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ALS – General

CLEANING OF ALUMINUM, COPPER AND STAINLESS STEEL FOR HIGH VACUUM USE

Aluminum, copper and stainless steel machined parts to be used in high or ultra-high vacuum shall be cleaned before assembly as follows:

1. Degrease using Blue Gold Everclean or equivalent. A 50% mixture with water at 130°F in ultrasonic tanks until oil free, 5 to 20 minutes. Rinse in deionized water.
2. Soak in Wyandotte Diversey 909 or equivalent at 145°F for 15 minutes. Alternate high PH alkaline cleaners may be acceptable with prior LBNL approval.
3. Immerse or spray rinse in room temperature tap water.
4. Soak in Mirachem 500 or equivalent at 130°F to 140°F for 5 to 10 minutes. Withdraw part and check for sheeting on all services. If sheeting does not occur, scrub with wet tampico brush using Mirachem 500. Repeat this process until sheeting occurs on all surfaces of the part. From this point on handle with clean gloves to prevent contamination with fingerprints.
5. Immerse or spray rinse in room temperature tap water.
6. Immerse or spray rinse in room temperature deionized water.
7. Immersion rinse in hot deionized water, 130°F to 140°F for 2 to 5 minutes. Maintain a minimum resistivity 1 x 10e6 ohm-cm.
8. Blow-dry with clean oil free nitrogen or argon.
9. Wrap individual parts with clean lint free paper and organic free aluminum foil. Store parts in a clean contamination free environment.