



Standard Specification for Copper-Zinc-Silicon Alloy Rod¹

This standard is issued under the fixed designation B 371; 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 (ϵ) 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 establishes the requirements for copper-zinc-silicon alloy rod produced in Copper Alloy UNS Nos. C69400, C69430, C69700, and C69710.

1.1.1 If the purchaser does not specify the alloy to be supplied, product is permitted to be furnished in any of the alloys named in 1.1.

1.2 The values stated in inch-pound units are the standard. Values given in parentheses are for information only.

NOTE 1—Mercury is a definite health hazard in use and disposal.

2. Referenced Documents

2.1 ASTM Standards:

B 154 Test Method for Mercurous Nitrate Test for Copper and Copper Alloys²

B 249 Specification for General Requirements for Wrought Copper and Copper Alloy Rod, Bar, Shapes, and Forgings²

B 846 Terminology for Copper and Copper Alloys²

E 8 Test Methods for Tension Testing of Metallic Materials³

E 54 Test Methods for Chemical Analysis of Special Brasses and Bronzes⁴

E 62 Test Methods for Chemical Analysis of Copper Alloys (Photometric Methods)⁴

E 478 Test Methods for Chemical Analysis of Copper Alloys⁴

3. Terminology

3.1 Refer to Terminology B 846 for definitions of general terms.

4. Ordering Information

4.1 Orders for product under this specification shall include the following information:

4.1.1 ASTM designation and year of issue (for example, B371 – 93),

4.1.2 Copper alloy designation (for example, C69400),

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² Annual Book of ASTM Standards, Vol 02.01.

³ Annual Book of ASTM Standards, Vol 03.01.

⁴ Annual Book of ASTM Standards, Vol 03.05.

4.1.3 *Form*—Cross section such as round, hexagon, etc.,
4.1.4 *Dimensions*—Diameter or distance between parallel surfaces,

4.1.5 Length,

4.1.6 *Quantity*—Total weight, footage, or number of pieces, and

4.1.7 When product is purchased for agencies of the U.S. Government (Section 9).

4.2 The following requirements are optional and shall be included in the contract or purchase order when required:

4.2.1 Mercurous nitrate test (Section 8),

4.2.2 Certification, and

4.2.3 Mill Test report (Specification B 249).

5. Material and Manufacture

5.1 Material:

5.1.1 The material of manufacture shall be cast billets, logs, or rods of Copper Alloy UNS Nos. C69400, C69430, C69700, or C69710 of such soundness and structure as to make them suitable for processing into the desired product.

5.2 Manufacture:

5.2.1 The product shall be manufactured by hot extrusion and finished by such cold working, annealing, and straightening as may be necessary to achieve the required properties.

6. Chemical Composition

6.1 The material shall conform to the requirements specified in Table 1 for the Copper Alloy UNS No. designated in the ordering information.

6.1.1 These composition limits do not preclude the presence of other elements. When required, limits shall be established and analysis required for unnamed elements by agreement between the manufacturer and the purchaser.

6.2 For copper alloys in which zinc is specified as the remainder, either copper or zinc is permitted to be taken as the difference between the sum of results for all elements analyzed and 100 %. When copper is so determined, that difference value shall conform to the requirements given in Table 1.

6.3 When all elements specified in Table 1 for the copper alloy designated in the ordering information are determined, the sum of results shall be 99.5 % minimum.

7. Mechanical Property Requirements

7.1 Tensile Requirements: