SpringerMaterials User Guide

Advanced Search

Allows specified searches for Substances, Molecular Formulas, Element Systems, CAS Registry Numbers and Properties in the relevant fields. Typing effort for query formulation is reduced by suggestions of terms (Speed Typing) showing available content.

Substances field: The speed-typing list also offers CAS Registry Number and Molecular Formula next to Substance Name in brackets. Element Systems can be typed with dash (the minus key) between the individual elements. The field supports case sensitive input; please use capital letters or spaces to mark the beginning of a new element symbol.

Your Query combines all search strings from the other fields of the Advanced Search page into a Boolean query that you can either submit as is or adapt to your needs before submitting it to the search engine.
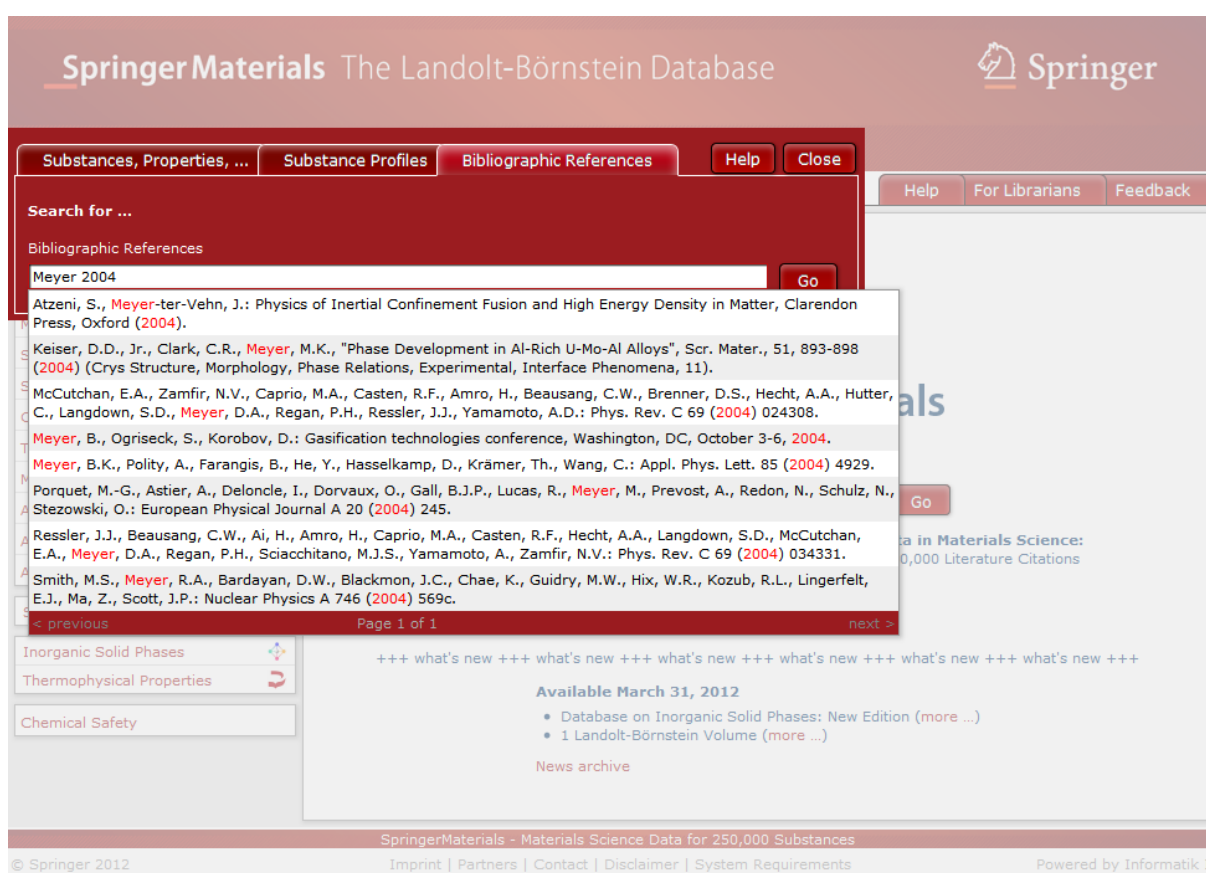

[up]

Bibliography

SpringerMaterials contains over 1.2 million references to primary literature (over 8000 journals referenced).

A fulltext search performed on the reference collection will immediately deliver authors, editors, publications if referenced in the database.

Typing effort for query formulation is reduced by suggestions of terms (Speed Typing) showing available content. Any prefix of occurring words can filter the suggestions efficiently as shown in the example below.

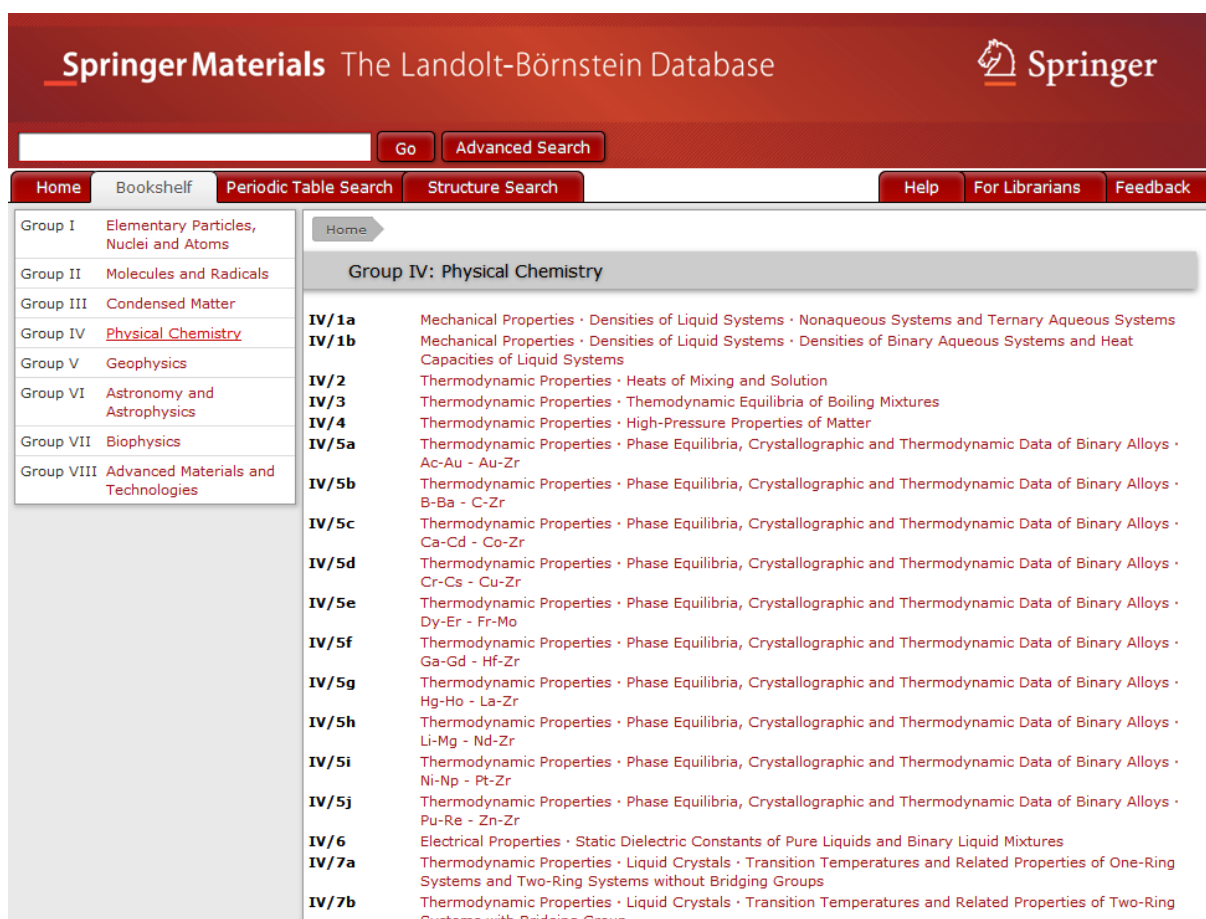A click on one of the references leads to documents citing this literature.

[up]

Bookshelf Navigation

Mirrors the organization of the Landolt-Börnstein New Book Series in Groups (I to VIII), Volumes and Subvolumes as on a bookshelf in the library. Click on one of the Groups to move to the content level, a list of available volumes will open in the main window. A click on the volume will show the Table of Contents as in the printed Landolt-Börnstein Volume. A PDF icon ( ) shows that you have reached the content level; the adjacent "i"-icon (i) opens an InfoPage.

[up]

Breadcrumb Trail

Appears horizontally at the top of [InfoPages](#) and [Search Hits](#), is dynamic and provides a trail for the user to follow back to the starting or entry point. It is a click-able navigation and provides links back to each parent level of the current one. Here ">" serves as separator of hierarchy levels.

Typical Breadcrumb Trail:

[up]

Chemical Safety

Safety Documents can be accessed by clicking "Chemical Safety" on the SpringerMaterials homepage. It facilitates finding safety-relevant information on the substances included in SpringerMaterials. Substances can be specified by their proper names, molecular formulas, element systems, EINECS Numbers, or CAS-Registry Numbers.

Safety data are available from REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), Hazard Information (Dangerous Substances Directive 67/548/EEC), GHS (Globally Harmonized System), RoHS (Restriction of Hazardous Substances), WEEE (Waste from Electrical and Electronic Equipment) and the ECHA (European CHemicals Agency) pre-registration.

Typical Safety Document:

[up]

Citation Export

Bibliographic data of documents can be exported in the RIS format (see, e.g., "RIS (file format)" at Wikipedia), to be used with Endnote and similar programs. Click on the link "RIS-Export" on the InfoPages.

[up]

Contents

The world's largest resource for critically evaluated physical & chemical data comprises

- the contents of the Landolt-Börnstein New Book Series (> 425 volumes) plus its electronic supplementary material,
- the LPF Multinaries Edition - 2009 database on inorganic solid phases,
- a subset of the DDBST database – Dortmund Data Bank Software & Separation Technology on thermophysical properties,
- Chemical Safety documents such as REACH Data.

[up]

Context

Appears horizontally below a [Search Hit](#) and displays surroundings in which the searched string occurs. Indicated in bold is whether the searched string (in blue) is found in [Metadata](#) or fulltext.

Typical Context:

[up]

Feedback

A click on the Feedback button activates your email program. Some brief information on your name, profession, affiliation and address is required for us to answer your query more quickly. "Referral" gives us information on your last search.

[up]

Fulltext Documents

Results shown as display-optimized PDF. [REACH](#) Data and [InfoPage](#) are offered in HTML, as well as results from the [LPF](#) and [DDBST](#) database.

[up]

Home

Click on SpringerMaterials Logo to return to the homepage.

[up]
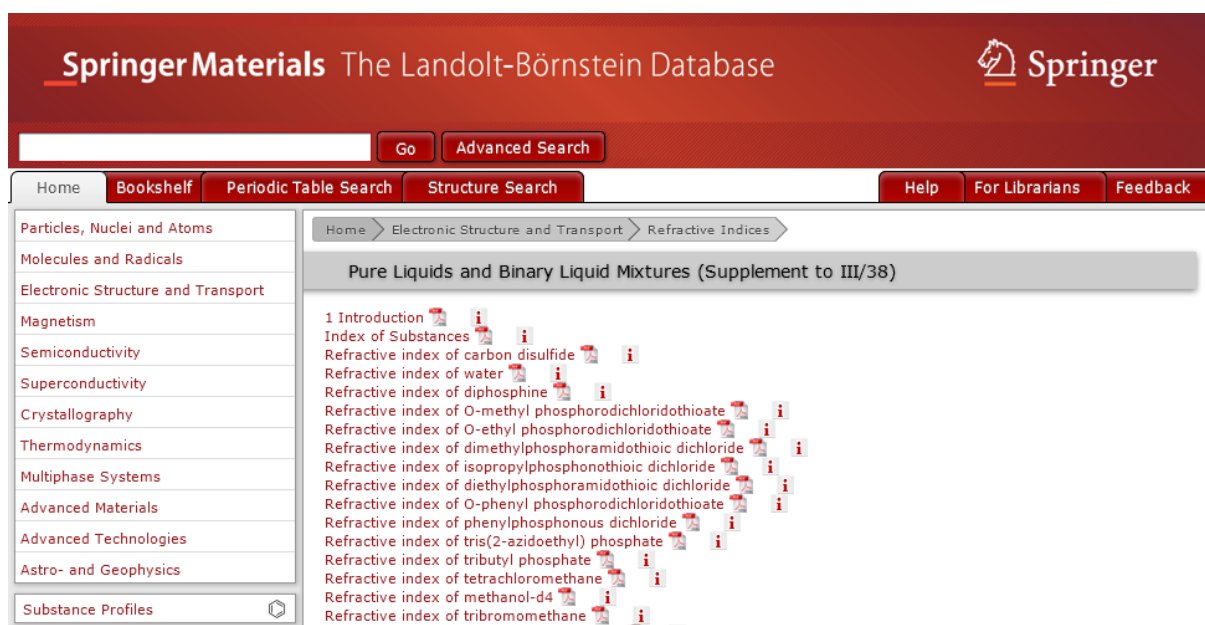
InfoPage

Provides bibliographic and metadata information for the corresponding document, and a thumbnail preview.
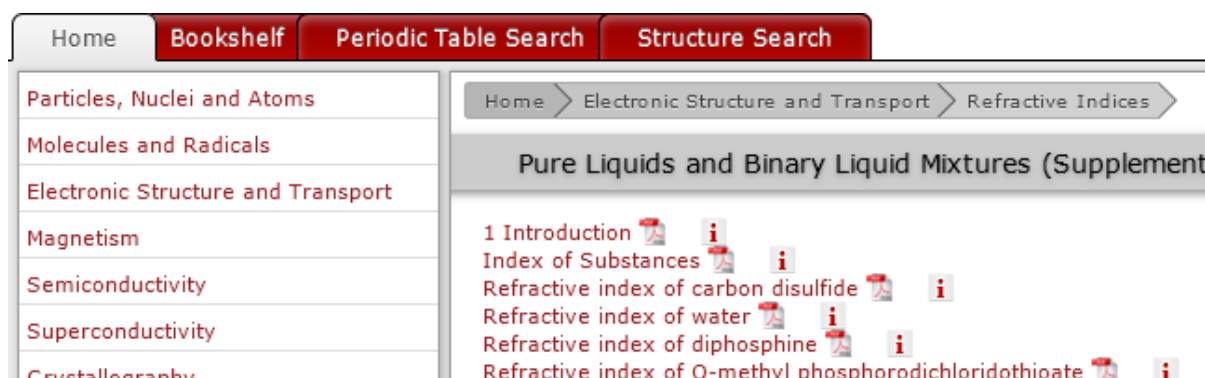
Bibliographic data include: How to cite the document, DOI, title, editor, author, publication date, and references. References are linked, where available, with the online versions of the original literature, usually via CrossRef or other bibliographic databases. Bibliographic data of the document can be exported in the RIS format, to be used with Endnote and similar programs.

Metadata indicate "Chapter Concepts" covered by the document, such as keywords, element systems, substances and properties.

InfoPages are marked with an "i"-icon (i) in the list of documents:

Typical InfoPage:

SpringerMaterials The Landolt-Börnstein Database   Springer

[Go] [Advanced Search]

Summary | Fulltext | Related Documents | References

Home › Molecules and Radicals › Molecular Constants › Diamagnetic Molecules › Dipole and Quadrupole Moments › Magnetic interaction constants (Up...)

2.9.2 Linear and symmetric top molecules

[Download Fulltext PDF]

Table of Contents:

Linear and symmetric top molecules
Preliminary remarks
Data
References

Source

Title	2.9.2 Linear and symmetric top molecules
In	2.9 Magnetic interaction constants
Author	W. Hüttner
Part of	Landolt-Börnstein - Group II Molecules and Radicals
	Numerical Data and Functional Relationships in Science and Technology
Volume	24C: Dipole Moments, Quadrupole Coupling Constants, Hindered Rotation and Magnetic Interaction Constants of Diamagnetic Molecules
Edited by	W. Hüttner
Chapter-DOI	10.1007/10735568_18
Book-DOI	10.1007/b75954 (Volume in Bookshelf)

Cite as

[RIS-Export]   Hüttner, W.: *2.9.2 Linear and symmetric top molecules*. Hüttner, W. (ed.). SpringerMaterials - The Landolt-Börnstein Database (http://www.springermaterials.com). DOI: 10.1007/10735568_18

Abstract

This document is part of Subvolume C 'Dipole Moments, Quadrupole Coupling Constants, Hindered Rotation and Magnetic Interaction Constants of Diamagnetic Molecules' of Volume 24 'Molecular Constants Mostly from Microwave, Molecular Beam, and Sub-Doppler Laser Spectroscopy' of Landolt-Börnstein - Group II Molecules and Radicals.

Chapter Concepts

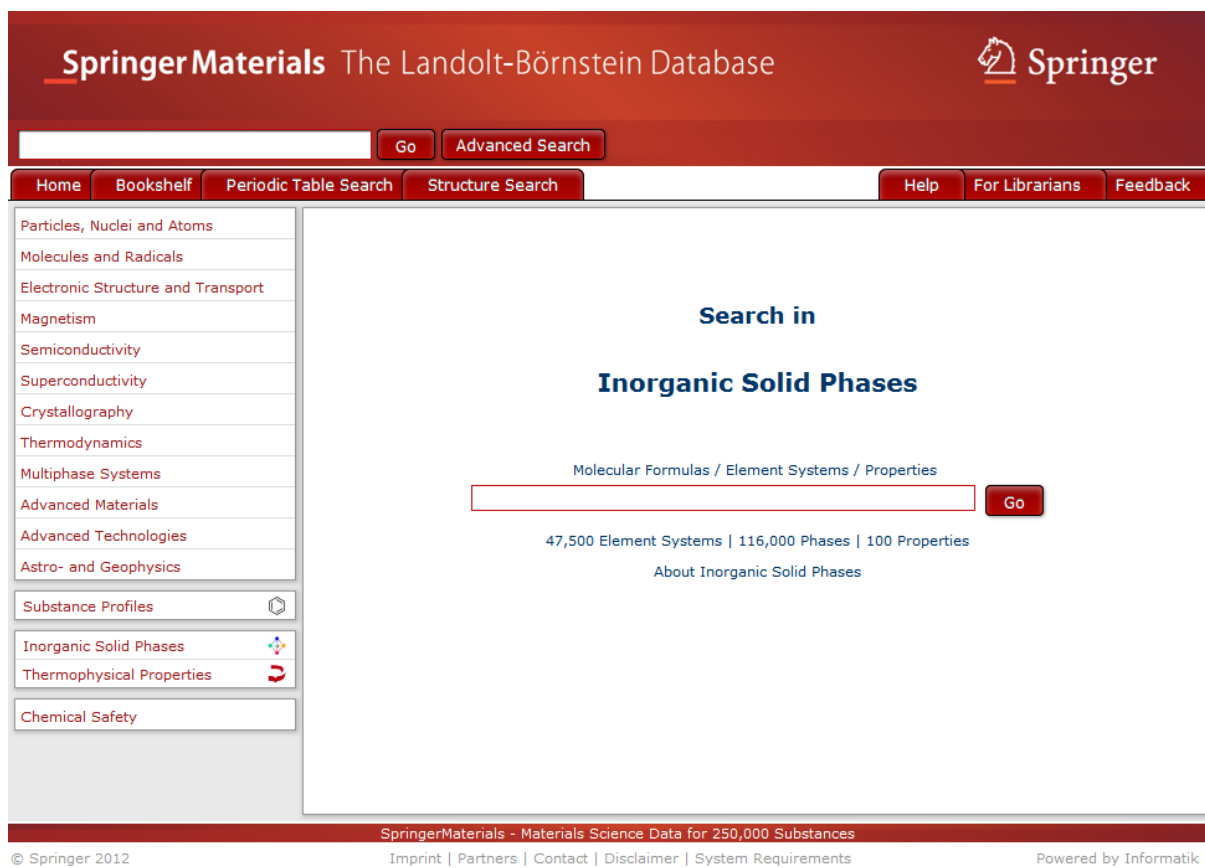|	
Substances / Molecular Formulas	1,1,1-Trifluorethan; 1,1,1-trifluoro-ethane; 1,1,1-trifluoroethane; 1,2-Propadien; 1,2-Propadien; 1,2-propadiene; 1,3-butadiyne; *sym*-Allylene; Allen; Ammonia gas; Ammonia-14N; Ammoniak; Ammoniak wasserfrei; Ammoniak' wasserfrei; Ammoniak, wasserfrei; Ar_3FH; Bis(methylene)methane; $C_2H_3F_3$; $C_2H_3F_3$ (1,1,1-trifluoro-ethane); C_2N_2; $C_3H_2D_2$; C_3H_4; C_3H_4 (propadiene); C_3H_6; C_3H_6 (cyclopropane); C_4H_2; CFC 143A; CFC-143A; COSe; Carbon oxide selenide; Carbon oxyselenide; Carbonylselenid; Cyano-isonitrile; Cyclopropan; Cyclopropane; Diacetylen; Dimethylenemethane; ECO2 FUME; F 143a; FC 143a; FC-143a; Fron 143a; H_3N; H_3N (ammonia); H_3P; HCF 143a; HCFC

[up]

Inorganic Solid Phases

The "LPF Multinaries Edition – 2009" is the most comprehensive database on inorganic solid phases. All data are normalized and standardized according to the IUCr standards. It consists of three data collections: structure and diffraction data, phase diagrams, and physical properties.

The database can be browsed and is accessible through all search functions. A logo (✤) next to a [Search Hit](#) indicates the source.

Typical list of data sheets:

SpringerMaterials The Landolt-Börnstein Database   **Springer**

Al-Fe-Ti   Go   Advanced Search

| Home | Bookshelf | Periodic Table Search | Structure Search | | Help | For Librarians | Feedback |

0 Particles, Nuclei and Atoms

0 Molecules and Radicals

0 Electronic Structure and Transport

6 Magnetism

0 Semiconductivity

1 Superconductivity

1 Crystallography

0 Thermodynamics

5 Multiphase Systems

0 Advanced Materials

0 Advanced Technologies

0 Astro- and Geophysics

0 Substance Profiles

18 Inorganic Solid Phases

0 Thermophysical Properties

0 Chemical Safety

Results 1 - 10 of 18 Documents   previous 1 2 next   Expanded View ▾   Refine

Inorganic Solid Phases

Al-Fe-Ti, ternary phase diagram, vertical section

Metadata - Element System: **Al-Fe-Ti** ... Fulltext: **Al-Fe-Ti**, ternary phase diagram, vertical section Element System: **Al-Fe-Ti** Inorganic Solid Phases · phase diagrams ... Diagram C1100103 from: Raghavan V.: "**Al-Fe-Ti** (Aluminum-Iron-Titanium)", J. Phase ... E.: "The Equilibrium Diagram of the **Al-Fe-Ti** System and the Segregation of Fe and ...

Inorganic Solid Phases

Al-Fe-Ti, ternary phase diagram, isothermal section

Metadata - Element System: **Al-Fe-Ti** ... Fulltext: **Al-Fe-Ti**, ternary phase diagram, isothermal section Element System: **Al-Fe-Ti** Inorganic Solid Phases · phase diagrams ... Diagram C975736 from: Raghavan V.: "The **Al-Fe-Ti** (Aluminum-Iron-Titanium) System", Phase ... Diagram C975732 from: Raghavan V.: "The **Al-Fe-Ti** (Aluminum-Iron-Titanium) System", Phase ...

Inorganic Solid Phases

Al-Fe-Ti, ternary phase diagram, liquidus projection

Metadata - Element System: **Al-Fe-Ti** ... Fulltext: **Al-Fe-Ti**, ternary phase diagram, liquidus projection Element System: **Al-Fe-Ti** Inorganic Solid Phases · phase diagrams ... Diagram C975722 from: Raghavan V.: "The **Al-Fe-Ti** (Aluminum-Iron-Titanium) System", Phase ...

Inorganic Solid Phases

TiFe2Al, physical properties

Metadata - Element System: **Al-Fe-Ti** ... Fulltext: physical properties Element System: **Al-Fe-Ti** Inorganic Solid Phases – physical ...

Inorganic Solid Phases

TiFeAl, crystallographic data

Metadata - Element System: **Al-Fe-Ti** ... Fulltext: crystallographic data Element System: **Al-Fe-Ti** Inorganic Solid Phases · ...

Inorganic Solid Phases

TiFe0.048Al2.952, crystallographic data

Metadata - Element System: **Al-Fe-Ti** ... Fulltext: crystallographic data Element System: **Al-Fe-Ti** Inorganic Solid Phases · ...

Inorganic Solid Phases

[up]

LB

The latest edition of this brand and the first one to be published in the English language. Started as an open series in 1961, it comprises to date > 400 volumes. To see how it is organized click Bookshelf.

[up]

Metadata

SpringerMaterials provides metadata for each document extracted in an editorial process: Substance, Element System, CAS Registry Number, Properties, Keywords, Main Subject, Secondary Subjects, and Bibliographic Information.

[up]

Navigation

SpringerMaterials offers two different views of the same content: By Subject Areas and, for aficionados of the Landolt-Börnstein New Book Series, the Bookshelf Navigation.

[up]

OpenSearch

Search results can be returned as an OpenSearch compliant RSS feed. The OpenSearch description document is located at http://www.springermaterials.com/content/search.xml. In order to integrate SpringerMaterials search results into your federate search, check the documentation of your search engine.

Further information about OpenSearch can be found on http://www.opensearch.org.

[up]

Periodic Table Search

Supports a search by element systems of substances and materials.

You can select elements by clicking on the symbols of the Periodic Table. Chosen elements are highlighted by an orange frame and also displayed in the central Your Selection string.

You can deselect elements by clicking on them a second time either in the Periodic Table or in the Your Selection string.

Chosen elements are highlighted by an orange frame; elements not available for further combinations are grayed-out in the Periodic Table.

Speed-typing: A list of available element systems opens. Chosen elements are marked red, black elements show further possible combinations.

Click on a possible combination from the list, available documents are shown.

To add any other search criteria, click Refine.

[up]

Query Operators

- **AND**
  The AND operator is the default operator. If your query consists of a sequence of words separated by spaces, each space symbol is interpreted as an AND; e.g. optical stark effect is the same as optical AND stark AND effect This query will find all documents where all three words optical, stark, and effect appear somewhere as substrings in the text.

- **OR**
  OR is often useful for combining closely related terms like synonyms in one query; e.g. methylurea OR 598-50-5 will find all documents which contain at least one of the two strings methylurea or its CAS-Registry-Number 598-50-5.

- **Double quotes for phrase search**
  Double quotes around a sequence of words in a query only yields those documents containing the exact words in exactly this order; e.g. "optical stark effect" will produce only those documents containing exactly this phrase somewhere in the text.

- **BUT_NOT**
  BUT_NOT is used to specify documents by some relevant keyword but excluding some known context from the result-set; e.g. !urea BUT_NOT optical selects documents that contain the exact match of urea but only if it does not also contain the substring optical.

- **{ and } for nested queries**
  { and } helps to handle several valid simple queries in one single and powerful nested query; e.g. {"Ruthenium" OR "7440-18-8"} AND "magnetic flux" combines the simple query "Ruthenium" or alternatively "7440-18-8" with the required phrase "magnetic flux".

[up]

Ranking

The ranking of the displayed documents is performed according to a scoring algorithm. Relevance is calculated by location and frequency of, and conformity with the search term within the document. A hit in the Metadata is scored higher than one occurring in the fulltext. Exact matches are preferred over substring matches.

[up]

REACH

The Chemical Safety Search finds REACH-relevant (Registration, Evaluation, Authorization and Restriction of CHemicals) information on the substances (alternatively CAS-Registry Numbers, Molecular Formula) included in SpringerMaterials. Also described, where applicable, are the GHS (Globally Harmonized System), RoHS (Restriction of Hazardous Substances), and WEEE (Waste from Electrical and Electronic Equipment).

[up]

Refine

To select or deselect subject areas, or to add any other search criteria, click Refine. You will be automatically directed to the Advanced Search, where you can narrow down your results with more specialized queries; then click Go.

[up]

Sample Searches

Simple Search

The Simple Search field is found in the center of the SpringerMaterials homepage and replicated in the field below the SpringerMaterials logo. Typing in a query is the quickest way to find data; however, to get a more precise result, refinement is possible in a second step.

In the example we are interested in all data available about "formic acid". Typing in the first characters opens a list of suggestions (via "Speed Typing") which shows the available content. A click on the first term and pushing the "Go" button executes the query. A list of available documents is shown.

In the default view of search results, each document found by the query is presented by indicating the path to the document in the systematic hierarchy via the breadcrumb trail, the title of the document, and the context of the search terms within the document:

A more compact list not showing the context can be obtained by clicking "Compact View":

The "Hierarchical View" of the query results locates search hits within the Subject Areas and the Navigation Tree. This allows an easy location of search hits within a specific context:

Clicking "Refine" opens the "Advanced Search" form.

Advanced Search

The Advanced Search allows specific searches for chemical substances and their properties. Chemical substances can be specified by their proper names, molecular formulas, element systems, or CAS registry numbers.

In the example the user is searching for the surface tension of formic acid. Thus, "formic acid" was typed in the substance search field and the appropriate entry was chosen from the list of suggestions. Then the first characters of the property "surface tension" were typed and the corresponding hit was chosen from the list of suggestions. "Your Query" combines all search strings from the other fields of the advanced search page into a Boolean query that can be submitted as is or adapted if necessary. Pushing the "Go" button executes the query.

The following screenshot shows the list of available documents:

The document of the first hit contains data on the surface tension of formic acid from the database on Thermophysical Properties. The second hit provides a PDF document from a Landolt-Börnstein compilation on surface tension covering formic acid. Further hits locate data about mixtures of formic acid with other liquids, e.g. with water.

A combined substance/property search is a typical use case for SpringerMaterials.

The Advanced Search page is opened by clicking on the "Advanced Search" button or by clicking the "Refine" button in the list of hits, e.g., as a second step after a simple search.

Besides the search for chemical substances and properties, the "Advanced Search" allows you to search for a specific word, for exact phrases, and to exclude documents containing specific words from the search results. Moreover, search can be restricted to one or more subject areas.

Structure Search

Structure Search allows the search for chemical substances according to their structure, either complete or partial, by simply drawing structures using an interactive Java applet.

As an example, a query for aromatic hydrocarbons can be formulated by drawing a single benzene ring (by clicking on the "benzene" icon in the applet), and running the search by clicking "Search".

Search results are shown as a list of substance names and structural formulas.

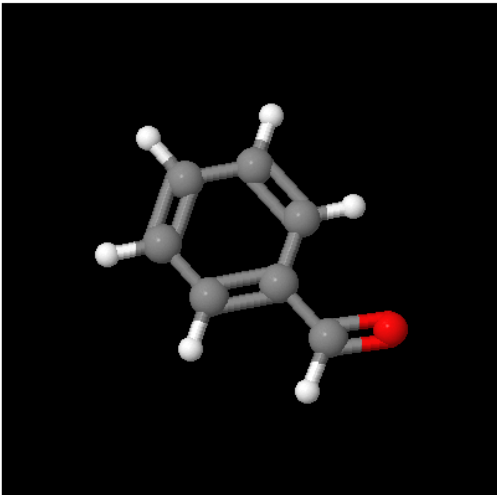Selecting one of the found substances links to the corresponding substance profile.

SpringerMaterials The Landolt-Börnstein Database
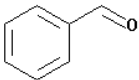
🐎 **Springer**

[ ] Go | Advanced Search

Home | Bookshelf | Periodic Table Search | Structure Search | Help | For Librarians | Feedback

Home > Substance Profiles

phenylmethanal

3D Substance Structure

Structural Formula

General information

Name	phenylmethanal
Molecular Formula	C_7H_6O
Element system	C-H-O
CAS-RN	100-52-7
InChI	InChI=1S/C7H6O/c8-6-7-4-2-1-3-5-7/h1-6H
InChI Key	HUMNYLRZRPPJDN-UHFFFAOYSA-N

Properties

[ ] Go

SpringerMaterials Documents

Magnetism > Diamagnetic Susceptibilities > Organic Compounds, Oils, Paraffins and Polyethylenes > Diamagnetic bulk susceptibility data > Derivatives of C7 Hydrocarbons > C7H6O
C7H6O 📄 i

Molecules and Radicals > NMR Spectroscopy > Carbon-13: Shifts and Coupling Constants > Aromatic Compounds > Carbon-13 Chemical shifts > C7... compounds
C7H6O 📄 i

Molecules and Radicals > Molecular Structure > Organic Molecules > Five or More Carbon Atoms > Element systems C7-... (Update)
C7H6O 📄 i

Electronic Structure and Transport > Optics > Refractive Indices > Pure Liquids and Binary Liquid Mixtures (Supplement to III/38)
Refractive index of the mixture (1) cyclohexane; (2) benzaldehyde 📄 i

Show All

Information on this Substance in SPRESIweb

Molecular Weight:	106.12
Calculated Log P:	1.8329999
Rotatable bonds:	1
H Acceptors:	1
H Donators:	0
Reactions having this substance as a reactant:	25077
Reactions having this substance as a product:	2100
Journal articles containing this substance:	9402
Patents containing this substance:	604
Other publications containing this substance:	118
Supplier:	Sigma-Aldrich; Acros; Otava; Indofine; ChemPacific; ASDI; ABCR;

Go to SpresiWeb

Synonyms

benzoic aldehyde; benzenecarboxaldehyde; benzenecarbonal; benzaldehyde; Benzaldehyd; Artificial Almond Oil; Benzaldehyde FFC; Phenylformaldehyde; Almond Artificial Essential Oil; Benzadehyde; NCI-C56133; Oil of Bitter Almond; Benzoesäurealdehyd; Formylbenzol; Bittermandelöl; C7H6O (benzaldehyde); Benzolmethylal; Benzolcarbonal; Benzoealdehyd; Benzolcarboxaldehyd; Benzalbdehyd; Bnsaldehyd; Bnsaldehyde; Benzalbdegid; Benzalbdegide; 2-Benzaldehyd; 2-Benzaldehyde; Benzadegid; Benzadegide; Benzal; Benzcarbaldehyd; Benzcarbaldehyde; Benzen-1-carbaldehyd; Benzen-1-carbaldehyde; Besaldehyd; Besaldehyde; Aceite sintetico de almendras amargas; Aetherisches mandeloel; Aldehido benzoico; Aldehyde benzoique; Aldehyde benzylique; Aldeidobenzoico; Amandol; Artificial essential oil of almond; Artificial essential oil of bitter almond(s); Benzaldehido; Benzaldehydbyzonderzuiver; Benzaldehyde bpc; Benzaldeido; Benzaldid; Benzene carbonal; Benzoesaeurealdehyd; Benzoilo hidruro; Benzoylaldehyd; Benzoylhydride; Benzoylhydruer; Benzoylwasserstoff; Bitter almond oil; Bittermandeloel; Bittermandeloel (kuenstlich); Essence d'amandes ameres; Huile d'amandes ameres (artificielle); Huile volatile d'amandes ameres; Oleum amygdalarum amar. artificiale; Pikramyloxid; Synthetic essential oil of bitter almond(s); Volatile oil of almonds; Benzoesaeure, aldehyd; Benzoic acid, aldehyde; Benzaldegnd; Benzaldegnde

Mol File provided by PubChem. Mol File Viewer is Jmol.

SpringerMaterials - Materials Science Data for 250,000 Substances

© Springer 2012 | Imprint | Partners | Contact | Disclaimer | System Requirements | Powered by Informatik II

Bibliography Search

The "Bibliography Search" is part of the Advanced Search feature. SpringerMaterials contains over 1 million references to primary literature (over 8000 journals are referenced). A fulltext search performed on the reference collection will immediately deliver authors, editors, and publications referenced in the database. Typing effort for query formulation is reduced by suggestions of terms ("Speed Typing") showing available content. In this example we typed in "williams" and get suggestions of possible references where the substring "williams" occurs. A click on one of the references leads to documents citing this literature.

Chemical Safety Document Search

The "Chemical Safety Document Search" can be accessed by clicking "Chemical Safety" on the SpringerMaterials home page. It facilitates finding safety-relevant information on the substances included in SpringerMaterials. Substances can be specified by their proper names, molecular formulas, element systems, or CAS-Registry Numbers.

"Chemical Safety Document Search" finds data from REACH (Registration, Evaluation, Authorization and Restriction of Chemicals). If available, data about Hazard Information (Dangerous Substances Directive 67/548/EEC), GHS (Globally Harmonized System), RoHS (Restriction of Hazardous Substances), WEEE (Waste from Electrical and Electronic Equipment) and on the European CHemicals Agency (ECHA) pre-registration are also given.

In the example the user is interested in REACH-relevant data of benzene. A click on the first entry in the list of suggestions opens the corresponding data sheet:

Periodic Table Search

A click on the button "Periodic Table" opens a window showing the Periodic Table of Chemical Elements.

It supports a search by element systems of substances and materials. Elements can be selected by clicking on the symbols of the Periodic Table. The elements chosen can be deselected by clicking on them a second time either in the Periodic Table or in the "Your Selection" string.

Elements chosen are highlighted by an orange frame and are also displayed in the central "Your Selection" string. Elements not available for further combinations are grayed-out in the Periodic Table.

After choosing an element a list of available element systems opens on the left hand. Chosen elements are marked red, black elements show further possible combinations. Click on a possible combination from the list and a list of available documents is shown in a new window.

In this example, we have chosen aluminum (Al), chromium (Cr) and iron (Fe). By clicking the first entry in the list of available element systems ("Al-Cr-Fe"), a list of documents containing this element system appears. Search hits are from Landolt-Börnstein documents and the database on Inorganic Solid Phases, as indicted by the icons.

To add any other search criteria, a click on the "Refine" button (top right) opens the Advanced Search window:

In this case we are interested in the magnetization of the element system Al-Cr-Fe. Typing in the first characters into the Properties search field opens the speed-typing list, and the entry

"magnetization" can be chosen. The complete search phrase will then be shown in the field "Your Query" which can be edited or left as it is. Pushing the "Go" button will lead to the list of available documents.

[up]

Search

SpringerMaterials offers Simple Search, Structure Search, the Periodic Table Search, and an Advanced Search.

A query is case insensitive and substring matching in its basic form. E.g., crystal as a query produces the same results as Crystal or CRYSTAL and also returns hits in crystalline, nanocrystalline, etc.

Typing effort for query formulation is reduced by suggestions of terms (Speed Typing) showing available content.

You can either type your query, then click "Go" or select a term from the speed-typing list and click "Go". While the suggestions are specific for the input fields, e.g., Molecular Formulas are supplied, the selection of any of the suggestions is not required; in fact any string can be placed in any of the fields to perform a search.

[up]

Search Hit

Each Search Hit shows the following three lines from top to bottom: Breadcrumb Trail, Fulltext Document, Context (LB, LPF, DDBST, or Chemical Safety).

Typical Search Hits (search for methanol "vapor pressure", hits in "Thermophysical Properties" and Landolt-Börnstein data):

[up]

Search Plugin for Web Browsers

As an additional feature, SpringerMaterials offers a search plugin for web browsers which support OpenSearch plugins, such as Internet Explorer (as of version 7), Firefox (as of version 2) and Chrome.

With Internet Explorer and Firefox, you can add the plugin to the browser search form by selecting "Add SpringerMaterials Search" from the top-right drop-down menu. Keep in mind that this works only while you are visiting www.springermaterials.com:
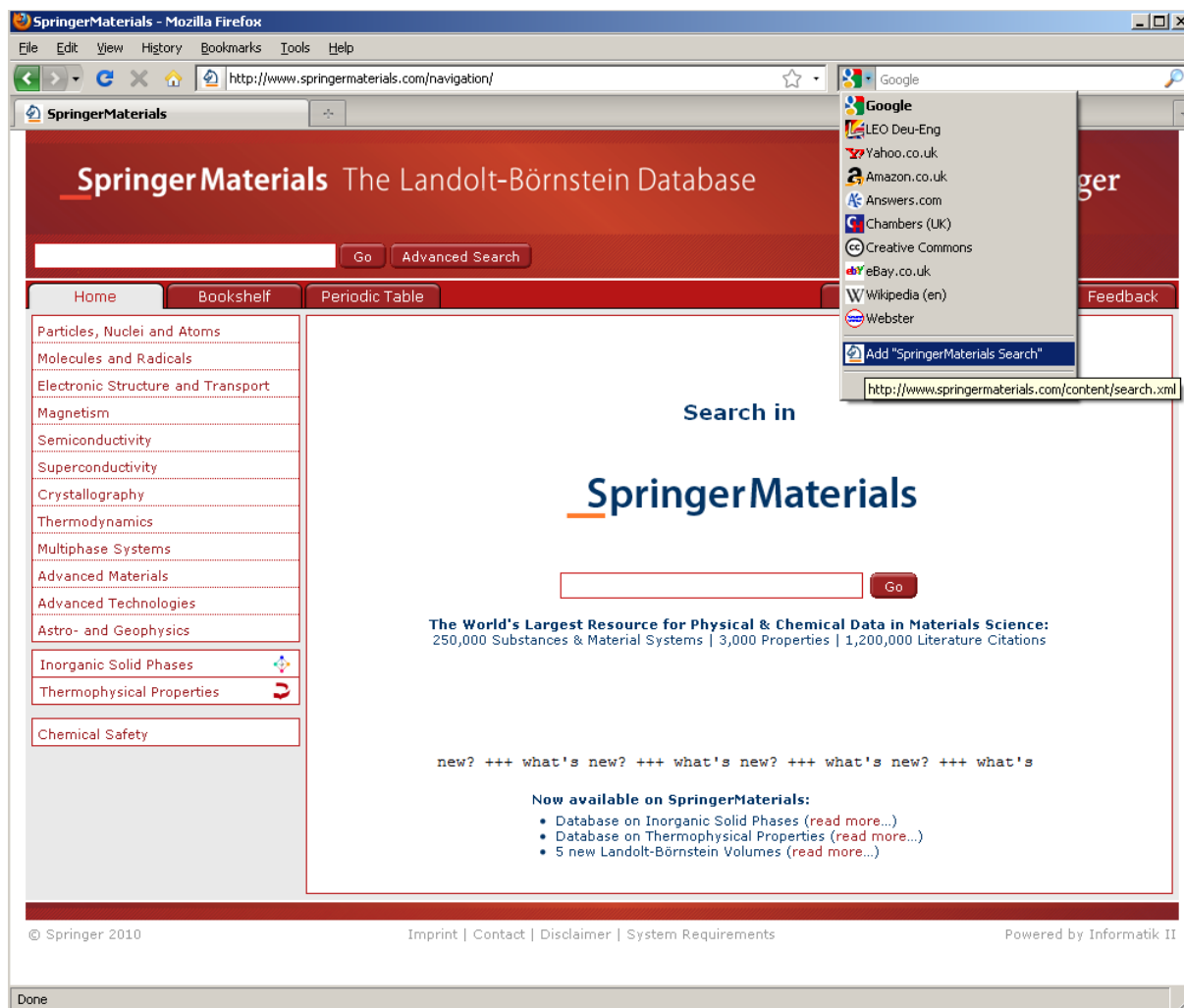
After this installation, you can use the browser search form to type queries which will then be sent directly to SpringerMaterials:

If you are using another system, please check the documentation of your browser to see if it supports search plugins according to the OpenSearch 1.1 specification, and how to install them.

[up]

Simple Search

The Simple Search field is found in the center of the SpringerMaterials homepage and replicated as such in a field below the SpringerMaterials logo.

Typing effort for query formulation is reduced by suggestions of terms (Speed Typing) showing available content.

You can either type your query, then click "Go" or select a term from the speed-typing list and click "Go".

To edit your current query again or to add further search criteria, click "Refine".

[up]

Speed Typing

Reduces typing effort for query formulation by suggesting terms and showing available content upfront. The more you type, the shorter the list of suggestions gets.

[up]

Structure Search

Structure Search allows the search for chemical substances by their structure, either complete or partial.

The chemical structure can be entered using an interactive tool. A query can be done for either the exact structure, or for substances that contain the structural parts in the query as a substructure.

Search results are shown as a list of substance names and structural formulas.

Selecting one of the found substances links to the corresponding substance profile.

Structure Search is realized as a Java Applet and requires your browser to support Java. A full documentation of the features and functionality of the applet can be found online at the InfoChem website.
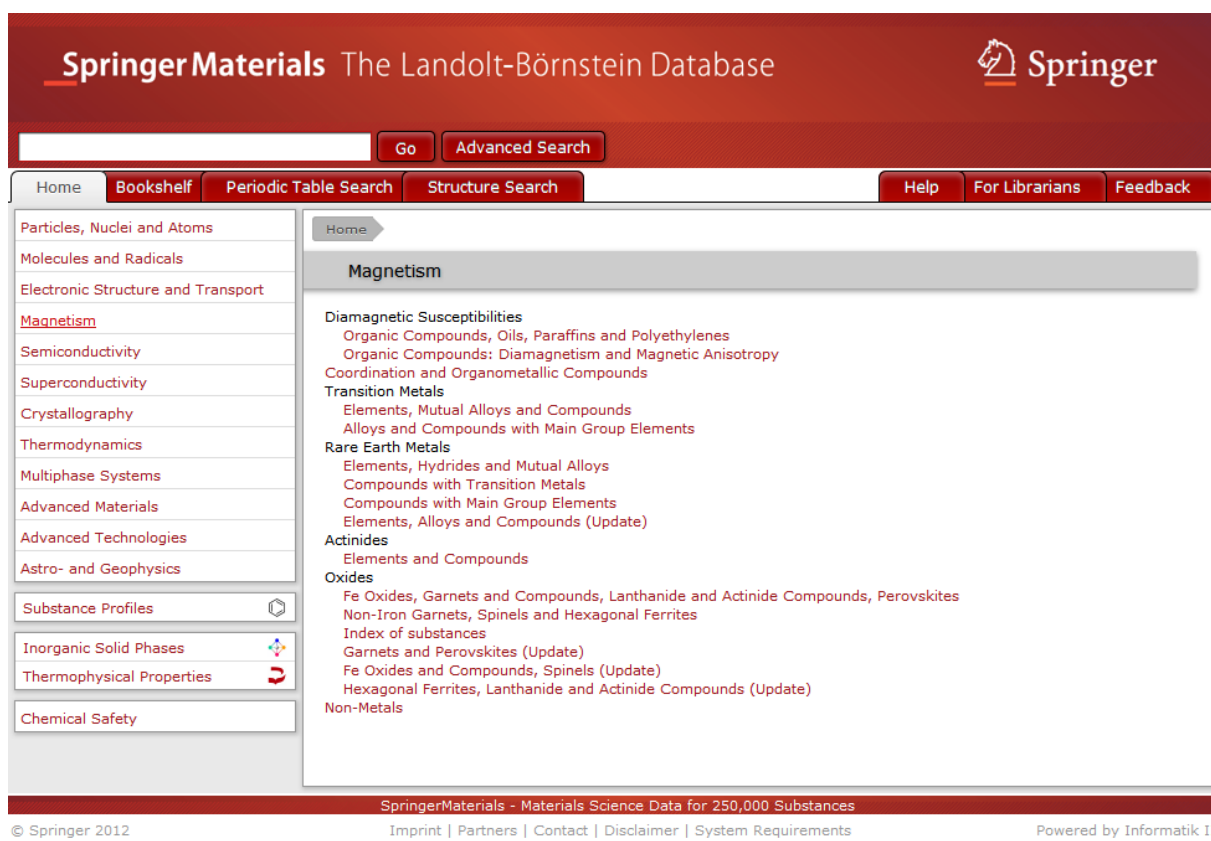
[up]

Subject Area Navigation

SpringerMaterials content is organized in 12 Subject Areas (see homepage):

- Particles, Nuclei and Atoms
- Molecules and Radicals
- Electronic Structure and Transport
- Magnetism
- Semiconductivity
- Superconductivity
- Crystallography
- Thermodynamics
- Multiphase Systems
- Advanced Materials
- Advanced Technologies
- Astro- and Geophysics

Click on one of the Subject Areas to move to the content level, a list of Sub-Areas will open in the main window. Red headlines offer further Sub-Sub-Areas. A "PDF" icon ( ) shows that you have reached the content level; the nearby "i"-icon ( ) opens the InfoPage.

[up]

Substance Profile

Substance profiles provide an at-a-glance overview of chemical substances about which data is available in SpringerMaterials.

A substance profile includes names, synonyms and international codes (CAS registration number, INCHI code and key) to denote a substance, and show the structure of the substance.

Moreover, links to documents in SpringerMaterials and to the SPRESIweb database of chemical reactions are provided.

Substance profiles can be reached via the the [Advanced Search](#) feature. There, the "Substance Profiles" tab opens a [Speed Typing](#) dialogue to select substances by their names, molecular formulas or CAS registry numbers. After the selection by mouse-click, the corresponding substance profile is shown.

The 3D structure of the substance is shown using Jmol, an open-source Java viewer for chemical structures in 3D, which opens and presents an interactive 3D model of molecules.

Jmol allows for a wide variety of viewer configurations and options, which are accessible via the context menu (right-hand mouse-button). Our screenshot below shows the measurement of bond lengths as an example.

Please refer to the Jmol home page, jmol.sourceforge.net, for detailed descriptions of the Jmol project, manuals and tutorials, examples, etc.

[up]

Thermophysical Properties

The subset of the DDBST (Dortmund Data Bank Software & Separation Technology) contains thermophysical properties of the 50 most important organic liquids plus water and their 1225 binary mixtures.

The database can be browsed and is accessible through all search functions. A logo (🔄) next to a [Search Hit](#) indicates the source.

Typical query for Thermophysical Properties:

Typical overview for Thermophysical Properties:

[up]

Wildcards

SpringerMaterials supports single and multiple character wildcard searches within terms. Use the "?" symbol to perform a single character wildcard search and use the "*" symbol to perform a multiple character wildcard search.

For example, the query sul*ite returns results for both "sul*phi*te" and "sul*fi*te". Searching for ferr?magnetism shows hits for both "ferr*o*magnetism" and "ferr*i*magnetism".

[up]

Your Query

A field in the Advanced Search that combines all search strings typed in any of the other fields of the Advanced Search page into a Boolean query that you can either submit as is or adapt to your needs before submitting to the search engine.

[up]

SpringerMaterials 2012-09-05