

**Metals & Alloys
in the
UNIFIED
NUMBERING
SYSTEM**

10th Edition

**SAE HS-1086/2004
ASTM DS-56I**

**A Joint Publication of the
Society of Automotive Engineers, Inc.
American Society for Testing and Materials**

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ISBN 0-7680-1488-3

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Printed in USA

Preface to the Tenth Edition

In 2005, we commemorate the 30th anniversary of the Unified Numbering System. The Tenth Edition contains more than 5,100 designations in an international identification system for metals and alloys. Since the Ninth Edition was published in 2001, more than 160 new UNS designations have been added. More than 4,000 changes have been made in a major updating of representative specification cross-references and specification indices. The Index of Common Trade Names has been expanded with more than 2,500 additions.

In total, approximately 6,500 changes have been incorporated into the Tenth Edition of *Metals & Alloys in the Unified Numbering System*.

A UNS designation is not a specification because it establishes no requirements for delivery conditions such as mechanical property requirements, heat analysis tolerances, heat treatment, packaging, marking, inspection, etc. UNS designations are identifying numbers for metals and alloys for which controlling requirements are established and published by technical societies and specifying organizations such as Aluminum Association, American Society of Mechanical Engineers (ASME), ASTM International, SAE International, NACE International, American Welding Society (AWS), Copper Development Association (CDA), and ISO.

The Unified Numbering System operates through the volunteer efforts of a group of experienced, highly qualified metallurgists responsible for each of the various series of metals and alloys. Without their dedication and expertise, this book and the Unified Numbering System could not exist. We would like to extend our special thanks to Harold M. Cobb, Metallurgical Consultant, who was instrumental in the development of the Unified Numbering System 30 years ago, for his ongoing dedication and commitment to the project.

James D. Redmond, Ph.D.
Chairman
UNS Advisory Board

New this year – UNS on the Web!

A Web version of the Unified Numbering System is available through both SAE and ASTM. It provides convenient online access, advanced search capabilities, and regular updates. It gives customers the ability to search by UNS number, description, common trade name, cross reference organization and specification, and chemical composition. For more information or to sign up for a one-year subscription, contact either SAE or ASTM.

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Introduction to the Unified Numbering System

The Unified Numbering System for Metals and Alloys (UNS) provides a means of correlating many internationally used metal and alloy numbering systems currently administered by technical societies, trade associations, and those individual users and producers of metals and alloys. This system avoids the confusion caused by the use of more than one identification number for the same metal or alloy, and the opposite situation of having the same number assigned to two or more different metals or alloys.

It provides the uniformity necessary for efficient indexing, record keeping, data storage and retrieval, and cross-referencing.

A UNS designation is not, in itself, a specification, because it establishes no requirements for form, condition, property, or quality. It is a unified identifier of a metal or an alloy for which controlling limits have been established in specifications published elsewhere.

The UNS establishes 18 series of designations for metals and alloys. Each UNS designation 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, S for stainless steels.

Although some of the digits in certain UNS designation groups have special assigned meanings, each series of UNS designations is independent of the others in regard to the significance of digits. This permits greater flexibility and avoids complicated and lengthy UNS designations.

Wherever feasible, and for the convenience of the user, identification "numbers" from existing systems are incorporated into the UNS designations. For example, carbon steel presently identified by the American Iron and Steel Institute as "AISI 1020" is covered by the UNS designation "G10200."

The UNS designation assignments for certain metals and alloys are established by the relevant trade associations which in the past have administered their own numbering systems; for other metals and alloys, UNS designation assignments are administered by the SAE International. Each of these assigners has the responsibility for administering a specific UNS series of designations. Each considers requests for the assignment of new UNS designations, and informs the applicants of the action taken. UNS designation assigners report immediately to the office of the Unified Numbering System for Metals and Alloys the details of each new assignment for inclusion into the system.

For additional details on the UNS System, see the combined ASTM E527/SAE J1086, "Recommended Practice for Numbering Metals and Alloys," included in the Appendix.

The listed cross-referenced specifications are representative only and are not necessarily a complete list of specifications applicable to a particular UNS designation.