Numerical Data Sheet for Superconducting Materials, MDR SuperCon Datasheet User's Guide Ver 2.0*

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DATASHEET OVERVIEW

USAGE RULES

SuperCon, which had been published using a Graphical User Interface (GUI), has been replaced by a datasheet publication due to the aging database application. The platform for publication is now MDR (Materials Data Repository, https://mdr.nims.go.jp/), newly renamed "MDR SuperCon Datasheet". A DOI will be assigned for each update of the data and for version management. Use of the data will be in accordance with MDR's Terms of Use, and when publishing your results, please use the following sample text to clearly state the DOI of the data you have used, and please include the appropriate provenance:

(Example of statement) This study used the MDR SuperCon Datasheet (DOI*), a numerical data sheet for superconducting materials, which is made public by the National Institute for Materials Science (NIMS).

*Please provide the DOI for the version you actually used.

NIMS does not guarantee the quality of the data contained in this datasheet and is not responsible for any problems that may result with the use of this datasheet.

BASIC DATA STRUCTURES

The MDR SuperCon Datasheet consists of the following files:

Readme (common)

- Metadata supercon-rm-mdr-schema.yml and supercon-rm-mdr-schema.json
- Read me SuperCon_ReadMe.pdf and SuperCon_ReadMe_en.pdf, ReadmeTbl.xlsx
- Preview data primary.tsv
- Thumbnail XXXXX.png

Each version

- Metadata YYMMDD_MDR_supercon-mdr-schema.yml and YYMMDD_MDR_supercon-mdr-schema.json
- Data Tables YYMMDD_MDR_OAndM.txt and YYMMDD_MDR_Organic.txt
- Figure/data Figure.zip and data.zip

* This guide was created accordingly at release of MDR SuperCon Datasheet Ver.240322

Readme (common)

Metadata is a machine-readable file that summarizes the basic information of this datasheet and is available in YAML and JSON formats. There is no difference in content between the two formats.

Read me is this document, its English version, and an Excel file of the tables used in these documents.

Preview data is a Simple Dataset for Machine Learning of SueprCon. This dataset is a summary of the Tc-related data in this datasheet. The actual file name is primary.tsv.

The thumbnail is an example of a systematic dataset derived from this datasheet.

Each version

Metadata is a machine-readable file that summarizes the basic information of each version and is available in YAML and JSON formats. There is no difference in content between the two formats.

The data tables are divided into two parts: “Oxide & Metallic (YYMMDD_MDR_OAndM.txt)” and “Organic (YYMMDD_MDR_Organic.txt)”. Whenever the data is updated, the version information (DOI) is revised. Although it is possible to select an older version, we recommend that you use the latest version. The first three rows of each column show, from the top, the data number, label, and symbol. In the conventional SuperCon, only the symbols shown in the third row could be seen in the GUI. In order to improve human readability, we have introduced labels. In this guide, each column will be denoted by "data-number-label-symbol".

Figure/data are the figures and their text data conventionally published at SuperCon.

Below is a guide to the data tables and Figure/data in particular.

DATA TABLE: DATA SCREENING

Although the entries in the table do not differ from those in the conventional SuperCon database, the GUI search function is no longer available, so users of the table will need to screen the data in order to find the target data. For quick GUI searches, please use

https://materiage.org/supercon/

This section provides information on operations corresponding to the SuperCon top search screen that you have been using in the past.

OXIDE&METALLIC

The Oxide & Metallic Search System was as shown in Figure 1.

(1) Select Input Search Element

For searches corresponding to this function, the equivalent operation can be achieved by extracting lines containing the symbol of the target element from 6-chemical formula-

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element. For single elements, it is convenient to use 7-element name of materials-ma1 to extract lines with the target element symbol.

(2) Select Structure

① Quick Search Oxide

This function was conventionally used to screen specifically for 31 representative oxide structures, but in this datatable, structures other than 31 can also be extracted by using the line with the desired structure in 67-common name of structure-str3. For screening of oxides, it is useful to exclude blank rows in 27-oxygen-mo1.

② Quick Search Metallic

This function was conventionally used to screen specifically for 16 representative metal structures, however, in this datatable, it is possible to extract structures other than the 16 by extracting the rows with the desired structure in 67-common name of structure-str3.

③ Select from all

This function is equivalent to extracting the line with the desired structure from all 67-common-name-of-structure-str3 entries.

(3) Select Property

① Property

This function was conventionally performed by selecting from 17 preset properties, however, it is now possible to screen all recorded properties and measurement methods (about 110 in total) in the data list to be described later, by excluding blank lines.

② Year

The function can be accomplished by using 31-publication-year-of-reference-year or 194-publication-year-of-reference-year in the datatable.

③ Detail

This function used to perform faceted searches in 92 items. As described in ① Property, all data, including measurement methods, etc., are now available.

As described here, the 67-common name of structure-str3 plays an important role in overviewing the data. In this item, the 4-digit system like Bi2212 is adopted in general, and popular names such as ladder (LD), infinite layer (IL), etc. are also included. For other than oxides, structure type (Pearson handbook) is adopted in principle, and fullrene, chevrel, skutterudite, etc., which are frequently used, are also employed. Materials that are difficult to classify are left blank.

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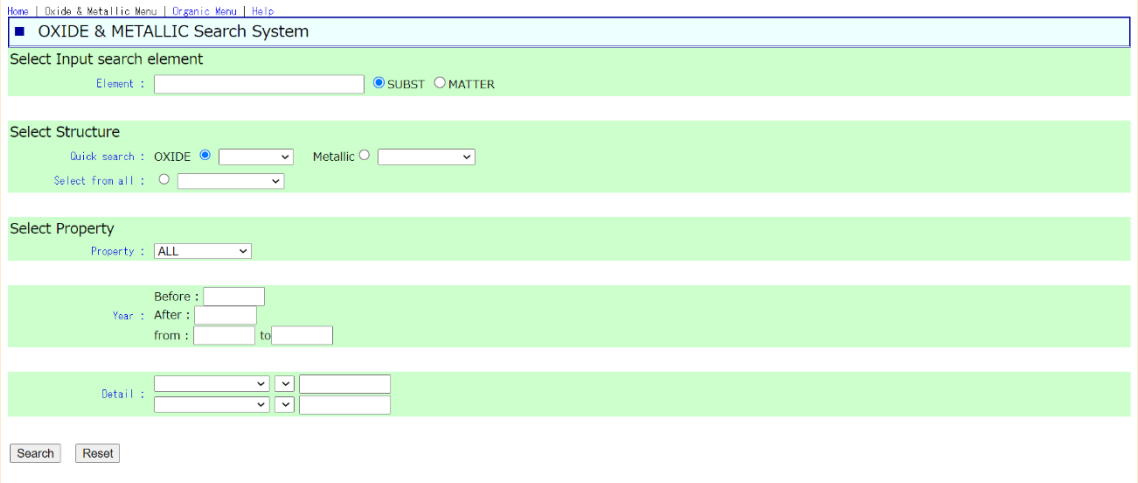

Figure. 1 Oxide & Metallic Search System image in conventional SuperCon (for reference)

ORGANIC

The Organic Search System was as shown in Figure 2.

(1) Structure

The search corresponding to this function can equivalently be performed by extracting the rows containing the target structure in 6-structure-str. Since the conventional 37 selections covered all the recorded structures, it is equivalent to using 6-structure-str for screening this table.

(2) Property

Although only the three types of Tc, Hc, and SP were conventionally subject to screening, this function is available by excluding blank lines for all recorded properties and measurement methods (about 30 types in total) in the data list described later.

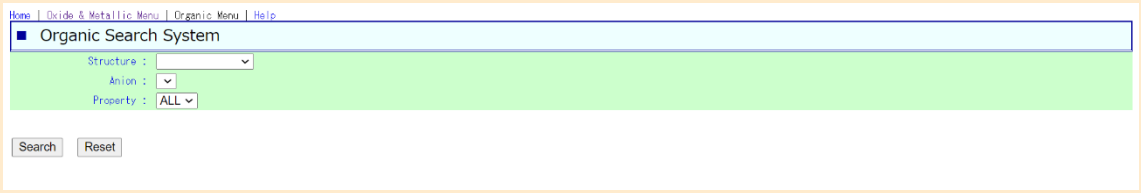

Figure 2 Organic Search System image in conventional SuperCon (for reference)

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Details of data entries (Duplicate items and empty data items have been deleted.)

Oxide & Metallic

Number	DB	Label	Description	Category	Data type
1	num	data number	data number	Material	Integer
2	refno	reference number	reference number	Material	String
3	commt	comment	Comment	Material	String
4	name	common formula of materials	common formula of materials	Material	String
6	element	chemical formula	chemical formula	Material	String
7	ma1	element name of materials	element name of materials	Material	String
8	ma2	composition of MA1	composition of material 1	Material	Float
9	mb1	element name of materials	element name of materials	Material	String
10	mb2	composition of MA2	composition of material 2	Material	Float
11	mc1	element name of materials	element name of materials	Material	String
12	mc2	composition of MA3	composition of material 3	Material	Float
13	md1	element name of materials	element name of materials	Material	String
14	md2	composition of MA4	composition of material 4	Material	Float
15	me1	element name of materials	element name of materials	Material	String
16	me2	composition of MA5	composition of material 5	Material	Float
17	mf1	element name of materials	element name of materials	Material	String
18	mf2	composition of MA6	composition of material 6	Material	Float
19	mg1	element name of materials	element name of materials	Material	String
20	mg2	composition of MA7	composition of material 7	Material	Float
21	mh1	element name of materials	element name of materials	Material	String
22	mh2	composition of MA8	composition of material 8	Material	Float
23	mi1	element name of materials	element name of materials	Material	String
24	mi2	composition of MA9	composition of material 9	Material	Float
25	mj1	element name of materials	element name of materials	Material	String
26	mj2	composition of MA10	composition of material 10	Material	Float
27	mo1	oxygen	oxygen	Material	String
28	mo2	common formula of oxygen	common formula of oxygen	Material	String
29	oz	measured value of Oxygen content	measured value of Oxygen content	Material	Float
30	shape	shape	*sample form (1: single phase(bulk),2: multi phase (bulk),3: single crystal(bulk) ,4:film,5:film(single))	Material	Integer
31	year	publication year of reference	year of reference	Material	Integer
33	ukai	unit of KAIZERO	unit of KAIZERO	Magnetic property	String
34	kaizero	temperature independent term in susceptibility	temperature independent term in susceptibility	Magnetic property	Double
35	ucc	unit of CURIEC	unit of CURIEC	Magnetic property	String
36	curiec	Curie constant	Curie constant	Magnetic property	Double
37	umoment	unit of MOMENT	unit of MOMENT	Magnetic property	String
38	moment	magnetic moment per formula	magnetic moment per formula	Magnetic property	Float
39	curiet	Curie temperature	Curie temperature	Magnetic property	Float
40	neelt	Neel temperature	Neel temperature	Magnetic property	Float
41	dens	density (gcm-3)	Density	Mechanical property	Float
42	uhv	unit of hardness	unit of hardness	Mechanical property	String
45	hv300	hardness at 300 K	hardness at 300K	Mechanical property	Float
46	uye	unit of Young's modulus	unit of Young's modulus	Mechanical property	String
47	yehe	Young's modulus at 4.2 K	Young's modulus at 4.2K	Mechanical property	Double
49	ye300	Young's modulus at 300 K	Young's modulus at 300K	Mechanical property	Double
50	ug	unit of shear modulus	unit of shear modulus	Mechanical property	String
51	ghe	shear modulus at 4.2 K	shear modulus at 4.2K	Mechanical property	Float
53	g300	shear modulus at 300 K	shear modulus at 300K	Mechanical property	Float
54	ub	unit of bulk modulus	unit of bulk modulus	Mechanical property	String
55	bhe	unit of bulk modulus at 4.2 K	unit of bulk modulus at 4.2K	Mechanical property	Float
57	b300	unit of bulk modulus at 300 K	unit of bulk modulus at 300K	Mechanical property	Float
58	pohe	Poisson ratio at 4.2 K	Poisson ratio at 4.2K	Mechanical property	Float
60	po300	Poisson ratio at 300 K	Poisson ratio at 300K	Mechanical property	Float
61	usv	unit of sound velocity	unit of sound velocity	Mechanical property	String
62	svhe	sound velocity at 4.2 K	sound velocity at 4.2K	Mechanical property	Double
64	sv300	sound velocity at 300 K	sound velocity at 300K	Mechanical property	Double
65	svfig	figure number for SV(T)	figure number for SV(T)	Mechanical property	String
66	str1	*crystal structure, symmetry	*crystal structure, symmetry (1=cubic,2=tetragonal,3=orthorhombic,4=monoclinic,5=triclinic,6=trigonal,7=hexagonal)	Structure	Integer
67	str3	common name of structure	*common name of structure	Structure	String
68	spaceg	space group	space group	Structure	String
69	tblno	international table number	international table number	Structure	Integer
70	ulat	unit of lattice constant	unit of lattice constant	Structure	String

71	lata	lattice constant a	lattice constant a	Structure	Float
72	latb	lattice constant b	lattice constant b	Structure	Float
73	latc	lattice constant c	lattice constant c	Structure	Float
74	analm	*method of analysis for structure	*method of analysis for structure (1.X-ray crystallography 2.Neutron crystallography 3.Powder x-ray diffraction 4.Powder neutron diffraction 5.Electron diffraction)	Structure	String
75	model	figure number of structure model	figure number of structure model	Structure	String
76	udldt	unit of D(L)DT	unit of DLDT	Structure	String
77	dadt	temperature dependence of LATA	temperature dependence of LATA	Structure	Float
78	dbdt	temperature dependence of LATB	temperature dependence of LATB	Structure	Float
79	dcdt	temperature dependence of LATC	temperature dependence of LATC	Structure	Float
80	udldp	unit of D(L)DP	unit of DLDP	Structure	String
81	dadp	pressure dependence of LATA	pressure dependence of LATA	Structure	Float
82	dbdp	pressure dependence of LATB	pressure dependence of LATB	Structure	Float
83	dcdp	pressure dependence of LATC	pressure dependence of LATC	Structure	Float
84	strcmt	comments for structure	comment for structure	Structure	String
85	utc	unit of Tc	unit of Tc	Superconductivity	String
86	t1	transition temperature (R = 0)	transition temperature (R=0)	Superconductivity	Float
87	t2	transition temperature (mid point)	transition temperature (mid point)	Superconductivity	Float
88	t3	transition temperature (R = 100%)	transition temperature (R=100%)	Superconductivity	Float
89	tcsus	Tc from susceptibility measurement	Tc from susceptibility measurement	Superconductivity	Float
90	tcn	lowest temperature for measurement (not superconducting)	lowest temperature for measurement (not superconducting)	Superconductivity	Float
91	tcwidth	transition width for resistive transition	transition width for resistive transition	Superconductivity	Float
92	tc	Tc (of this sample) recommended	Tc (of this sample) recommended	Superconductivity	Float
93	tcfig	figure number for Tc(p, x, etc)	figure number for Tc(p, x, etc)	Superconductivity	String
94	tcmeth	tc measurement method	(1.magnetization, 2.ac susceptibility, 3.resistivity, 4.heat capacity, 5.tunneling, 6.infrared spectroscopy, 7.thermal conductivity, 8.Raman spectroscopy , 9.nuclear magnetic resonance, 10.surface impedance, 11.neutron diffraction, 12.photoemission spectroscopy, 13.microwave transmission, 14.Others)	Superconductivity	Integer
95	udtcdp	unit of DTCDP	unit of DTCDP	Superconductivity	String
96	dtcdp	slope at P = 0 in Tc vs P plot	slope at P=0 in Tc vs P plot	Superconductivity	Float
97	pmax	maximum pressure applied	maximum pressure applied	Superconductivity	Float
98	isotope	alpha in Tc = A * M^(-alpha), isotope effect	alpha in Tc=A*M^(-alpha), isotope effect	Superconductivity	Float
99	isoel	isotope element	isotope element	Superconductivity	String
100	isorat	exchange ratio of isotope(%)	exchange ratio of isotope(%)	Superconductivity	String
101	dtc	DTC = Tc - Tc0 for isotope element	DTC=Tc-Tc0 for isotope element	Superconductivity	Float
102	vols	volume fraction of Meissner effect(%)	volume fraction of Meissner effect, unit=%	Superconductivity	Float
103	uhc1	unit of Hc1	unit of Hc1	Superconductivity	String
104	mhc1	method of Hc1 derivation	method of Hc1 derivation (1.magnetization, 2.ac susceptibility, 3.resistivity, 4.heat capacity, 5.tunneling, 6.infrared spectroscopy, 7.thermal conductivity, 8.Raman spectroscopy , 9.nuclear magnetic resonance, 10.surface impedance, 11.neutron diffraction, 12.photoemission spectroscopy, 13.microwave transmission, 14.Others)	Superconductivity	Integer
105	hc1zero	Hc1 at 0 K for poly crystal	Hc1 at 0 K for poly crystal	Superconductivity	Float
106	phc1zero	Hc1 at 0 K for single crystal for H //ab-plane	Hc1 at 0 K for single crystal for H //ab plane	Superconductivity	Float
107	nhc1zero	Hc1 at 0 K for single crystal for H //c-axis	Hc1 at 0 K for single crystal for H //c-axis	Superconductivity	Float
108	hc1t	Hc1 at given temperature for poly crystal	Hc1 at given temperature for poly crystal	Superconductivity	Float
109	phc1t	Hc1 at given temperature for single crystal H//ab-plane	Hc1 at given temperature for single crystal H//ab-plane	Superconductivity	Float
110	nhc1t	Hc1 at given temperature for single crystal H//c-axis	Hc1 at given temperature for single crystal H//c-axis	Superconductivity	Float
111	tempc1	measuring temperature	measuring temperature	Superconductivity	Float
112	uhc2	unit of Hc2	unit of Hc2	Superconductivity	String
113	mhc2	method of Hc2 derivation	method of Hc2 derivation	Superconductivity	String
114	hc2zero	Hc2 at 0 K for poly crystal	Hc2 at 0 K for poly crystal	Superconductivity	Float
115	phc2zero	Hc2 at 0 K for single crystal for H //ab-plane	Hc2 at 0 K for single crystal for H //ab plane	Superconductivity	Float
116	nhc2zero	Hc2 at 0 K for single crystal for H //c-axis	Hc2 at 0 K for single crystal for H //c-axis	Superconductivity	Float
117	hc2t	Hc2 at given temperature for poly crystal	Hc2 at given temperature for poly crystal	Superconductivity	Float
118	phc2t	Hc2 at given temperature for single crystal H//ab-plane	Hc2 at given temperature for single crystal H//ab-plane	Superconductivity	Float
119	nhc2t	Hc2 at given temperature for single crystal H//c-axis	Hc2 at given temperature for single crystal H//c-axis	Superconductivity	Float
120	tempc2	measuring temperature	measuring temperature	Superconductivity	Float

121	udhc2dt	unit of dHc2/dT	unit of dHc2/dT	Superconductivity	String
122	mdhc2dt	method of dHc2/dT derivation	method of dHc2/dT derivation (1.magnetization, 2.ac susceptibility, 3.resistivity, 4.heat capacity, 5.tunneling, 6.infrared spectroscopy, 7.thermal conductivity, 8.Raman spectroscopy , 9.nuclear magnetic resonance, 10.surface impedance, 11.neutron diffraction, 12.photoemission spectroscopy, 13.microwave transmission, 14.Others)	Superconductivity	Integer
123	dhc2dt	-slope in Hc2 vs T at Tc for poly crystal		#N/A	#N/A
124	pdhc2dt	-slope in Hc2 vs T at Tc for single crystal for H //ab-plane	-slope in Hc2 vs T at Tc for single crystal for H //ab plane	Superconductivity	Float
125	ndhc2dt	-slope in Hc2 vs T at Tc for single crystal for H //c-axis	-slope in Hc2 vs T at Tc for single crystal for H //c-axis	Superconductivity	Float
126	hirfig	figure number for Hirr(T), irreversibility field	figure number for Hirr(T), irreversibility field	Superconductivity	String
127	mhirr	difinition or method for Hirr	difinition or method for Hirr	Superconductivity	String
128	ucohere	unit of COHERE	unit of COHERE	Superconductivity	String
129	mcohere	method of COHERE derivation	method of COHERE derivation	Superconductivity	String
130	cohere	coherence length at 0 K for poly crystal	coherence length at 0 K for poly crystal	Superconductivity	Float
131	pcohere	coherence length at 0 K for single crystal for H //ab-plane	coherence length at 0 K for single crystal for H //ab plane	Superconductivity	Float
132	ncohere	coherence length at 0 K for single crystal for H ⊥ab-plane	coherence length at 0 K for single crystal for H ⊥ab plane	Superconductivity	Float
133	upenet	unit of PENET	unit of PENET	Superconductivity	String
134	mpenet	method of PENET derivation	method of PENET derivation	Superconductivity	String
135	penet	penetration depth at 0 K for poly crystal	penetration depth at 0 K for poly crystal	Superconductivity	Float
136	ppenet	penetration depth at 0 K for single crystal for H //ab-plane	penetration depth at 0 K for single crystal for H //ab plane	Superconductivity	Float
137	npenet	penetration depth at 0 K for single crystal for H ⊥ab-plane	penetration depth at 0 K for single crystal for H⊥ab plane	Superconductivity	Float
138	ugap	unit of energy gap	unit of energy gap	Superconductivity	String
139	gap	energy gap at 0 K , delta(0)	energy gap at 0 K , delta(0)	Superconductivity	Float
140	gapene	normarized energy gap at 0 K , 2delta(0)/kTc	normarized energy gap at 0 K , 2delta(0)/kTc	Superconductivity	Float
141	gapmeth	method of measuring energy gap	method of measuring energy gap (1.tunneling, 2.infrared spectroscopy, 3.thermal conductivity, 4.Raman spectroscopy , 5.AC susceptibility, 6.nuclear magnetic resonance, 7.surface impedance, 8.neutron diffraction, 9.ultraviolet photoemission spectroscopy, 10.microwave transmission)	Superconductivity	Integer
142	jche	Jc at 4.2 K, H = 0 T	Jc at 4.2K, H=0 T	Superconductivity	Double
143	jc77	Jc at T = 77 K, H = 0 T	Jc at T=77K,H=0T	Superconductivity	Double
144	figjc	figure number for Jc(T,H)	figure number for Jc(T,H)	Superconductivity	String
145	spheat	graph number of specific heat	graph number of specific heat	Thermal property	String
146	ujump	unit of SPJUMP	unit of SPJUMP	Thermal property	String
147	spjump	specific heat jump at Tc (delta-C)	specific heat jump at Tc (delta-C)	Thermal property	Float
148	ugamma	unit of GAMMA	unit of GAMMA	Thermal property	Float
149	gamma	coefficient of electronic specific heat	coefficient of electronic specific heat	Thermal property	Float
150	gamcom	comment for derivation of GAMMA	comment for derivation of GAMMA	Thermal property	String
151	debyet	Debye temperature	Debye temperature	Thermal property	Float
152	mdebye	method for derivation of Debye temperature	method for derivation of Debye temperature	Thermal property	String
153	uthc	unit of thermal conductivity	unit of thermal conductivity	Thermal property	String
154	thc300	thermal conductivity at 300 K	thermal conductivity at 300K	Thermal property	Float
155	thc300n	thermal conductivity at 300 K for heat flow//c-axis	thermal conductivity at 300K for heat flow//c-axis	Thermal property	Float
156	thc300p	thermal conductivity at 300 K for heat flow//ab-plane	thermal conductivity at 300K for heat flow//ab-plane	Thermal property	Float
157	thcfig	graph number for thermal conductivity	graph number for thermal conductivity	Thermal property	String
158	utp	unit of thermopower	unit of thermopower	Thermal property	String
159	tp300	thermopower at 300 K	thermopower at 300K	Thermal property	Float
160	tp300n	thermopower at 300 K for normal to ab-plane	thermopower at 300K for normal to ab-plane	Thermal property	Float
161	tp300p	thermopower at 300 K for parallel to ab-plane	thermopower at 300K for parallel to ab-plane	Thermal property	Float
162	tpfig	graph number for thermopower	graph number for thermopower	Thermal property	String
163	ures	unit of resistivity	unit of resistivity	Normal state property	String
164	reshe	resistivity at 4.2 K for poly crystal	resistivity at 4.2K for poly crystal	Normal state property	Float
165	abreshe	resistivity at 4.2 K for single crystal for J//ab-plane	resistivity at 4.2K for single crystal for J//ab plane	Normal state property	Float
166	creshe	resistivity at 4.2 K for single crystal for J//c-axis	resistivity at 4.2K for single crystal for J//c-axis	Normal state property	Float
167	res77	resistivity at 77 K for poly crystal	resistivity at 77K for poly crystal	Normal state property	Float
168	abres77	resistivity at 77 K for single crystal for J//ab-plane	resistivity at 77K for single crystal for J//ab plane	Normal state property	Float
169	cres77	resistivity at 77 K for single crystal for J//c-axis	resistivity at 77K for single crystal for J//c-axis	Normal state property	Float
170	resn	resistivity at normal-T for poly crystal	resistivity at normal-T for poly crystal	Normal state property	Float

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171	abresn	resistivity at normal-T for single crystal for J//ab-plane	resistivity at normal-T for single crystal for J//ab plane	Normal state property	Float
172	cresn	resistivity at normal-T for single crystal for J//c-axis	resistivity at normal-T for single crystal for J//c-axis	Normal state property	Float
173	nort	normal temperature	normal temperature	Normal state property	Float
174	resrt	resistivity at RT for poly crystal	resistivity at RT for poly crystal	Normal state property	Float
175	abresrt	resistivity at RT for single crystal for J//ab-plane	resistivity at RT for single crystal for J//ab plane	Normal state property	Float
176	cresrt	resistivity at RT for single crystal for J//c-axis	resistivity at RT for single crystal for J//c-axis	Normal state property	Float
177	uhall	unit of RH300	unit of RH300	Normal state property	String
178	rh300	Hall coefficient at 300 K	Hall coefficient at 300K	Normal state property	Double
179	rh300n	Hall coefficient at 300 K for single, H//c-axis	Hall coefficient at 300K for single, H//c-axis	Normal state property	Double
180	rh300p	Hall coefficient at 300 K for single, H//ab-plane	Hall coefficient at 300K for single, H//ab-plane	Normal state property	Double
181	rhn	Hall coefficient for single, H//c-axis	Hall coefficient for single, H//c-axis	Normal state property	Double
182	field	magnetic field for Hall effect	magnetic field for Hall effect	Normal state property	Float
183	hallfig	graph number for Hall coefficient	graph number for Hall coefficient	Normal state property	String
184	ucarr	unit of carrier density	unit of carrier density	Normal state property	String
185	carrier	carrier density at 300 K	carrier density at 300K	Normal state property	Double
186	rawmat	raw materials	raw materials	Preparation	String
187	method	*preparation method	*preparation method (see the end of this table)	Preparation	Integer
188	prepcmt	preparation comments	preparation process	Preparation	String
189	f_prep	preparation method for film	preparation method for film	Preparation	String
190	subst	substrate	substrate	Preparation	String
191	target	target material	target material	Preparation	String
192	pr_commt	process comments			String
193	title	title of reference			String
194	year	publication year of reference	year of reference		Integer
195	month	month of reference			Integer
196	keyword	keyword			String
197	institute	institute			String
198	journal	journal			String
199	sample	sample			String
200	comments	comments			String

For "187 method *preparation method"		
Method@ja	Method@en	
粉末焼結	powder sintering method	1=powder sintering method
ドクターブレード	doctor blade method	2=doctor blade method
スクリーン印刷	screen printing metod	3=screen printing metod
押しだし	extrusion method	4=extrusion method
フラックス法	flux method	5=flux method
TSSG法	Top Seeded Solution Growth method	6=Top Seeded Solution Growth method
FZ法	floating zone method	7=floating zone method
LPE法	Liquid Phase epitaxy	8=Liquid Phase epitaxy
メルトクエンチ法	melt-quench method	9=melt-quench method
ブリッジマン法	Bridgeman	10=Bridgeman
ゾルゲル法	sol-gel method	11=sol-gel method
有機酸塩法	organic acid base method	12=organic acid base method
サスペンジョン法	suspension method	13=suspension method
塗布法	spray coating method	14=spray coating method
プラズマスプレー	plasma spray method	15=plasma spray method
ｽﾊﾟｯﾀｰ蒸着	sputter deposition	16=sputter deposition
蒸着法	vacuum deposition	17=vacuum deposition
CVD法	CVD method	18=CVD method
MOCVD法	Metal-Organic Chemical Vapor Deposition	19=Metal-Organic Chemical Vapor Deposition
VG法	Vapor Growth method	20=Vapor Growth method
MBE法	Molecular Beam Epitaxy method	21=Molecular Beam Epitaxy method

Organic

Number	Symbol	Label	Comments
1	num	data number	
2	refno	reference number	
3	name	common formula of materials	
4	fullname	full material name	
5	shape	shape	(1: single phase(bulk),2: multi phase (bulk),3: single crystal(bulk) ,4:film,5:film(single))
6	str	structure	
7	lata	lattice constant a	
8	latb	lattice constant b	
9	latc	lattice constant c	
10	alpha	lattice alpha	
11	beta	lattice beta	
12	lgamma	lattice gamma	
13	tc	Tc at pcrit	
14	tcmax	maximum tc under pressure	
15	pmax	applied pressure for tcmax	
16	pcrit	Critical pressure/GPa at which Tc can be observed	
17	tcmeth	tc measurement method	(1.magnetization, 2.ac susceptibility, 3.resistivity, 4.heat capacity, 5.tunneling, 6.infrared spectroscopy, 7.thermal conductivity, 8.Raman spectroscopy , 9.nuclear magnetic resonance, 10.surface impedance, 11.neutron diffraction, 12.photoemission spectroscopy, 13.microwave transmission, 14.Others)
18	isotope	alpha in Tc=A*M^(-alpha), isotope effect	
19	isoel	isotope element	
20	dtcdp	slope at P=0 in Tc vs P plot	
21	tcn	lowest temperature for measurement (not superconducting)	
22	hc1zero	Hc1 at 0 K for poly crystal	
23	hc2zero	Hc2 at 0 K for poly crystal	
24	dhc2dt	-slope in Hc2 vs T at Tc for poly crystal	
25	cohere	coherence length at 0 K for poly crystal	
26	penet	penetration depth at 0 K for poly crystal	
27	glpar	Ginzburg-Landau order parameter	
28	gap	energy gap at 0 K, delta(0)	
29	gapmeth	method of measuring energy gap	(1.tunneling, 2.infrared spectroscopy, 3.thermal conductivity, 4.Raman spectroscopy , 5.AC susceptibility, 6.nuclear magnetic resonance, 7.surface impedance, 8.neutron diffraction, 9.ultraviolet photoemission spectroscopy, 10.microwave transmission)
30	gamma	coefficient of electronic specific heat	
31	Z	Debye temperature	
32	curiet	Curie temperature	
33	neelt	Neel temperature	
34	fig1	figure1 file name	
35	fig2	figure2 filename	
36	figname	figure description	
37	tbl	table file name	
38	tblname	table description	
39	commt	comment	
40	f1_filenam	figure1 data file name	
41	f1_img_fn	f1 image file name	
42	f2_filenam	f2 data file name	
43	f2_img_fn	f2 image file name	
44	title	title	
45	year	year	
46	month	month	
47	keyword	keyword	
48	institute	institute	
49	journal	journal	
50	author	author	
51	sample	sample	
52	comments	comments	

* This guide was created accordingly at release of MDR SuperCon Datasheet Ver.240322

List of data sources

As a rule, the list consists of the journal name (3 letters) + Vol number (3dig) + page (4dig). (Example, PHC1710181)

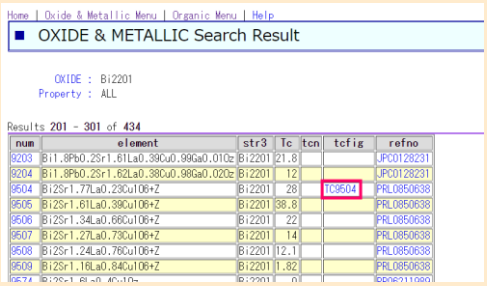
Symbol	Journal name
ADV	Advanced Materials
APJ	Jpn.J.Appl.Phys.
APL	Appl.Phys.Lett.
APP	Appl.Phys.
CEM	J.Solid State Chem.
CRY	Cryogenics
CTR	Ceramic Transaction
EEE	IEEE Transactions on Magnetics
EPJ	Eur. Phys. J B
EPL	Europhys.Lett.
FEL	Ferroelectrics
HPA	Helvetica Phys.Acta
JAC	J.Alloys and Compound
JAP	J.Appl.Phys.
JCG	J.Cryst. Growth
JET	Sov. Phys.JETP
JIM	Materials Transactions
JJP	Jpn.J.Appl.Phys.Lett.
JMC	J.Mater.Chem.
JML	J.Mater.Sci.Lett.
JMP	Int.J.Mod.Phys..B
JMR	J.Mater. Res.
JMS	J.Mater.Sci.
JP	J.Phys.:Cond.Matter
JPC	J.Phys.C
JPD	J.Phys.D: Appl.Phys.
JPL	J.Appl.Phys.Lett.
JPM	J.Phys. Conden. Mater
JPS	J.Phys.Soc.Japan
JSC	J.Solid State Chem.

JTL	JETP Lett.
LES	J.Less-Common Metals
LTP	J.Low Temp.Phys.
MMM	Journal of Magnetism and Magnetic Materials
MPL	Mod.Phys.Lett.B
MRB	Mater.Res.Bull.
MTL	Materials Letters (Mater.Lett.)
NAT	Nature
NMT	Nature[Materials]
NUC	Journal of Nuclear Materials
PCS	J.Phys.Chem.Solids
PHB	Physica B
PHC	Physica C
PHF	J.Phys.F
PLA	Phys.Lett.A
PMB	Philos.Mag.B
PMM	Phys.Met.Metall
PRB	Phys.Rev.B
PRR	Phys.Rev.Research
PRX	Phys.Rev.X
PRL	Phys.Rev.Lett.
PRM	Phys.Rev.Materials
PSS	Physica Stat.Solidi B
RAD	Radiation Effects
RMP	Reviws of Modern Physics (Rev.Mod.Phys.)
SCI	Science
SCR	Scripta METALLURGICA
SPS	Sov. Phys.Solid State
SSC	Solid State Commun.
SST	Supercond.Sci.Technol.
SUP	J.Superconductivity
SUR	Surface Science
ZMT	Z.Metallkde
ZPS	Z.Phys.B

FIGURE/DATA

Conventionally, SuperCon has published figure and table sets of systematic data for selected samples. This data sheet provides compressed files of the entire figures and text data of all of them in zip format, separately.

For your reference, an example of a link to a figure provided in SuperCon (Figure 3(a), red frame) and the link site (Figure 3(b)) are shown below.



Home | Oxide & Metallic Menu | Organic Menu | Help

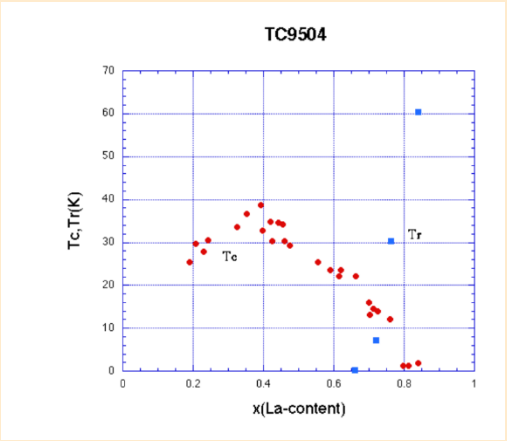
OXIDE & METALLIC Search Result

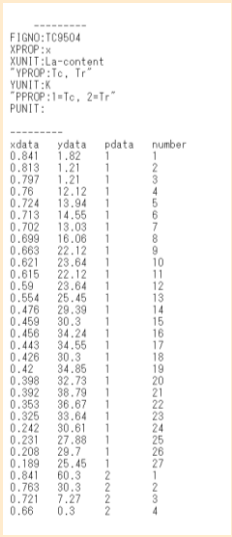
OXIDE : Bi2201
Property : ALL

Results 201 - 301 of 434

num	element	str3	Tc	tcn	tcfig	refno
9203	Bi1.8Pb0.2Sr1.61La0.39Cu0.99Ga0.01Oz	Bi2201	21.8			JPC0128231
9204	Bi1.8Pb0.2Sr1.62La0.38Cu0.98Ga0.02Oz	Bi2201	12			JPC0128231
9504	Bi2Sr1.77La0.23CuO6+Z	Bi2201	28		TC9504	PRL0850638
9505	Bi2Sr1.61La0.39CuO6+Z	Bi2201	38.8			PRL0850638
9506	Bi2Sr1.34La0.66CuO6+Z	Bi2201	22			PRL0850638
9507	Bi2Sr1.27La0.73CuO6+Z	Bi2201	14			PRL0850638
9508	Bi2Sr1.24La0.76CuO6+Z	Bi2201	12.1			PRL0850638
9509	Bi2Sr1.16La0.84CuO6+Z	Bi2201	1.82			PRL0850638

Figure 3(a) Example of link to figures and tables in SuperCon (for reference)





```
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FIGNO:TC9504
XPROP:x
XUNIT:La-content
"YPROP:Tc, Tr"
YUNIT:K
"PPROP:1=Tc, 2=Tr"
PUNIT:

---------
xdata   ydata   pdata   number
0.841   1.82    1       1
0.813   1.21    1       2
0.797   1.21    1       3
0.76    12.12   1       4
0.724   13.94   1       5
0.713   14.55   1       6
0.702   13.03   1       7
0.699   16.06   1       8
0.663   22.12   1       9
0.621   23.64   1       10
0.615   22.12   1       11
0.59    23.64   1       12
0.554   25.45   1       13
0.476   29.39   1       14
0.459   30.3    1       15
0.456   34.24   1       16
0.443   34.55   1       17
0.426   30.3    1       18
0.42    34.85   1       19
0.398   32.73   1       20
0.392   38.79   1       21
0.353   36.67   1       22
0.325   33.64   1       23
0.242   30.61   1       24
0.231   27.88   1       25
0.208   29.7    1       26
0.189   25.45   1       27
0.841   60.3    2       1
0.763   30.3    2       2
0.721   7.27    2       3
0.66    0.3     2       4
```

Figure 3(b) Example of Figure and Table Links in SuperCon (for reference)

93-figure number for Tc(p, x, etc)-tcfig in the data table indicates the corresponding file name.

2024/04/24

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