check. See the recommended calibration values in the box to the right.

Adv. Blue*: 50 < C < 300, ITerm > 16
Green: 150 < C < 700, ITerm > 16
Yellow: 200 < C < 750, ITerm > 14
Red: 250 < C < 800, ITerm > 14
0.02 < M < 0.06
0.01 < M < 0.08* For Adv. Blue

**5. RUN SAMPLES**

- For autosampler systems, pipette the appropriate volume of sample into the cups or tubes, and place in the rack. If an electrolyte pump is not installed, pipette the appropriate volume of electrolyte to the sample, swirling to mix. See below for recommended mixing volumes. The total volume may be adjusted, however ensure the correct mixing ratio is used.
  - Advance Blue Range.....15mL sample + 5mL electrolyte
  - Green Range.....10mL sample + 10mL electrolyte
  - Yellow Range.....2mL sample + 18mL electrolyte
  - Red Range.....1mL sample + 49mL electrolyte OR 0.5mL sample + 24.5mL electrolyte
- For all system styles, load a timetable or create a template to analyze the samples and press Start. The sequence will begin with a system flush using rinse water.
- When the schedule has finished running, a report will be generated containing the COD results.



***PeCOD<sup>®</sup> L100 COD Analyzer***  
***Quick Start Guide for Automated and Online Systems***

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### Sensor and Electrode Block Storage

#### Guidelines

- The sensor and electrode block may be stored in the peCOD for up to three weeks, ensure that the peCOD has been primed with DI water to keep the electrode block hydrated.
- If the unit will not be used for more than three weeks:
  - Prime PORT A and PORT B with DI water, three times. Repeat with air, priming three times. This ensures that the fluidics lines are free of liquid.
  - Remove the electrode block and sensor, and fill the block with deionized water (see instructions below). Place the sensor in its original package when not in use as it is light sensitive.

#### Flushing and Storing the Electrode Block

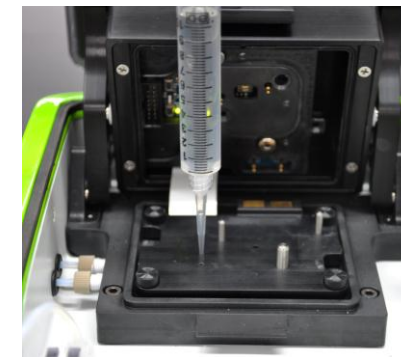
1. The electrode block should always be kept hydrated. Flushing with DI water maintains the life of the electrode block, and is a general troubleshooting procedure. Flushing is necessary for short term storage. Long term storage requires the block to be filled with 3M NaCl.
2. Using the syringe and tips provided in the starter kit, fill the syringe with DI water and find the appropriate sized tip for the hole indicated below. Push DI water through the hole. This will flush out the internal channel and come out the other side. Refill the syringe and repeat the process 5-6 times.
3. Place electrical tape over one hole to prevent the DI / NaCl from draining out of the internal channel and fill with the appropriate solution for storage. Once filled, tape over the second hole and write the type of solution inside and the date it was stored. Tape the O-rings down to prevent them from getting lost.



### Removing Blockages from the PeCOD® COD Analyzer

The peCOD utilizes nanotechnology and the internal fluid lines may become obstructed by particles larger than 50uM in size. It is important to filter or settle samples containing particles large enough to block the internal components of the peCOD. However, should a blockage occur, back flushing PORTS A and B will clear the blockage in most cases.

1. Obtain the syringe and tip kit supplied with the peCOD and fill a syringe with DI water. Use the appropriate sized tip for the hole indicated below.
2. Open the peCOD lid and remove the sensor.
3. Place the PORT A tubing into a waste container as shown.
4. Insert the syringe with a narrow tip into the back, left hole as shown, the tip should fit snugly into the hole so that no air is introduced.
5. Select MENU/ OPERATION / PRIME LINES / PRIME PORT A
6. Press ENTER, and at the same time gently push on the plunger of the syringe. You must prime PORT A to open the valves of the internal fluidics path. Observe the flow of water out of the PORT A tubing and note any particles that are expelled into the waste beaker. Stop pushing the plunger when you hear the pump stop.
7. Repeat Step 6 a few times and ensure the flow out of PORT A is strong.
8. Repeat the same process for PORT B, using the same syringe tip and hole position.
9. Prime as normal to verify that the blockage has been removed. Note that each prime should be between 1.8 – 2.5mL.



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