

METRIC

MIL-STD-1893(AT)  
~~14 August 1991~~  
SUPERSEDING  
(see 6.1)

MILITARY STANDARD

CLEANING ELECTROCHEMICALLY MACHINED NICKEL  
BASE ALLOY SURFACES, PROCESS FOR (METRIC)



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FOREWORD

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3. The intent of this standard is to define the process used for removing contaminants from electrochemically machined surfaces of nickel base alloy parts.

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1. SCOPE

1.1 **Scope.** This standard defines the process used for removing contaminants from electrochemically machined surfaces of nickel base alloy parts.

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2. REFERENCED DOCUMENTS

(This section is not applicable to this standard.)

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3. DEFINITIONS

(This section is not applicable to this standard.)

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4. GENERAL REQUIREMENTS

4.1 Equipment.

4.1.1 Dipping racks. Plastic coated or stainless steel racks shall be used when immersing parts in decontamination solution.

CAUTION: Iron or low alloy steel racks and handling equipment shall not be used for immersion in solution.

4.2 Materials.

4.2.1 Degreaser solution. Stabilized 1-1-1 trichloroethane.

4.2.2 Decontamination solution. The solution shall be formulated using equal parts by volume of water and nitric acid (HNO<sub>3</sub>, 40° Baume) plus 5 milliliters (0.17 ounce) of hydrochloric acid (HCl, concentrated) for each 3.78 liters (one gallon) of solution.

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5. DETAILED REQUIREMENTS

5.1 Procedure. The parts shall be cleaned as follows (see 4.1.1 for caution note):

- a. Vapor degrease (see 4.2.1) parts paying special attention to cored passages and narrow openings.
- b. Pressure flush passages and parts with clean cold running water of maximum 100 degrees Celsius ( $^{\circ}\text{C}$ ) [100 degrees Fahrenheit ( $^{\circ}\text{F}$ )].
- c. Immerse parts in decontamination solution (see 4.2.2) at room temperature for  $50 \pm 5$  minutes.
- d. Pressure flush passages and parts with clean cold running water [maximum  $38^{\circ}\text{C}$  ( $100^{\circ}\text{F}$ )].
- e. Rinse in hot water [ $54 - 60^{\circ}\text{C}$  ( $120 - 140^{\circ}\text{F}$ )].
- f. Dry passages and parts with pressure blasts of filtered clean air.
- g. If necessary, repeat steps a thru f to insure complete removal of surface contaminants.



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6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This standard is intended to define the process for removing contaminants from electrochemically machined surfaces of nickel base alloy parts.

6.2 Supersession. This military standard supersedes AVCO Lycoming Division, internal specification P7207A, dated 27 March 1975.

6.3 Subject term (key word) listing.

Contaminant  
Decontamination solution  
Degreaser  
Dripping racks  
Electrochemical  
Hydrochloric acid  
Nickel base alloy  
Nitric acid  
Trichloroethane

Custodian:  
Army - AT

Preparing activity:  
Army - AT

(Project MFFP-A491)

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DOCUMENT IDENTIFIER (Number) AND TITLE MIL-STD-1893(AT); Cleaning Electrochemically Machined Base Alloy Surfaces, Process for. (Metric)

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