materials.springer.com





SpringerMaterials

The fastest solution for identifying material properties

- Discover comprehensive, tailored data across key materials scientific disciplines
- Save time with optimized search tools
- Unlock enhanced visualization and analysis for seamless insights

Advanced Interactivity



Quick and reliable insights accelerating materials science research

As the amount of scientific information exponentially increases, the need for critically evaluated and easily retrievable data becomes ever greater. Information must be cross-linked, updated, and presented in intuitive and readily accessible ways.

SpringerMaterials effectively addresses these challenges for materials science and closely related fields in chemistry, engineering, and physics. The database is a comprehensive resource of curated data covering 3,000 properties and 290,000 materials on one platform: materials.springer.com

Single platform access to curated data



Data sources

- Classic Landolt-Börnstein series
- MSI Eureka, Linus Pauling Files Inorganic Solid Phases
- Polymer Thermodynamics Database (ATHAS)
- Dortmund Databank of Separation Technology
- Springer Handbooks (e.g., VDI Heat Atlas)
- Adsorption Database, NIST Corrosion Database, SpringerMaterials Fundamentals Handbooks
- Organic-inorganic perovskites

Content overview

Content Class	Quantity
Phase Diagram Reports	4,000 detailed reports
Interactive Phase Diagrams	51,000+ binary and ternary systems
Crystal Structures	358,000+ structures
Physical Properties	185,900+ datasheets
Corrosion Data	25,000 records for 1000+ metal systems and 275+ environments
Gas Adsorption Data	5,800+ isotherms, 99 adsobates, 1,355 adsorbents
Thermophysical Property Data	472,000 data points for 1,200+ binary mixtures and 51 substances
Polymer Thermodynamic Data	30,000 data points for 150 polymers & macro- molecules
Book Content	520+ volumes from 225,000+ documents in the Landolt-Börnstein, Springer Handbooks, SpringerMaterials Fundamentals and other related resources
Metal Foams	450 datasheets

Saving researchers time

Search options optimized for materials science

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		2 Springer Materials	e.g. GaAs, benzene, Cd-Te, band gap Q	Springer Nature Affi
			Elements search Corrosion search Video tutorial @	
Search by Elements		Browse by collection	The research solution for identifying material propertie Fast and reliable insights accelerating materials science research	s
		Landolt-Börnstein		
		Inorganic Solid Phases	SpringerMaterials provides curated data and advanced functionalities to support research	h in materials science, physics,
Corrosion Search		MSI Eureka	chemistry, engineering, and other related fields.	
conosion scarch		Metal foam	A comprehensive database covering multiple material classes, property types, and a	oplications
		Organic-inorganic perovskites	 Enhanced data visualization features display interactive crystal structures, data table options for further analysis 	s, and phase diagrams with export
		Polymer Thermodynamics	 Search functions optimized for materials science like elemental composition or che material property data 	mical structure searching to quickly find
		SGTE phase diagrams	Trusted and curated resource with thousands of materials science experts ensuring	nigh data quality
		Substance Profile	Learn more about how Springer Materials can benefit you	
		Thermophysical Properties		

SpringerMaterials Interactive

As a multidisciplinary field, materials science draws on data from many topics in physics, chemistry, and engineering. Material property data, even for a single material, is often scattered across many sources. A set of workflow tools called **SpringerMaterials Interactive** addresses this challenge with the following features:

- Consolidation of data from multiple sources on a single graph or table
- Highly customizable data visualization options
- Side-by-side comparison of material properties
- Numerical property value search to find materials within a given property range

SpringerMaterials Interactive data is extracted primarily from the Landolt-Börnstein book series. This digitized data is then consolidated with relevant data from other sources to create these multisource data sets. Interactive data sets are highlighted on the platform with an interactive button.

Data Consolidation: presentation of multisource data

E _{g-dir} = 2.83 eV	T = 0 K	GaP	F15v-F1c, calculated	P608509	172909. Scheffler (1984)
E _{g-ind} = 2.36 eV	Τ = 0 Κ	GaP	approximate value F15v-X1c, calculated from fig. 1	P608509	172909. Scheffler (1984)
E _{g−di} = 2.88 eV	T = 0 K	GaP	calculated value for F15v - F1c transition	P900452	83949. Chen (1980)
E _{g−ind} = 2.16 eV	T = 0 K	GaP	calculated value for F15v - X1c	P900452	83949. Chen (1980)





Interactive Views: customizable data visualization



Material Comparisons: side-by-side views of material properties



Interactive Views

Numerical Property Search: show all materials with given property range(s)



SpringerMaterials is fast. The periodic table search provides intuitive, specific data, it's totally different from a conventional data search engine. The colorful 3-D crystal structure view not only provides direct knowledge on the bond length, bond angle, etc. but also leaves a very strong visual impression.

Prof. Jun Jiang, Chemical Physics University of Science and Technology of China

Additional Functionality

Built-in crystal structure viewer

View interactive crystal structures from published data and create your own personalized view. Measure angles and distances, display multiple unit cells, and easily export the customized image



Citation exporter

Citations for SpringerMaterials content can be easily exported in multiple standard formats

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Exact data points with phase diagrams

Over 40,000 interactive phase diagrams include tools to determine phase transitions and record points of interest



of China

A useful database should be convenient for its users, the data should be very accurate and reliable, and the results

found through a search should be of high

relevance. In my opinion, SpringerMaterials

is doing very well in all those three aspects. Dr. Yafong Fan, Science Librarian University of Science and Technology

SpringerMaterials research benefits

A single platform covers curated data from all major topics in materials science, chemistry, physics & engineering

Save time with multiple search * methods and advanced result refining options

Take advantage of specialized integrated features to analyze, manipulate, and visualize different data types

Export data in multiple formats for further use in other software/applications

Benefits for Libraries

- Increase your institution's research productivity by offering a vast materials science database. Harnessing the scope and depth of SpringerMaterials minimizes the number of resources needing maintenance.
- Assurance that the database contains high quality curated content compiled by subject matter experts.
- SpringerMaterials is a cloud-based platform providing 24/7 concurrent access for all researchers, either onsite or through remote authentication.
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