



HIGH PURITY TECHNOLOGY, INC.

50 PERSHING AVENUE * P.O. BOX 870

POUGHKEEPSIE, N.Y. 12602-0870

(845) 452-1103 * FAX (845) 471-8965

PROCESS SPECIFICATION FOR HPT – 100 ELECTROPOLISHED PRODUCTS

1.0 SCOPE:

- 1.1 This process is designed to produce an Ultra smooth, particulate free Electro Polished product for use in gas transport and containment systems. Standard product surface smoothness is:

Up to 1.0" – Avg. of 10RA

Over 1.5" – Avg. of 15RA

2.0 MATERIAL:

- 2.1 Approved material for processing shall be 316L, cold drawn, hydrogen bright annealed, with sulfur controlled between .005% and .017%. It must conform to ASTM-A269, ASTM-A213, and/or ASTM-A270 specifications.
- 2.2 Approved sources of seamless product are: Sandvik, Handy & Harman and Plymouth. Approved sources of welded products are: RathGibson and Trent. Other approved sources may be considered.

3.0 RECEIVING/ QUALITY INSPECTION:

- 3.1 All products received must be fully certified with heat code traceable to mill test report.
- 3.2 Initial quality receiving inspection lot sample shall be a specified percentage of the order. All material will be checked for cleanliness, surface roughness, and mechanical criteria.

4.0 ELECTROPOLISHING:

- 4.1 The HPT-100 process is a low density, full flooded process utilizing both automatic and mechanical equipment for electro polishing. Electrolyte condition is monitored daily and is automatically changed according to iron content and specific gravity.

5.0 RINSING:

- 5.1 After completion of electro polishing, the product is flushed of electrolyte, soaked in a nitric acid DI water solution for a minimum of 30 minutes, and flushed with 18 megohm DI water.
- 5.2 The product is then dried using cryogenic .2 micron filtered nitrogen as a purge in conjunction with class 100 clean room projectiles.

6.0 INSPECTION:

- 6.1 Each tube is visually inspected using fluorescent light sources to determine if imperfections or non-uniformities exist in the product.



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- 6.2 Standard audit procedure is to cut 3" from each end of one tube in ten. Each cut is split to allow perpendicular surface inspection and profilometer recordings. Inspections of fittings are made directly on the product. Results of audit samples and profilometer data is documented and stored for a three-month period.
- 6.3 The HPT-100 standard inspection can be waived or augmented in favor of specific customer audit requirements.
- 7.0 FINAL CLEANING, PACKAGING AND SHIPPING:**
- 7.1 All final cleaning will be performed in certified class 10/100 E-209 certified clean room station. No exceptions will be allowed.
- 7.2 Final cleaning is with a DI water solution and lint free projectiles to remove trace hydrocarbon residue and particulate contamination. Final purging is with .2 micron filtered cryogenic nitrogen. Each length of tubing or fitting to have a minimum .001" mylar placed over each end while under purge prior to securing plastic tube cap.
- 7.3 Product for HPT stock is placed into double polyethylene heat sealed bags. Depending upon customer specification, product may be individually single bagged, individually double bagged or shipped bulk bagged.
- 7.4 Shipping will be in an appropriately sized 1/4" wall cardboard shipping tube with end caps or a plastic sheeting lined wooden shipping crate depending upon quantity and customer requirements.
- 8.0 REFERENCE DOCUMENTATION:**
- 8.1 HPT General Product Specification for **HP SERIES 5.**

(End)