

PREFACE TO THIS EDITION

This edition of *Stainless Steels* contains about thirty percent more data than the 1999 edition. The most significant changes are noted below.

Descriptions of Alloys. Fifty alloys have been added to the section that includes a general descriptions of the alloys, their physical and mechanical properties and their applications, bringing the total coverage to 177 stainless steels. For each entry a list of the pertinent alloy names and numbers is also included. It will be seen that some of the popular alloys, such as Type 316 stainless steel, are known by as many as 50 different names and numbers for alloys that have the same or similar chemical compositions. Many of these new alloys have been included in ASTM specifications since the last edition of the Manual was published.

Chemical Compositions. There are now over 300 alloys in a single table that lists their chemical compositions according to alloy type – austenitic, duplex, ferritic, martensitic and precipitation hardening – and the appropriate UNS numbers for each alloy.

Dimensional Tolerances. The tables of dimensional tolerances have been updated to reflect the latest changes in ASTM specifications for the various product forms – Semifinished Products, Bar Size Shapes, Bars, Plates, Sheets, Strip and Foil, Wire and Tubular Products.

Specification Titles. In addition to the listing of approximately 200 ASTM stainless steel specification titles, there is now included a list of approximately 200 SAE AMS (Aerospace Material Specifications) specification titles for stainless steel.

Stainless Steel Alloy Index. The designations for stainless steel alloys often differ from producer to producer and from country to country for alloys having the same or similar chemical compositions. The Stainless Steel Alloy Index is a catalog of these names and numbers. First published in the 1999 Edition, the has been expanded from 636 entries to 2,244.

The Index, which is at the front of the book, enables a reader to find and identify alloys based on an alloy name, trade name or number. The names and numbers are those that relate to chemical compositions that are the same as, or similar to, the chemical compositions associated with UNS (Unified Numbering System) designations. The Index includes alloy names and numbers used in the United States, Mexico, Brazil, the United Kingdom, France, Germany, Sweden, Russia, Japan, P. R. China and Korea. The identifying names and numbers assigned by the various standards organizations in each country are included as well as the trade names of many steel producers. For the European Community the five-digit EN (Euronorm) numbers, which are generally the same as the DIN Werkstoff numbers, are listed. The former British En (Emergency Number) numbers assigned during the second World War are also listed.

National Designations. National designations for over 100 stainless steels that have similar chemical compositions to those in other countries are listed in Appendix IV. Designations are included for the USA, France, Germany, Japan, Sweden, PR China, Russia, the UK and Euronorm.

Naming and Numbering of Stainless Steels. A recent study describes the development of the names and the systems of numbering the alloys that are now generally called “stainless steels.” This discussion of names and numbers used around the world appears in Appendix V.