

Cleaning and Handling of U.H.V. Components

CEBAF Specification #22632-S-001

Revision E, December 14, 1990

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REV.	ECO#	DESCRIPTION	BY	CHK.	APP.	APP.	DATE
E		ultra sonic power from .03 w/gal to .008 w/gal	JP	JP	CKS	GPB	1/8/91
SUMMARY OF CHANGES FROM PREVIOUS REVISION:							

CLEANING AND HANDLING OF ULTRA HIGH VACUUM COMPONENTS

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1.0 SCOPE

This specification details procedures to be followed for cleaning and handling of Ultra High Vacuum components.

Adhering to these procedures will facilitate the achievement of the required surface outgassing rate. Vendors may propose alternate processes and materials provided that they submit proof to demonstrate that they meet the surface outgassing rate requirements.

2.0 Cleaning Procedure for Stainless Tubing and Flanges

- 2.1 Pre-clean by removing gross contamination, machining oils, etc., by washing with a trisodium phosphate based detergent (i.e. Alconox or equivalent) solution using deionized water as the solvent.
- 2.2 Pre-clean rinse in deionized water.
- 2.3 Pre-clean air dry (optional, depending on the time separation between pre-clean and final clean).
- 2.4 Final cleaning by immersion in a high intensity (≥ 0.008 watts/cm³ or 33 w/gal) ultrasonic bath for 15 minutes, in a warm (60-70 C) detergent (Alconox) solution made with high quality ($\geq 10^7$ ohm-cm resistivity) filtered, deionized water.
- 2.5 Final rinsing by immersion in a second high intensity ultrasonic bath for 15 minutes in high quality ($\geq 10^7$ ohm-cm resistivity) filtered, deionized water.
- 2.6 Final rinse with high quality ($\geq 10^7$ ohm-cm resistivity) filtered, deionized water.
- 2.7 Dry in a clean, dust free, air dryer or oven, with the parts oriented to permit them to drain free of all residual water.
- 2.8 Clean parts and ends of tube shall be wrapped with lint free paper and oil free food grade aluminum foil or CEBAF approved, vendor suggested alternate.
- 2.9 If parts or tubes are to be shipped prior to further manufacturing, they shall be bagged and sealed in lubricant free and particulate free polyethylene as appropriate. (i.e. ends of tubes, loose flanges)

3.0 HANDLING AND CARE OF PARTS FOR ULTRA HIGH VACUUM

- 3.1 While handling parts during or following the cleaning procedure, talc free latex gloves shall be worn. During use, these gloves shall touch nothing but the clean parts. If the gloves become dirty, new ones shall be used.
- 3.2 While handling clean parts, care shall be taken not to touch the vacuum surfaces of the part.
- 3.3 Cleaning and wrapping of parts shall be done in a controlled area to prevent contamination of parts from any oil, dust, or dirt.
- 3.4 Care shall be taken while handling flanges to prevent damage to the knife edge sealing surface.