

Now available on-line—CINDAS Aerospace Structural Metals Database (ASMD)

The ASMD web-based database allows the user to instantly see the properties and relationships for 280 metal alloys with over 96,100 data curves. This user-friendly interface enables ASMD subscribers to quickly select and compare the attributes of the alloys for which they are looking.

The ASMD provides numeric and graphic information as part of the database, including a comprehensive PDF consisting of additional information for each alloy.

ASMD Users

Universities	Course Material Aid
Technical Schools	Project Reference & Guide
Government Agencies	New Material Research
Aerospace Industry	Turbine Design
Automotive Industry	Developing Engines & Frame
Industrial Suppliers	Manufacturing, Machinery
Research Corporations	Research and Development
<i>And many others...</i>	

About the Data

The ASMD was fully developed by CINDAS LLC from the widely used and highly respected Aerospace Structural Metals Handbook (ASMH).

CINDAS LLC completed and released the database under a Cooperative Research and Development Agreement (CRADA) with the United States Air Force Materials Directorate at Wright Patterson Air Force Base.

Search and Browse the Aerospace Structural Metals Database by

Material Group
(Aluminum, Titanium, Nickel Alloys, Stainless Steels, etc.)
Material Name
(Al6061, Ti-6Al-4V, AZ63A, etc.)
Property Group
(Mechanical, Thermophysical, etc.)
Property Name
(Yield Strength, Elongation, Fracture Toughness, etc.)

Property Groups

The ASMD contains 700 different properties. These properties are separated into 20 easy-to-navigate property groups. Alternatively, you can search the property names by using keywords which would bring you directly to the property you're interested in.

Thermophysical

Thermoradiative

Electrical and Nuclear

Mechanical Properties

Strength, Stress, Hardness, Fatigue &
Crack Growth, Impact Energy, Strain, Area
Reduction, Deformation and others

Temperature

Time, Life to Failure

Corrosion, Oxidation, and Weight Change

Length, Thickness, Diameter, Size, and Grain Size

Content of Component, Phase

Plus others...

Searching and Browsing: Aerospace Structural Metals Database (ASMD) Finding Information

Search: Enter the full or partial name of the property or material.

Browse: Use the drop-down menu to find the property or material.

The Aerospace Structural Metals Database contains 280 metal alloys in 20 metal groups and 700 properties in 20 property groups.

ASMD (version 2.5, data updated 2011.1) [START / VAP](#) | [MATERIAL](#) | [PROPERTY](#) | [HELP](#) | [HOM](#)

Browse By:
Material Group

Search By:
Material Name

e.g., Inconel 718 alloy

or

Property Group

or

Property Name

e.g., elastic Elastic Modulus

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Select Property Group: Mechanical Properties - Fatigue, Crack

(20 property groups)

Select Property Name:

- Alternating Pseudo Stress
- Cycles to First/Initiation Crack
- Delay Cycles
- Effective Crack Length
- Fatigue, Alternating Stress
- Fatigue, Crack Growth Rate
- Fatigue, Crack Growth Rate per cycle
- Fatigue, Cyclic Stress
- Fatigue Limit/Endurance Limit
- Fatigue, Maximum Stress
- Fatigue, Mean stress
- Fatigue, R-ratio
- Fatigue Strength Ratio, Fatigue Strength/TS
- Fatigue Strength Ratio, Fatigue Strength/TS
- Fatigue Stress
- Fatigue, Stress Amplitude
- Fatigue, Stress Range
- Fatigue, Torsional Strength
- Mean stress
- Peak Pseudo Stress
- Percent of Fatigue Max. Stress, Ultimate Strength
- True R-ratio Stress

Form of Service

Customizing Information

Select: The independent variable.

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Select Property Group: Mechanical Properties - Fatigue, Crack

(20 property groups)

Select Property Name: Fatigue, Alternating Stress

(22 properties)

Property Range
Fatigue, Alternating Stress (ksi) -0.4 - 180.11

Select an Independent Variable, and then click the Show Graph or Show Text button.

Independent Variable	Minimum	Maximum
<input checked="" type="radio"/> Cycles (cycles)	30506.47	321062.0
<input type="radio"/> Cycles to Failure (cycles)	981.4	57102513.61
<input type="radio"/> Cycles to First/Initiation Crack (cycles)	1733.36	93351.37
<input type="radio"/> Fatigue, Mean Stress (ksi)	-16.0	232.55
<input type="radio"/> Mean Stress (ksi)	0.0	99.26

Viewing Information

The ASMD allows the user to view a property of multiple materials on one graph.

Step 1: Select Materials.

Step 2: Select Data Curves or Test Conditions.

Note: At any time, the user can click on the "Show Text" button to see the values of the data points, text description, references, etc.



Results: Graphic and Numeric

- Over 96,100 data curves
- Color-coded data curves
- Multiple curves of different materials per graph
- Hovering cursor to show X and Y values of each data point
- Unit conversion package
 - Contains both English and SI units
- Shows all typically used units for the variables
- Allows both X-axis and Y-axis selection



