

FCAL1 Process Sheet

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Process Spec: 1.3.3.1.1.2-5 – 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 [1.3.3.1.1.2-4](#) 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 [1.3.3.1.1.2-6](#)).

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