

FCAL1 Process Sheet

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- Process Spec:** 1.3.3.1.1.2-4 – Tube Cleaning
- Components:** Copper Tube [4.2.7.1.2.1]
- Material:** Nitril Gloves
Heavy Chemical Gloves
Citranox Cleaner
LPS Cleaner
Isopropyl Alcohol
Mineral Spirits
Clean Room Wipes
Filtered, De-ionized (FD) Water
Compressed Nitrogen Gas
- Tooling:** Ultrasonic Transducers w. Power Supplies (2)
Cleaning Matrix/Tube Carrier (4)
Tanks for Cleaning/Rinsing Solutions (5)
Belt Heaters (2)
Compressed Nitrogen Nozzle
Large Cart
Ph/Temperature Meter
Conductivity Meter
- Location:** UofA PAS 180 – Cleaning Station
UofA PAS 180 – Clean Room
- QC Form:** FCal1-QC-1.3.3.1.2-4 – Cleaning Inspection
- Process:**
1. Wear gloves whenever tubes are being handled. Heavy chemical gloves can be worn when handling hot objects. Otherwise, latex/nitril gloves should be worn.
 2. Pre-soak selected tubes in mineral spirits (tub) for at least 24 hours.
 3. Load cleaning matrix with 132 de-burred tubes (fill all holes in matrix except the row under the handle).
 4. Use electric hoist to move cleaning matrices into, out of, and between tanks. Slide matrix handle over the hook on the hoist taking care to center the handle on the hook before lifting.