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SpringerMaterials 数值数据库

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基于Landolt-Börnstein丛书的数据库

Landolt Börnstein (LB)

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- LB是一套连续出版的数值与事实型大型工具书，由Hans Landolt 和 Richard Börnstein两位教授在1883年共同创建了这套工具书

- 数据来源于全世界千余名物理与工程领域的科学家撰稿的研究期刊全文
- 所有数据都经过严格苛刻的挑选

- Landolt-Börnstein涵盖以下学科：
  - 天文学
  - 生物物理
  - 工程
  - 地球物理
  - 材料技术
  - 物理
  - 物理化学

主要包括与上述学科有关的数值数据和函数关系、常用单位以及基本常数等等

- 涵盖的物质对象和类型，包括基本粒子、原子核和原子、有机化学分子、核酸、蛋白、液晶、金属和合金、岩石、玻璃、陶瓷、以及氧化物和卤化物等。

Landolt-Börnstein: 为用户提供的内容

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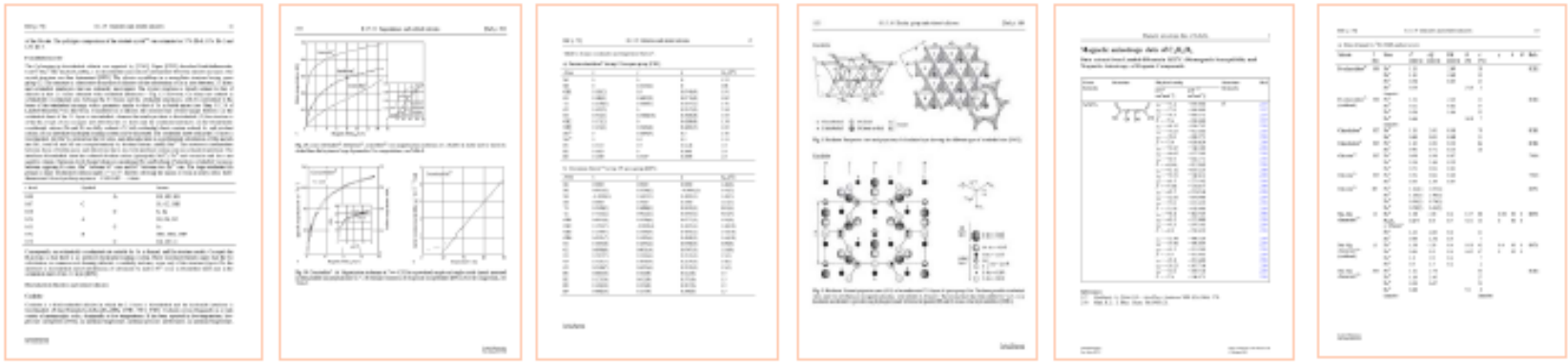
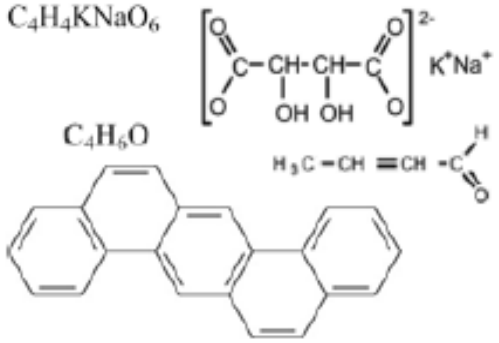
- > 195,000 页 | > 90,000 篇在线文献 | > 125,000 份各类图表



- > 150,000 种化学物质 | > 1,000,000 参考文献



- 根据需求增加最新内容，每年出版约19 卷印刷版

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- LB由8部分组成：
  - 基本粒子，原子 和等离子 29卷
  - 分子和自由基 63卷
  - 凝聚态 124卷
  - 物理化学 48卷
  - 地球物理 11卷
  - 大气物理 7卷
  - 生物物理 5卷
  - 高级技术和材料 5卷

从夸克到银河系
海量数据！

- 2001年，Springer 推出 Landolt-Börnstein 在线服务
- 2009年底，Springer 隆重推出 SpringerMaterials 数据库

SpringerMaterials

- Springer Materials – 全球上最大的物理和化学科学数据资源，收录最高质量信息
- 包括全部 Landolt Börnstein印本资料信息
- 内容横跨：粒子、核子、原子；分子与质子；热力学；多相系统；超导；电子传输；磁学；结晶学；高级材料与技术；航天-地球物理学等诸多热门学科
- 提供原始数据、图表、试验数据、还有相关论文与评论等文献，所有内容均经过专家的严格评估和筛选

“严格的评估与筛选”意味着什么？

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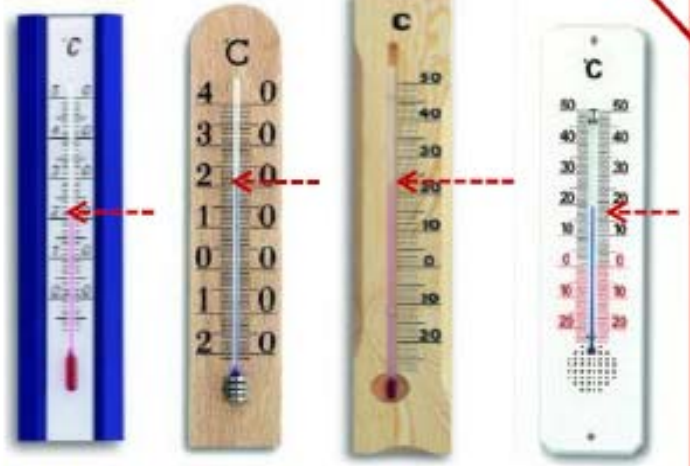

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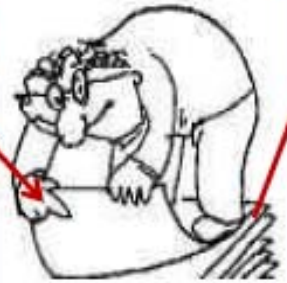

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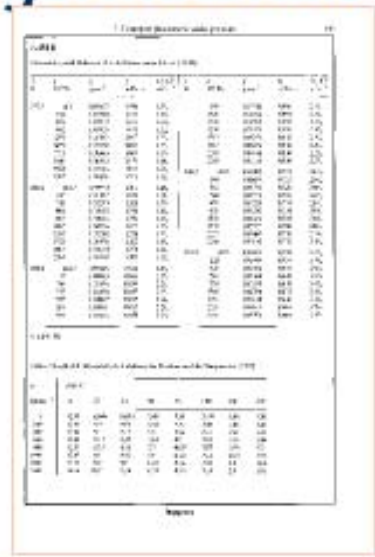

编辑和作者

- •选择最好的结果
- •描述最理想的试验方法
- •介绍最佳的实践操作
- •给予充分的物理和化学背景信息

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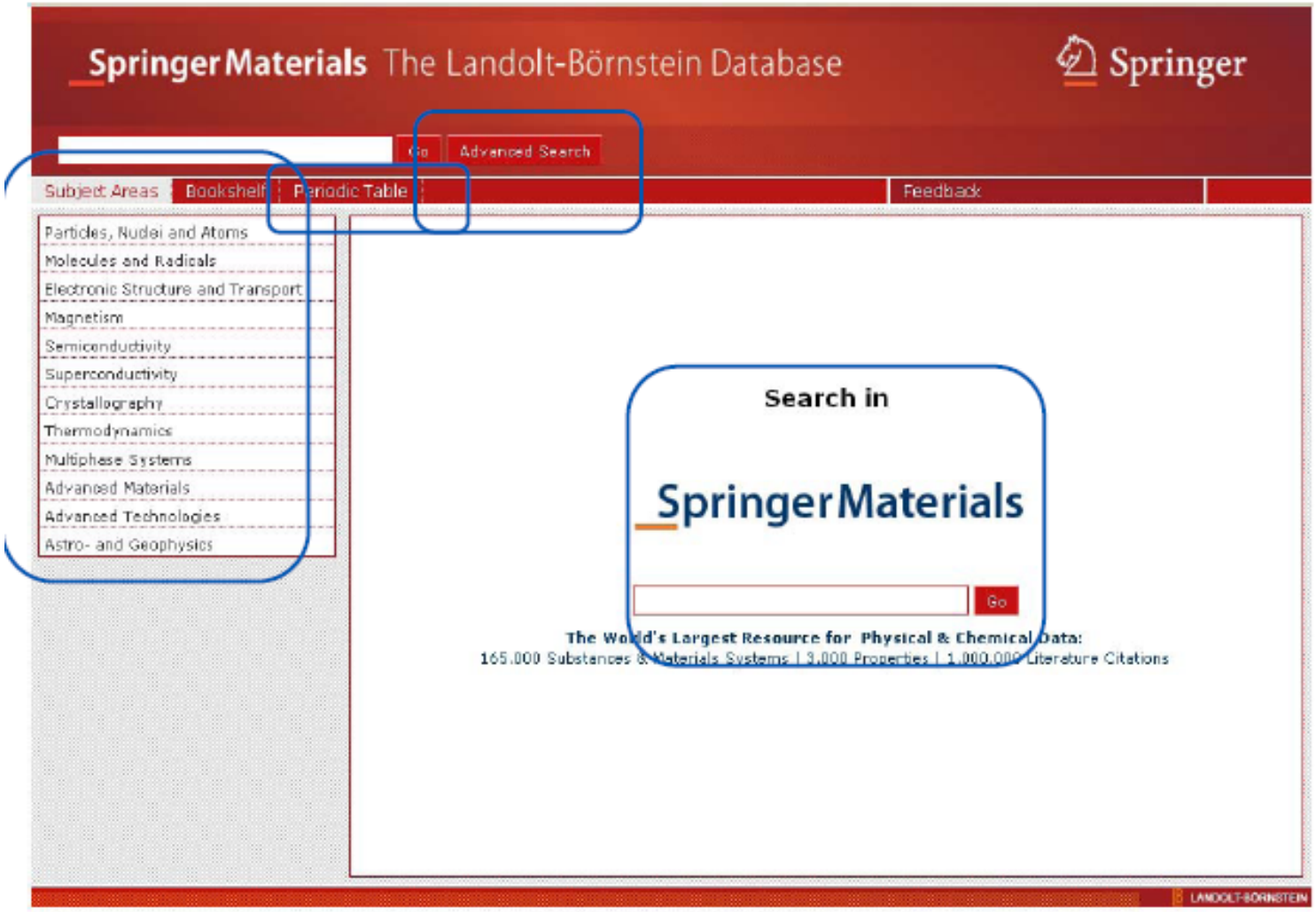

学科导航
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类似Google
的检索方式

化学元素周期表

高级检索

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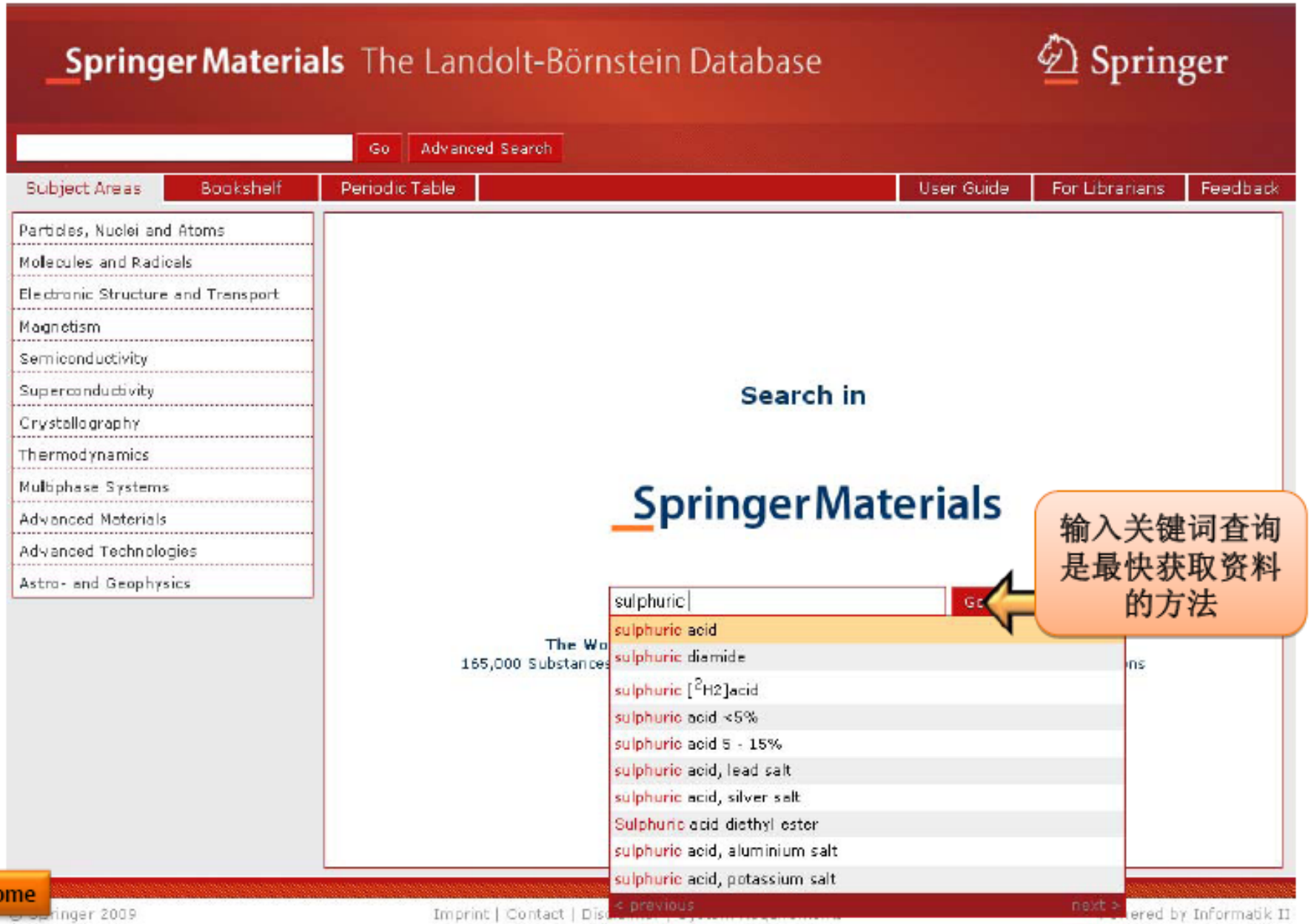

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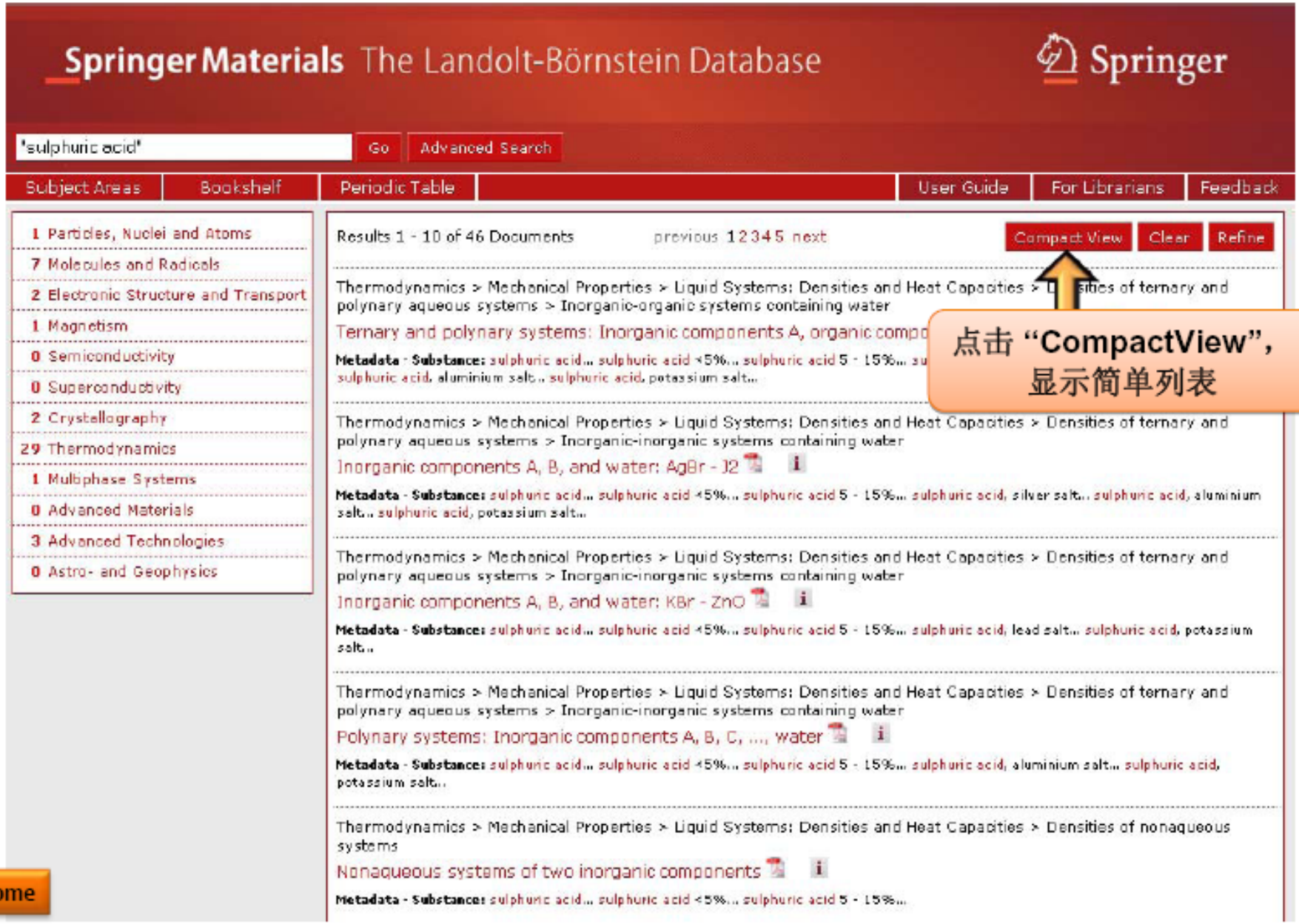

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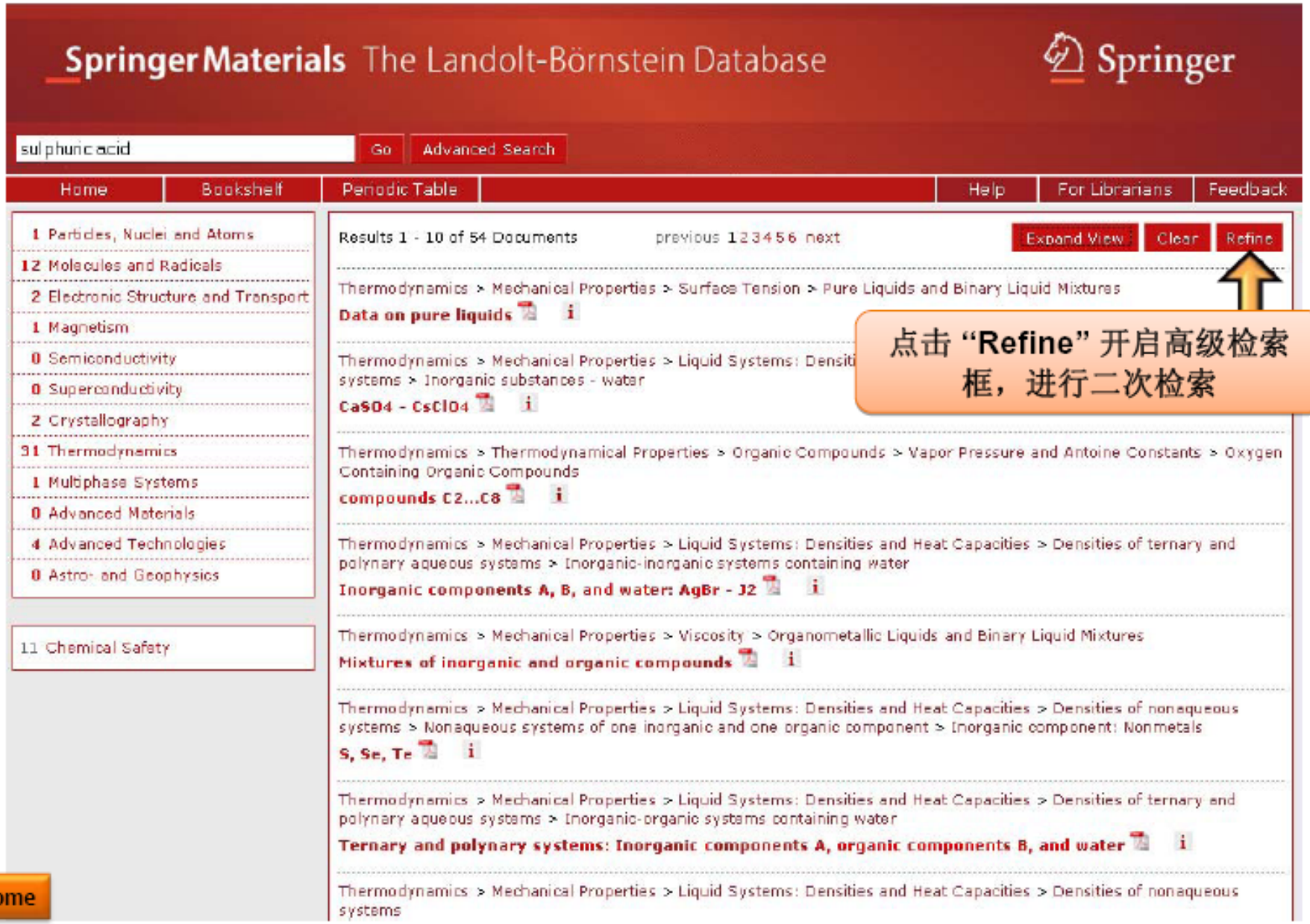

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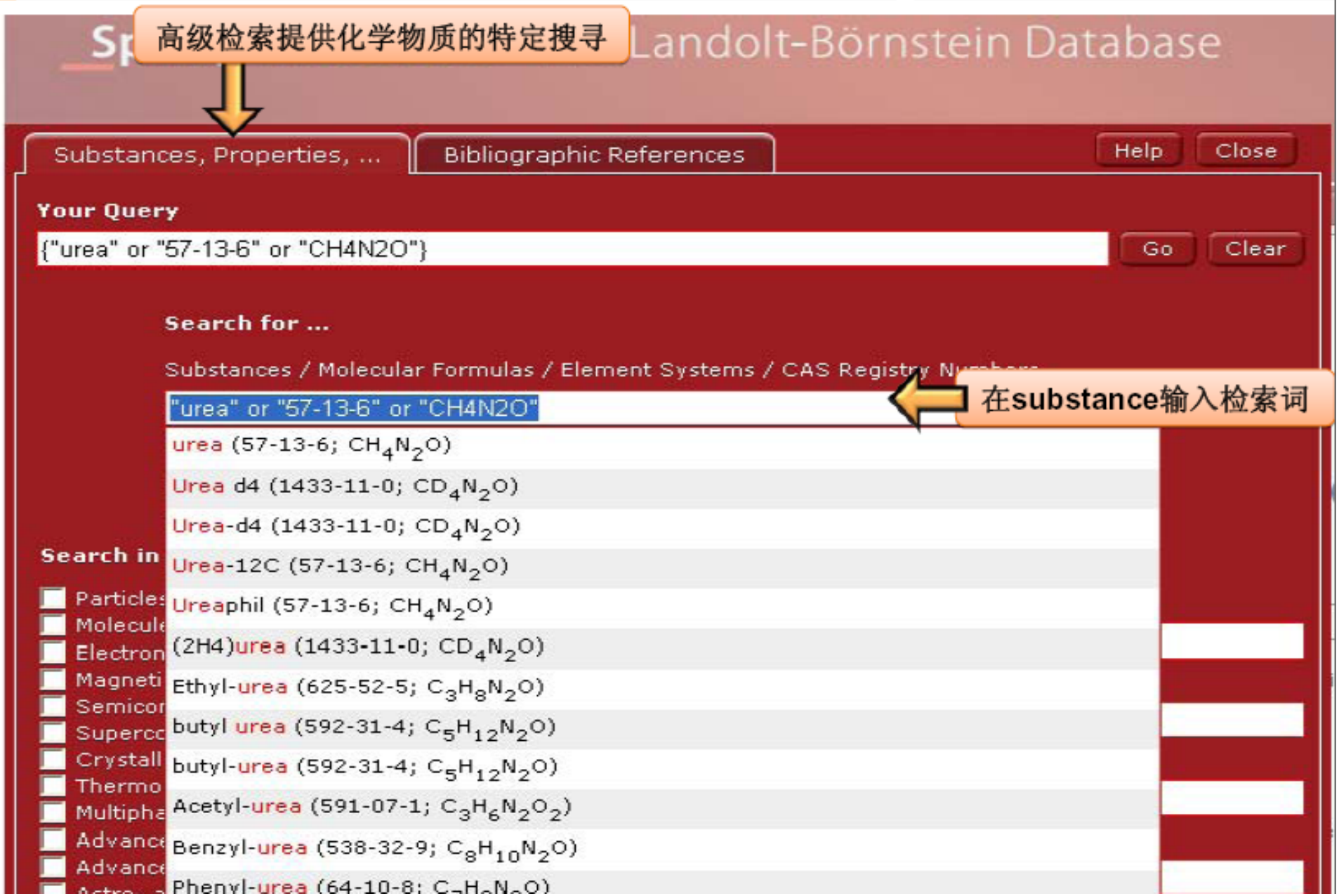

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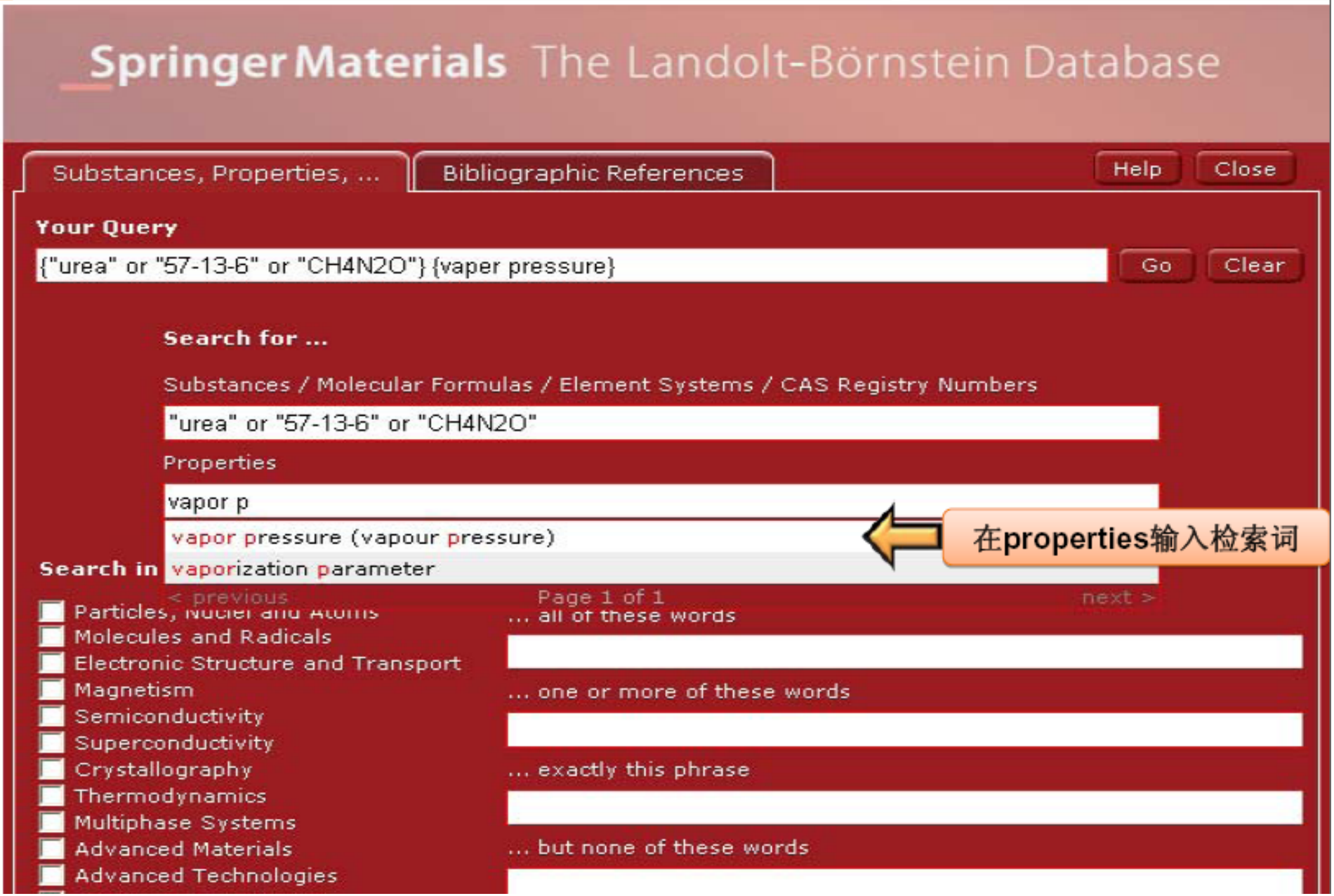

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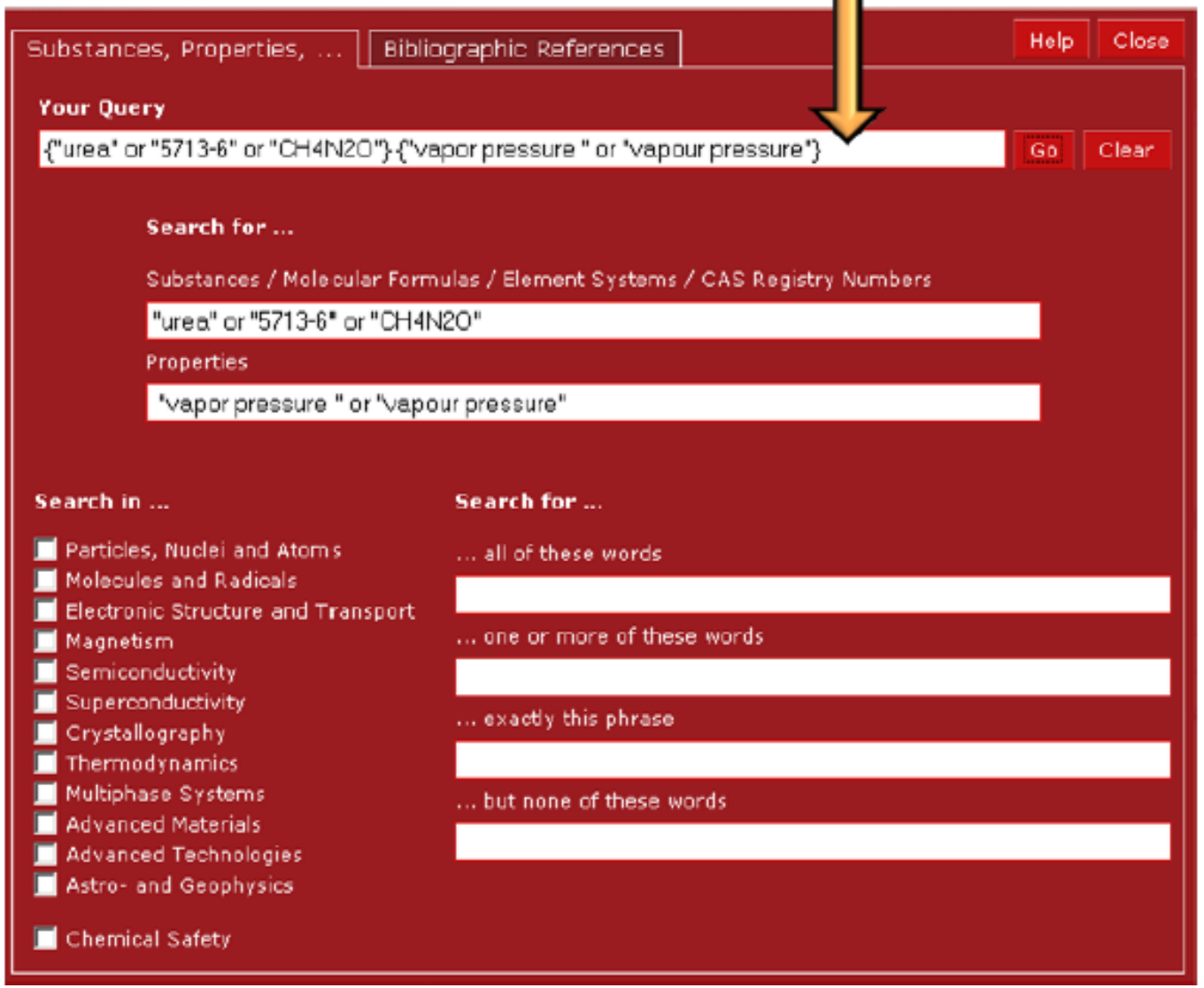

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rea" or "57-13-6" or "CH4N2O") {"vapor pr Go Advanced Search

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Compact View | Clear | Refine

Thermodynamics > Thermodynamical Properties > Organic Compounds > Vapor Pressure and Antoine Constants > Nitrogen Containing Organic Compounds

Compounds Br, C1···C30

Metadata - Substance: urea ... butyl urea ... **Metadata - Property:** vapor pressure ... **Metadata -** [illegible] **Molecular Formula:** CH4N2O ... **Metadata - Keyword:** Vapor Pressure of Chemicals ... Vapor Pr[illegible] Tabulated Data on Vapor Pressure of Nitrogen Containing ... CH4N2 4.57265 CH4N2 7.2356[illegible]

第一个显示是在以前检索范例中最符合的结果

Thermodynamics > Thermodynamical Properties > Organic Compounds > Vapor Pressu[illegible] Containing Organic Compounds

compounds C2···C8

Metadata - Substance: urea ... butyl urea ... **Metadata - Property:** vapor pressure ... **Metadata - CAS Registry Number:** 57-13-6 ... **Metadata - Molecular Formula:** CH4N2O ... **Fulltext:** Compounds 2 Tabulated Data on Vapor Pressure of Oxygen Containing Organic ... 6485-89-8 l-g 122 CH4N2O Urea 57-13-6 cr-g 123 CH4N4O2 ...

Thermodynamics > Thermodynamical Properties > Organic Compounds > Enthalpies of Fusion and Transition

Organic Compounds, C1···C3

Metadata - Substance: urea ... Urea, thio- ... urea, ethyl- ... **Metadata - CAS Registry Number:** 57-13-6 ... **Metadata - Molecular Formula:** CH4N2O ... **Fulltext:** 49-sta/gup 49-sta/gup Urea [57-13-6] CH4N2O MW = 60.06 cr cr Urea ... ± 0.13 ns ns ns ns ns ns ns vapor pressure isoperibol isoperibol DSC adiabatic vapor pressure DSC DSC adiabatic vapor pressure 50-sek/mom 67-tse 67-tse/god ...

Thermodynamics > Thermodynamical Properties > Organic Compounds > Vapor Pressure and Antoine Constants > Oxygen Containing Organic Compounds

Compounds C9···C57

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1	1 H	1 D	1 T															2 He
2	3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 A
4	19 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	37 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	55 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	87 Fr	88 Ra	**	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113	114	115	116	117	118

*	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

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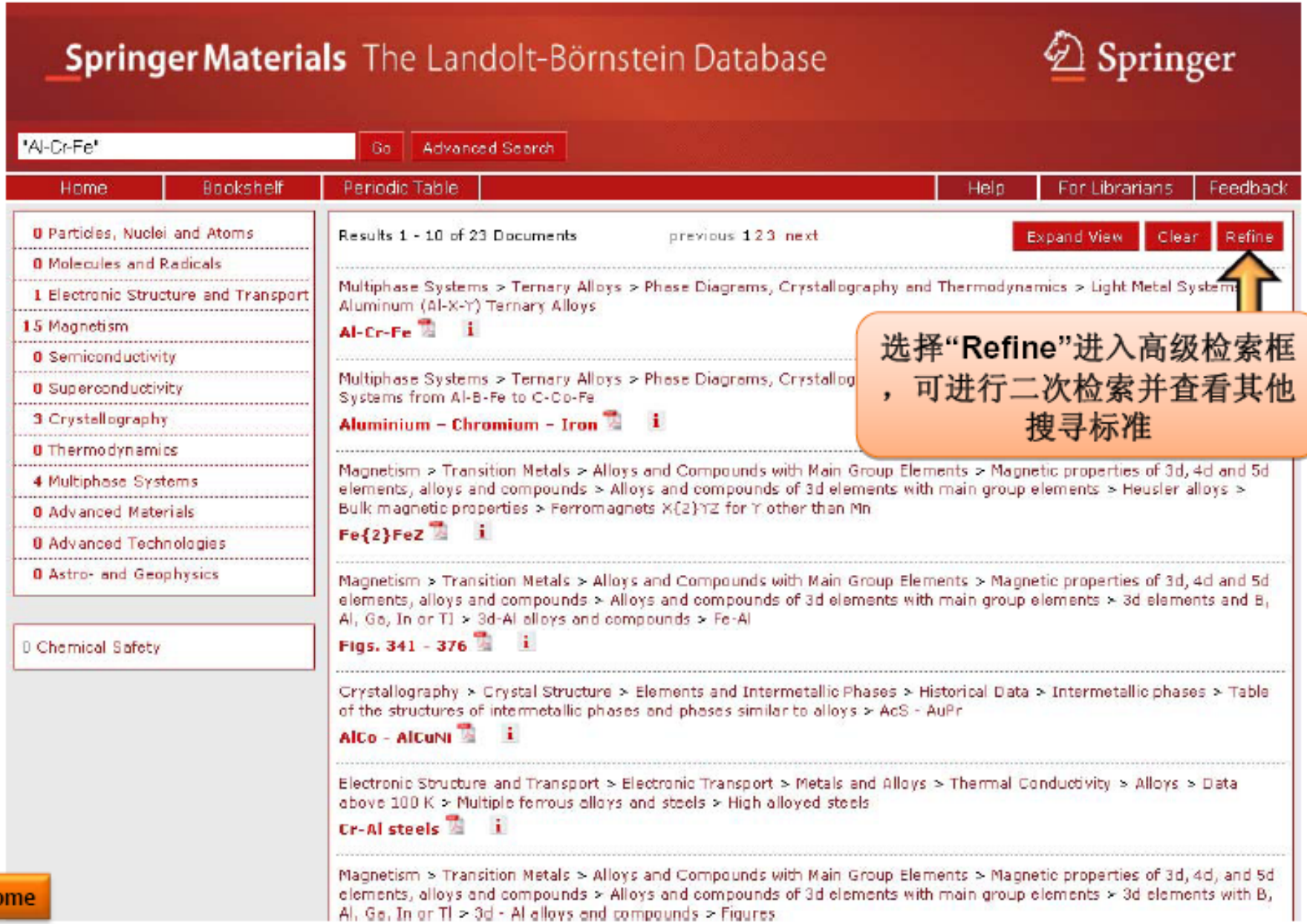

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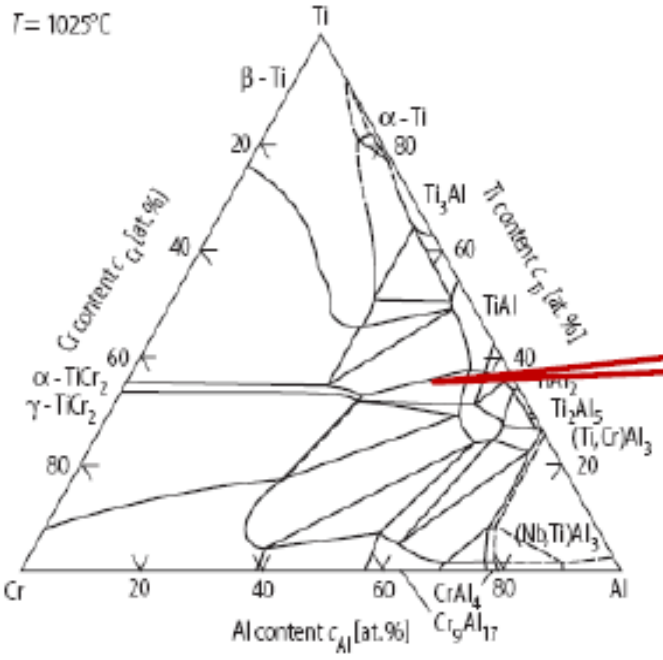

Fig. 14.4. Isothermal section of the Ti-Al-Cr phase diagram at 1025 °C [97P1] - see also [97X1, 98H3].

图像

正文

表格

14.4.2.2 Ti_3Al-base alloys

14.4.2.2.1 Compositions and applications

Various Ti_3Al-base alloys have been developed which contain niobium as major alloying element and further elements for obtaining an optimised balance of strength, deformability, toughness and oxidation resistance. The alloys are two-phase or three-phase and contain additional phases besides the phase Ti_3Al, which is known as the α_2 phase. The usual additional phases are the β phase, which is Ti-rich and which has the b.c.c. structure or is ordered with B2 structure, the orthorhombi Nb, and/or the ω-type phase Ti_4Al_3Nb with $B8_2$ structure [92B1, 95B]. In ac ave been used as matrices for intermetallic matrix composites, which rely pri the SiC fibre SCS-6 [92L]. Current Ti_3Al-base alloys with engineering significan isted in Table 6.

Table 6. Important Ti_3Al-base alloys [92B1, 95B].

Type	Alloy [at.%]	Designation	Phases
α_2	Ti-24Al-11Nb	24-11	$\alpha_2 + \beta$
α_2	Ti-25Al-11Nb	25-11	$\alpha_2 + \beta$

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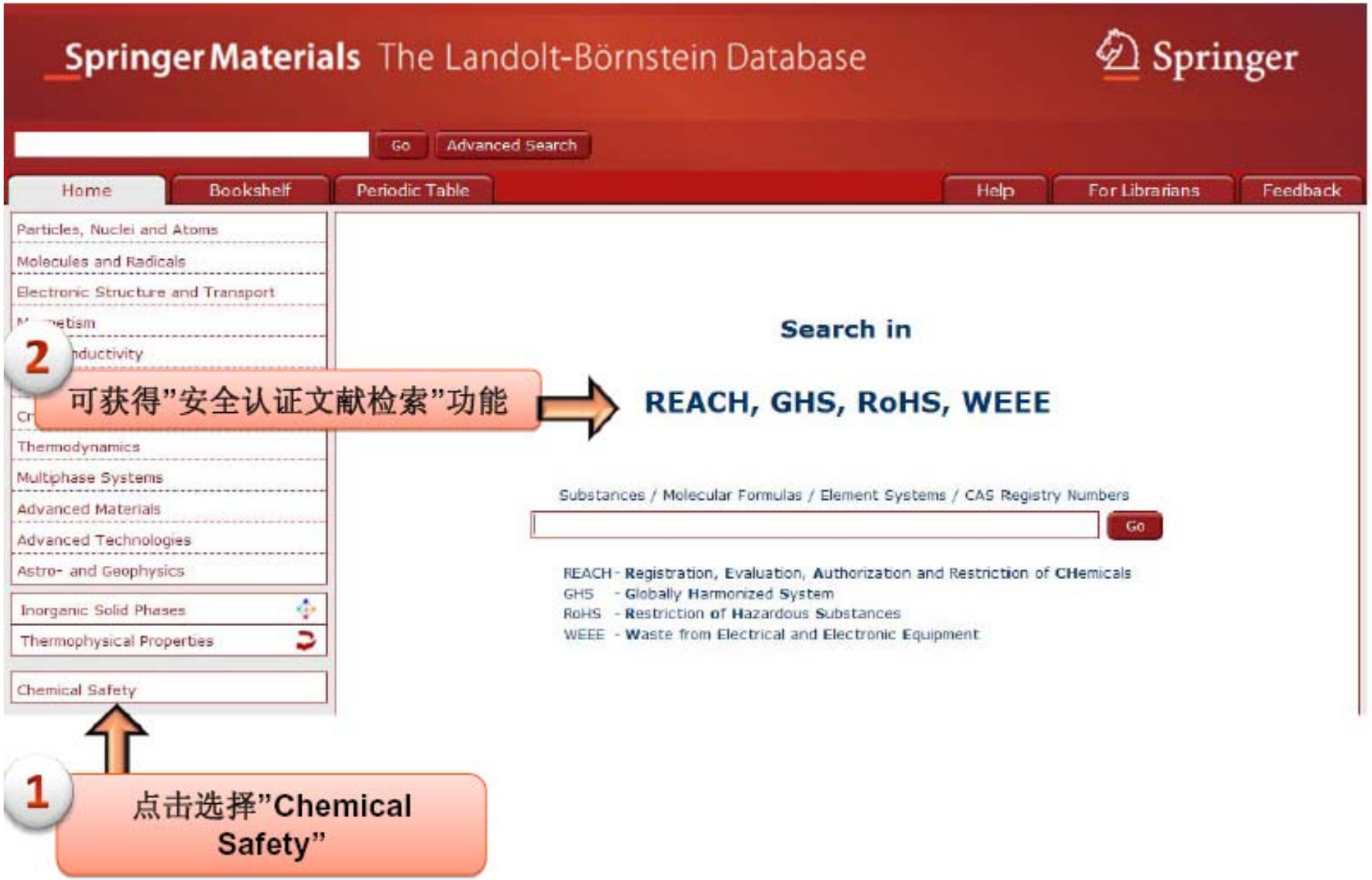

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REACH: "Registration，Evaluation， Authorization and Restriction of Chemicals，化学品注册、评估、许可和限制"，是欧盟对进入其市场的所有化学品进行预防性管理的法规。将于2007年6月1日正式实施。

GHS: "化学品分类及标记全球协调制度"（Globally Harmonized System of Classification and Labelling of Chemicals 简称GHS），中文译为化学品分类及标记全球协调制度。它是由联合国出版的作为指导各国控制化学品危害和保护人类与环境的规范性文件。

RoHS：是由欧盟立法制定的一项强制性标准，它的全称是《关于限制在电子电器设备中使用某些有害成分的指令》(Restriction of Hazardous Substances)。该标准已于2006年7月1日开始正式实施。

WEEE指令：WEEE是《电子电气产品的废弃指令》（Waste Electrical and Electronic Equipment）的英文缩写。该指令也由欧洲议会及理事会提出，欧盟成员国于2005年8月13日起已经开始强制实施。其主要目的是预防废弃物的产生，其次是为方便废弃物进行再回收、再使用、再制造，减少资源浪费。

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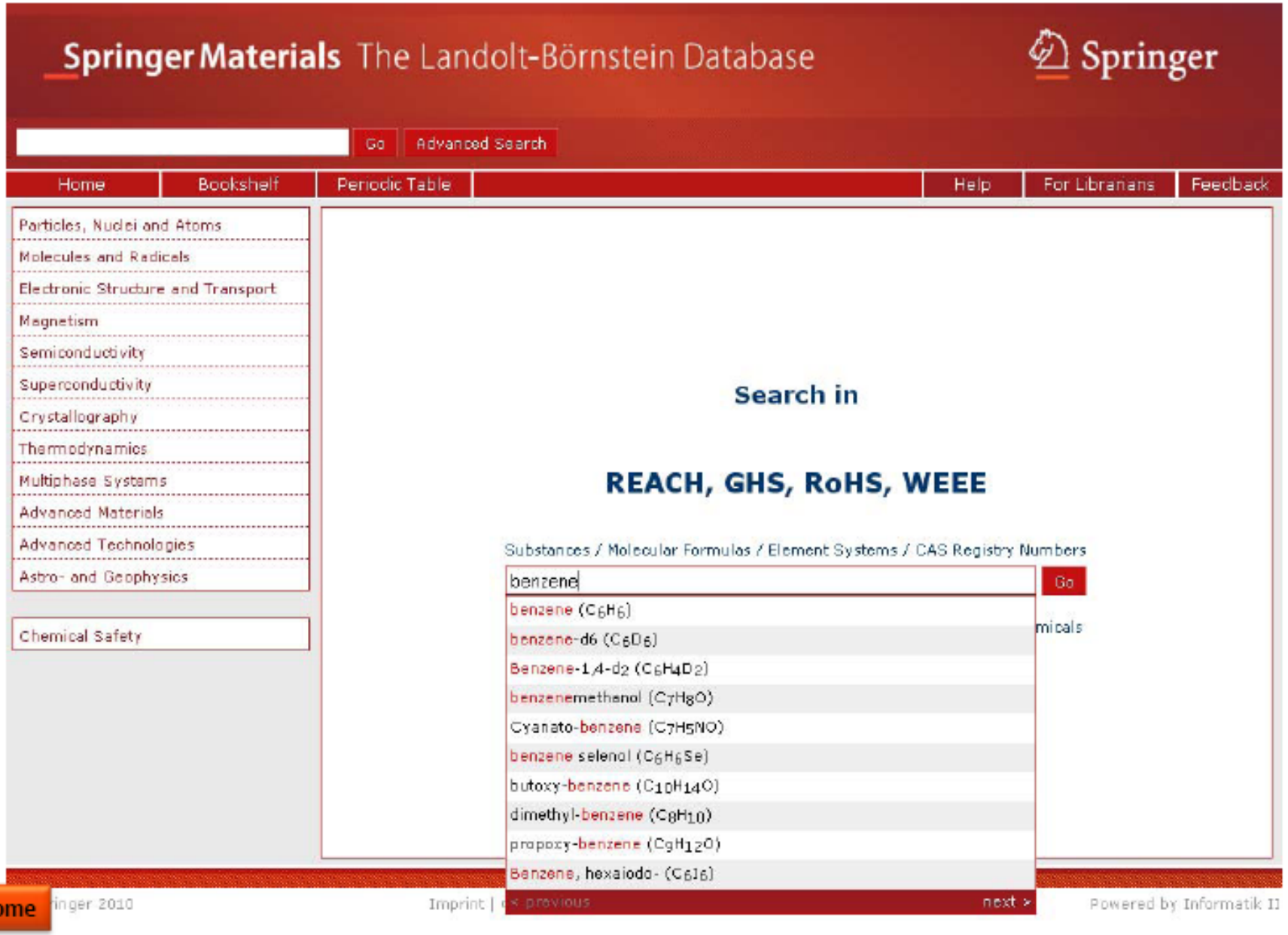

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European regulations regarding benzene (C_6H_6)

Name	benzene	**Formula:**	C_6H_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	  T Toxic F Highly flammable	2004/73/EC
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	53-45 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)
Regulation on Classification, Labelling and Packaging of Substances and Mixtures (CLP)

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	

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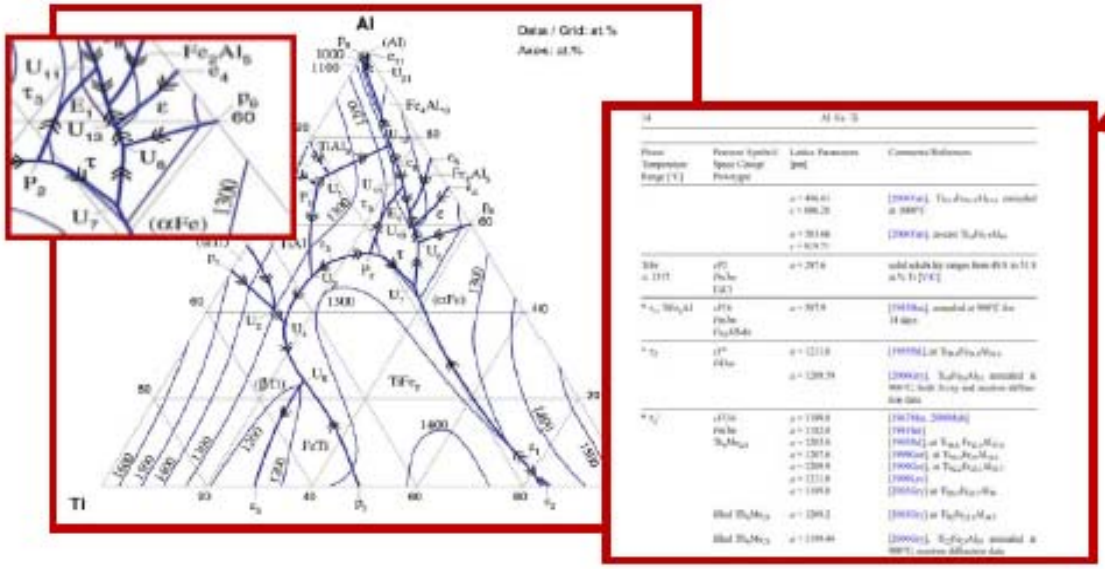
- 为研究项目找出哪种材料能够提供最可靠的匹配参数
- 在实际测量完毕以后与已知的材料参数进行对比、评估与证实试验所获得的数据



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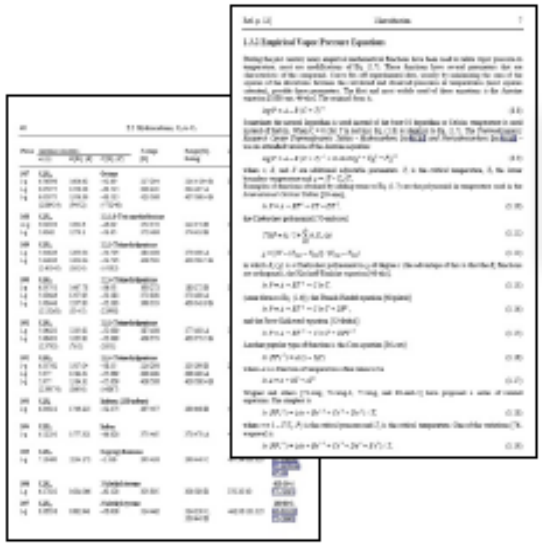

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