

SpringerMaterials User Guide

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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.

SpringerMaterials The Landolt-Börnstein Database

Springer

Substances, Properties, ... Substance Profiles Bibliographic References Help Close

Your Query

Go Clear

Search for ...

Substances / Molecular Formulas / Element Systems / CAS Registry Numbers

Properties

Search in ...

- 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
- Inorganic Solid Phases
- Thermophysical Properties
- Chemical Safety
- Substance Profiles

Search for ...

... all of these words

... one or more of these words

... exactly this phrase

... but none of these words

Help For Librarians Feedback

Go

Data in Materials Science:
1,200,000 Literature Citations

+++ what's new +++ what's new +++

Edition (more ...)

Powered by Informatik II

[\[up\]](#)

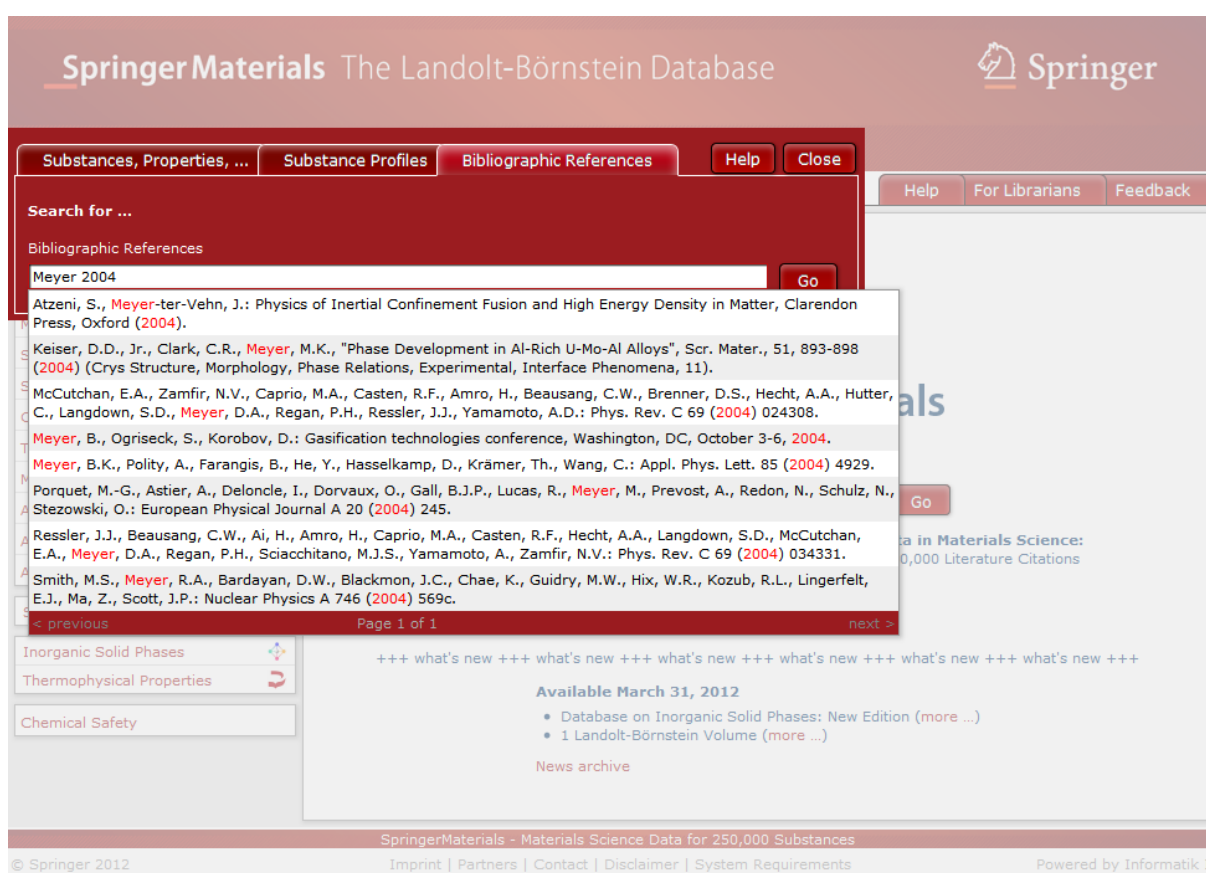
Bibliography

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.

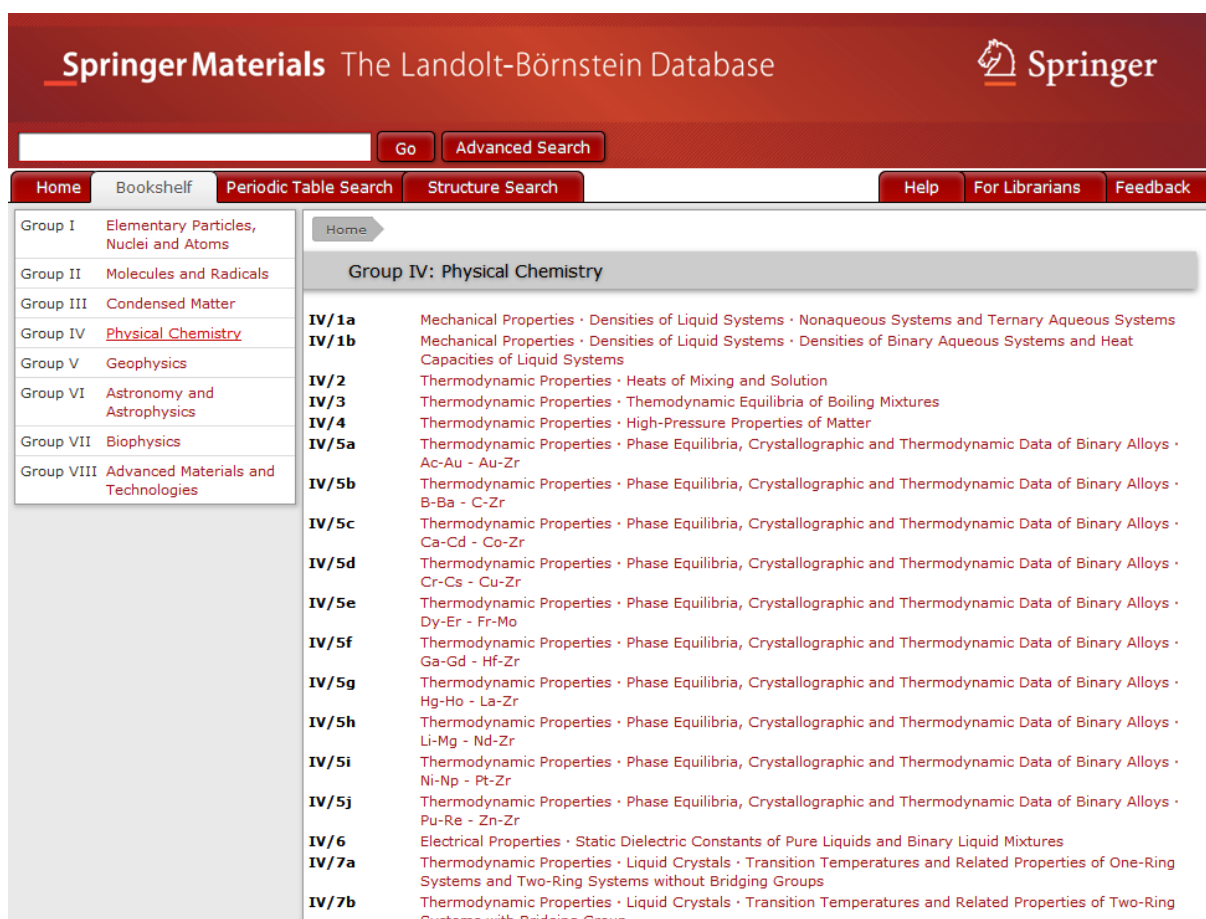


The screenshot displays the SpringerMaterials interface. At the top, it reads "SpringerMaterials The Landolt-Börnstein Database" and features the Springer logo. A navigation bar includes tabs for "Substances, Properties, ...", "Substance Profiles", and "Bibliographic References", along with "Help" and "Close" buttons. A search bar is active with the text "Meyer 2004" and a "Go" button. Below the search bar, a list of bibliographic references is shown, including entries by Atzeni, S., Meyer-ter-Vehn, J.; Keiser, D.D., Jr., Clark, C.R., Meyer, M.K.; McCutchan, E.A., Zamfir, N.V., Caprio, M.A., Casten, R.F., Amro, H., Beausang, C.W., Brenner, D.S., Hecht, A.A., Hutter, C., Langdown, S.D., Meyer, D.A., Regan, P.H., Ressler, J.J., Yamamoto, A.D.; Meyer, B., Ogriseck, S., Korobov, D.; Meyer, B.K., Polity, A., Farangis, B., He, Y., Hasselkamp, D., Krämer, Th., Wang, C.; Porquet, M.-G., Astier, A., Deloncle, I., Dorvaux, O., Gall, B.J.P., Lucas, R., Meyer, M., Prevost, A., Redon, N., Schulz, N., Stezowski, O.; Ressler, J.J., Beausang, C.W., Ai, H., Amro, H., Caprio, M.A., Casten, R.F., Hecht, A.A., Langdown, S.D., McCutchan, E.A., Meyer, D.A., Regan, P.H., Sciacchitano, M.J.S., Yamamoto, A., Zamfir, N.V.; and Smith, M.S., Meyer, R.A., Bardayan, D.W., Blackmon, J.C., Chae, K., Guidry, M.W., Hix, W.R., Kozub, R.L., Lingerfelt, E.J., Ma, Z., Scott, J.P. The interface also shows a sidebar with categories like "Inorganic Solid Phases", "Thermophysical Properties", and "Chemical Safety". At the bottom, there is a footer with copyright information and navigation links.

[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 () opens an [InfoPage](#).



The screenshot displays the SpringerMaterials website interface. At the top, the header reads "SpringerMaterials The Landolt-Börnstein Database" and features the Springer logo. Below the header is a search bar with "Go" and "Advanced Search" buttons. A navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback".

The "Bookshelf" section is active, showing a list of groups on the left and the content for "Group IV: Physical Chemistry" on the right. The left sidebar lists groups I through VIII, with "Group IV: Physical Chemistry" highlighted. The main content area for Group IV lists subvolumes IV/1a through IV/7b, each with a list of topics and a PDF icon.

Group	Content
Group I	Elementary Particles, Nuclei and Atoms
Group II	Molecules and Radicals
Group III	Condensed Matter
Group IV	Physical Chemistry
Group V	Geophysics
Group VI	Astronomy and Astrophysics
Group VII	Biophysics
Group VIII	Advanced Materials and Technologies

Subvolume	Content
IV/1a	Mechanical Properties · Densities of Liquid Systems · Nonaqueous Systems and Ternary Aqueous Systems
IV/1b	Mechanical Properties · Densities of Liquid Systems · Densities of Binary Aqueous Systems and Heat Capacities of Liquid Systems
IV/2	Thermodynamic Properties · Heats of Mixing and Solution
IV/3	Thermodynamic Properties · Thermodynamic Equilibria of Boiling Mixtures
IV/4	Thermodynamic Properties · High-Pressure Properties of Matter
IV/5a	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Ac-Au · Au-Zr
IV/5b	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · B-Ba · C-Zr
IV/5c	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Ca-Cd · Co-Zr
IV/5d	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Cr-Cs · Cu-Zr
IV/5e	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Dy-Er · Fr-Mo
IV/5f	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Ga-Gd · Hf-Zr
IV/5g	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Hg-Ho · La-Zr
IV/5h	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Li-Mg · Nd-Zr
IV/5i	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Ni-Np · Pt-Zr
IV/5j	Thermodynamic Properties · Phase Equilibria, Crystallographic and Thermodynamic Data of Binary Alloys · Pu-Re · Zn-Zr
IV/6	Electrical Properties · Static Dielectric Constants of Pure Liquids and Binary Liquid Mixtures
IV/7a	Thermodynamic Properties · Liquid Crystals · Transition Temperatures and Related Properties of One-Ring Systems and Two-Ring Systems without Bridging Groups
IV/7b	Thermodynamic Properties · Liquid Crystals · Transition Temperatures and Related Properties of Two-Ring Systems with Bridging Group

[\[up\]](#)

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.

The screenshot displays the SpringerMaterials interface. At the top, the header reads "SpringerMaterials The Landolt-Börnstein Database" with the Springer logo. Below the header is a search bar with "Go" and "Advanced Search" buttons. A navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback". The main content area shows a breadcrumb trail: "Home > Thermodynamics > Organic Compounds > Vapor Pressure and Antoine Const...". Below the trail, the page title is "Nitrogen Containing Organic Compounds". A list of links is provided: "Introduction", "Compounds Br, C1...C30", "Notes", and "References", each with an information icon. The footer contains the text "SpringerMaterials - Materials Science Data for 250,000 Substances", copyright information "© Springer 2012", and links for "Imprint | Partners | Contact | Disclaimer | System Requirements". It also states "Powered by Informatik II".

Typical Breadcrumb Trail:

Home > Thermodynamics > Organic Compounds > Vapor Pressure and Antoine Const...

[\[up\]](#)

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.

The screenshot displays the SpringerMaterials website interface. At the top, the header reads "SpringerMaterials The Landolt-Börnstein Database" with the Springer logo on the right. Below the header is a search bar with "Go" and "Advanced Search" buttons. A navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback".

The main content area is titled "Search in REACH, GHS, RoHS, WEEE". Below this title, there is a search bar with a "Go" button and the text "Substances / Molecular Formulas / Element Systems / CAS Registry Numbers". A legend defines the abbreviations: REACH - Registration, Evaluation, Authorization and Restriction of Chemicals; GHS - Globally Harmonized System; RoHS - Restriction of Hazardous Substances; WEEE - Waste from Electrical and Electronic Equipment.

The left sidebar contains a list of categories: 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; Substance Profiles; Inorganic Solid Phases; Thermophysical Properties; and Chemical Safety.

At the bottom of the page, the footer contains: "SpringerMaterials - Materials Science Data for 250,000 Substances", "© Springer 2012", "Imprint | Partners | Contact | Disclaimer | System Requirements", and "Powered by Informatik II".

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:

SpringerMaterials The Landolt-Börnstein Database

 Springer

[Home](#) > [Chemical Safety](#)

European regulations regarding benzene (C₆H₆)

Name	benzene	Formula:	C ₆ H ₆	
CAS-RN	71-43-2	Molecular Weight:	78.112 g/mol	
EG-Index:	601-020-00-8 (2004/73/EC)			
EINECS:	200-753-7 (EINECS2)			
Hazard Information (Dangerous Substances Directive 67/548/EEC)				
Hazard symbols				2004/73/EC
	T	F	Toxic	Highly flammable
R-Phrase	45-46-11-36/38-48/23/24/25-65 R45 May cause cancer. R46 May cause heritable genetic damage. R11 Highly Flammable. R36/38 Irritating to eyes and skin. R48/23/24/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. R65 Harmful: may cause lung damage if swallowed.			2004/73/EC
S-Phrase	S3-45 S53 Avoid exposure - obtain special instructions before use. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).			2004/73/EC
GHS classification (Globally Harmonized System)				
<small>Regulation on Classification, Labelling and Packaging of Substances and Mixtures (CLP)</small>				
Signal Word	Danger			EC/1272/2008
Pictogram				
Hazard Statements	H225	Highly flammable liquid and vapour.		
	H350	May cause cancer <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>		

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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.

The screenshot shows the SpringerMaterials interface. At the top, the search bar contains 'urea vapor pressure temperature' with 'Go' and 'Advanced Search' buttons. Below the search bar are navigation tabs: Home, Bookshelf, Periodic Table Search, Structure Search, Help, For Librarians, and Feedback. A left sidebar lists various material categories, with 'Thermodynamics' highlighted in red and containing 164 items. The main content area displays search results for 'Results 1 - 10 of 211 Documents'. The first result is for 'Compounds Br, C1...C30' and includes the following metadata: **Metadata - Substance:** urea ... VX Vapor ... Sulourea ... thiourea ... Ureaphil ... Hexanitroethane (low temperature form) ... Hexanitroethane (high temperature form) ... **Metadata - Property:** temperature ... vapor pressure ... **Metadata - Keyword:** Vapor Pressure of Chemicals ... Vapor Pressure and Antoine Constants for Nitrogen ...

Typical Context:

Metadata - Substance: urea ... VX Vapor ... Sulourea ... thiourea ... Ureaphil ... Hexanitroethane (low temperature form) ... Hexanitroethane (high temperature form) ... **Metadata - Property:** temperature ... vapor pressure ... **Metadata - Keyword:** Vapor Pressure of Chemicals ... Vapor Pressure and Antoine Constants for Nitrogen ...

[\[up\]](#)

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.


[\[up\]](#)

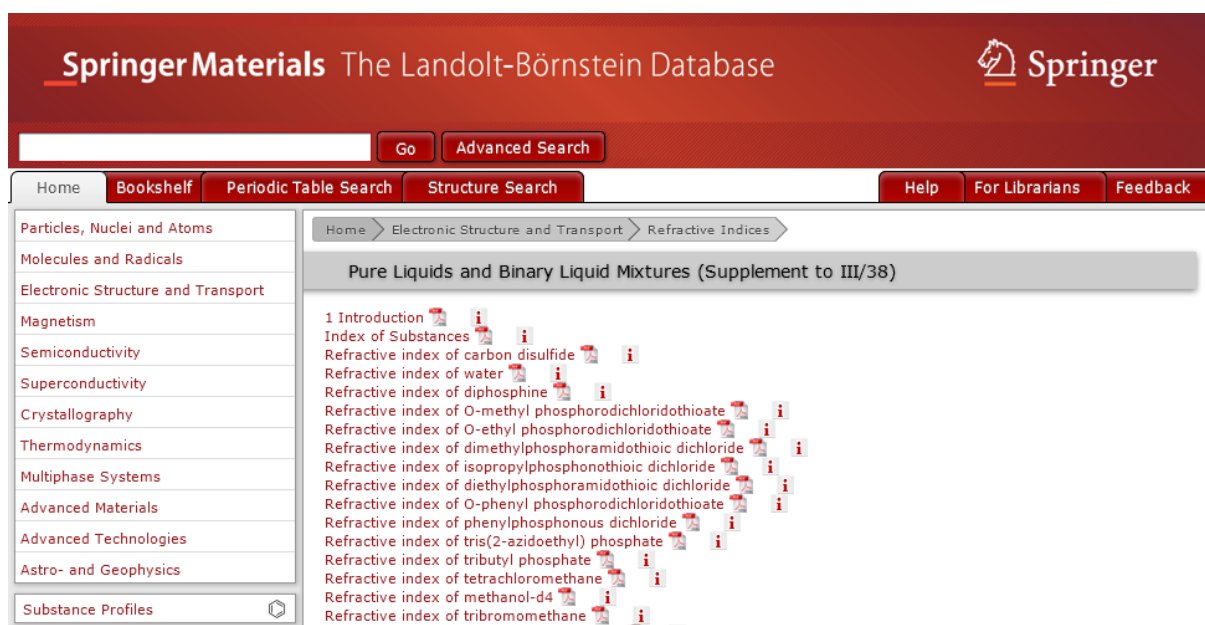
InfoPage

Provides bibliographic and [metadata](#) information for the corresponding document, and a thumbnail preview.

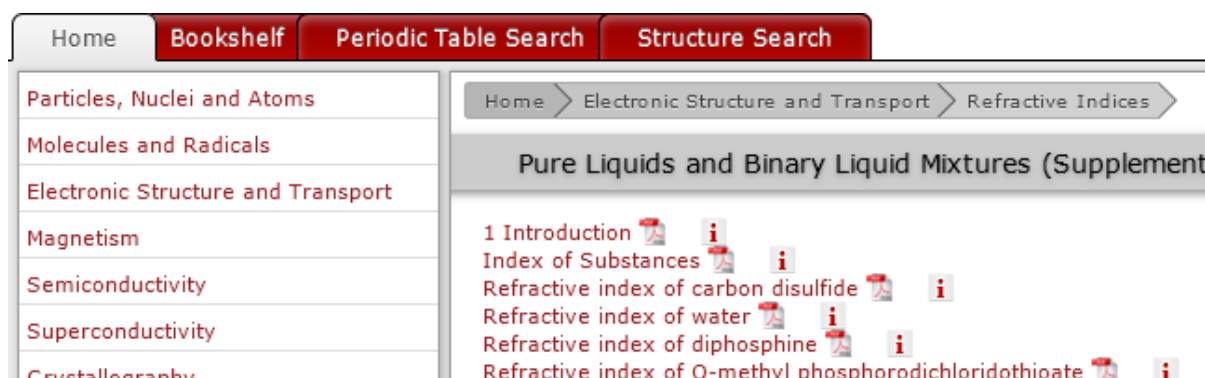
Bibliographic data include: How to cite the document, DOI, title, editor, author, publication date, and references. References are linked, where available, with the online versions of the original literature, usually via CrossRef or other bibliographic databases. Bibliographic data of the document can 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 () in the list of documents:



The screenshot shows the SpringerMaterials interface. The header includes the logo and the text "SpringerMaterials The Landolt-Börnstein Database". Below the header is a search bar with a "Go" button and an "Advanced Search" button. The main navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback". The left sidebar lists various categories such as "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", and "Substance Profiles". The main content area shows a breadcrumb trail: "Home > Electronic Structure and Transport > Refractive Indices". Below this is a section titled "Pure Liquids and Binary Liquid Mixtures (Supplement to III/38)". The list of documents includes "1 Introduction", "Index of Substances", and several entries for refractive indices of various substances, each accompanied by a small "i" icon indicating an InfoPage.



This screenshot is similar to the one above, showing the same SpringerMaterials interface. The main content area shows the same breadcrumb trail and section title. The list of documents is slightly different, showing "1 Introduction", "Index of Substances", and refractive indices for carbon disulfide, water, diphosphine, and O-methyl phosphorodichloridothioate, each with an "i" icon.

Typical InfoPage:

SpringerMaterials The Landolt-Börnstein Database Springer

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

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-Trifluoroethan; 1,1,1-trifluoro-ethane; 1,1,1-trifluoroethane; 1,2-Propadien; 1,2-Propandien; 1,2-propadiene; 1,3-butadiyne; <i>sym</i> -Allylene; Allen; Ammonia gas; Ammonia-14N; Ammoniak; Ammoniak wasserfrei; Ammoniak' wasserfrei; Ammoniak, wasserfrei; Ar ₃ FH; Bis(methylene)methane; C ₂ H ₃ F ₃ ; C ₂ H ₃ F ₃ (1,1,1-trifluoro-ethane); C ₂ N ₂ ; C ₃ H ₂ D ₂ ; C ₃ H ₄ ; C ₃ H ₄ (propadiene); C ₃ H ₆ ; C ₃ H ₆ (cyclopropane); C ₄ H 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 ₃ N; H ₃ N (ammonia); H ₃ P; HCF 143a; HCFC
--	--


[up]

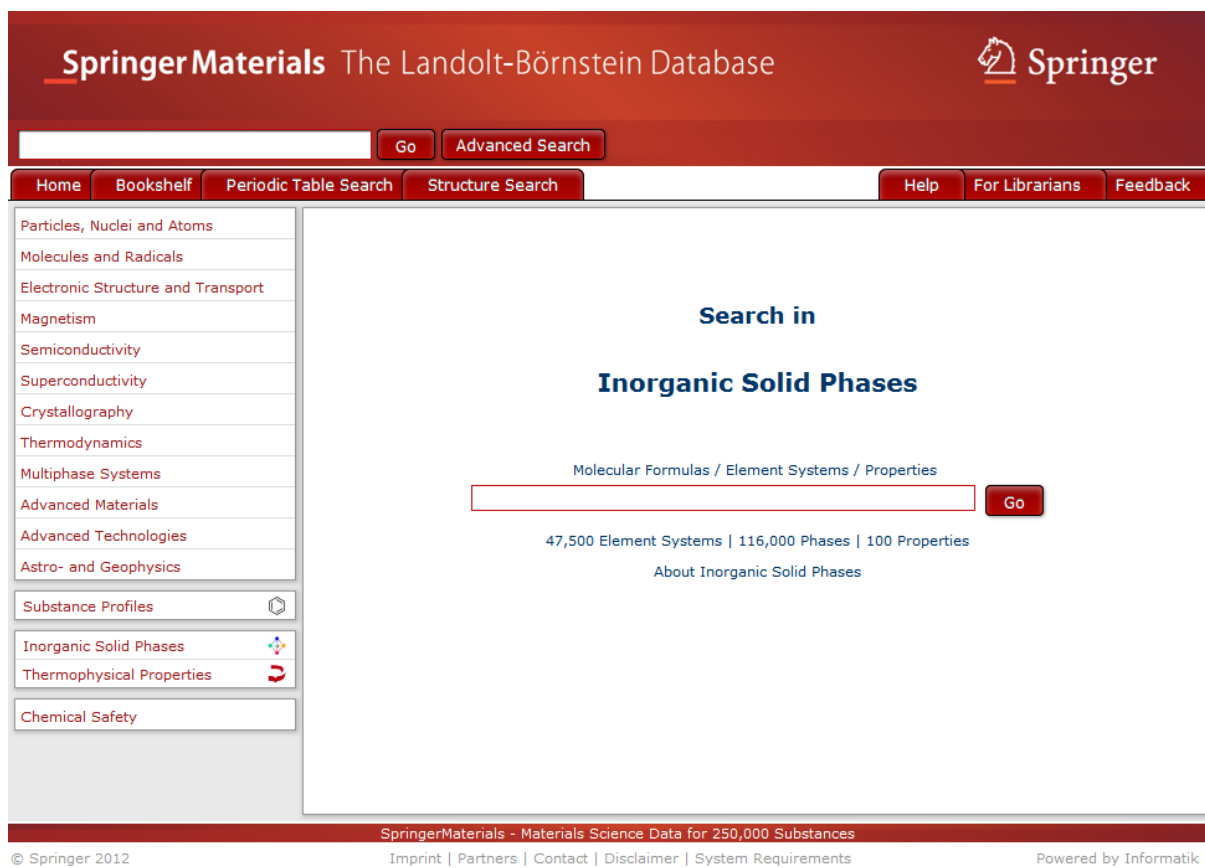
2012-09-06

12/42

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.




The screenshot displays the SpringerMaterials website interface. At the top, the header reads "SpringerMaterials The Landolt-Börnstein Database" with the Springer logo on the right. Below the header is a search bar with "Go" and "Advanced Search" buttons. A navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback".

The main content area is titled "Search in Inorganic Solid Phases". It features a search bar with a "Go" button and the text "Molecular Formulas / Element Systems / Properties". Below this, it states "47,500 Element Systems | 116,000 Phases | 100 Properties" and provides a link "About Inorganic Solid Phases".

A sidebar on the left lists various categories: "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", "Substance Profiles", "Inorganic Solid Phases" (highlighted with a logo), "Thermophysical Properties", and "Chemical Safety".




At the bottom, the footer contains "SpringerMaterials - Materials Science Data for 250,000 Substances", "© Springer 2012", "Imprint | Partners | Contact | Disclaimer | System Requirements", and "Powered by Informatik II".

Typical list of data sheets:

SpringerMaterials The Landolt-Börnstein Database 

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 12 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](#).

SpringerMaterials The Landolt-Börnstein Database 

Search for Element Systems

Select elements by clicking on the symbols.
Deselect elements by clicking a second time.

Your Selection
Al

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
IA	IIA	IIIB	IVB	VB	VIB	VIIIB	VIIIB	VIIIB	VIIIB	IB	IIB	IIIA	IVA	VA	VIA	VIIA	VIIIA	
1 H	2 D	3 T										5 B	6 C	7 N	8 O	9 F	10 Ne	
2 Li	4 Be											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar	
3 Na	12 Mg																	
4 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr	
5 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe	
6 Cs	56 Ba	**	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn	
7 Fr	88 Ra	**	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og	
			57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu	
			**	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

< previous Page 1 of 199 next >

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[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.

The screenshot displays the SpringerMaterials homepage. At the top, the logo reads "SpringerMaterials The Landolt-Börnstein Database" with the Springer logo to the right. Below the logo is a search bar containing the text "formic" and a "Go" button. A dropdown menu is open below the search bar, listing suggestions: "formicacid", "Formic acid" (highlighted), "Formic acid d", "Formic acid-d", "Formic-d acid", "Formic aldehyde", "formic [²H]acid", "formic [2H]acid", "Formic acid-O-d1", and "Formic hydrazide". The page also features a navigation menu with options like "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback". A sidebar on the left lists various scientific categories such as "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", "Substance Profiles", "Inorganic Solid Phases", "Thermophysical Properties", and "Chemical Safety". The footer contains copyright information: "© Springer 2012" and "SpringerMaterials - Materials Science Data for 250,000 Substances".

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:

SpringerMaterials The Landolt-Börnstein Database 



"Formic acid"


Home Bookshelf Periodic Table Search Structure Search Help For Librarians Feedback



0 Particles, Nuclei and Atoms
 136 Molecules and Radicals
 26 Electronic Structure and Transport
 17 Magnetism
 0 Semiconductivity
 0 Superconductivity
 18 Crystallography
 331 Thermodynamics
 0 Multiphase Systems
 3 Advanced Materials
 1 Advanced Technologies
 0 Astro- and Geophysics



37 Substance Profiles 
 0 Inorganic Solid Phases 
 31 Thermophysical Properties 
 20 Chemical Safety



Results 1 - 10 of 620 Documents previous 1 2 3 4 5 6 7 8 9 10 next

Molecules and Radicals > Molecular Structure > Organic Molecules > One or Two Carbon Atoms > Element systems C-H2-...
CH2O2 Formic acid  
Metadata - Substance: formic acid ... Formic acid ... CH2O2 (formic acid) ... Fulltext: 228 CH2O2 Formic acid Cs MW r a) C-H C=O C-O O-H & 1.0981(16) ...


Thermophysical Properties
Formic acid 
Metadata - Substance: Formic acid ... Fulltext: Formic acid Thermophysical Data in the Dortmund ... Number Name 1 CH2O2 46.026 64-18-6 Formic acid List of Available Properties Pure ...

Thermodynamics > Mechanical Properties > Surface Tension > Pure Liquids and Binary Liquid Mixtures
Data on pure liquids  
Metadata - Substance: formic acid ... CH2O2 (formic acid) ... formic acid ethyl ester ... formic acid hexyl ester ... Fulltext: 30.86 30.81 26.99 24.87 2002 C11H18O2 formic acid trans-3,7-dimethyl-oct-2,6-dien-1-yl ...

Thermodynamics > Thermodynamical Properties > Organic Compounds > Vapor Pressure and Antoine Constants > Oxygen Containing Organic Compounds
compounds C2...C8  
Metadata - Substance: formic acid ... CH2O2 (formic acid) ... benzoyl formic acid ...

Thermodynamics > Mechanical Properties > Viscosity > Organometallic Liquids and Binary Liquid Mixtures > Mixtures of organic compounds
Part 1  
Metadata - Substance: formic acid ... CH2O2 (formic acid) ... formic acid ethyl ester ... Formic acid, ethyl ester ... C3H6O2 (formic acid ethyl ester) ... Fulltext: 0.1669 0.1944 0.2394 498 CH2O2 (1) formic acid *1 64-18-6 CH3NO (2) formamide 75-12-7 ... 3.196 3.286 3.314




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

SpringerMaterials The Landolt-Börnstein Database 




"Formic acid"









Home Bookshelf Periodic Table Search Structure Search Help For Librarians Feedback

0 Particles, Nuclei and Atoms
 136 Molecules and Radicals
 26 Electronic Structure and Transport
 17 Magnetism
 0 Semiconductivity
 0 Superconductivity
 18 Crystallography
 331 Thermodynamics
 0 Multiphase Systems
 3 Advanced Materials
 1 Advanced Technologies
 0 Astro- and Geophysics

37 Substance Profiles 
 0 Inorganic Solid Phases 
 31 Thermophysical Properties 
 20 Chemical Safety

Results 1 - 10 of 620 Documents previous 1 2 3 4 5 6 7 8 9 10 next

Molecules and Radicals > Molecular Structure > Organic Molecules > One or Two Carbon Atoms > Element systems C-H2-...
CH2O2 Formic acid  
 Thermophysical Properties
Formic acid 

Thermodynamics > Mechanical Properties > Surface Tension > Pure Liquids and Binary Liquid Mixtures
Data on pure liquids  
 Thermodynamics > Thermodynamical Properties > Organic Compounds > Vapor Pressure and Antoine Constants > Oxygen Containing Organic Compounds
compounds C2...C8  
 Thermodynamics > Mechanical Properties > Viscosity > Organometallic Liquids and Binary Liquid Mixtures > Mixtures of organic compounds
Part 1  
 Electronic Structure and Transport > Dielectricity > Pure Liquids and Binary Liquid Mixtures: Dielectric Constants
Pure Liquids: References  
 Thermodynamics > Electrical Properties > Electrochemistry: Thermodynamics and Kinetics > Electrode potentials

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:

The screenshot shows the SpringerMaterials website interface. At the top, the logo "SpringerMaterials The Landolt-Börnstein Database" and the Springer logo are visible. A search bar contains the text "Formic acid" with "Go" and "Advanced Search" buttons. Below the search bar are navigation tabs: Home, Bookshelf, Periodic Table Search, Structure Search, Help, For Librarians, and Feedback. On the left side, there is a vertical menu with categories and their counts: Particles, Nuclei and Atoms (0), Molecules and Radicals (136), Electronic Structure and Transport (26), Magnetism (17), Semiconductivity (0), Superconductivity (0), Crystallography (17), Thermodynamics (331), Multiphase Systems (0), Advanced Materials (3), Advanced Technologies (1), Astro- and Geophysics (0), Substance Profiles (37), Inorganic Solid Phases (0), Thermophysical Properties (31), and Chemical Safety (20). The main content area is titled "Search Results" and lists various categories with their counts: (136) Molecules and Radicals, (26) Electronic Structure and Transport, (17) Magnetism, (17) Crystallography, (331) Thermodynamics, (3) Advanced Materials, and (1) Advanced Technologies. Each category has a list of sub-categories with their respective counts. On the right side of the search results, there are buttons for "Hierarchical View", "Expanded View", and "Compact View", along with a "Refine" button.

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.

The screenshot shows the "Advanced Search" form in the SpringerMaterials application. The form has a title bar "Substances, Properties, ..." and buttons for "Substance Profiles", "Bibliographic References", "Help", and "Close". The "Your Query" section contains a text input field with the text "Formic acid" {"surface tension"} and buttons for "Go" and "Clear". Below the query field, there are sections for "Search for ..." and "Search in ...". The "Search for ..." section has a dropdown menu with options: "Substances / Molecular Formulas / Element Systems / CAS Registry Numbers" and "Properties". The "Search in ..." section has a list of categories with checkboxes: Particles, Molecules, Electronic Structure and Transport, Magnetism, Semiconductivity, Superconductivity, Crystallography, Thermodynamics, Multiphase Systems, Advanced Materials, Advanced Technologies, Astro- and Geophysics, Inorganic Solid Phases, Thermophysical Properties, Chemical Safety, and Substance Profiles. The "Properties" dropdown menu is open, showing a list of properties: "surface tension", "surface twist", "surface tension", "surface layer thickness", "surface phase transition", "nuclear surface thickness", "transient surface temperature", and "surface termination dependence". The "surface tension" property is selected. The form also includes a "Page 1 of 1" indicator and a "next >" button.

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 screenshot displays the SpringerMaterials interface. At the top, the search bar contains the query "Formic acid" {"surface tension"}. Below the search bar, a navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback". A left sidebar lists various scientific categories, with "Thermophysical Properties" selected and highlighted in red. The main content area shows search results for "Formic acid". It includes a breadcrumb trail: "Thermodynamics > Mechanical Properties > Surface Tension > Pure Liquids and Binary Liquid Mixtures". The first result is titled "Data on pure liquids" and provides metadata: "Metadata - Substance: formic acid ... CH2O2 (formic acid) ... Metadata - Property: surface tension ...". The second result is titled "Surface tension of the mixture (1) water; (2) formic acid" and provides more detailed metadata: "Metadata - Substance: formic acid ... CH2O2 (formic acid) ... Metadata - Property: surface tension ... Metadata - Keyword: surface tension of binary liquid mixtures ... Fulltext: 2 Hill Formula H2O CH2O2 Name water formic acid CAS Number 7732-18-5 64-18-6 Older data ... IV/16. Table 1. H2O (1); CH2O2 (2). Surface Tension at T = 293.15 K [1997ALV1]. x 2 0.000 ...".

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".

SpringerMaterials The Landolt-Börnstein Database

Go **Advanced Search**

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

1,2-benzynes	97%
benzene-d6	93%
C7H6	87%
toluene	85%
benzenamine	84%
phenol	83%
Benzene, methyl-d3-	82%
fluorobenzene	81%
Benzenamine-d7	78%
Perdeutero-fluorbenzol	77%
ethynylbenzene	76%
Bicyclo[4.2.0]octa-1,3,5,7-tet...	76%
isocyanobenzene	76%
benzonitrile	76%
Bicyclo[4.2.0]octa-1,3,5-triene	75%
styrene	75%
ethylbenzene	74%
1,4-dimethyl-benzene	74%
1,3-dimethyl-benzene	74%
phenylmethanal	74%
1,2-dimethyl-benzene	74%
3-methylbenzenamine	73%
N-methylaniline	73%
4-methylbenzenamine	73%
2-methylbenzenamine	73%
nitrosobenzene	73%
1,3-benzenediamine	72%
phenylhydrazine	72%
1,4-benzenediamine	72%
benzenemethanol	72%

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 Recognized as: Springer Affiliates [30000939]
 Remote Address: 172.20.32.104 Server: senl
 User Agent: Mozilla/5.0 (Windows NT 6.1; rv:9

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](#).

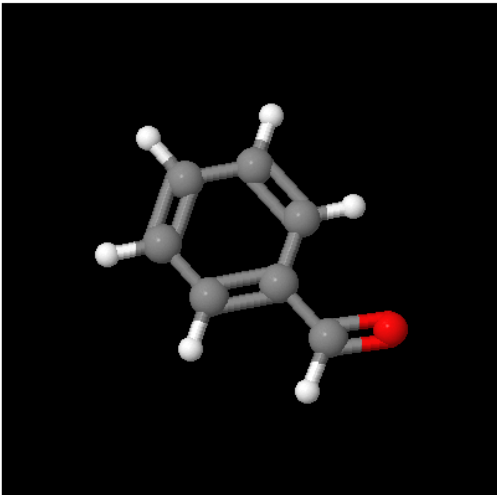
SpringerMaterials The Landolt-Börnstein Database
 Springer

Go
Advanced Search

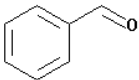
Home
Bookshelf
Periodic Table Search
Structure Search
Help
For Librarians
Feedback

Home > Substance Profiles >

phenylmethanal



3D Substance Structure



Structural Formula

General information

Name	phenylmethanal
Molecular Formula	C ₇ H ₆ O
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	HUMNYLRZRPJDN-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

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

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

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

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; Benzoësäurealdehyd; Formylbenzol; Bittermandelöl; C₇H₆O (benzaldehyde); Benzolmethylal; Benzolcarbonal; Benzoealdehyd; Benzolcarboxaldehyd; Benzalbddehyd; Bnsaldehyd; Bnsaldehyde; Benzalbddehyd; Benzalbddehyd; 2-Benzaldehyd; 2-Benzaldehyde; Benzadegid; Benzadegide; Benzal; Benzcarbaldehyd; Benzcarbaldehyde; Benzen-1-carbaldehyd; Benzen-1-carbaldehyde; Besaldehyd; Besaldehyde; Aceite sintético de almendras amargas; Aetherisches mandeloel; Aldehido benzoico; Aldehyde benzoique; Aldehyde benzylque; Aldeidobenzoico; Amandol; Artificial essential oil of almond; Artificial essential oil of bitter almond(s); Benzaldehydo; Benzaldehydbyzonderzuiver; Benzaldehyde bpc; Benzaldeido; Benzalid; Benzene carbonal; Benzoësäurealdehyd; Benzoiolo hidruro; Benzoyaldehyd; Benzoylhydride; Benzoylhydrer; 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; Benzoësäure, aldehyd; Benzoic acid, aldehyde; Benzaldegnd; Benzaldegnde

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

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Bibliography Search

The screenshot shows the 'Bibliographic References' search results for the term 'williams'. The interface includes a search bar with the text 'williams' and a 'Go' button. Below the search bar, a list of references is shown, each starting with the author(s) and the publication details. The references include works by A.K. Pradhan and J. Peng (1995), M. Aronson (1981), B.D. Ababio et al. (1991, 1994), R. Abegg (1978), E.W. Abel et al. (1982), S.C. Abrahams et al. (1964, 1963), W. Adam et al. (1994, 1992), R. Addinall et al. (1991), H. Adkins (1952), and E.A. Allen et al. (1963). The results are paginated, showing 'Page 1 of 119'.

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 screenshot shows the 'Chemical Safety Document Search' interface. The search bar contains the text 'REACH, GHS, RoHS, WEEE'. Below the search bar, a list of substances and their associated safety regulations is shown. The regulations include REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), GHS (Globally Harmonized System), RoHS (Restriction of Hazardous Substances), and WEEE (Waste from Electrical and Electronic Equipment). The search results are paginated, showing 'Page 1 of 119'.

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.

The screenshot shows the SpringerMaterials interface. At the top, it says "SpringerMaterials The Landolt-Börnstein Database" and the Springer logo. Below is a search bar with "Go" and "Advanced Search" buttons. A navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback".


The main content area is titled "Search in REACH, GHS, RoHS, WEEE". Below this, there are links for "Substances / Molecular Formulas / Element Systems / CAS Registry Numbers". A search input field contains "benzene" and a "Go" button. A dropdown list of suggestions is shown:

- benzene
- benzene (C₆H₆)
- benzene-d6 (C₆D₆)
- Benzene-1,4-d₂ (C₆H₄D₂)
- benzenemethanol (C₇H₈O)
- Cyanato-benzene (C₇H₅NO)
- benzene selenol (C₆H₆Se)
- butoxy-benzene (C₁₀H₁₄O)
- dimethyl-benzene (C₈H₁₀)
- propoxy-benzene (C₉H₁₂O)
- Benzene, hexaiodo- (C₆I₆)

The footer contains "© Springer 2012", "Imprint | Previous", "Page 1 of 67", "next >", and "Powered by Informatik II".

"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:

SpringerMaterials The Landolt-Börnstein Database 



Go Advanced Search

Home Chemical Safety

European regulations regarding benzene (C₆H₆)

Name benzene **Formula:** C₆H₆
CAS-RN 71-43-2 **Molecular Weight:** 78.112 g/mol
EG-Index: 601-020-00-8 (2004/73/EC)
EINECS: 200-753-7 (EINECS2)


Hazard Information (Dangerous Substances Directive 67/548/EEC)

Hazard symbols   2004/73/EC

R-Phrase 2004/73/EC
 45-46-11-36/38-48/23/24/25-65
 R45 May cause cancer.
 R46 May cause heritable genetic damage.
 R11 Highly Flammable.
 R36/38 Irritating to eyes and skin.
 R48/23/24/25 Toxic: danger of serious damage to health by prolonged exposure through

Periodic Table Search

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

SpringerMaterials The Landolt-Börnstein Database 

Go Advanced Search

Home Bookshelf Periodic Table Search Structure Search Help For Librarians Feedback

No elements selected

Search for Element Systems

Select elements by clicking on the symbols.
Deselect elements by clicking a second time.

Your Selection

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
IA	IIA	IIIB	IVB	VB	VIB	VIIb	VIIIb	VIIIb	VIIIb	IB	IIB	IIIA	IVA	VA	VIA	VIIA	VIIIA	K
1 H	2 D	3 T										5 B	6 C	7 N	8 O	9 F	10 Ne	L
2 Li	4 Be											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar	M
3 Na	12 Mg																	
4 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr	N
5 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe	O
6 Cs	56 Ba	**	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn	P
7 Fr	88 Ra	**	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og	Q
*	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu			
**	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr			

< previous next >

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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.

SpringerMaterials The Landolt-Börnstein Database

Go Advanced Search

Home Bookshelf Periodic Table Search Structure Search Help For Librarians Feedback

Search for Element Systems

Select elements by clicking on the symbols.
Deselect elements by clicking a second time.

Your Selection
Al-Cr-Fe

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
IA IIA IIIB IVB VB VIB VIIB VIIIB VIIIIB IXB IIB IIIA IVA VA VIA VIIA VIIIA K

1 H D T He
2 Li Be B C N O F Ne
3 Na Mg Al Si P S Cl Ar
4 K Ca Sc Ti V Cr Mn Fe Co Ni Cu Zn Ga Ge As Se Br Kr
5 Rb Sr Y Zr Nb Mo Tc Ru Rh Pd Ag Cd In Sn Sb Te I Xe
6 Cs Ba Hf Ta W Re Os Ir Pt Au Hg Tl Pb Bi Po At Rn
7 Fr Ra Rf Db Sg Bh Hs Mt Ds Rg Cn

* La Ce Pr Nd Pm Sm Eu Gd Tb Dy Ho Er Tm Yb Lu
** Ac Th Pa U Np Pu Am Cm Bk Cf Es Fm Md No Lr

< previous Page 1 of 6 next >

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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 indicated by the icons.

The screenshot shows the SpringerMaterials website interface. At the top, there is a search bar containing "Al-Cr-Fe" and buttons for "Go" and "Advanced Search". Below the search bar are navigation tabs: "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback". On the left side, there is a vertical menu with categories and their counts: "0 Particles, Nuclei and Atoms", "0 Molecules and Radicals", "1 Electronic Structure and Transport", "15 Magnetism", "0 Semiconductivity", "0 Superconductivity", "3 Crystallography", "0 Thermodynamics", "6 Multiphase Systems", "0 Advanced Materials", "0 Advanced Technologies", "0 Astro- and Geophysics", "0 Substance Profiles", "24 Inorganic Solid Phases", "0 Thermophysical Properties", and "0 Chemical Safety". The main content area displays search results for "Al-Cr-Fe", showing "Results 1 - 10 of 49 Documents". The first result is titled "Al-Cr-Fe" and includes a "Refine" button. The second result is titled "Al-Cr-Fe, ternary phase diagram, isothermal section" and the third is "Al-Cr-Fe, ternary phase diagram, liquidus projection".

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

The screenshot shows the "Advanced Search" window overlaid on the main search results. The window has tabs for "Substances, Properties, ...", "Substance Profiles", and "Bibliographic References", along with "Help" and "Close" buttons. The "Your Query" field contains "Al-Cr-Fe" with "Go" and "Clear" buttons. Below the query field, there is a "Search for ..." section with a dropdown menu showing "Substances / Molecular Formulas / Element Systems / CAS Registry Numbers". The "Search in" section has a list of categories with checkboxes: "Particles", "Molecules", "Electron", "Magnetism", "Semiconductivity", "Superconductivity", "Crystallography", "Thermodynamics", "Multiphase Systems", "Advanced Materials", "Advanced Technologies", "Astro- and Geophysics", "Inorganic Solid Phases", "Thermophysical Properties", and "Chemical Safety". The "Properties" search field contains "magnetiz", and a speed-typing list is displayed below it, showing suggestions like "magnetization (magnetic moment per unit volume)", "magnetizability", "magnetization curve", "molar magnetization", "magnetization energy", "magnetization tensor", "volume magnetization", "magnetization density", "magnetizing frequency", "reduced magnetization", "surface magnetization", "remanent magnetization", "specific magnetization (magnetic moment per gram; magnetic moment per unit mass)", "parasitic magnetization (specific weak magnetization)", "staggered magnetization", and "Pauli-type magnetization". The window also shows "Page 1 of 3" and "next >" navigation.

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](#)).

The screenshot shows the SpringerMaterials interface. At the top, the search bar contains 'methanol "vapor pressure"' with 'Go' and 'Advanced Search' buttons. Below the search bar are navigation tabs: Home, Bookshelf, Periodic Table Search, Structure Search, Help, For Librarians, and Feedback. A left sidebar lists various material categories with counts, such as '66 Thermodynamics' and '1 Thermophysical Properties'. The main content area displays search results for 'Methanol'. The first result is titled 'Thermophysical Properties' and includes a breadcrumb trail: 'Thermodynamics > Thermodynamical Properties > Organic Compounds > Vapor Pressure and Antoine Constants > Oxygen Containing Organic Compounds'. The fulltext document snippet reads: 'Metadata - Substance: Methanol ... furanmethanol ... Oxiranmethanol ... Metadata - Property: vapor pressure ... Fulltext: Inorganic Compounds 2 Tabulated Data on Vapor Pressure of Oxygen Containing Organic Compounds ...'. The context line shows the breadcrumb trail: 'Thermodynamics > Thermodynamical Properties > Binary Fluid Systems > Vapor-Liquid Equilibrium in Mixtures and Solutions > Organic systems > Primary linear-alkyl monoalcohols and Alkynes'.

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

Thermodynamics > Thermodynamical Properties > Organic Compounds > Vapor Pressure and Antoine Constants > Oxygen Containing Organic Compounds
compounds C2...C8

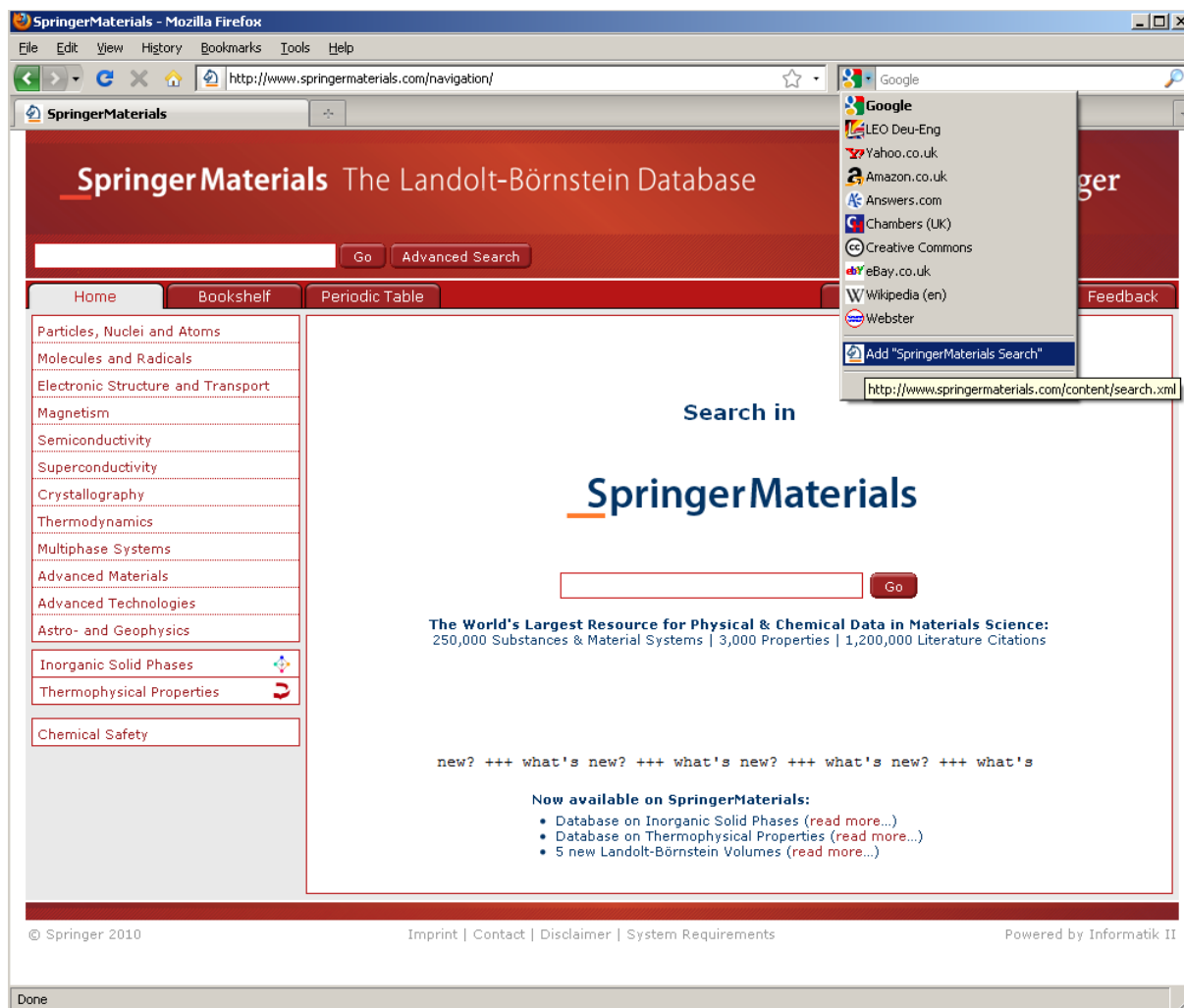
Metadata - Substance: Methanol ... furanmethanol ... Oxiranmethanol ... Metadata - Property: vapor pressure ... Fulltext: Inorganic Compounds 2 Tabulated Data on Vapor Pressure of Oxygen Containing Organic Compounds ...

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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:

The screenshot displays the SpringerMaterials website interface in a Mozilla Firefox browser. The search term 'benzene' is entered in the search bar, and the results page shows a list of documents. The left sidebar contains a navigation menu with categories such as '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', 'Inorganic Solid Phases', 'Thermophysical Properties', and 'Chemical Safety'. The main content area displays search results for 'benzene', including a list of documents with metadata, fulltext, and thermophysical properties. The browser's address bar shows the URL 'http://www.springermaterials.com/qs/search?query=benzene'.

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.

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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.

The screenshot displays the SpringerMaterials website interface. At the top, the header reads "SpringerMaterials The Landolt-Börnstein Database" with the Springer logo on the right. Below the header is a search bar with a "Go" button and an "Advanced Search" link. A navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback". On the left, a sidebar lists various categories such as "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", "Substance Profiles", "Inorganic Solid Phases", "Thermophysical Properties", and "Chemical Safety". The main content area features a "Search in SpringerMaterials" section with a search input field containing "nucl magnet" and a "Go" button. A dropdown menu shows suggestions: "nuclear magnetic moment", "nuclear magnetic resonance", "magnetic properties of nuclei", "nuclear magnetic resonance data", "nuclear magnetic relaxation rate", "nuclear magnetic resonance (NMR)", "nuclear magnetic resonance signal", "1H nuclear magnetic resonance data", "internal nucleation magnetic field", and "11B nuclear magnetic resonance data". The page footer includes "SpringerMaterials - Materials Science Data for 250,000 Substances", "© Springer 2012", "Imprint | Partners | Contact | Disclaimer | System Requirements", and "Powered by Informatik II".

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](#)".

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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.

SpringerMaterials The Landolt-Börnstein Database

Springer

Substances, Properties, ... Substance Profiles Bibliographic References Help Close

Your Query

Search for ...

Substances / Molecular Formulas / Element Systems / CAS Registry Numbers

Search in

- Particles
- Molecules
- Electron
- Magnetic
- Semiconductors
- Supercritical
- Crystalline
- Thermodynamic
- Multiphase
- Advanced
- Advanced
- Astro-materials
- Inorganic
- Thermodynamic
- Chemical
- Substance Profiles

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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.

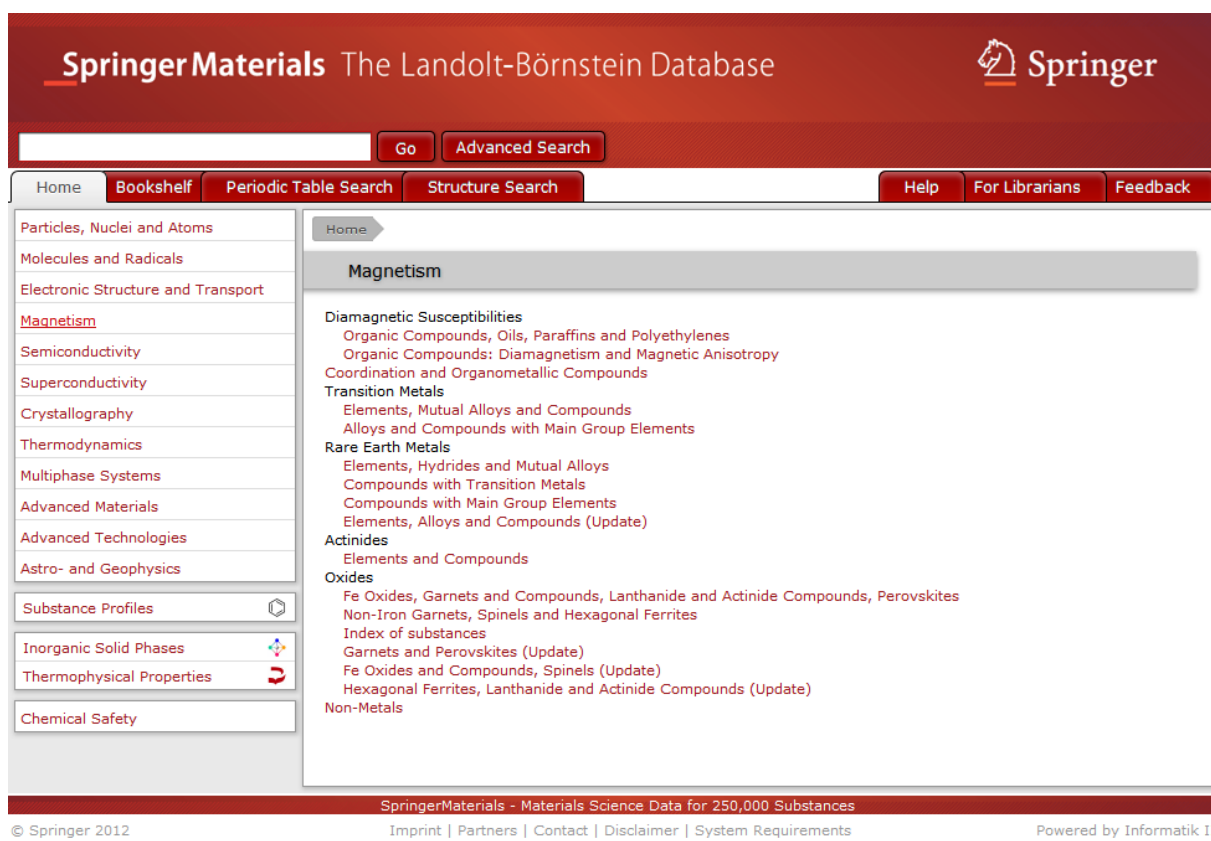
[\[up\]](#)

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](#).



The screenshot displays the SpringerMaterials website interface. At the top, the header reads "SpringerMaterials The Landolt-Börnstein Database" with the Springer logo on the right. Below the header is a search bar with "Go" and "Advanced Search" buttons. A navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback".

The main content area is divided into a left sidebar and a main panel. The sidebar lists 12 subject areas: Particles, Nuclei and Atoms; Molecules and Radicals; Electronic Structure and Transport; **Magnetism** (highlighted in red); Semiconductivity; Superconductivity; Crystallography; Thermodynamics; Multiphase Systems; Advanced Materials; Advanced Technologies; and Astro- and Geophysics. Below these are sections for Substance Profiles, Inorganic Solid Phases, Thermophysical Properties, and Chemical Safety.

The main panel shows the "Magnetism" subject area. It features a "Home" button and a list of sub-areas: Diamagnetic Susceptibilities (with sub-items: Organic Compounds, Oils, Paraffins and Polyethylenes; Organic Compounds: Diamagnetism and Magnetic Anisotropy; Coordination and Organometallic Compounds); Transition Metals (with sub-items: Elements, Mutual Alloys and Compounds; Alloys and Compounds with Main Group Elements); Rare Earth Metals (with sub-items: Elements, Hydrides and Mutual Alloys; Compounds with Transition Metals; Compounds with Main Group Elements; Elements, Alloys and Compounds (Update)); Actinides (with sub-item: Elements and Compounds); Oxides (with sub-items: Fe Oxides, Garnets and Compounds, Lanthanide and Actinide Compounds, Perovskites; Non-Iron Garnets, Spinel and Hexagonal Ferrites; Index of substances; Garnets and Perovskites (Update); Fe Oxides and Compounds, Spinel (Update); Hexagonal Ferrites, Lanthanide and Actinide Compounds (Update)); and Non-Metals.

At the bottom of the page, a footer contains the text "SpringerMaterials - Materials Science Data for 250,000 Substances", copyright information "© Springer 2012", and links for "Imprint | Partners | Contact | Disclaimer | System Requirements". It also states "Powered by Informatik II".

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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.

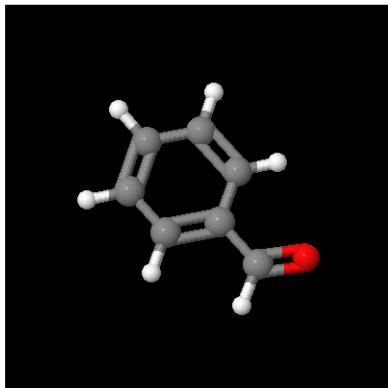
Substance profiles can be reached via the the [Advanced Search](#) feature. There, the "Substance Profiles" tab opens a [Speed Typing](#) dialogue to select substances by their names, molecular formulas or CAS registry numbers. After the selection by mouse-click, the corresponding substance profile is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

SpringerMaterials The Landolt-Börnstein Database

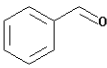
Home Bookshelf Periodic Table Search Structure Search Help For Librarians Feedback

Home > Substance Profiles

phenylmethanal



3D Substance Structure



Structural Formula

General information

Name	phenylmethanal
Molecular Formula	C ₇ H ₆ O
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	HUMNYLRZRPJDN-UHFFFAOYSA-N

Properties

SpringerMaterials Documents

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

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

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

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

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; benzenecarbonyl; benzaldehyde; Benzaldehyd; Artificial Almond Oil; Benzaldehyde FFC; Phenylformaldehyde; Almond Artificial Essential Oil; Benzaldehyde; NCI-C56133; Oil of Bitter Almond; Benzoessäurealdehyd; Formylbenzol; Bittermandelöl; C₇H₆O (benzaldehyde); Benzolmethylal; Benzolcarbonyl; Benzoesäurealdehyd; Benzolcarboxaldehyd; Benzaldehyd; Bnsaldehyd; Bnsaldehyde; Benzaldehyd; Benzaldehyd; 2-Benzaldehyd; 2-Benzaldehyde; Benzaldehyd; Benzaldehyd; Benzal; Benzcarbaldehyd; Benzcarbaldehyde;

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.

Trimethylamine N-oxide

General information

Name	Trimethylamine N-oxide
Molecular Formula	C ₃ H ₉ NO
Element system	C-H-N-O
CAS-RN	1184-78-7
InChI	InChI=1S/C3H9NO/c1-4(2,3)5/h1-3H3
InChI Key	UYPYRKYUKCHHIB-UHFFFAOYSA-N

3D Substance Structure

Measurements

- Show Measurements
- Double-Click begins and ends all measurements
- Click for distance measurement
- Click for angle measurement
- Click for torsion (dihedral) measurement
- Delete measurements
- List measurements
- Distance units nanometers
- Distance units Angstroms
- Distance units picometers

European regulations regarding Trimethylamine N-oxide (C3H9NO)

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

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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.

The screenshot displays the SpringerMaterials website interface. At the top, the header reads "SpringerMaterials The Landolt-Börnstein Database" with the Springer logo on the right. Below the header is a search bar with "Go" and "Advanced Search" buttons. A navigation menu includes "Home", "Bookshelf", "Periodic Table Search", "Structure Search", "Help", "For Librarians", and "Feedback".

The main content area is titled "Search in Thermophysical Properties". It features a search input field with a "Go" button and the text "Substances / Molecular Formulas / CAS Registry Numbers". Below this, it states "50 Organic Substances & Water | 1,225 Binary Mixtures | 425,000 Data Points | 10,000 Literature Citations" and provides a link "About Thermophysical Properties".

A left sidebar contains a list of categories: "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", "Substance Profiles", "Inorganic Solid Phases", "Thermophysical Properties" (highlighted with a 🔍 icon), and "Chemical Safety".

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Typical query for Thermophysical Properties:

Molecules and Radicals

Electronic Structure and Transport

Magnetism

Semiconductivity

Superconductivity

Crystallography

Thermodynamics

Multiphase Systems

Advanced Materials

Advanced Technologies

Astro- and Geophysics

Substance Profiles

Inorganic Solid Phases

Thermophysical Properties

Chemical Safety

Search in

Thermophysical Properties

Substances / Molecular Formulas / CAS Registry Numbers

benzene Go

Benzene (71-43-2; C₆H₆) 100 Literature Citations

Benzene (71-43-2; C₆H₆) + Water (7732-18-5; H₂O)

Acetone (67-64-1; C₃H₆O) + Benzene (71-43-2; C₆H₆)

Benzene (71-43-2; C₆H₆) + Hexane (110-54-3; C₆H₁₄)

Benzene (71-43-2; C₆H₆) + Methanol (67-56-1; CH₄O)

Benzene (71-43-2; C₆H₆) + Phenol (108-95-2; C₆H₆O)

Benzene (71-43-2; C₆H₆) + Toluene (108-88-3; C₇H₈)

Ethanol (64-17-5; C₂H₆O) + Benzene (71-43-2; C₆H₆)

Benzene (71-43-2; C₆H₆) + Decane (124-18-5; C₁₀H₂₂)

Benzene (71-43-2; C₆H₆) + Heptane (142-82-5; C₇H₁₆)

50 Organic S

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next >

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Typical overview for Thermophysical Properties:

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Go
Advanced Search

Home > Thermophysical Properties

Benzene / Phenol

Thermophysical Data in the Dortmund Data Bank

Components

No.	Formula	Molar Mass	CAS Registry Number	Name
1	C ₆ H ₆	78.114	71-43-2	Benzene
2	C ₆ H ₆ O	94.113	108-95-2	Phenol

List of Available Properties

- Activity Coefficients at Infinite Dilution
- Azeotropic Data
- Excess Enthalpies
- Mixture Surface Tensions
- Mixture Viscosities
- Solid-Liquid Equilibria
- Densities
- Vapor-Liquid Equilibria

Dortmund Data Bank Edition - 2011. Integrated in SpringerMaterials - 2011
 Dortmund Data Bank by DDBST - Dortmund Data Bank Software and Separation Technology GmbH
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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 "sulphite" and "sulfit^e". Searching for `ferr?magnetism` shows hits for both "ferromagnetism" and "ferrimagnetism".

[\[up\]](#)

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.

The screenshot displays the SpringerMaterials search interface. A modal window titled "Your Query" is open, showing a search query: `{"sulphur dioxide" or "7446-09-5" or "O2S"} {"virial coefficient"}`. Below the query field are "Go" and "Clear" buttons. The "Search for ..." section lists search criteria: "Substances / Molecular Formulas / Element Systems / CAS Registry Numbers" with the value `"sulphur dioxide" or "7446-09-5" or "O2S"`; "Properties" with the value `"virial coefficient"`; and "Search in" with the value `second virial coefficient`. A list of search categories is shown on the left, including "Particles", "Molecules and Radicals", "Electronic Structure and Transport", "Magnetism", "Semiconductivity", "Superconductivity", "Crystallography", "Thermodynamics", "Multiphase Systems", "Advanced Materials", "Advanced Technologies", "Astro- and Geophysics", "Inorganic Solid Phases", "Thermophysical Properties", "Chemical Safety", and "Substance Profiles". The background shows the main search page with a "Go" button and a "Data in Materials Science" section.

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