What's New at NIST: An Update on Web Resources Available from the National Institute of Standards and Technology

SLA Maryland Chapter

Xtreme Reference: Navigating Government Data

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NIST
National Institute of Standards and Technology
U.S. Department of Commerce

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Presentation Overview

Free web resources available through NIST

- Background on data resources at NIST
- Updates on specific resources
- Some favorite data-rich NIST web sites

NIST Digital Archives (NDA)

- Images/information on NIST Museum artifacts
- Full-text PDF files of the *Journal of Research of National Institute of Standards and Technology*

NIST/NBS History

- Full-text PDF files of three-volume history set

National Institute of Standards and Technology

NIST's Mission:

"To promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life."

- Non-regulatory agency within the US Department of Commerce.
- About 1500 scientists and 1800 guest researchers and post-doctoral students.

Information Services Office (ISO)

Mission:

"To support and enhance the research activities of the NIST scientific and technological community through a comprehensive program of knowledge management."

Organizational Structure:

- Research Library and Information Program
- Electronic Information and Publications Program
- NIST Museum and History Program

NIST Standard Reference Data

Standard Reference Data: Data which has been extracted from the world's literature, assessed for reliability, and then evaluated to select the preferred values.

The Standard Reference Data Act

Public Law 90-396. July 11, 1968

- "To provide for the collection, compilation, critical evaluation, publication and sale of standard reference data."
- "The Congress hereby finds and declares that reliable standardized scientific and technical reference data are of vital importance to the progress of the Nation's science and technology. It is therefore the policy of the Congress to make critically evaluated reference data readily available to scientists, engineers, and the general public."

NIST Data Gateway: A Federated Search

http://srdata.nist.gov/gateway/

NIST Time | NIST Home | About NIST | Contact Us | A-Z Site In Search

Technology Services

About TS ▼ Products/Services ▼ Publications News/Events Training/Education Virtual Library

NIST Home > TS > Measurement Services > Standard Reference Data

About: Standard Reference Data (SRD)

Standard Reference Data Act of 1968 (PL 90-396)

Standard Reference Data
Copyright Information

NIST Online Databases
List
Descriptions

Databases for Purchase
Online Subscription Databases

La Version En Español
Lista de Precios/Base de Datos En Linea

SRD Database Numbering System

NIST Databases Indexed by Discipline
Analytical Chemistry
Atomic and Molecular Physics
Biometrics
Biotechnology
Chemical and Crystal Structure

Chemical Kinetics
Chemistry
Communications

The NIST Data Gateway

NIST Data Gateway-provides easy access to many (currently over 80) of the NIST scientific and technical databases. These databases cover a broad range of substances and properties from many different scientific disciplines. The Gateway includes links to free online NIST data systems as well as to information on NIST PC databases available for purchase.
To use the Gateway, choose one of the following search options:

Keyword
Property
Substance Name

Journal of Physical and Chemical Reference Data (JPCRD) is published by the American Institute of Physics (AIP) for NIST. The objective of the Journal is to provide critically evaluated physical and chemical property data, fully documented as to the original sources and the criteria used for evaluation.

Journal of Physical and Chemical Reference Data
JPCRD Reprints
JPCRD Monographs and Supplements

The National Standard Reference Data System (NSRDS-NBS) provides access to the quantitative data of physical sciences, critically evaluated and compiled.

National Standard Reference Data Series (NSRDS)

Quick List:

Atomic Spectra Database
CODATA Fundamental Physical Constants
NIST Ceramics WebBook

What's New in NIST Data

SHARE

Rate our Products and Services

Chem-Blast: Gateway for PDB Ligands

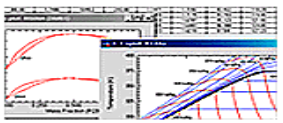
NIST/EPA/NIH Mass Spectral Database NIST 08

Click here for a list of our distributors.

NIST Standard Reference Subscription Database 1NIST X-Ray Photoelectron Spectroscopy Database: Version 4.0

NIST Standard Reference Subscription Database 2Web Thermo Tables (WTT) - Lite Edition

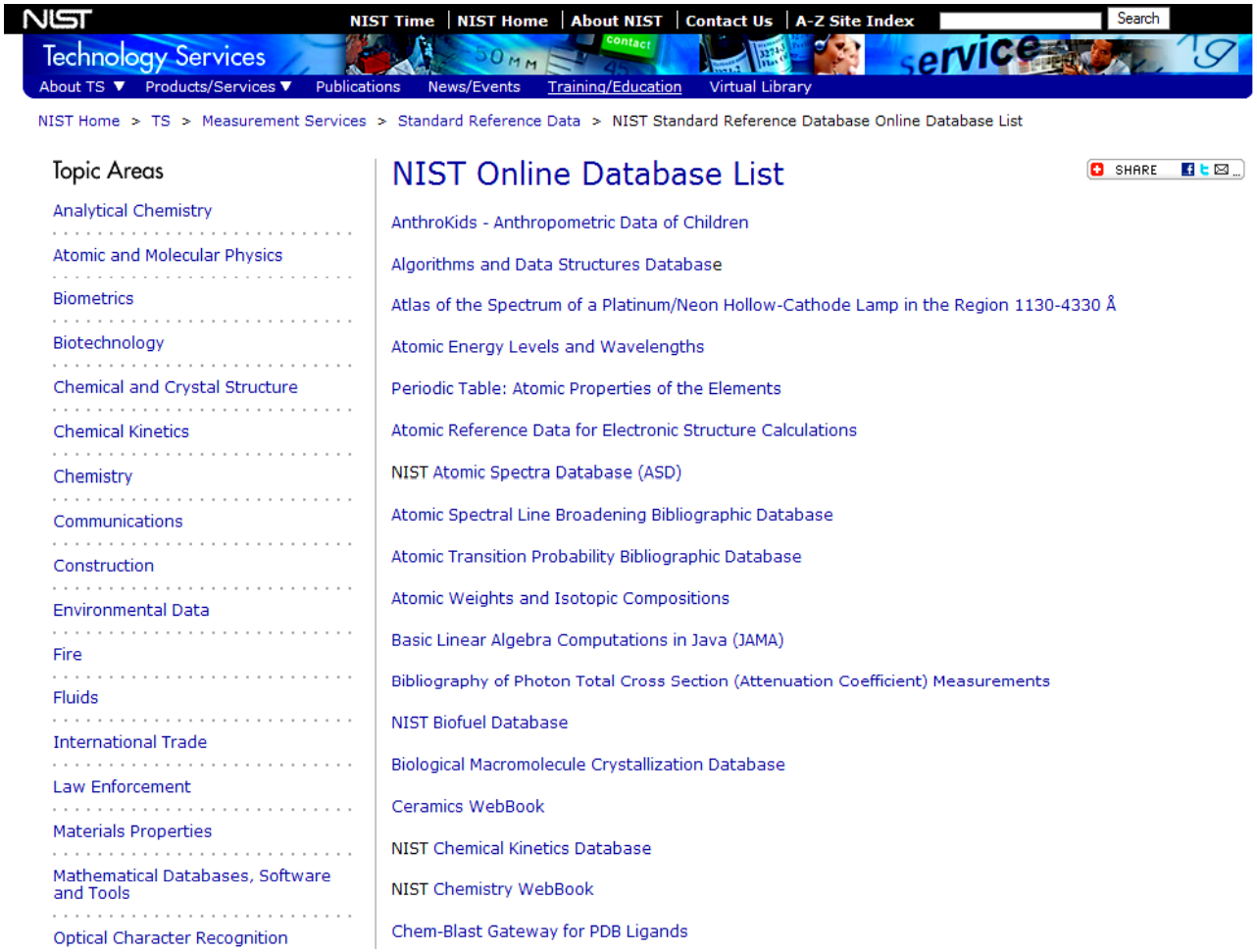
NIST Standard Reference Subscription Database 3Web Thermo Tables (WTT) - Professional Edition



NIST Reference Fluid Thermodynamic and Transport

NIST Standard Reference Databases

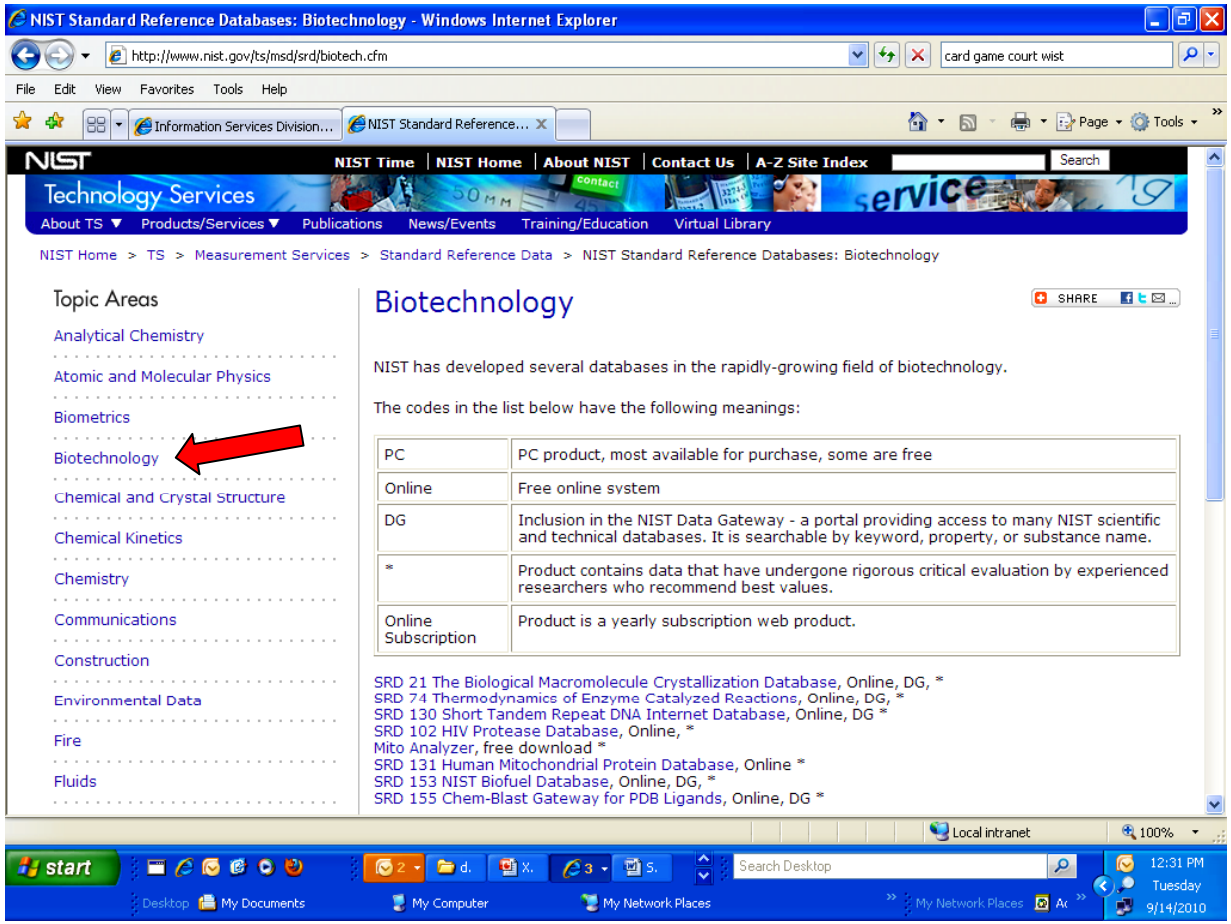
Select **List** under **NIST Online Databases** from the left menu on the home page of the NIST Data Gateway to see a complete list of NIST online databases.



NIST Standard Reference Databases

Select a **Topic Area** from left menu to view list of databases in that area.

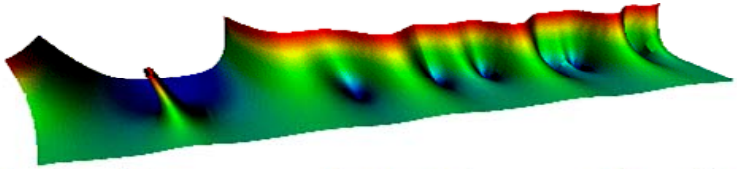
Note the format(s) of the database. “Online” code represents a free online system.



NIST Digital Library of Mathematical Functions
http://dlmf.nist.gov/

Digital Library of Mathematical Functions
- Index
- Notations
- Search
- Need Help?
- How to Cite
- Customize

About the Project
NIST National Institute of Standards and Technology



NIST Digital Library of Mathematical Functions

companion to the NIST Handbook of Mathematical Functions

Project News

2010-05-11 *Handbook published and DLMF goes public*

2010-05-06 *Firefox 3.6 slow on Windows*

- *More news*

Digital Library of Mathematical Functions (DLMF)

- The definitive reference work on applied mathematics' "special functions”
- Print companion: *NIST Handbook of Mathematical Functions*
- More than 8,000 equations and almost 500 figures

NIST Chemistry WebBook
http://webbook.nist.gov

- Contains thermochemical data, reaction thermochemistry data, spectra (IR, mass, UV/Vis, electronic/vibrational), ion energetics data
- Latest major revision in June 2005
- Incremental revisions since June 2005
  - Improved display of site on handheld devices (smart phones).
  - Updated vibrational and electronic energy levels.
  - Update to thermochemical data.
  - Added support for permanent links to individual species using IUPAC InChI.
  - Added formula browser.

Clathrate Hydrate Physical Property Database
http://gashydrates.nist.gov/

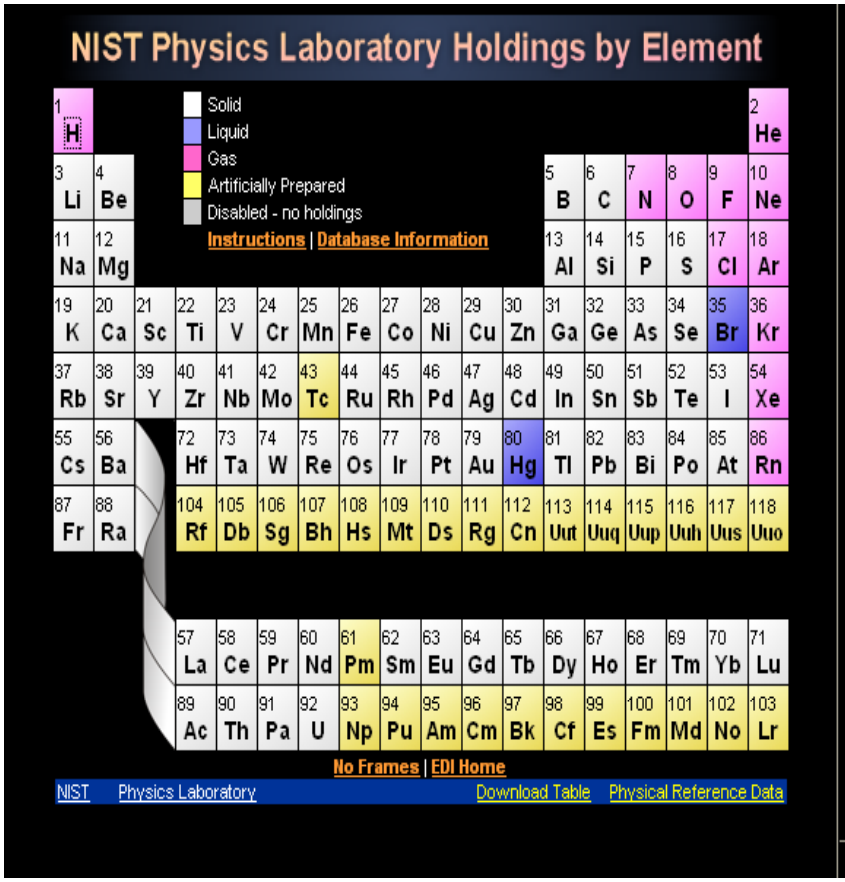
- Free online collection of data on the properties of gas hydrates
- Includes phase equilibria and thermophysical property information such as thermal conductivity
- Potential database users
  - Climate modelers
  - Petroleum industry

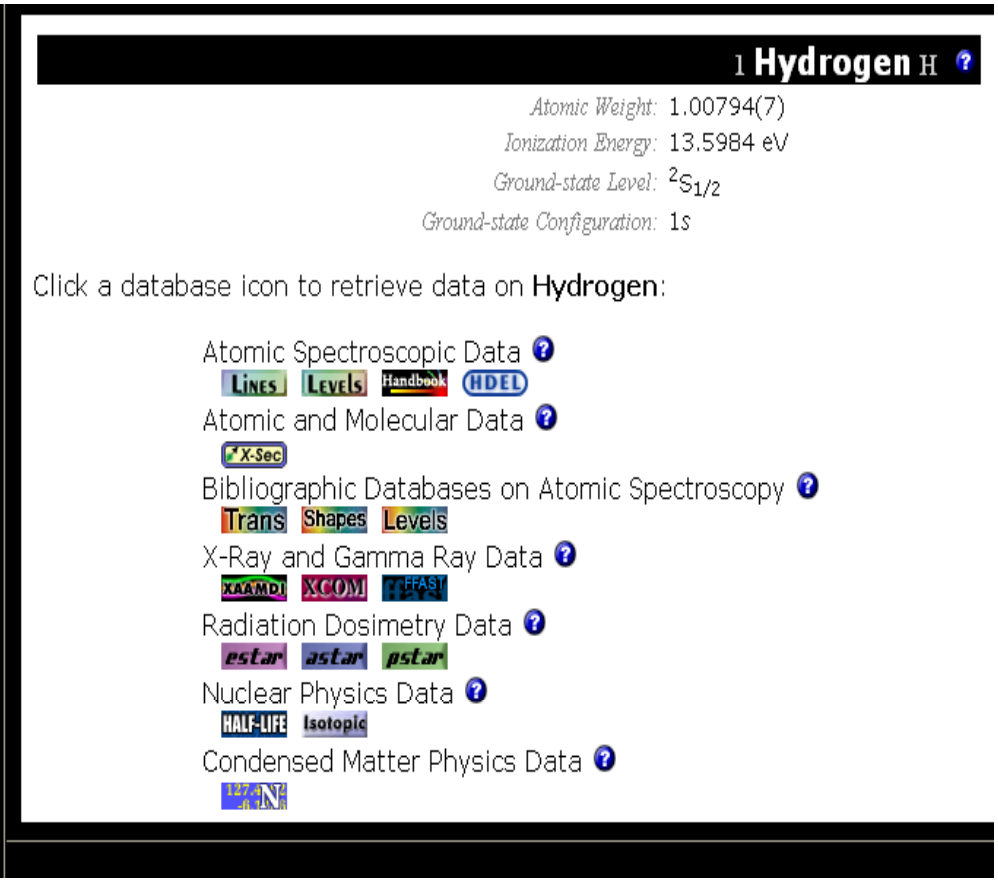
Cryogenic Materials Properties Database

- Free online database on the properties of solid materials at temperatures ranging from cryogenic to room temperature
- Covers wide range of materials from stainless steels to fiberglass epoxy
- Applications include medicine, energy storage, electronics, transportation, space exploration, environmental research, weather forecasting, and defense

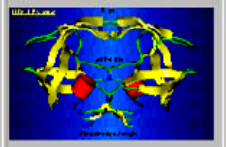
Physics Data: Elemental Data Index

physics.nist.gov/PhysRefData/Elements/





HIV Structural Database
http://xpdb.nist.gov/hivsdb/hivsdb.html

HIV protease	HIV Structural Database and Chem-BLAST	NIST
	HIV Structural Database & Chem-BLAST	NIST National Institute of Standards and Technology

HIV 2-D database | HIV RT database | CCR5 | Integrase | Publications | Deposit Structure | Animation of enzyme inhibitor interactions

HIV Structural Reference Database (102) and Chem-BLAST

Biotechnology Division, National Institute of Standards and Technology Gaithersburg, MD 20899 U.S.A.

In citing this work please use the following publications:

1.Prasanna, M.D., Vondrasek, J., Wlodawer, A., Bhat, T.N. Application of InChI to curate, index and query 3-D structures. *PROTEINS: Structure, Function, and Bioinformatics* **60**, 1-4 (2005).

2.Prasanna M.D, Vondrasek J, Wlodawer A, Rodriguez H, Bhat T.N. Chemical compound navigator: a web-based Chem-BLAST, chemical taxonomy-based search engine for browsing compounds. Proteins **63**(4), 907-917(2006).

Information is available on the following topics:

- **Chem-BLAST Gateway to PDB Ligands (Includes all ligands in the PDB and many more diseases)**
- **Show credits**
- **Accessibility Requirements**
- **Background**
- **How to Use This Database (Help)**
- **Advanced Inhibitor Searches Using Data-tree: Search inhibitors using chemical compound tree, Chem-BLAST |?**
- **Chem-BLAST Using Semantic Concepts Search structures (needs Java enabling) using Semantic Concepts and Chem-BLAST NEW**
- **General Text Search: Search on citation, abstract, inhibitor name, preamble to Chem-BLAST... |?**
- **Inhibitor Search: View inhibitors in 2-D using search on citation, abstract, inhibitor name, preamble to Chem-BLAST ... |?**
- **Picture gallery: Show pre-computed pictures |?**
- **View slides: AIDS Structural Meeting presentation 2004**

NIST Digital Archives (NDA)

- NIST Museum artifacts
  - Selected images of artifacts, including the first NIST laser, a quartz crystal time standard, gage blocks, and calorimeters, to name a few
- *Journal of Research of NIST*
  - Flagship publication of NIST
  - Published since 1904 under various titles
  - Full text PDF files available from 1996 – present

NIST/NBS History

NIST/NBS History Volumes

- Highlights NIST accomplishments from 1901 to 1993
- Three-volume set as searchable PDF files on NVL (http://nvl.nist.gov)
  - *Measures for Progress*
  - *A Unique Institution*
  - *Responding to National Needs*
- NIST history appendices (1994-2009)
  - Updates appendices in latest history volume

Questions?

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