

## Nitinol treatment at INTA Technology

Due to Nitinol's unique combination of properties including biocompatibility, it has been widely used in a variety of applications.

To fully benefit from the material's thermo-mechanical characteristics while improving its corrosion resistance, surface roughness and radio opacity further processing should be carefully selected.

INTA developed an array of specialty processes for surface treatment of Nitinol from mechanical blasting to sophisticated plating with practically any metals.

Especially attention was given to minimizing the Hydrogen concentration induced during processing of Nitinol

Bellow is an example of the Hydrogen content at the each step of the typical process sequence of Nitinol. (In this case Au strike 4 microinch and Ag plate 450 microinch).

Analysis was performed by Luvak, Inc.

**Description:** Five NiTi samples were analyzed as listed below.

**Results:**

<u>Sample Identification:</u>	<u>Hydrogen</u>
	<u>ppm</u>
Sample 1 Control	6
Sample 2 Etched Only	7
Sample 3 Blasted and Etched	10
Sample 4 Blasted, Etched and Striked	18
Sample 5 Blasted, Etched, Striked and Plated	15

Hydrogen values conform to the specification requirements of ASTM F 2063-12.

Method: Vacuum hot extraction - ASTM E 146-83

**Work in progress** includes development of "green" electropolishing process in DES-based electrolyte, that provides high rate of material removal without use of Fluoride or cryogenic solutions.