



Designation: F 1079 – 87 (Reapproved 2008)

## Standard Specification for Inserted and Noninserted Surgical Scissors<sup>1</sup>

This standard is issued under the fixed designation F 1079; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

### 1. Scope

1.1 This specification covers general workmanship aspects of inserted and noninserted stainless steel scissors fabricated from stainless steel and intended for reuse in surgery.

1.2 The following safety hazards caveat pertains only to the test method described in this specification: *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

**A 380** Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems

**E 18** Test Methods for Rockwell Hardness of Metallic Materials

**E 92** Test Method for Vickers Hardness of Metallic Materials

**E 140** Hardness Conversion Tables for Metals Relationship Among Brinell Hardness, Vickers Hardness, Rockwell Hardness, Superficial Hardness, Knoop Hardness, and Scleroscope Hardness

**F 899** Specification for Wrought Stainless Steels for Surgical Instruments

**F 1078** Terminology for Surgical Scissors—Inserted and Non-Inserted Blades

**F 1089** Test Method for Corrosion of Surgical Instruments

### 3. Terminology

3.1 Definitions applicable to surgical scissors shall be in accordance with Terminology **F 1078**.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F04 on Medical and Surgical Materials and Devices and is the direct responsibility of Subcommittee F04.33 on Medical/Surgical Instruments.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

### 4. Material

4.1 All the component parts of the instrument shall be made of martensitic stainless steel type 410, 410K, 416, 420, 420A, and 420B of Specification **F 899**. Inserts shall be made of stellite or tungsten carbide or other suitable material.

### 5. Physical Properties

5.1 *Rockwell Hardness*—The Rockwell hardness of the scissor halves and inserts shall be within the range of 40 HRC and 58 HRC (approximately equivalent to Vickers hardness 530 HV and 670 HV). Opposite halves and inserts shall not vary in hardness by more than 4 points on the Rockwell hardness scale (HRC) or equivalent.

5.2 *Passivation*—Instruments and instrument components shall be passivated after completion of all fabricating and finishing operations as specified in Practice **A 380**.

5.3 *Heat Treatment*—The component parts of the instruments shall be heat treated under conditions recommended for the material used. Typical heat treating guidelines and hardness values are shown in Specification **F 899**.

### 6. Performance Requirements

6.1 *Corrosion Resistance*—Instruments or instrument components shall be subject to corrosion tests specified in Test Method **F 1089**.

6.2 *Cutting Ability*—The test material shall comply with the material specified in **Table 1**, **Table 2**, or **Table 3**. Clean scissors to be tested prior to test. Perform three separate, consecutive tests with each scissor. Each test shall consist of a nonstop cut along the distal two-thirds of the blade length using the test material at right angles to the threads (if present) of the material. Each cut shall be made using the scissors in the normal manner, that is, with the examiner's fingers in the finger rings of the instrument, except that no lateral pressure shall be exerted. Any bending or snagging of the test material anywhere along the cut including the distal tips shall be cause for rejection.

### 7. Workmanship, Finish, and Appearance

7.1 *Finger Rings*—Inside surfaces shall be well rounded and polished and comply with the requirements in **7.5.1**.