



Designation: F 1079 – 87 (Reapproved 1998)

## 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 problems, 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:

- A 380 Practice for Cleaning and Descaling Stainless Steel Parts, Equipment, and Systems<sup>2</sup>
- E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials<sup>3</sup>
- E 92 Test Method for Vickers Hardness of Metallic Materials<sup>3</sup>
- E 140 Hardness Conversion Tables for Metals (Relationship Between Brinell Hardness, Vickers Hardness, Rockwell Hardness, Rockwell Superficial Hardness, and Knopp Hardness)<sup>3</sup>
- F 899 Specification for Stainless Steel Billet, Bar, and Wire for Surgical Instruments<sup>4</sup>
- F 1078 Terminology for Surgical Scissors—Inserted Blades<sup>4</sup>
- F 1089 Test Method for Corrosion of Surgical Instruments<sup>4</sup>

### 3. Terminology

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

### 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.

**TABLE 1 Testing Materials for Lightweight and Micro, Neuro, and Ophthalmologic Scissors**

Example of Acceptable Testing Materials	Thickness, in.	Examples
Synthetic (50 % polyester, 50 % cotton)	0.007 (1 layer)	Iris Scissors Strabismus Scissors Stevens Scissors Dissecting Scissors
Synthetic (65 % polyester, 35 % cotton)	0.006/0.007	(Kilner) Potts-DeMartell Joseph
Latex rubber sheet	0.009/0.0115	
Latex rubber sheet	0.004/0.008	
Wet facial tissue paper <sup>A</sup> (2 layers)	N/A	
Silicone tubing <sup>A</sup>	0.030 ID, 0.065 OD	
Suture—twist polyester fiber <sup>A</sup>	0.025 (G-207)	

<sup>A</sup>This material may also be used with the aforementioned materials to test extra fine micro, neuro, and ophthalmologic scissors.

<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 F 04.33 on Medical and Surgical Instruments.

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<sup>2</sup> Annual Book of ASTM Standards, Vol 01.03.

<sup>3</sup> Annual Book of ASTM Standards, Vol 03.01.

<sup>4</sup> Annual Book of ASTM Standards, Vol 13.01.