

ASM International: Meeting materials data sharing needs for 100 years

We are dedicated to serving the information needs of the materials community.

Founded out of a genuine need for the exchange of technical information in the automotive industry, ASM International began as the Steel Treaters Club in 1913. As materials advances propelled manufacturing and innovation forward, ASM expanded to support the needs of the growing community. Almost 100 years later, ASM is still recognized as a vital materials professional society that plays a critical role in data development and dissemination by bringing together industry, government, and academia to meet community needs.

We work with the experts to collect and structure the best data possible.

As an engineering and scientific society, ASM International is led by our volunteer members, guided by their needs, and fueled by their participation. Our members are leaders in their fields who serve as the authority in ASM's data collection efforts. Representing all facets of the materials community, including academia, industry, and government, their involvement ensures that the data we share with the greater community is robust and representative of the state of the art.

We work with other organizations to meet broader information needs.

Through partnerships, ASM facilitates development and dissemination of information in a wider range of areas. Cooperation with other professional societies resulted in the Corrosion Analysis Network. Engagement with industry and government labs is the basis for the Materials Data Management Consortium. And, joint activities with Granta Design Ltd. have produced the Medical Materials and MEMS Databases. ASM welcomes partnerships with organizations across the materials spectrum a way to strengthen the information-sharing capabilities in the materials community.



A History of Sharing Materials Information

- **1913:** Steel Treaters Club established
- **1929:** First bound-edition Handbook published
- **1930:** First issue of *Metal Progress* published
- **1951:** First World Metallurgical Congress held
- **1954:** Metals Engineering Institute established as the educational arm of the society
- **1986:** Society name becomes ASM International
- **1997:** First ASM Materials Solutions Conference held
- **2002:** ASM online Handbooks Center and ASM Online Training launched
- **2003:** Online Alloy Center and Alloy Phase Diagram Center launched
- **2004:** Online micrograph Center and Failure Analysis Center established
- **2006:** Online Medical Materials Database launched
- **2007:** Online MEMS Materials Database Packaging Module established and Pearson's Crystal Structure Database for Inorganic Compounds made available online by ASM
- **2009:** Corrosion Analysis Network collaborative online database produced
- **2012:** Computational Materials Data Network established

We make the most comprehensive, up-to-date data available to serve many needs of the materials community.

ASM serves materials professionals, nontechnical personnel and managers worldwide by providing high-quality materials information, education and training, networking opportunities, and professional development resources. While we're widely known for our comprehensive handbooks on ferrous and non-ferrous metals and materials technology, we also provide a wide range of specialized data and information to the materials community through databases, interactive networks, and education and training tools. Below are some key areas of materials technology that ASM supports through online data and information sharing.

<h3>Alloys</h3> <p>The Alloy Center provides over 5,000 datasheets containing property data, performance charts, and processing guidelines. It serves as a flexible and convenient tool for identifying and selecting alloys.</p>	<h3>Alloy Phase Diagrams</h3> <p>We provide alloy phase diagrams through the Alloy Phase Diagram Center. This Center provides more than 34,000 binary and ternary phase diagrams and associated phase data for more than 6,200 systems.</p>	<h3>Crystal Structures</h3> <p>We provide crystal structures for a wide variety of inorganic materials and compounds through Pearson's Crystal Structure Database for Inorganic Compounds. These crystal structures are critical to interpreting the chemical and physical properties of compounds.</p>
<h3>Microstructure</h3> <p>Our Micrograph Center provides more than 3,500 micrographs, each with details about the materials, processing history, specimen preparation, and microstructure. This database serves as the most comprehensive micrograph repository available.</p>	<h3>Computational Materials</h3> <p>The Computational Materials Data Network (CMDN) was established as a central point for the collection, dissemination, and management of materials data. The Network aims to provide effective access to the data needed to accelerate materials discovery and deployment in applications such as medical, transportation, and national security.</p>	<h3>Failure Analysis</h3> <p>Our Failure Analysis Center provides over 1,000 case histories dealing with failures related to fracture, stress, strain, wear, corrosion, distortion, materials class and processing from leading journals and technical reports. These case studies provide important failure data under real-world circumstances.</p>
<h3>Medical Materials</h3> <p>The ASM Medical Materials Database is a peer-reviewed database that serves as a single source for materials data to support medical device design. The first and only of its kind, the comprehensive database enables screening, analyzing, selecting, and sourcing candidate materials and coatings for device applications and compatible drugs.</p>	<h3>Corrosion Analysis</h3> <p>In partnership with NACE International (The Corrosion Society) and the American Society for Testing and Materials (ASTM), ASM developed the Corrosion Analysis Network™. This online network provides a single source for comprehensive and authoritative information for researching, understanding, preventing and solving corrosion-related problems.</p>	<h3>MEMS Packaging</h3> <p>The MEMS Materials Database Packaging Module provides a comprehensive and authoritative set of mechanical and physical properties, processing, and component data to facilitate materials selection and design for microelectromechanical system packages.</p>



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