

PROCESS SPECIFICATION

SUBJECT:

CLEANING AND PASSIVATION TREATMENTS FOR 300 & 400 SERIES
STAINLESS (CORROSION RESISTANT) STEEL, FREE MACHINING GRADES

1.0 SCOPE

1.1 This specification covers the requirements for the passivation treatment for stainless steel in the 300 (nonmagnetic) and 400 (magnetic) series, free machining grades.

2.0 APPLICABLE DOCUMENTS

2.1 Specifications and Standards. The following specifications and standards of the current issue form a part of this specification to the extent specified herein and may be used as reference. In the event of conflict between this specification and an IMC detail drawing, the information contained in the drawing shall take precedence.

Federal Specifications

O-N-350 Metric Acid
O-S-595 Sodium Dichromate
QQ-P-35 Passivation Treatments

Military Standards:

MIL-STD-171 Finishing Metal and Wood Surfaces

Military Specifications:

MIL-S-5002 Surface Treatments and Metallic Coatings
MIL-F-14072 Surface Finishes

Commercial Standards:

Carpenter Steel Handbook Cleaning and Passivating

3.0 REQUIREMENTS

3.1 Materials. The chemicals and reagents used for passivation of stainless steel (300 and 400 series) shall produce passivated surfaces which meet the requirements of this specification.

3.2 Pretreatments. The pretreatment methods and procedures used prior to the passivation treatment shall leave the part free of oil, grease, rust, scale, and other foreign matter and shall have no deleterious effect on material properties. In instances where lubricants containing protein are not removed by the pretreatment or cleaning process, immersion in the acid passivation bath may cause a tightly adhering brown stain to form on the parts.

3.2.1 Equipment. Equipment for pretreatment and passivation processes shall consist of:

Vapor degreaser (carbon tetrachloride shall not be used).

Tanks. Clean tanks of polyethelene or fibreglass are suitable.

THIS SPECIFICATION IS THE PROPERTY OF IMC MAGNETICS CORP. AND IS ISSUED IN STRICT CONFIDENCE AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALES OF APPARATUS WITHOUT PERMISSION.

REVISIONS

Revised and
retyped 8-18-81

Imc Magnetics Corp.
WESTBURY NY

COMPOSED BY *JE*

DATE 8-18-81

SPEC. NO.

CHECKED BY

DATE

5-55

APPROVED BY

DATE

SHEET 1 OF 2

PROCESS SPECIFICATION

SUBJECT:

CLEANING AND PASSIVATION TREATMENTS FOR 300 & 400 SERIES
STAINLESS (CORROSION RESISTANT) STEEL, FREE MACHINING GRADES (continued)

3.2.2 Handling of Parts: Handling of parts for passivation should be done with rubber gloves, plastic coated baskets, and stainless steel tongs. If parts are to be hung in tanks, stainless steel wire should be used.

4.0 PROCEDURE

- 4.1 Degrease parts in vapor degreaser for 15 minutes minimum.
- 4.2 Rinse parts thoroughly with running tap water.
- 4.3 Immerse parts in an aqueous solution of 5% sodium hydroxide mixed with clean tap water at 160°/180°F for 30 minutes.
- 4.4 Repeat 4.2.
- 4.5 Immerse parts in an aqueous solution of 20% nitric acid by volume plus 2% sodium dichromate by weight mixed with clean tap water at 120°/140°F for 30 minutes.
- 4.6 Repeat 4.2.
- 4.7 Repeat 4.3.
- 4.8 Repeat 4.2.
- 4.9 The parts shall then be thoroughly dried.

5.0 FINISH

- 5.1 The passivated parts shall exhibit smooth clean surfaces and show no etching or frosting when examined.

THIS SPECIFICATION IS THE PROPERTY OF IMC MAGNETICS CORP. AND IS ISSUED IN STRICT CONFIDENCE AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALES OF APPARATUS WITHOUT PERMISSION.

REVISIONS

Revised and
retyped 8-18-81

Imc Magnetics Corp.
WESTBURY NY

COMPOSED BY	DATE 8-18-81	SPEC. NO.
CHECKED BY	DATE	5-55
APPROVED BY	DATE	SHEET 2 OF 2