



total facility solutions, inc.

**Ultra High Purity Standard Procedure
Standard Installation Specification**

Written By: _____

Approved By: _____

Standard Installation Specification

1. Vents.

- Inboard helium leak test $\leq 1 \times 10^{-9}$ atm cc sec.

2. Non-Process Nitrogen, Clean Dry Air.

- 4 Hour pressure decay, test pressure equal to 125% of system operating pressure.

3. Process Nitrogen.

- 4 Hour pressure decay, test pressure equal to 125% of system operating pressure.
- Inboard helium leak test $\leq 1 \times 10^{-9}$ atm cc sec.
- Particle count analysis ≤ 2 particles @ .1 micron average for 5 consecutive 1 cubic foot samples.
- Trace moisture / oxygen analysis ≤ 20 PPB.

4. UHP Specialty & Bulk Gas Piping.

- 4 Hour pressure decay, test pressure equal to 125% of system operating pressure.
- Inboard helium leak test, $\leq 1 \times 10^{-9}$ atm cc sec.
- Particle count analysis, ≤ 2 particles @ .1 micron average for 5 Consecutive 1 cubic foot samples.
- Trace moisture / oxygen analysis ≤ 20 PPB

5. Coax Outer Containment

- 4 hour pressure decay @ 100 PSI or inboard helium leak test $\leq 1 \times 10^{-9}$ atm cc sec.

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6. Ultra Pure Water PVDF Piping Systems (De-Ionized Water)

- 1 hour hydrostatic pressure test with approved ultra pure water source. Loop supply and return lines together utilizing house supply.
- 1-hour hydrodynamic test, cycle supply and return valves to simulate water demand from process tools.
- Particle analysis, ≤ 5 particles @ .05 micron per sample for 5 consecutive samples.
- Resistivity analysis, ≥ 17.2 meg ohm for a 24 hour sample period.

7. Ultra Pure Chemical PFA / PFC Piping Systems.

Outer Containment PVC

- Create vacuum utilizing hepa filtered vacuum, apply snoop type solution to exterior of all mechanical and glued joints. Repair any joints that show solution pulled into inside of PVC.

PFA Carrier Line

- 1 hour hydrostatic pressure test with approved ultra pure water source. Loop supply and return lines together utilizing house supply.
- 1-hour hydrodynamic test, cycle supply and return valves to simulate water demand from process tools.
- Particle analysis, ≤ 5 particles @ .05 micron per sample for 5 consecutive samples.
- Resistivity analysis, ≥ 17.2 meg ohm for a 24 hour sample period.

8. These specifications are based upon materials selected in the budgeting process and do not apply to any other company projects.

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9. If specific installation or certification procedures are required we can provide a package for you.

Attachments:

None