



# Standard Specification for Gear Bronze Alloy Castings<sup>1</sup>

This standard is issued under the fixed designation B427; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

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

## 1. Scope\*

1.1 This specification<sup>2</sup> establishes requirements for alloys whose copper alloy numbers and nominal compositions are shown in **Table 1**. The castings may be furnished as one of three types: static chill, centrifugal chill, or sand cast.

1.2 The values stated in inch-pound units are to be regarded as the standard. SI values given in parentheses are for information purposes only.

## 2. Referenced Documents

2.1 *ASTM Standards*:<sup>3</sup>

**B208** Practice for Preparing Tension Test Specimens for Copper Alloy Sand, Permanent Mold, Centrifugal, and Continuous Castings

**B824** Specification for General Requirements for Copper Alloy Castings

**B846** Terminology for Copper and Copper Alloys

**B950** Guide for Editorial Procedures and Form of Product Specifications for Copper and Copper Alloys

**E8** Test Methods for Tension Testing of Metallic Materials

**E10** Test Method for Brinell Hardness of Metallic Materials

**E527** Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

## 3. General Requirements

3.1 The following sections of Specification **B824** constitute a part of this specification.

3.1.1 Terminology

3.1.2 Materials and Manufacture

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee B05 on Copper and Copper Alloys and is the direct responsibility of Subcommittee B05.05 on Castings and Ingots for Remelting.

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<sup>2</sup> The UNS system for copper and copper alloys (see Practice **E527**) is a simple expansion of the former standard designation system accomplished by the addition of a prefix “C” and a suffix “00.” The suffix can be used to accommodate composition variations of the base alloy.

<sup>3</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.

**TABLE 1 Nominal Composition**

Copper Alloy UNS No.	Previously Used Designation	Composition, %				
		Copper	Tin	Nickel	Lead	Phosphorus
C90800	A	87.8	12.0	...	0	0.2
C91700	B	86.3	12.0	1.5	0	0.2
C90700	...	87.8	11.0	...	0	0.2
C91600	C	88.0	10.3	1.5	0	0.2
C92900	D	83.5	10.0	3.5	2.8	0.2

3.1.3 Sampling

3.1.4 Number of Tests and Retests

3.1.5 Specimen Preparation

3.1.6 Certification

3.1.7 Test Reports

3.2 In addition, when a section with a title identical to that referenced in **3.1**, above, appears in this specification, it contains additional requirements which supplement those appearing in Specification **B846**.

## 4. Terminology

4.1 For definitions of terms related to copper and copper alloys, refer to Terminology **B846**.

## 5. Ordering Information

5.1 Include the following information when placing orders for product under this specification:

5.1.1 Quantity of castings required,

5.1.2 Copper Alloy UNS No. (**Table 1**),

5.1.3 Specification title, number, and year of issue,

5.1.4 Pattern or drawing number and casting type (Section 1),

5.1.5 Repair of castings (Section 9),

5.1.6 Certification, if specified in the purchase order (Specification **B824**),

5.1.7 Foundry test report, if specified in the purchase order (Specification **B824**), and

5.1.8 Witness inspection, if specified in the purchase order (Specification **B824**).

5.2 When product is purchased for agencies of the U.S. Government, the Supplementary Requirements of Specification **B824** may be specified.

\*A Summary of Changes section appears at the end of this standard.