# FCAL1 Process Sheet

**Process Spec:** 1.3.3.1.2-5 - Tube Cleaning Inspection

**Components:** Copper Tube [4.2.7.1.2.1]

**Material:** Latex Gloves  
Isopropyl Alcohol  
Clean Room Foam Swab

**Tooling:** Magnifying Loupe

**Location:** UofA PAS 180 - Laboratory

**QC Form:** FCal1-QC-1.3.3.1.2-4 - Cleaning Inspection

**Process:**

1. Take a random sample of 14 tubes from every batch of 132 tubes cleaned.  
2. Wipe down the inner tube length with a foam swab dipped in isopropyl alcohol.  
3. With the loupe examine the swab for traces of grease, dirt or metal flakes.  
4. If the sample shows contamination for 1 or more the entire batch shall be re-cleaned as described in process sheet 1.3.3.1.2-4 and cleaning methods/solutions may possibly be re-evaluated.  
5. If all the samples pass the swab test, within requirements, the batch of tubes will proceed to storage (process sheet 1.3.3.1.2-6).

**Remarks:**

- For the first few batches, a sample of 14 tubes from various locations in the tube holder will be examined. As confidence in the cleaning processes increase, the number of tubes swabbed may decrease.  
- The efficiency of the actual cleaning process should be evaluated by recording the number of rejected/accepted tube batches. The reason for rejection should also be recorded.

**Global Process:** 1.3.3.1.1.2 - Tube Processing

**Previous:** 1.3.3.1.1.2-4 - Tube Cleaning

**Follow-Up:** 1.3.3.1.1.2-6 - Tube Packaging and Storage