



"Engineers working in metals and alloys across all six laboratories utilized the CINDAS data on a daily basis and considered it the most valuable and effective technical data at our disposal."

John Yadon, retired NAVAIR National Division Head, Materials Engineering

John Yadon, who served as a metallurgical engineer and National Division Head for NAVAIR for over 34 years, recently commented on the value of the CINDAS materials properties databases and their unique benefits and features:

General Features

- Detailed physical and mechanical properties for alloys are all in one place.
- Engineers can rapidly familiarize/refresh knowledge of any alloy with which they are dealing.
- Unique properties of specific alloys are provided upfront in the chapters and helps quickly focus attention on potential properties of interest.
- References for each alloy (chapter) are extremely helpful if additional research is needed.
- Data for product forms (wrought, bar, plate, forgings, etc.) and conditions (heat treatments, environmental conditions, etc.) is readily identified via general properties, saving much time and cost in assimilation of data.
- Mechanical and physical property data for each alloy is extensive (far more so than any other data source available).
- Static, dynamic and fracture toughness data proved to be very useful in solving many material problems.
- Alloy data is provided for a wide range of temperatures both sub-ambient and elevated temperature conditions.
- Extensive corrosion data is valuable for material selection criteria.

Design & Alloy Selection

- The amount of property data for each alloy is extremely beneficial when selecting alloys for new designs or as design improvements.
- Alloy data allows for quick down selecting of candidate materials when re-designing for improved part performance.
- Alloy data can be used extensively to identify newer or more advanced alloys to replace parts and components that were obsolete or failed to provide adequate service life.
- Active applications provide insight on potential alloys to consider for a new application.

Failure Analysis

- The databases are an outstanding reference source in all failure analyses.
- The "special precautions" sections of each chapter helped focus attention on potential causes of failures and provided key findings in many analyses.
- Details provided on microstructure for various heat treatment conditions is instrumental in many investigations.

Manufacturing & Processing

- CINDAS data is extremely valuable in solving manufacturing and processing problems.
- Recommendations and precautions provided for machining and grinding of alloys was routinely used to improve process efficiency.
- Welding and brazing data is very useful repair development work for repair and salvage of aerospace parts and components.