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## **Standard Practice for Numbering Metals and Alloys (UNS)<sup>1</sup>**

This standard is issued under the fixed designation E 527; 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.*

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<sup>ε1</sup> NOTE—Keywords were added editorially in October 1997.

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### **1. Scope**

1.1 This practice (Note 1) covers a unified numbering system (UNS) for metals and alloys that have a “commercial standing” (see Note 2), and covers the procedure by which such numbers are assigned. Section 2 describes the system of alphanumeric designations or “numbers” established for each family of metals and alloys. Section 3 outlines the organization established for administering the system. Section 4 describes the procedure for requesting number assignment to metals and alloys for which UNS numbers have not previously been assigned.

NOTE 1—UNS designations shall not be used for metals and alloys that are not registered under the system described herein, or for any metal or alloy whose composition differs from those registered.

NOTE 2—The terms “commercial standing,” “production usage,” and others are intended to portray a material in active industrial use, although the actual amount of such use will depend, among other things, upon the type of materials. (Obviously gold will not be used in the same “tonnages” as hot-rolled steel.)

Different standardizing groups use different criteria to define the status that a material has to attain before a standard number will be assigned to it. For instance, the American Iron and Steel Institute requires for stainless steels “two or more producers with combined production of 200 tons per year for at least two years”; the Copper Development Association requires that the material be “in commercial use (without tonnage limits)”; the Aluminum Association requires that the alloy be “offered for sale (not necessarily in commercial use)”; the SAE Aerospace Materials Division calls for “repetitive procurement by at least two users.”

While it is apparent that no hard and fast usage definition can be set up for an all-encompassing system, the UNS numbers are intended to identify metals and alloys that are in more or less regular production and use. A UNS number will not ordinarily be issued for a material that has just been conceived or that is still in only experimental trial.

1.2 The UNS provides a means of correlating many nationally used numbering systems currently administered by societies, trade associations, and individual users and producers of metals and alloys, thereby avoiding confusion caused by use of

more than one identification number for the same material; and by the opposite situation of having the same number assigned to two or more entirely different materials. It also provides the uniformity necessary for efficient indexing, record keeping, data storage and retrieval, and cross referencing.

1.3 A UNS number is not in itself a specification, since it establishes no requirements for form, condition, quality, etc. It is a unified identification of metals and alloys for which controlling limits have been established in specifications published elsewhere.

NOTE 3—Organizations that issue specifications should report to appropriate UNS number-assigning offices (3.1.2) any specification changes that affect descriptions shown in published UNS listings.

### **2. Description of Numbers (or Codes) Established for Metals and Alloys**

2.1 The unified numbering system (UNS) establishes 18 series of numbers for metals and alloys, as shown in Table 1. Each UNS number consists of a single letter-prefix followed by five digits. In most cases the letter is suggestive of the family of metals identified; for example, A for aluminum, P for precious metals, and S for stainless steels.

2.2 Whereas some of the digits in certain UNS number groups have special assigned meaning, each series is independent of the others in such significance; this practice permits greater flexibility and avoids complicated and lengthy UNS numbers.

NOTE 4—This arrangement of alphanumeric six-character numbers is a compromise between the thinking that identification numbers should indicate many characteristics of the material, and the belief that numbers should be short and uncomplicated to be widely accepted and used.

2.3 Wherever feasible, identification “numbers” from existing systems are incorporated into the UNS numbers. For example: carbon steel, presently identified by AISI 1020 (American Iron and Steel Institute), is covered by “UNS G 10200”; and free cutting brass, presently identified by CDA (Copper Development Association C 36000), is covered by “UNS C 36000.” Table 2 shows the secondary division of some primary series of numbers.

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<sup>1</sup> This practice is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.91 on Editorial.

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