Pinnacle PCX Site Requirements

- ❑ The minimum bench top space required for the Pinnacle PCX system is approximately 32H x 16W x 20D inches (81 x 41 x 51 cm), both doors fully opened, with bottles and electrical connections in place. The Pinnacle PCX weighs approximately 67 lbs (30kg) for simplex systems, and approximately 77 lbs (35kg) for duplex systems. The minimum bench space does not include the HPLC system. The total space requirement depends on the brand and model of HPLC. For most cases, it is best to place the LC pump and injector system on the left side of the Pinnacle PCX, and the detector on the right.

- ❑ In addition to the power outlets required for the HPLC system, one grounded outlet will be needed.

- ❑ Nitrogen is required to pressurize the reagent reservoir(s). The Pinnacle PCX requires gas pressure of 45-75psi (3-5bar) at the gas inlet. To minimize oxidation of the TRIONE ninhydrin or OPA reagent, use oxygen-impermeable tubing for the entire gas supply line. *Note:* If TRIONE is to be used, Nitrogen must be used to prevent out-gassing.

- ❑ An adaptor from the gas regulator to **1/8 inch OD** tubing is required.

- ❑ A waste container should be provided for the waste lines from the Pinnacle PCX and the HPLC detector.

Pinnacle Control Software Computer Requirements

For the Installation, we strongly recommend installing the USB cable. Use of the network connection is optional at the user's discretion.

How far is the computer from the HPLC? _____

The computer must have:

- ❑ Microsoft Windows XP, Vista, or Windows 7 operating environment
- ❑ Minimum of one USB port, Network Card, or Network router
- ❑ Available Memory: Minimum 10 Mb

HPLC System Requirements

Since every HPLC is different, the following procedure has been generalized. Before attempting to connect any tubing, examine the HPLC setup, and determine the best possible means of making the connections. Small ID tubing (0.010") should be used wherever the sample is in the flow path.

Important! If the system will be used for amino acids, glufosinate, glyphosate, polyamines, or diquat & paraquat analysis, be aware that the column regenerant is strongly alkaline. Any polymers or other materials in the HPLC pump, injector, needle seat, and detector must be compatible. For example, the standard rotor seal in Rheodyne injector valves is Vespel polyimide, which is not recommended at pH >9; a Tefzel or PEEK rotor seal must be installed.

- ❑ Detector Specs: Cannot use UHPLC standard size (1uL) flowcell. Must use larger volume flowcell with a pressure rating greater than 110psi (7.5 bar). The viscosity of some reagents can cause high pressure problems with small volume flow cells.

  OK Example: Agilent 1290 DAD (G4212-60007), 60mm, 4uL, 60 bar (870psi)

For Amino Acid Analysis

Pump

- ❑ Minimum ternary gradient elution
- ❑ Piston wash capability is preferable

Injector

- ❑ Tefzel or PEEK rotor seal for injector valve
- ❑ Tefzel or PEEK needle seat if it is an autosampler

Detector

- ❑ Vis if using TRIONE
  - 570nm for primary amines
  - 440nm for secondary amines
- ❑ FLD if using OPA
  - Ex 330nm and Em 465nm

For Glyphosate Analysis

Pump

- ❑ Minimum binary gradient elution
- ❑ Piston wash capability is preferable

Injector

- ❑ Tefzel or PEEK rotor seal for injector valve
- ❑ Tefzel or PEEK needle seat if it is an autosampler
- ❑ For water samples, at least 200ul injection

Detector

- ❑ FLD detection required
  - Ex 330nm and Em 465nm

For Carbamate Analysis

Pump

- ❑ Minimum binary gradient elution

Injector

- ❑ For water samples, at least 200ul injection

Detector

- ❑ FLD required
  - Ex 330nm and Em 465nm

For Chromium VI Analysis

Pump

- ❑ Non-metallic HPLC or IC

Injector

- ❑ 1000ul injection loop per official method.

Detector

- ❑ Vis required
  - 530nm

For all other applications, review the method abstract for chemistry requirements.

HPLC Relay Requirements

For HPLC systems other than Agilent 1100, or 1200, the Software and system must be capable of sending a relay signal to an external piece of equipment to achieve synchronization.

- ❑ Chemstation version 9.0 or higher is needed for Agilent 1100 or Agilnet 1200. Pinnacle PCX software will communicate with Chemstation directly – no relay connection is needed.

Any machine that drives this relay input shall provide a relay contact pair that is electrically isolated from all other electrical devices. The relay signal must have:

- ❑ Relay detection voltage 24 +/- 2V
- ❑ Relay detection current Approximately 1 mA

Chemistry

- ❑ The user must have HPLC experience and must be able to operate the HPLC being coupled with the Pinnacle PCX.
- ❑ The user must check the chemistry requirements for the specific application.

For Carbamate Analysis

HPLC Grade Methanol
HPLC Grade Water
Materials for calibration standards
Carbamate hydrolysis reagent (Cat. No. CB910)
Carbamate OPA diluent (Cat. No. CB130 or CB130.2)
o-phthaladehyde (Cat. No. O120)
Thiofluor™ (Cat. No. 3700-2000)

For Glyphosate Analysis

5% Sodium hypochlorite solution
Materials for calibration standards
Methanol for OPA reagent preparation
Glyphosate Eluant, pH2.0 (Cat. No. K200)
Glyphosate Regenerate (Cat. No. RG019)
Glyphosate Hypochlorite diluent (Cat. No. GA116)

Glyphosate OPA diluent (Cat. No. GA104)
o-phthaladehyde (Cat. No. 0120)
Thiofluor™ (Cat. No. 3700-2000)

For Amino Acid Analysis

A: UV – Visible detection

- DI Water
- TRIONE® Ninhydrin reagent (cat. no. T1OOC or T200)
- Pickering sodium or lithium elution buffers

B: Fluorescence detection

- Methanol for OPA reagent preparation
- 5% Sodium hypochlorite if using the 2-reagent method
- Brij 35 solution for OPA reagent preparation
- DI Water
- Pickering sodium or lithium elution buffers

All of the requirements must be met and the HPLC must be in working condition before the Installation can take place. If any of the site requirements are not met or the HPLC is not working, then the Installation must be rescheduled until the requirements are met and the HPLC is in working condition.

All of the requirements have been met and the HPLC is in working condition:

Sign and date: _____

Name: _____
Company: _____
Phone: _____
Email: _____

Please send a signed copy back to
Fax: (650) 968-0749 or
Email: support@pickeringlabs.com