

# **PHASE DIAGRAMS OF PRECIOUS METAL ALLOYS**

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## Vorwort

Es ist seit vielen Jahren eine dringende Forderung in der Konstitutionsforschung, die in der Literatur weit verstreuten Einzelkenntnisse zu sammeln und kritisch zusammenzufassen. Eine Forderung, die in allen Teilen der Welt erhoben und durch angesehenen wissenschaftliche Gesellschaften unterstützt wird. Im Sinne dieser Forderung ist die vorliegende Sammlung von Zustandsdiagrammen der Edelmetallegierungen ein bedeutender Beitrag, dem internationale Anerkennung zuteil werden wird.

Ich beglückwünsche die Kollegen Professor K. C. Ma und Forschungsingenieur C. X. Ho zu diesem Werk, das sie in vielen Jahren zusammengetragen haben. Sie haben damit dem technischwissenschaftlichen Fortschritt einen grossen Dienst erwiesen.

Für mich war es eine besondere Freude, dass ich anlässlich meines Besuches mit der deutschen Delegation für Werkstoffwissenschaften beim Institut für Edelmetallforschung in Kunming/Provinz Yünnan die Gelegenheit hatte, dieses umfassende Werk Erst vor seiner Drucklegung zu sehen und mit den beiden Autoren zu diskutieren.

Kunming, am 17 November 1978

Günter Petzow

## 前 言

许多年以来，在相图研究方面存在着把极为分散在文献中的个别研究结果进行收集并予以综合评论的迫切要求。世界各地都提出了这种要求，并得到许多著名科学机构的支持。本书对于贵金属合金相图的收集工作是一项重大成果，必将获得国际的公认。

我对马光辰教授和何纯孝研究工程师等同事多年所作的这项编辑工作表示祝贺。他们的这项工作对于技术——科学进展的贡献是大的。

当我同德国材料科学代表团访问云南省昆明贵金属研究所的时候，在这项内容全面的作品付印之前能有机会首先见到，并且同两位作者进行讨论，这对我来说感到特别愉快。

G. 佩苏夫

1978年11月17日于昆明

马克思·普朗克学会

金属研究所

斯图加特

## Foreword

For many years there has been an urgent demand in phase diagram research to collect and critically compile the individual diagrams widely dispersed in the literature. The importance of such a task is being recognized in all parts of the world and backed up by well known scientific organizations. In view of this situation, the present collection of phase diagrams of precious metal alloys represents an important contribution which will find international acknowledgement.

I congratulate the colleagues Professor Ma Guangchen and Research Engineer He Chunxiao et al on the publication of this book, at which they have worked for many years. They have thus been of great service to the progress of technical science.

On the occasion of my visit with the German Delegation for Materials Science to the Precious Metals Research Institute of Kunming, Yunnan Province, it was an unusual pleasure for me to have had the opportunity to read this comprehensive survey before its publication and to discuss with both of the compilers.

Kunming, 17th November, 1978

Günter Petzow

Max-Planck-Institute for Metals  
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## 导 言

合金相图是金属材料科学的基础之一。在世界上，它是长期活跃的研究课题，一直不断地提供和积累研究成果，并对新工艺和新材料的发展起着指导作用。

几十年来，在贵金属合金相图方面进行了大量的研究工作。从一九五五年到一九六四年，平均每年发表有关贵金属合金相图达20个；一九六五年到一九七四年，平均每年增至29个。已有的资料表明：金、银与周期表元素的相互作用的二元系相图，绝大多数都已进行了研究；铂、钯与金属元素的二元系相图，除ⅠA、ⅡA族之外，大多数都不同程度地进行了研究；铱、铑、钨、钼的二元系相图还不多；已有的贵金属-稀土元素二元系相图，大多数是近十多年内完成的；贵金属多元系相图的研究，近年来增长甚快。已有的大量研究工作，为编辑本书提供了厚实的基础。

随着科学技术的飞速发展，贵金属合金材料获得了广泛的应用，并且起着现代工业“维他命”的作用。但在工作中，深感贵金属合金相图非常分散，对研究和技术工作极为不便。编制一本较为完整的贵金属合金相图就成了一项迫切的要求，这也是我们编制本书的初衷。

本书编入了一九七五年年底以前我们收集到的贵金属合金相图520个合金系，共772幅。其中：二元系306个，370幅；三元系201个，364幅；四元系13个，38幅。

本书分三部分：第一部分为二元系，第二部分为三元系；第三部分为四元系。为了便于读者查阅有关相图的详细说明，在图题之后，注明了原始文献的出处。参考文献都集中列在各部分之后。编者尽量采用原始资料。但是仍有一部分，特别是二元系中的一些相图，研究的作者、文献很多，要把同一个合金系中不同作者的工作都列入，似觉冗繁。因此，采用了某些专著中已经进行综合过的相图。

编入本书的都是温度-组成图。同一合金系有几个相图时，以选录新近发表的为原则。若有些多元系相图已研究了多个截面，则只选编了部分截面。在不影响图的质量的前提下，对少数图作了简化，如在图中均未标出实验点的位置，某些图中的等温线很多，也作了适当的删节。

考虑到贵金属合金相图的研究工作正在蓬勃发展，对所收集的相图，均未加以评述和综合。

编者希望本书的出版，能对贵金属材料科学的发展起到一定的作用。对同行们有一定的参考价值。但由于编者水平有限，经验缺乏，无论在内容的选择或编排形式上，缺点和错误一定不少，可能还有遗漏，因此，恳切希望广大读者批评指正。

冶金工业出版社对编辑出版《贵金属合金相图》一书给予了热情的支持和帮助，编者深表谢意。

梁允宜、孔祥维、刘幼葵同志在成书的初期也做过部分工作，编者也很感谢。

本书是在贵金属研究所所长谭庆麟教授的计划和指导下进行的，他除了对本书经常提出某些关键性指导意见之外，并在工作条件上也给予了极大支持，编者特致谢忱。

在编辑工作基本完成之后，正值西德马克思·普朗克学会材料科学代表团来 贵 金属研究所访问，编者欣幸地请 G.佩苏夫教授审阅了这本相图集，G.佩苏夫教授不仅提出了宝贵的意见，还为本书写了前言，编者衷心感谢。

编 者

一九七八年十一月于昆明  
冶金工业部贵金属研究所

## Introduction

Alloy phase diagrams constitute one of the foundations of the materials science. They are the subject of sustained research and world wide activity providing an ever increasing wealth of achievements, which serves as a valuable guide to the development of new materials and sophisticated engineering techniques.

In the field of precious metal alloys, it has been found that from 1955 to 1964 a yearly average of 20 phase diagrams were published and that from 1965 to 1974, this average number increased to 29. The available references show that most of the binary phase diagrams of gold and of silver with all the other elements of the periodic table have already been studied; that most of the binary phase diagrams of platinum and of palladium with the metallic elements, with the exception of those of the group IA and IIA, have been studied to a certain extent; that binary phase diagrams of rhodium, of iridium, of osmium, and of ruthenium are still rather scarce and that most of the binary phase diagrams of precious metals with rare earth metals have only been published in the past ten years. Recently, the study of polycomponent phase diagrams of precious metal alloys is rapidly gaining momentum. The considerable amount of research work cited above provides a dependable basis for the compilation of the present volume.

With the rapid development of science and technology, precious metal alloys find broad avenues for application, and thus play a vital role in modern techniques. However, these phase diagrams are highly dispersed in literature causing much inconvenience to serious work in science and technology. Therefore, the need is keenly felt for a comprehensive compilation and the purpose of this volume is to meet this need. It includes a total of 520 systems represented by 772 phase diagrams published before the end Of 1975. Of these, 306 are binary systems represented by 370 diagrams; 201 are ternary systems represented by 364 diagrams and 13 are quarternary systems represented by 38 diagrams.

The book is divided into three parts, the binary systems being in the first part, the ternary systems in the second and the quarternary systems in the third. To facilitate the reader to obtain more detailed information about any definite phase diagram, a list of original references is attached at the end of each part with the corre-

sponding reference number by the side of each diagram heading. In general, the diagrams are selected from original authors. But in a few cases, especially in binary systems, where more than one contribution are available, the choice has been made either to adopt the diagram published in existing compilations or to adopt the one published the latest; in other cases, when a number of sections of a poly-component system have been studied, only a limited number of them are chosen. Furthermore, some simplifications are made, e. g., the plots or marks showing locations of experimental data and some of the isothermal lines lacking temperature indications have been omitted.

In consideration of the fact that rapid progress in this field is under way, all the diagrams in this compilation are neither evaluated nor reviewed. It is hoped, however, that the publication of the present compilation might be of assistance to those engaged in the development of precious metal alloy materials. Due to lack of experience and competence on the part of the compilers, shortcomings or errors are possible. Criticisms and suggestions from interested readers are earnestly welcome.

The compilers take the opportunity to express their sincere thanks to the Metallurgical Industries Press for its enthusiastic support and assistance.

Thanks are due to comrades Y. Y. Liang, X. W. Kong, and Y. Z. Liu who participated in the work at its initial stage.

It should be specially noted that all the work concerning the compilation of this book has been done under the guidance of Professor Tan Qinglin, Director of the Institute of Precious Metals, who not only sponsored this project but also offered full support and valuable advice to our effort.

Finally, when the present work was approaching its completion, the German Delegation of Materials Science of the Federal Republic of Germany paid a visit to our Institute, providing the compilers an opportunity to ask Professor Günter petzow to look over the manuscript. He graciously agreed to check the whole work, gave us much valuable advice and more still, kindly wrote a foreword for the book. To Professor Petzow, the compilers wish to express their deep gratitude.

Kunming, November 1978

### Compilers

Institute of Precious Metals of  
the Department of Metallurgical Industries.



# 目 录 Contents

合金系是按组元化学符号的字母顺序排列的。  
Systems are given in alphabetical order according  
to the chemical symbols of the component elements

## 第一部分·二元系

### Part One · Binary Systems

系 System	图 Fig.	系 System	图 Fig.
Ag-Al	1~2	Ag-Pd	40
Ag-As	3~4	Ag-Pr	41
Ag-Au	5	Ag-Pt	42
Ag-Ba	6	Ag-Pu	43
Ag-Be	7~8	Ag-Rh	44
Ag-Bi	9	Ag-Ru	45
Ag-Ca	10~11	Ag-S	46~47
Ag-Cd	12~13	Ag-Sb	48
Ag-Ce	14	Ag-Sc	49
Ag-Cr	15	Ag-Se	50~51
Ag-Cu	16	Ag-Si	52~53
Ag-Dy	17	Ag-Sm	54~55
Ag-Er	18	Ag-Sn	56
Ag-Eu	19	Ag-Sr	57~58
Ag-Fe	20	Ag-Tb	59
Ag-Ga	21	Ag-Te	60~61
Ag-Gd	22	Ag-Th	62
Ag-Ge	23	Ag-Ti	63
Ag-Hg	24	Ag-Tl	64
Ag-Ho	25	Ag-Tm	65
Ag-In	26	Ag-U	66
Ag-La	27	Ag-Y	67~68
Ag-Li	28	Ag-Yb	69
Ag-Lu	29	Ag-Zn	70
Ag-Mg	30	Ag-Zr	71~73
Ag-Mn	31~32	Al-Au	74~76
Ag-Na	33	Al-Pd	77~78
Ag-Nd	34	Al-Pt	79~81
Ag-Ni	35	Al-Ru	82
Ag-O	36	As-Au	83
Ag-P	37	As-Pd	84
Ag-Pb	38~39	As-Pt	85

系 System	图 Fig.		系 System	图 Fig.	
Au-Be	86	.....30	Au-Tb	145	.....53
Au-Bi	87	.....31	Au-Te	146	.....54
Au-Ca	88	.....31	Au-Th	147	.....54
Au-Cd	89~90	.....32	Au-Ti	148~149	.....55
Au-Ce	91	.....33	Au-Tl	150	.....56
Au-Co	92~93	.....33	Au-Tm	151	.....57
Au-Cr	94	.....34	Au-U	152	.....56
Au-Cs	95	.....34	Au-V	153	.....57
Au-Cu	96	.....35	Au-Yb	154	.....58
Au-Dy	97~98	.....35	Au-Zn	155~157	.....58
Au-Er	99	.....36	Au-Zr	158	.....59
Au-Fe	100~101	.....37	B-Pd	159	.....60
Au-Ga	102~104	.....37	B-Pt	160~161	.....60
Au-Gd	105	.....38	B-Ru	162	.....61
Au-Ge	106	.....39	Ba-Pd	163~164	.....61
Au-Hf	107	.....39	Ba-Pt	165~166	.....61
Au-Hg	108~109	.....39	Be-Pd	167	.....62
Au-Ho	110	.....40	Be-Ru	168~169	.....62
Au-In	111~112	.....40	Bi-Ir	170	.....63
Au-K	113	.....41	Bi-Pd	171	.....63
Au-La	114	.....42	Bi-Pt	172~173	.....64
Au-Li	115	.....42	Bi-Rh	174	.....65
Au-Lu	116	.....43	C-Ir	175	.....64
Au-Mg	117	.....43	C-Rh	176	.....65
Au-Mn	118~119	.....43	C-Ru	177	.....65
Au-Na	120	.....44	Cd-Pd	178	.....66
Au-Nb	121	.....45	Cd-Pt	179	.....66
Au-Ni	122~123	.....45	Ce-Ir	180	.....67
Au-P	124	.....46	Ce-Pd	181	.....67
Au-Pb	125	.....46	Ce-Ru	182	.....67
Au-Pd	126	.....47	Co-Ir	183	.....68
Au-Pr	127~128	.....47	Co-Os	184	.....68
Au-Pt	129	.....48	Co-Pd	185	.....68
Au-Pu	130	.....48	Co-Pt	186	.....69
Au-Rb	131	.....49	Co-Rh	187	.....69
Au-Rh	132	.....49	Co-Ru	188	.....69
Au-Ru	133	.....50	Cr-Ir	189	.....70
Au-S	134	.....50	Cr-Os	190	.....70
Au-Sb	135	.....50	Cr-Pd	191~192	.....71
Au-Sc	136	.....51	Cr-Pt	193	.....71
Au-Se	137~138	.....51	Cr-Rh	194	.....72
Au-Si	139~140	.....51	Cr-Ru	195	.....72
Au-Sm	141	.....52	Cu-Ir	196	.....73
Au-Sn	142~143	.....52	Cu-Pd	197	.....73
Au-Sr	144	.....53	Cu-Pt	198	.....73

## 系 System 图 Fig.

Cu-Rh	199	74
Dy-Pd	200	74
Er-Pd	201	75
Er-Pt	202	75
Er-Rh	203	75
Eu-Pd	204	76
Fe-Ir	205	76
Fe-Os	206	77
Fe-Pd	207~209	77
Fe-Pt	210	78
Fe-Rh	211~212	79
Fe-Ru	213	79
Ga-Pd	214	80
Ga-Pt	215~217	80
Gd-Pd	218	81
Ge-Pd	219	81
Ge-Pt	220	81
Ge-Rh	221	82
Ge-Ru	222	82
H-Pd	223~224	82
Hf-Ir	225	83
Hf-Pd	226	83
Hf-Ru	227	84
Hg-Pd	228	84
Hg-Pt	229	84
Hg-Rh	230	84
Ho-Pd	231	85
In-Pd	232	85
In-Pt	233	86
Ir-La	234	86
Ir-Mg	235	86
Ir-Mn	236	86
Ir-Mo	237	87
Ir-Nb	238	87
Ir-Os	239	87
Ir-Pd	240	88
Ir-Pt	241	88
Ir-Re	242	89
Ir-Rh	243	89
Ir-Ru	244	89
Ir-Sb	245	90
Ir-Ta	246	90
Ir-Th	247	90
Ir-Ti	248	91
Ir-U	249	91

## 系 System 图 Fig.

Ir-V	250	92
Ir-W	251	92
Ir-Zr	252~253	93
La-Rh	254	93
Mg-Pd	255	94
Mn-Rd	256	94
Mn-Pt	257	95
Mn-Rh	258	95
Mn-Ru	259	95
Mo-Os	260~261	95
Mo-Pd	262	96
Mo-Pt	263	97
Mo-Rh	264~265	97
Mo-Ru	266	98
Nb-Pd	267	99
Nb-Pt	268	99
Nb-Rh	269	100
Nb-Ru	270	101
Nd-Pt	271~272	100
Nd-Rh	273	102
Ni-Pd	274	103
Ni-Pt	275	102
Ni-Rh	276	103
Ni-Ru	277	103
Os-Pd	278	104
Os-Pr	279	104
Os-Pu	280	105
Os-Re	281	105
Os-Ru	282	105
Os-Ta	283	106
Os-Th	284	107
Os-Ti	285	107
Os-U	286	106
Os-V	287	107
Os-W	288	107
P-Pd	289	108
P-Pt	290	108
P-Rh	291	109
Pb-Pd	292	109
Pb-Pt	293~294	110
Pb-Rh	295	111
Pd-Pt	296	111
Pd-Pu	297	111
Pd-Re	298	112
	299	112

系 System	图 Fig.		系 System	图 Fig.	
Pd-Rh	300	112	Pt-U	338	131
Pd-Ru	301	112	Pt-V	339~340	132
Pd-S	302	113	Pt-W	341	133
Pd-Sb	303~304	113	Pt-Yb	342	133
Pd-Sc	305	114	Pt-Zn	343	134
Pd-Si	306~307	115	Pt-Zr	344	134
Pd-Sm	308	117	Pu-Rh	345	135
Pd-Sn	309	116	Pu-Ru	346	135
Pd-Ta	310	117	Re-Rh	347	136
Pd-Te	311	118	Re-Ru	348	136
Pd-Th	312	119	Rh-Ru	349	136
Pd-Ti	313	118	Rh-S	350	137
Pd-U	314~315	120	Rh-Sb	351	137
Pd-V	316	121	Rh-Se	352	137
Pd-W	317~318	121	Rh-Sn	353	137
Pd-Y	319	122	Rh-Ta	354	138
Pd-Zn	320	123	Rh-Th	355	139
Pd-Zr	321	124	Rh-Ti	356	138
Pr-Pt	322	124	Rh-U	357	139
Pt-Pu	323	125	Rh-W	358	140
Pt-Re	324	125	Rh-Zr	359	140
Pt-Rh	325	126	Ru-Sc	360	140
Pt-Ru	326~327	126	Ru-Si	361	141
Pt-S	328	126	Ru-Ta	362	141
Pt-Sb	329	127	Ru-Th	363	141
Pt-Si	330~331	128	Ru-Ti	364~365	142
Pt-Sn	332	129	Ru-U	366	143
Pt-Ta	333	129	Ru-V	367	143
Pt-Te	334	130	Ru-W	368	143
Pt-Th	335	130	Ru-Y	369	143
Pt-Ti	336	130	Ru-Zr	370	144
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## 第二部分·三元系

### Part Two · Ternary Systems

系 System	图 Fig.		系 System	图 Fig.	
Ag-Al-Bi	371	152	Ag-Al-Sn	393	159
Ag-Al-Cd	372	152	Ag-Al-Ti	394~396	160
Ag-Al-Cu	373~374	153	Ag-Al-Zn	397~399	161
Ag-Al-Fe	375	153	Ag-As-S	400~403	163
Ag-Al-Mg	376~382	154	Ag-As-Se	404~405	164
Ag-Al-Mn	383~390	156	Ag-Au-Co	406	165
Ag-Al-Pb	391	159	Ag-Au-Cu	407~408	166
Ag-Al-Pd	392	159	Ag-Au-Ge	409	167

## 系 System 图 Fig.

Ag-Au-Ni	410	167
Ag-Au-Pd	411	167
Ag-Au-Pt	412~414	168
Ag-Au-S	415	168
Ag-Au-Si	416	169
Ag-Au-Sn	417~419	169
Ag-Bi-S	420~423	170
Ag-Bi-Te	424	172
Ag-Bi-Zn	425~426	172
Ag-Cd-Cu	427~433	173
Ag-Cd-Sb	434	176
Ag-Cd-Sn	435~437	177
Ag-Cd-Te	438	178
Ag-Cd-Zn	439~441	178
Ag-Co-Ge	442	179
Ag-Co-Pd	443	180
Ag-Co-Si	444	180
Ag-Cr-O	445	181
Ag-Cr-Pd	446	181
Ag-Cu-In	447~449	181
Ag-Cu-Ni	450	183
Ag-Cu-P	451	183
Ag-Cu-Pb	452	184
Ag-Cu-Pd	453~458	184
Ag-Cu-S	459	186
Ag-Cu-Se	460~461	186
Ag-Cu-Sn	462~464	187
Ag-Cu-Ti	465~470	189
Ag-Cu-Zn	471~477	191
Ag-Fe-Ge	478	194
Ag-Fe-Pd	479~482	194
Ag-Fe-S	483~485	195
Ag-Fe-Si	486	197
Ag-Ga-In	487	197
Ag-Ga-Mg	488	198
Ag-Ga-Sn	489~491	198
Ag-Ga-Te	492	200
Ag-Ge-Mn	493	200
Ag-Ge-Ni	494	200
Ag-H-Pd	495~496	200
Ag-Hg-Pb	497~501	201
Ag-Hg-Sn	502~505	202
Ag-In-Mg	506	204
Ag-In-Sb	507	205
Ag-In-Se	508	205

## 系 System 图 Fig.

Ag-In-Te	509	205
Ag-Ir-Pd	510	205
Ag-Li-Mg	511	206
Ag-Mg-Sb	512~513	206
Ag-Mg-Sn	514	207
Ag-Mg-Zn	515~516	207
Ag-Mn-Pd	517	208
Ag-Ni-Pd	518~519	209
Ag-Ni-Si	520~521	210
Ag-Pb-S	522	210
Ag-Pb-Sb	523	211
Ag-Pb-Se	524	211
Ag-Pb-Sn	525	211
Ag-Pb-Te	526	211
Ag-Pb-Zn	527	212
Ag-Pd-Pt	528	212
Ag-Pd-Rh	529	212
Ag-Pd-Si	530	213
Ag-Pd-Te	531	213
Ag-Pd-Ti	532	213
Ag-Pd-Zr	533~534	214
Ag-S-Sb	535~537	215
Ag-Sb-Se	538	216
Ag-Sb-Se	539~541	217
Ag-Sb-Sn	542	218
Ag-Sb-Te	543~545	218
Ag-Sb-Zn	546	219
Al-Cu-Pd	547~548	219
Al-Hf-Ru	549	220
Al-Nb-Rh	550	220
Al-Pd-Sc	551	220
Al-Ru-Sc	552~553	221
Al-Ru-Y	554	221
Al-Ru-Zr	555	222
As-In-Pd	556	222
As-Pd-Te	557	222
Au-Bi-Se	558~566	223
Au-Bi-Te	567~577	227
Au-Bi-Zn	578	231
Au-Cd-In	579	231
Au-Cd-Sb	580~581	232
Au-Co-Cu	582	232
Au-Co-Fe	583	232
Au-Co-Pd	584	233
Au-Cu-Fe	585	233

## 系 System 图 Fig.

Au-Cu-Ni	586~588	234
Au-Cu-Pb	589	235
Au-Cu-Pd	590~593	236
Au-Cu-Zn	594	237
Au-Fe-Ni	595	237
Au-Ga-Si	596~597	238
Au-Ge-Sb	598~600	238
Au-H-Ni	601	239
Au-In-Sb	602~603	240
Au-Ni-Pd	604~605	240
Au-Ni-Pt	606~610	241
Au-Pb-Sn	611~615	243
Au-Pb-Te	616	245
Au-Pd-Pt	617~619	246
Au-Pd-Rh	620	247
Au-Pd-Ru	621	247
Au-Pd-W	622	248
Au-Pt-Rh	623	248
Au-Sb-Si	624	248
Bi-Ni-Rh	625~626	248
Bi-Pb-Pt	627	249
Bi-Pd-Te	628	249
C-Ce-Ir	629	250
C-Ce-Pt	630	250
C-Er-Ir	631	250
C-Er-Pt	632	251
C-Ir-U	633	251
C-Ir-Y	634	251
C-Os-U	635	252
C-Os-W	636	252
C-Pt-Y	637	252
C-Pu-Rh	638	253
C-Pu-Ru	639	253
C-Rh-U	640	254
C-Ru-U	641	254
Co-Cu-Pd	642	255
Co-Fe-Pd	643~649	255
Co-Mn-Pd	650	257
Co-Nb-Pt	651	257
Co-Ni-Pd	652	257
Co-Ni-Ru	653	258
Co-Pd-V	654	258
Co-Pt-Ta	655	258
Co-Pt-V	656	258
Co-Ru-Y	657~658	258

## 系 System 图 Fig.

Cr-Cu-Pd	659	259
Cr-Ni-Pd	660	259
Cu-Fe-Pd	661	259
Cu-Fe-Pt	662	259
Cu-Ni-Pd	663	260
Cu-Ni-Pd	664	260
Cu-Ni-Pd	665	260
Cu-Ni-Pd	666~669	260
Cu-O-Rh	670	261
Fe-Ni-Pd	671	261
Fe-Ni-Pt	672	262
Fe-Ni-Ru	673	262
Fe-Ru-Y	674~675	262
Ga-Ge-Pd	676	263
Ga-Ge-Pt	677	263
Ga-Ni-Pd	678	264
Ga-Ni-Pt	679	264
Ga-Pd-Zn	680	265
Ge-Pd-Te	681	265
Hf-Nb-Ru	682~684	265
Hf-Ru-Ti	685~687	266
Hf-Ru-V	688	267
Hf-Ru-Zr	689~690	267
In-Pd-Sn	691	268
Ir-Nb-Si	692	268
Ir-Ni-Ta	693	268
Ir-O-Zr	694	269
Ir-Re-W	695~697	269
Mg-O-Rh	698	270
Mn-Ni-Pd	699	270
Mo-Os-W	700~702	271
Mo-Pt-Re	703~705	272
Mo-Ru-U	706	272
Nb-O-Ru	707	273
Nb-Ru-Ta	708	273
Nb-Ru-Ti	709~711	273
Nb-Ru-Zr	712~714	274
Ni-Pd-Pt	715~716	274
Ni-Pd-V	717	275
Ni-Ru-Y	718	275
O-Pt-Zr	719	276
O-Rh-Zr	720	276
Os-Re-Ru	721	276
Pb-Pd-Te	722	277
Pb-Pt-Tl	723	277

系 System 图 Fig.		系 System 图 Fig.	
Pd-Re-W 724 .....	277	Re-Ru-V 729 .....	279
Pd-Sb-Te 725 .....	277	Re-Ru-W 730~731 .....	279
Pt-Rh-S 726 .....	278	Ru-Ti-Zr 732~733 .....	280
Pt-Sb-Sn 727 .....	278	Ru-V-Zr 734 .....	280
Re-Ru-Ti 728 .....	278	参考文献 References .....	281

### 第三部分·四元系

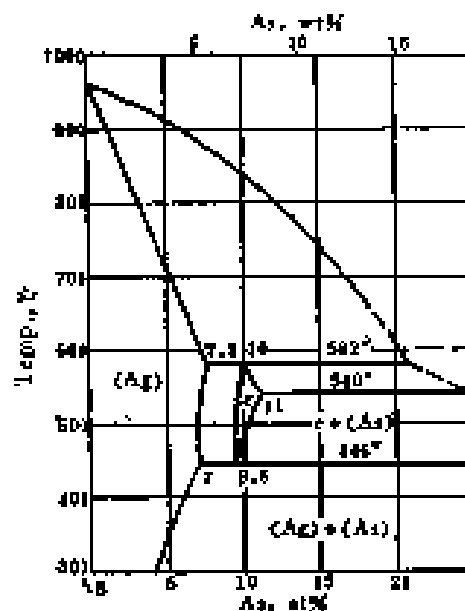
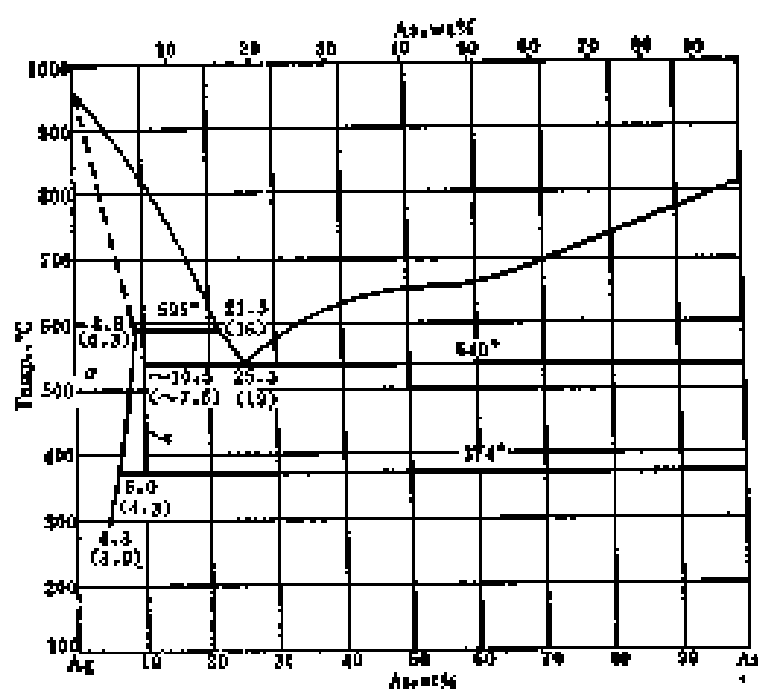
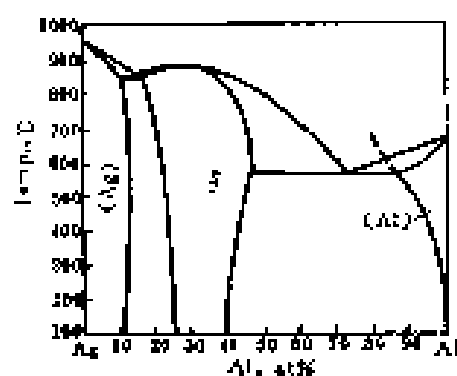
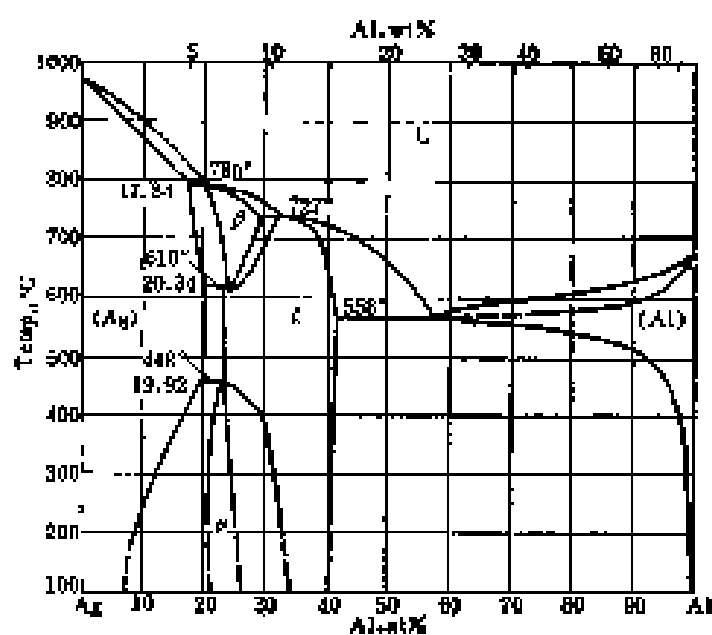
#### Part Three · Quaternary Systems

系 System 图 Fig.		系 System 图 Fig.	
Ag-Al-Cu-Pd 735 .....	288	Ag-Cu-Pb-S 766 .....	298
Ag-As-S-Sb 736 .....	288	Ag-Pb-Sb-Te 767 .....	299
Ag-Au-Cd-Zn 737 .....	288	Au-Cu-Ni-Pt 768 .....	299
Ag-Au-Cu-Zn 738~740 .....	288	Co-Fe-Ni-Pt 769 .....	299
Ag-Bi-Pb-Te 741 .....	289	Co-Ni-Pd-V 770~771 .....	299
Ag-Cd-Cu-Sn 742~748 .....	289	Pd-Pt-Re-Rh 772 .....	300
Ag-Cd-Cu-Zn 749~765 .....	292	参考文献 References .....	301

# 第 一 部 分 · 二 元 系

## Part One · Binary Systems





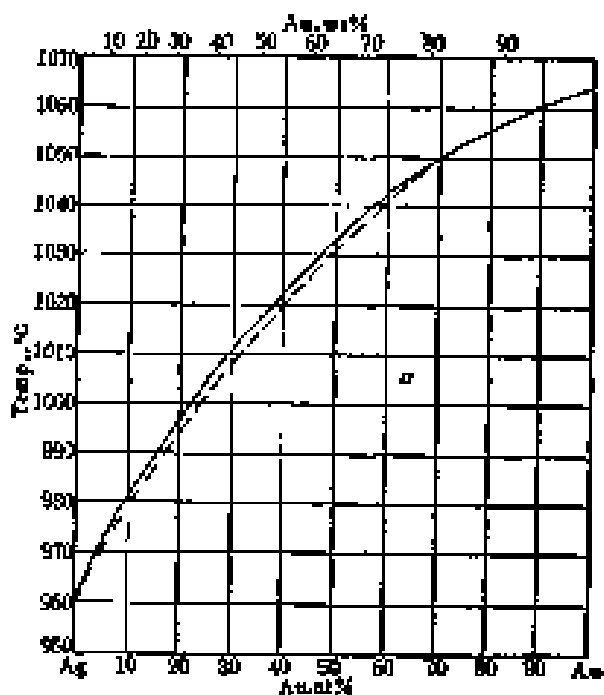


Fig.5 Ag-Au 銀-金 Silver-Gold(2)

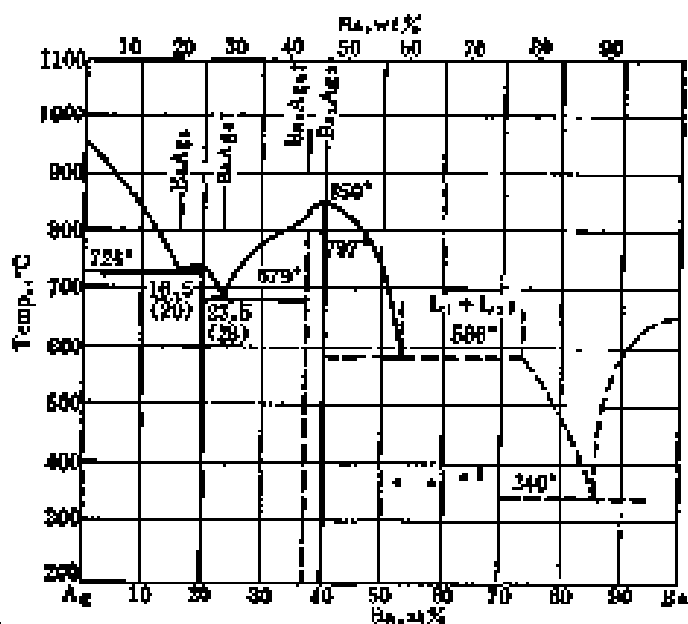


Fig.6 Ag-Ba 銀-鋇 Silver-Barium(10)

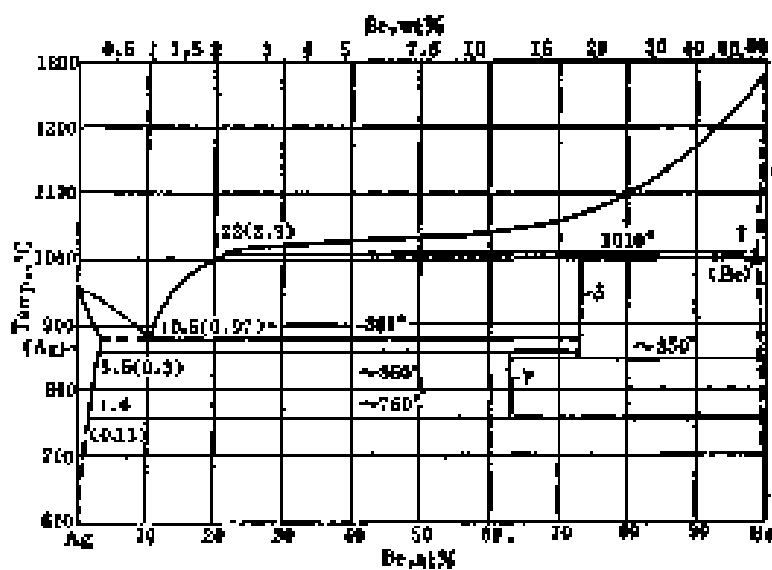


Fig.7 Ag-Be 銀-铍 Silver-Beryllium(1)

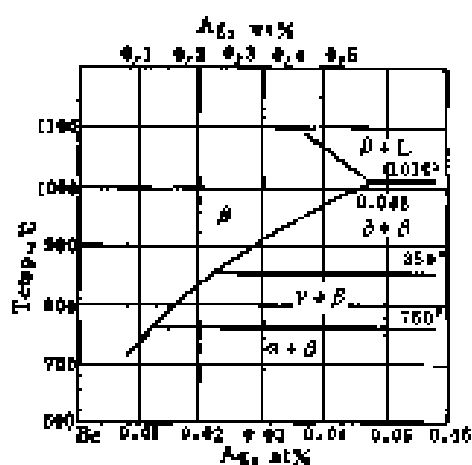


Fig.8 Ag-Be 銀-铍 Silver-Beryllium(11)

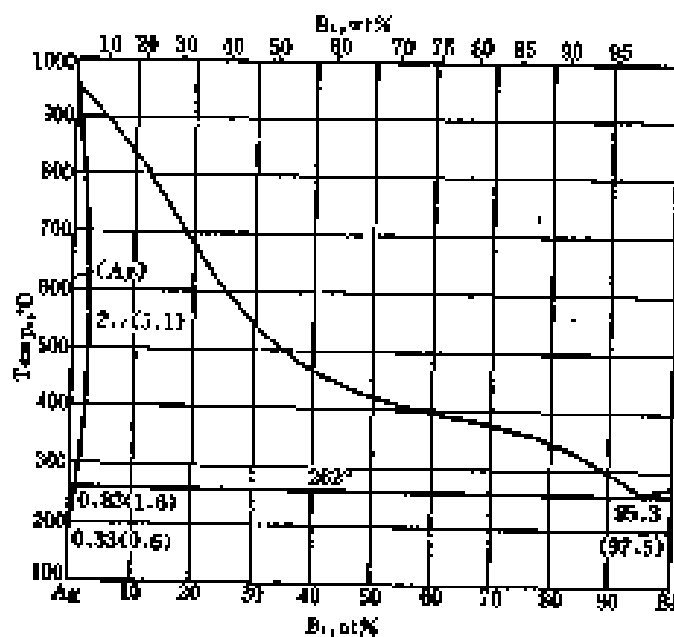


Fig. 9 Ag-Bi 银-铋 Silver-Bismuth(1)

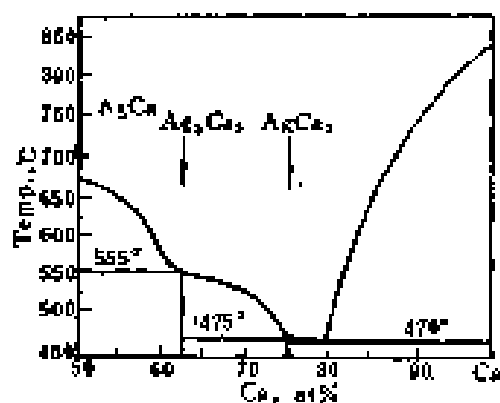


Fig. 11 Ag-Ca 银-钙  
Silver-Calcium(12)

部分相图 Partial phase diagram

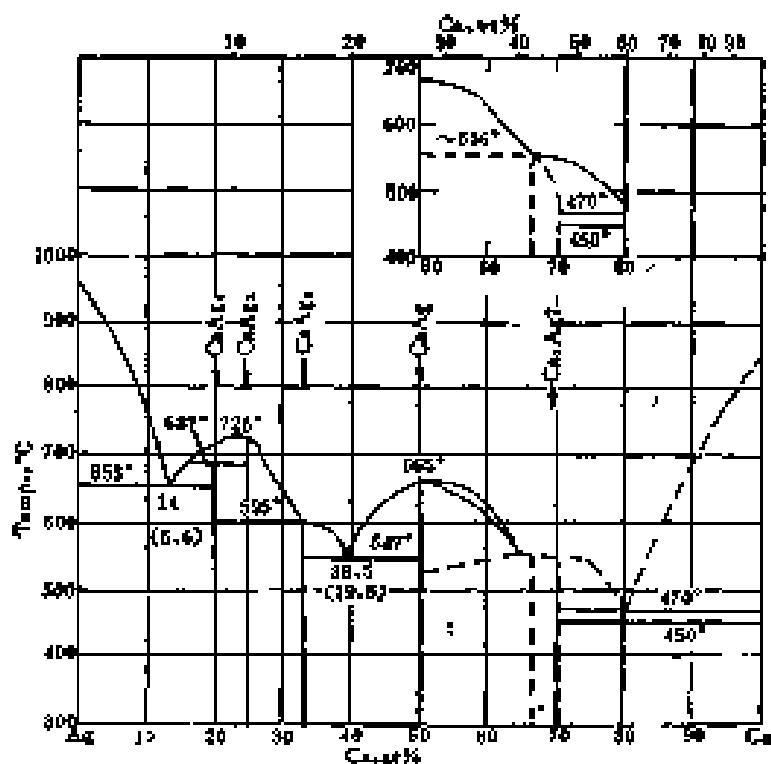


Fig. 10 Ag-Ca 银-钙 Silver-Calcium(1)

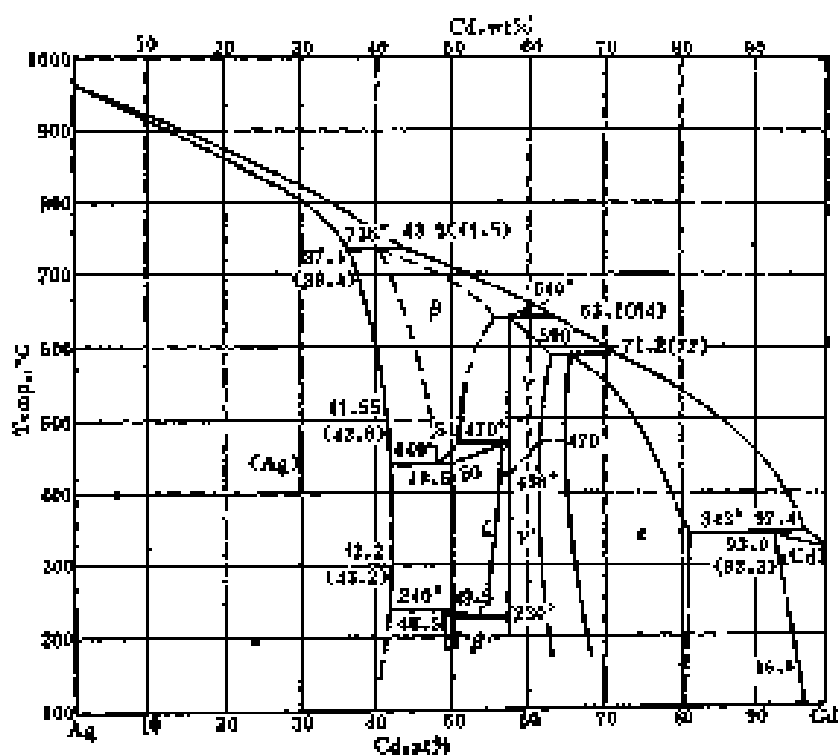


Fig.12 Ag-Cd 銀-鎘 Silver-Cadmium(1)

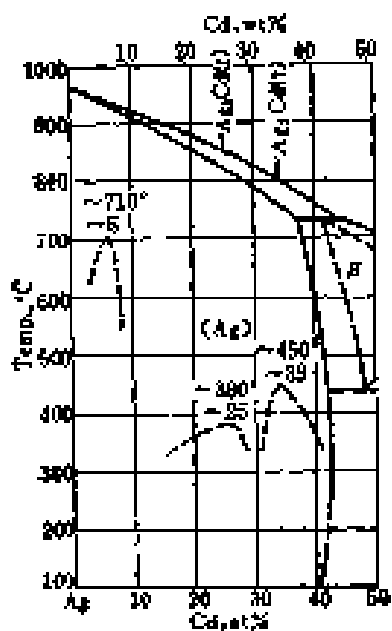


Fig.13 Ag-Cd 銀-鎘  
Silver-Cadmium(2)

部分相圖 Partial phase diagram

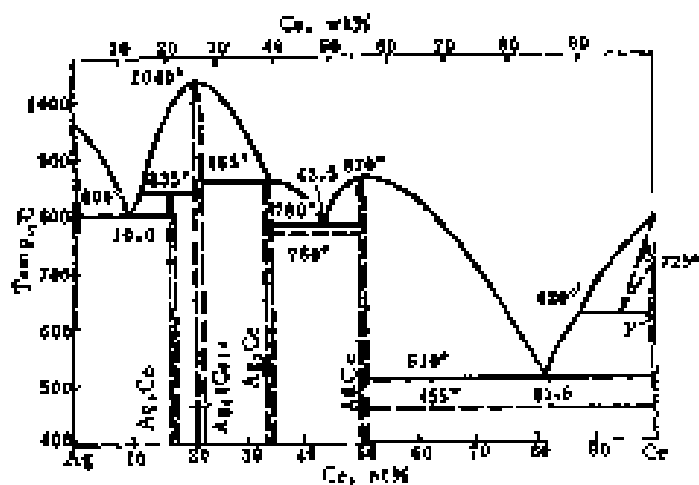


Fig.14 Ag-Ce 銀-銻 Silver-Cerium(1)

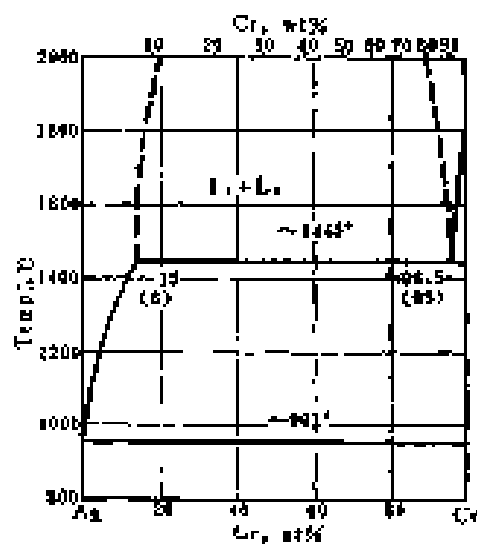


Fig.15 Ag-Cr 银-铬 Silver-Chromium(1)

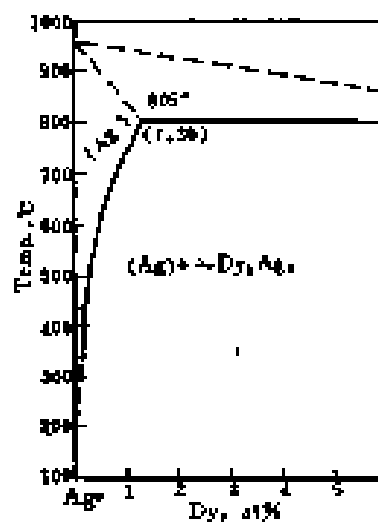


Fig.17 Ag-Dy 银-镱 Silver-Dysprosium(14)

部分相图 Partial phase diagram

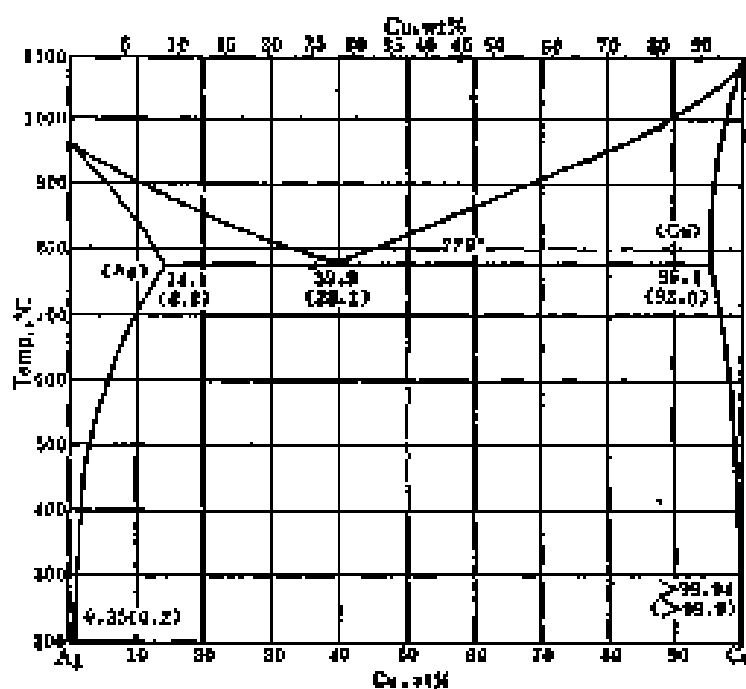


Fig.16 Ag-Cu 银-铜 Silver-Copper(1)

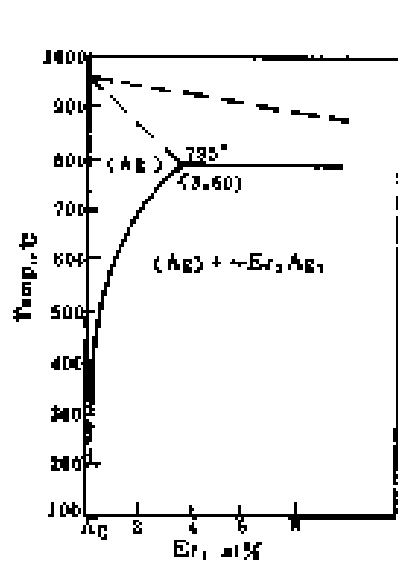


Fig.18 Ag-Er 银-铈 Silver-Erbium(14)

部分相图 Partial phase diagram

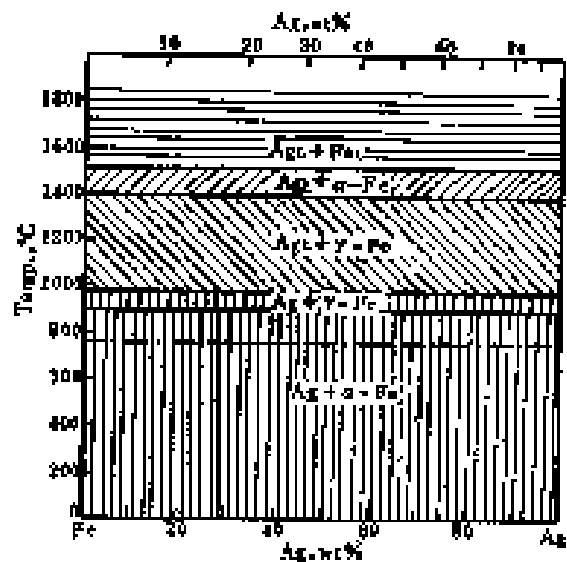


Fig.20 Ag-Fe 银-铁 Silver-Iron(5)

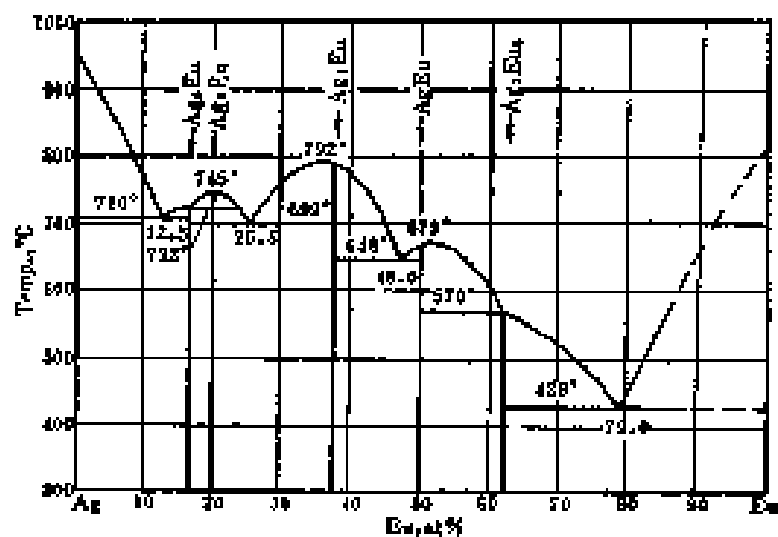


Fig.19 Ag-Eu 银-铕 Silver-Europium(15)

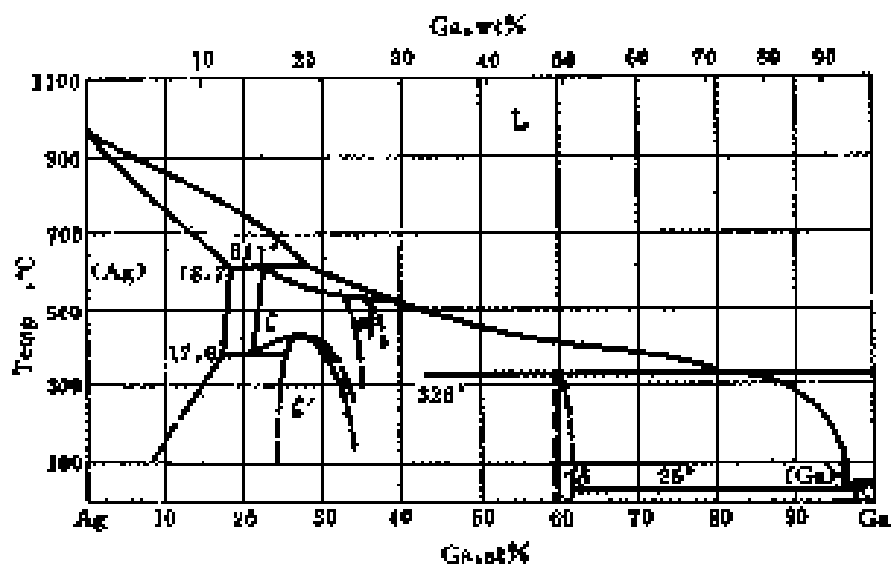


Fig.21 Ag-Ga 銀-鎵 Silver-Gallium(1)

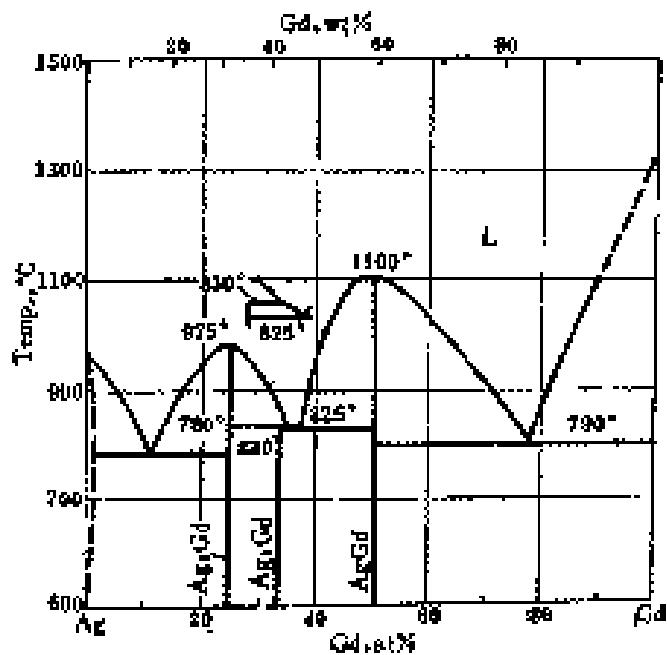


Fig.22 Ag-Gd 銀-釓 Silver-Gadolinium(10)

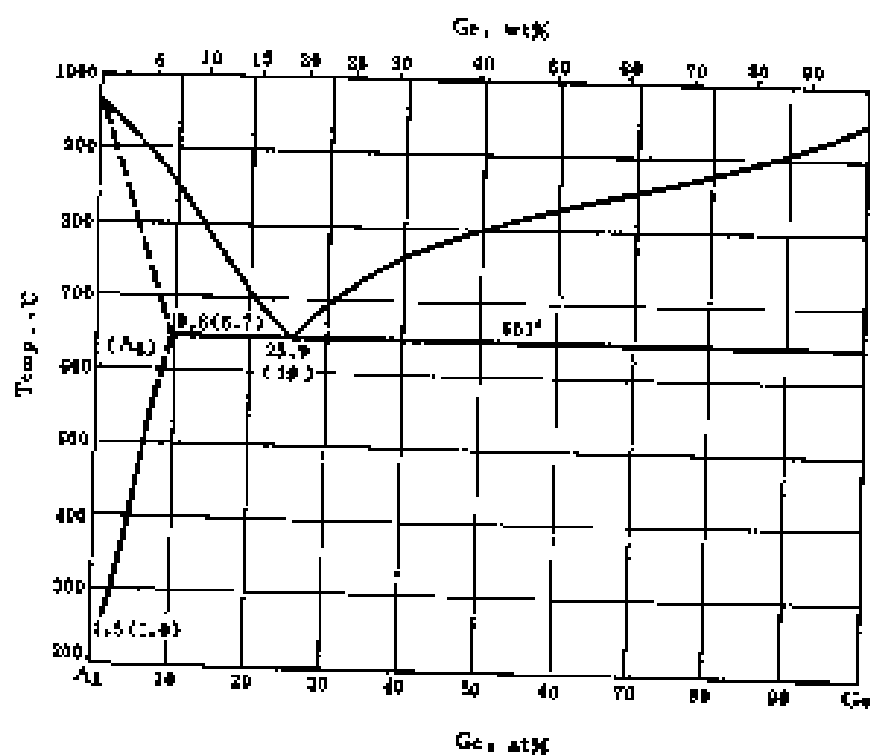


Fig.23 Ag-Ge 銀-碲 Silver-Germanium(I)

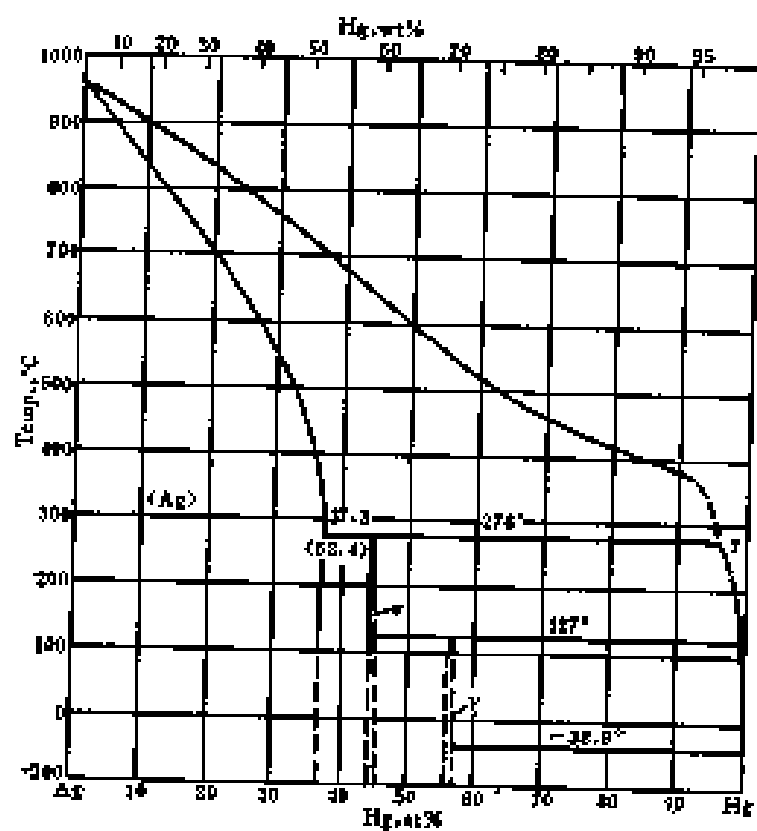


Fig.24 Ag-Hg 銀-汞 Silver-Mercury(I)



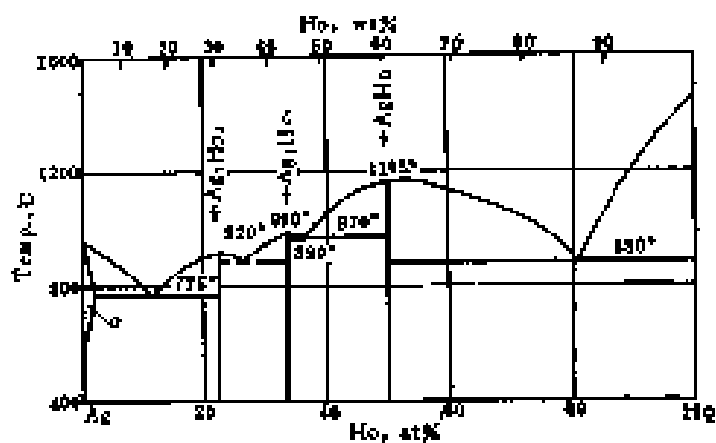


Fig.25 Ag-Ho 銀-ホ Silver-Holmium(17)

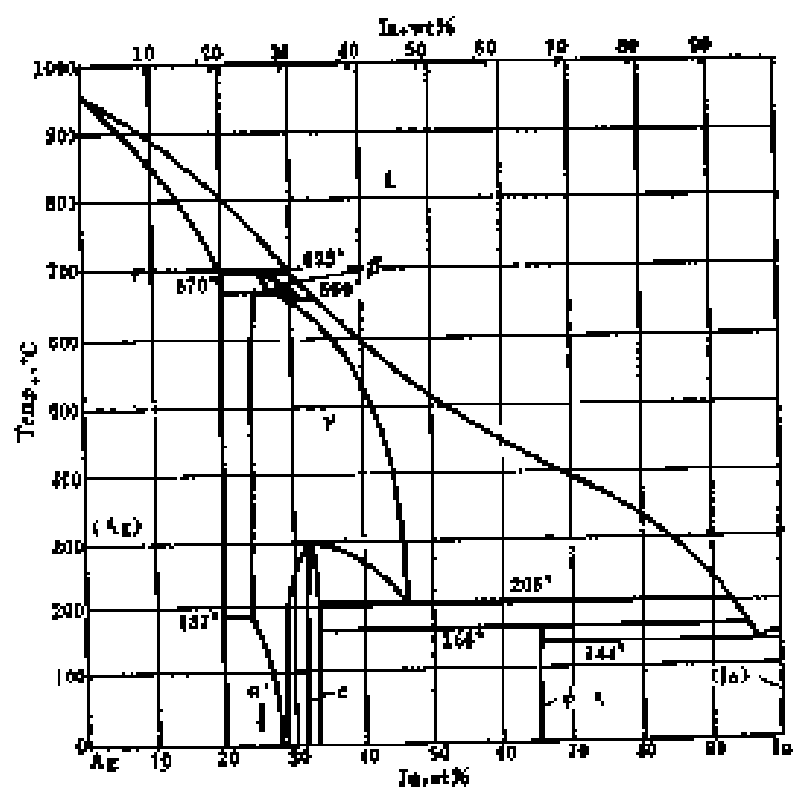


Fig.26 Ag-In 銀-錫 Silver-Indium(4)

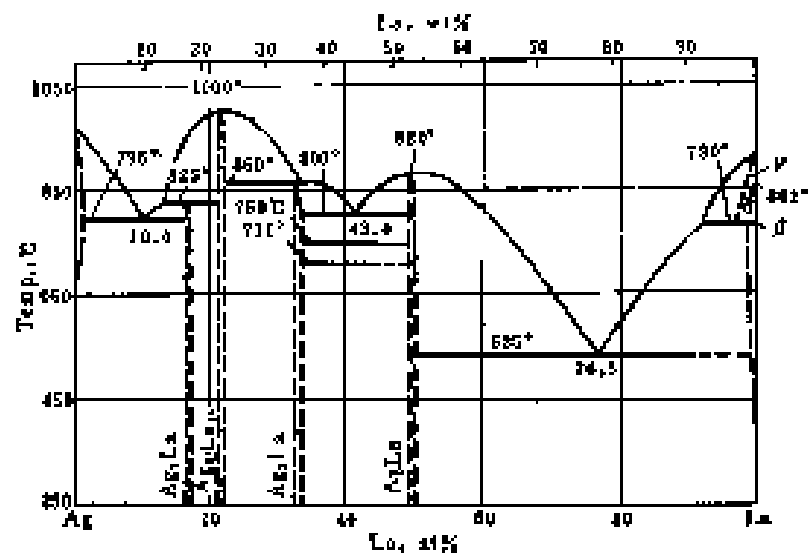


Fig.27 Ag-La 銀-鐳 Silver-Lanthanum(183)

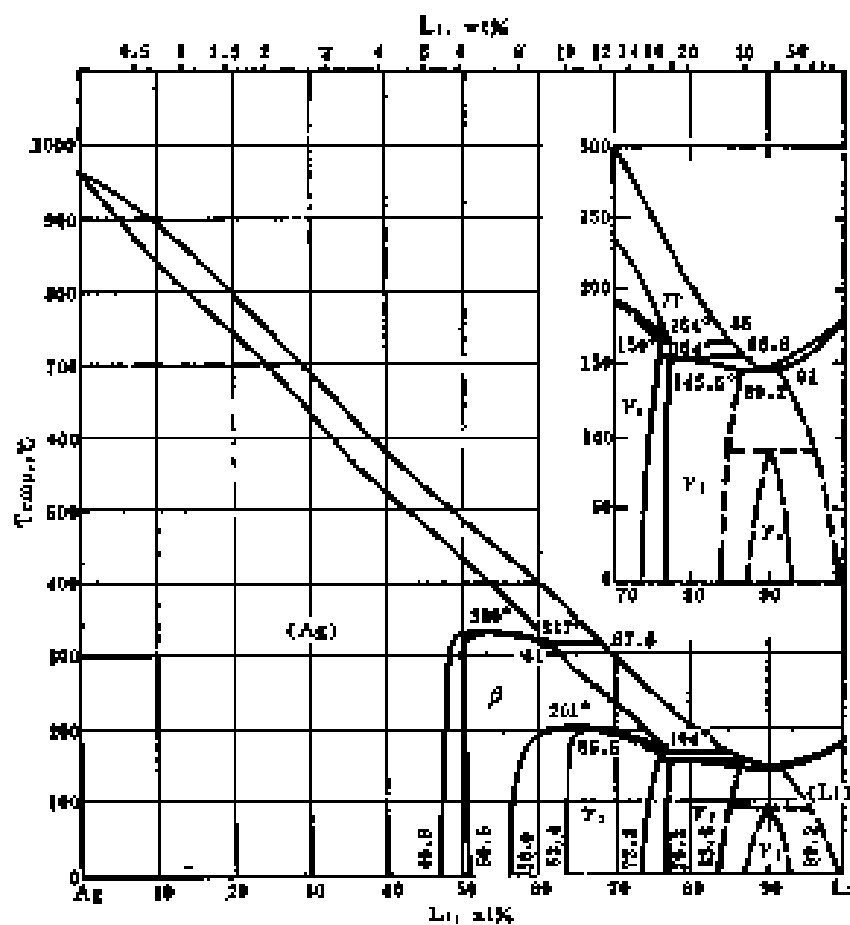


Fig.28 Ag-Lu 銀-銩 Silver-Lutetium(19)

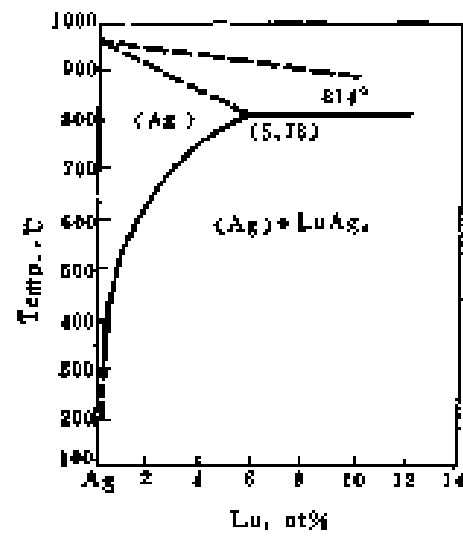


Fig.29 Ag-Lu 銀-銦 Silver-Lutetium(4)

部分相圖 Partial phase diagram

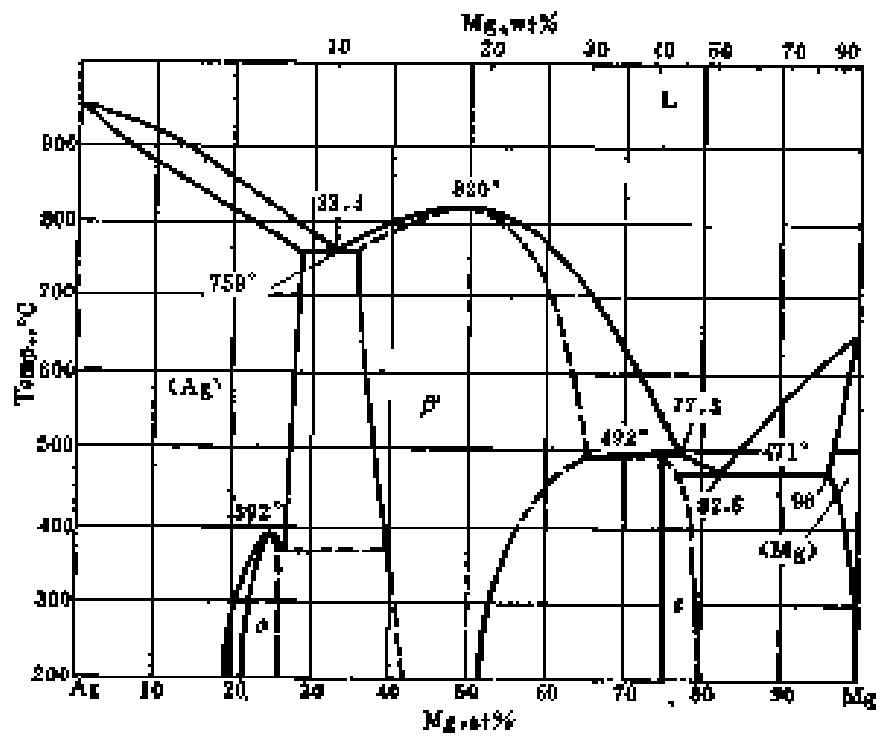


Fig.30 Ag-Mg 銀-鎂 Silver-Magnesium(4)

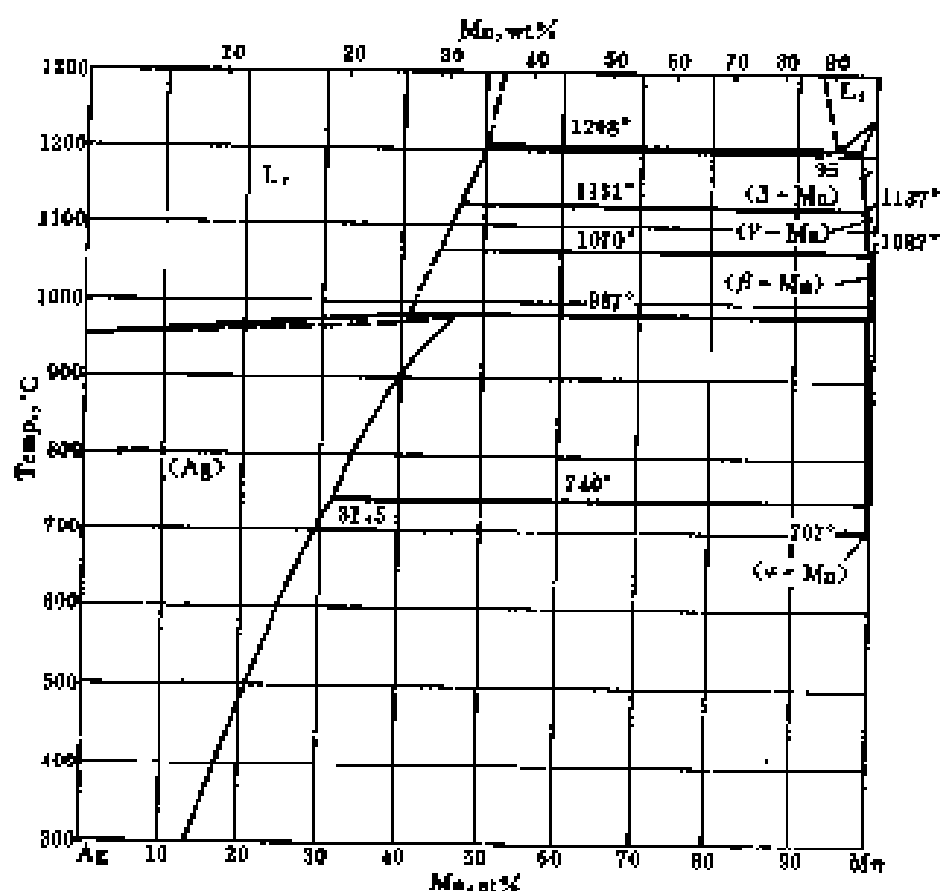


Fig. 31 Ag-Mn 銀-錳 Silver-Manganese(1)

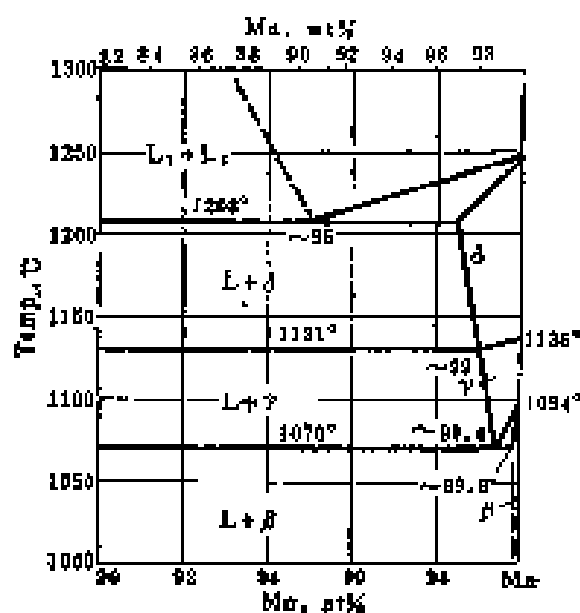


Fig. 32 Ag-Mn 銀-錳 Silver-Manganese(2)

部分相圖 Partial phase diagram

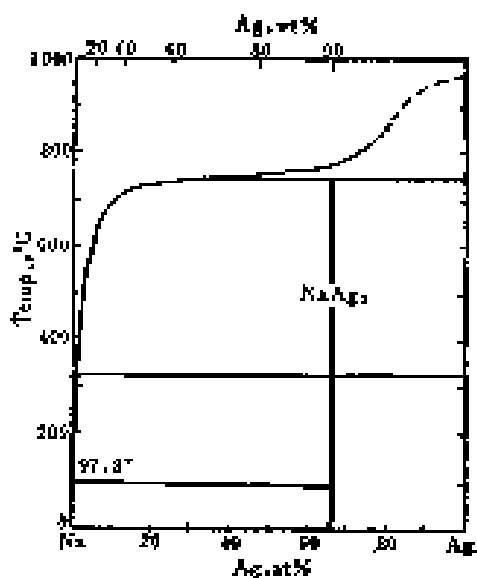


Fig.33 Ag-Na 銀-鈉 Silver-Sodium(20)

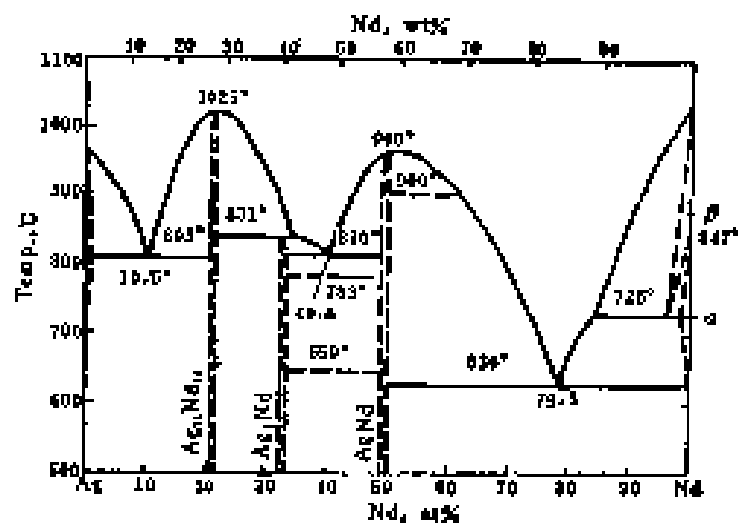


Fig.34 Ag-Nd 銀-釔 Silver-Neodymium(21)

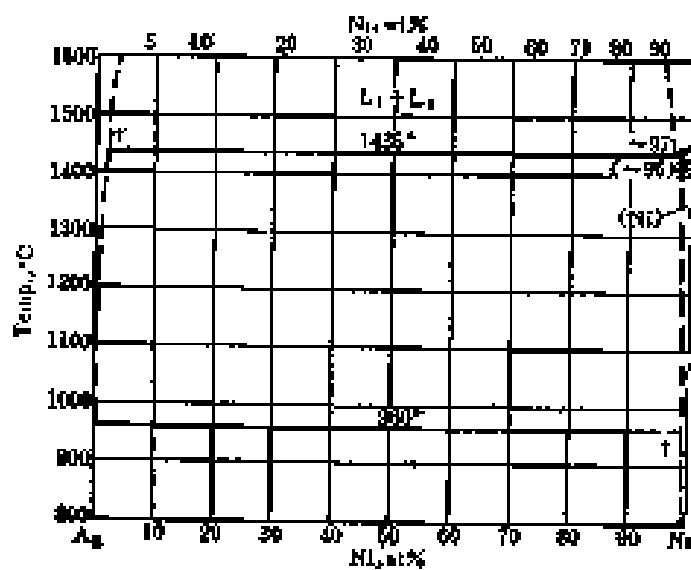


Fig.35 Ag-Ni 銀-鎳 Silver-Nickel(11)

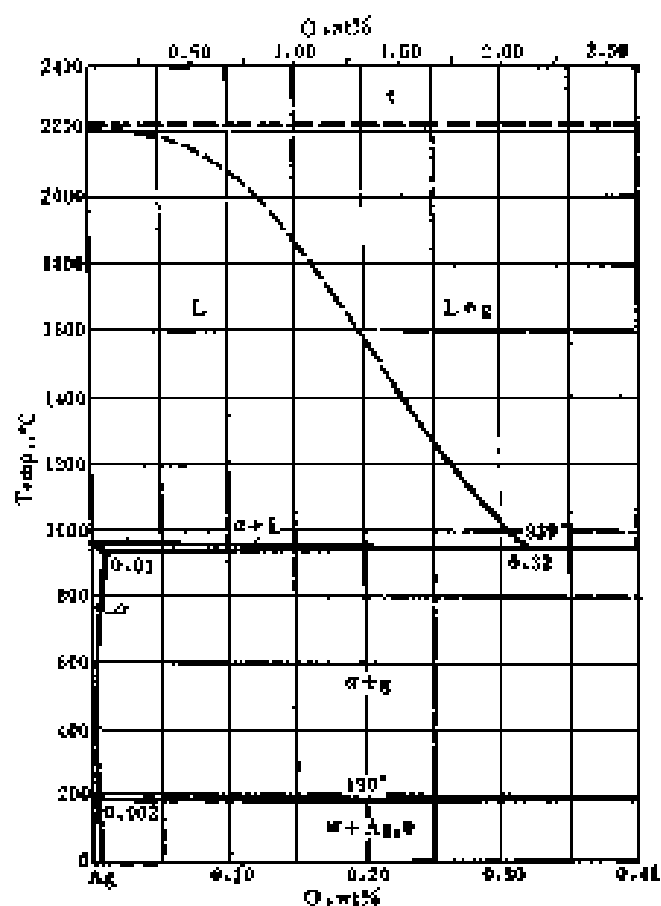


Fig. 36 Ag-O 银-氧 Silver-Oxygen (1)  
部分相图 Partial phase diagram

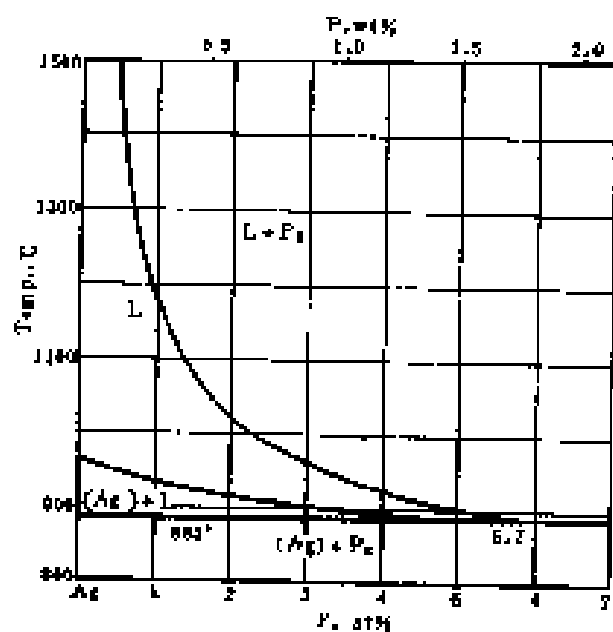


Fig. 37 Ag-P 银-磷 Silver-Phosphorus (22)  
部分相图 Partial phase diagram

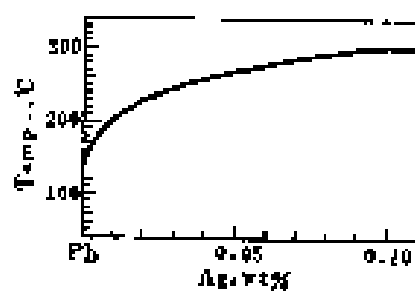


Fig. 38 Ag-Pb 银-铅 Silver-Lead (23)  
溶解度 Solubility

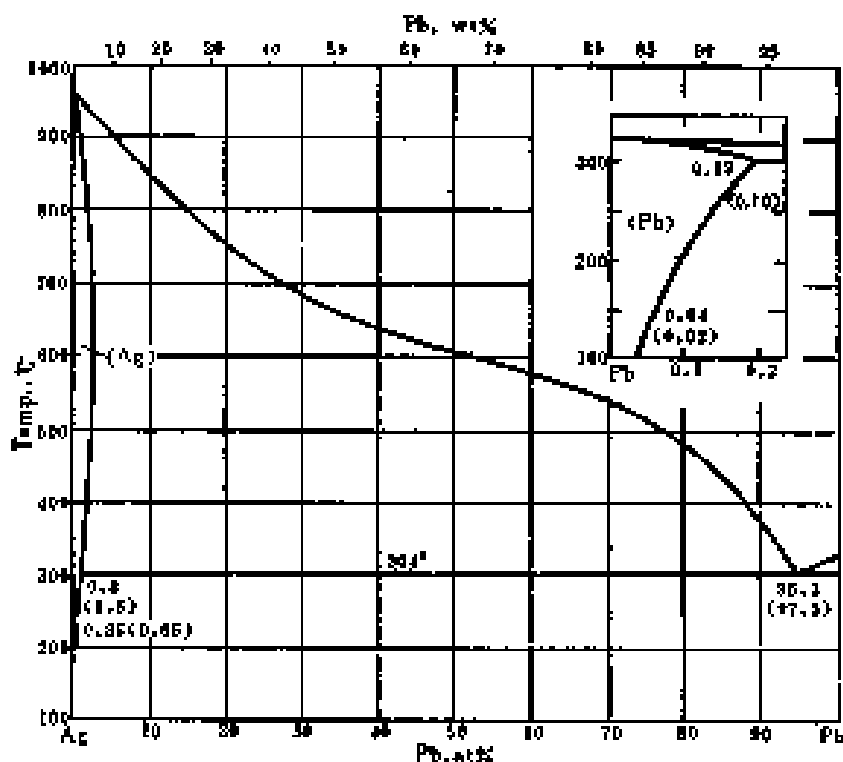


Fig.39 Ag-Pb 銀-鉛 Silver-Lead(I)

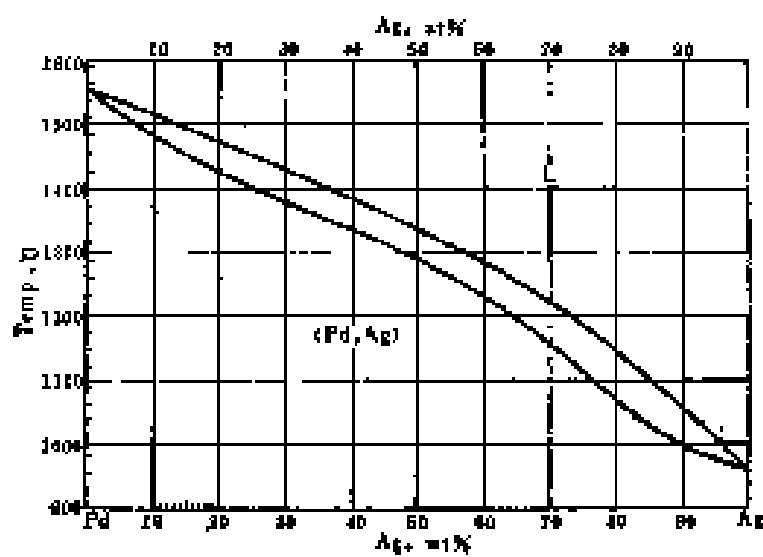


Fig.40 Ag-Pd 銀-鉑 Silver-Palladium(6)

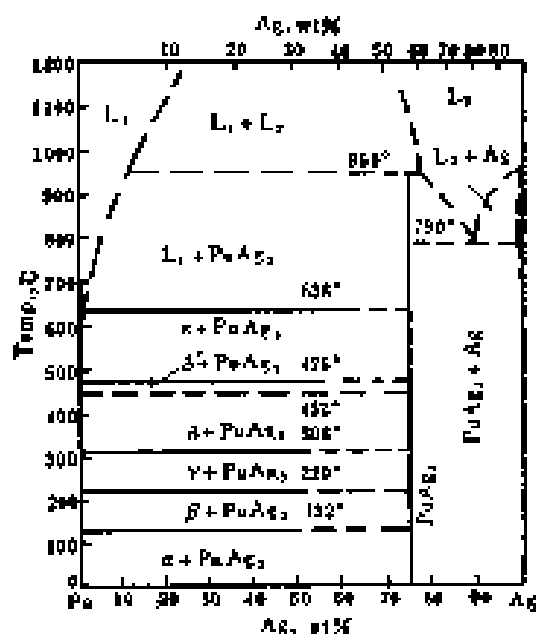
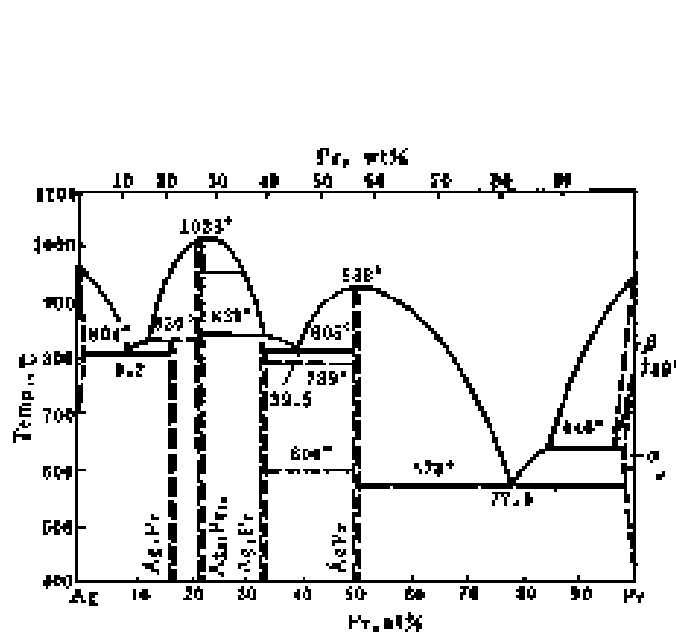


Fig.41 Ag-Pt 銀-銻 Silver-Platinum(24)

Fig.43 Ag-Pu 銀-鈾 Silver-Plutonium(25)

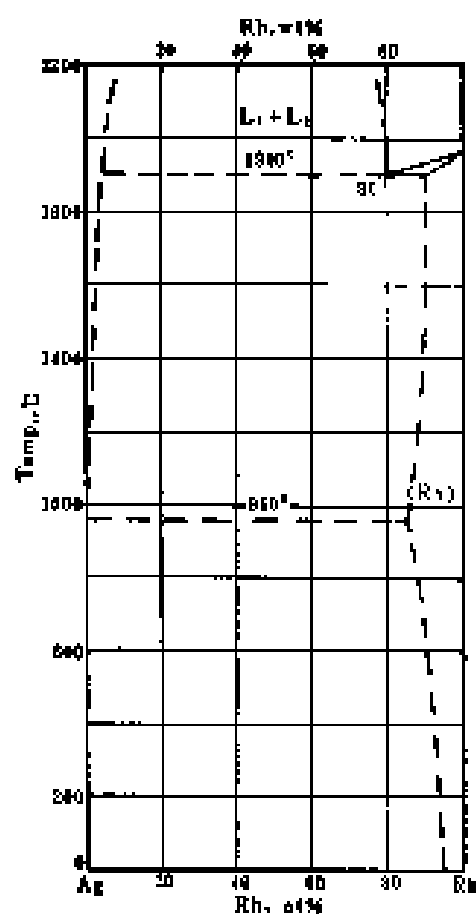
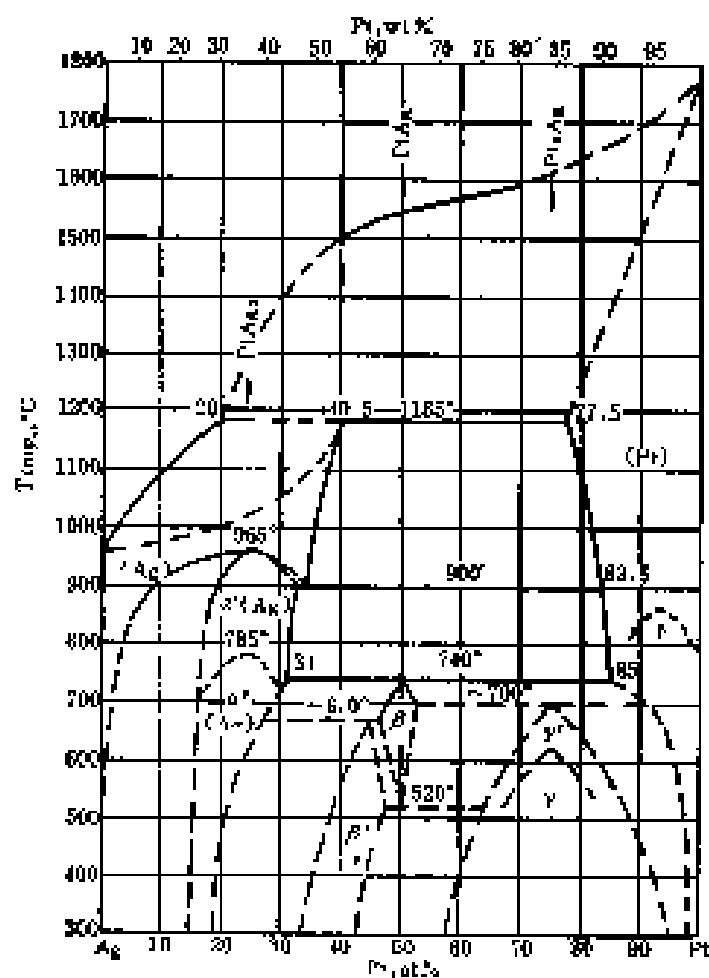


Fig.42 Ag-Pt 銀-銻 Silver-Platinum(1)

Fig.44 Ag-Rh 銀-銲 Silver-Rhodium(26)



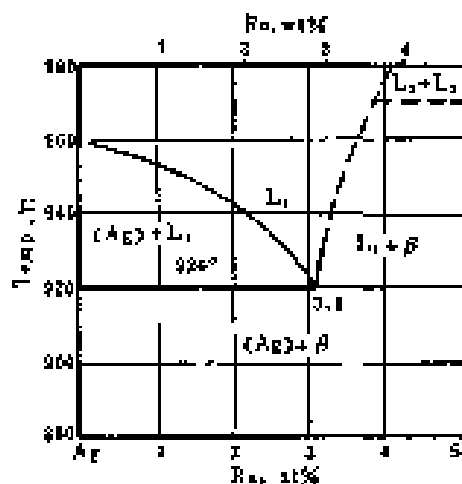


Fig. 45 Ag-Ru 銀-鈦  
Silver-Ruthenium (27)

部分相圖 Partial phase diagram

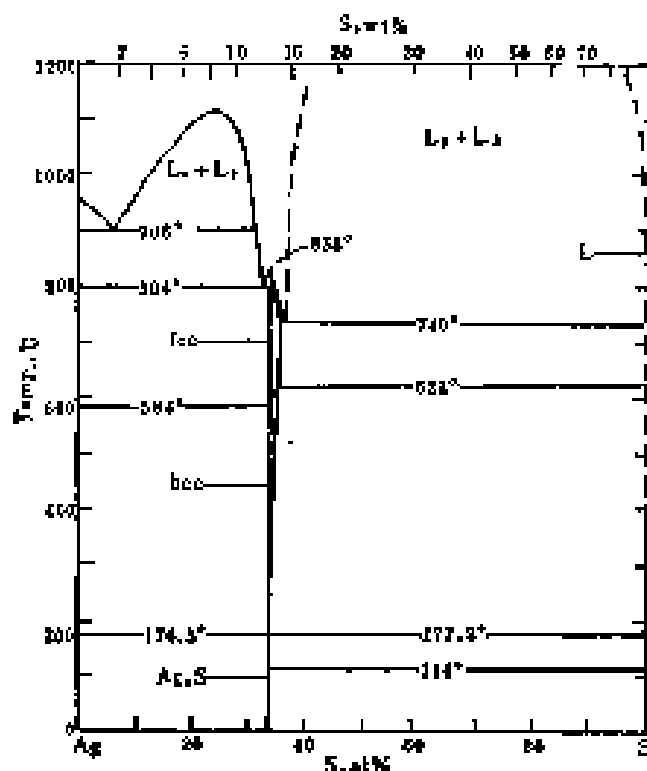


Fig. 46 Ag-S 銀-硫 Silver-Sulfur (14)

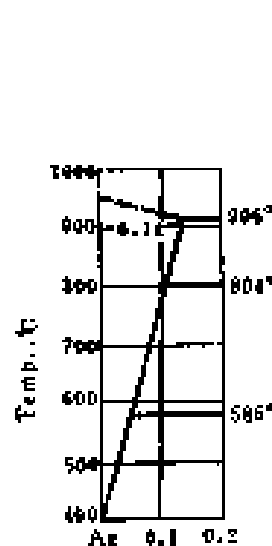


Fig. 47 Ag-S 銀-硫  
Silver-Sulfur (28)

部分相圖 Partial  
phase diagram

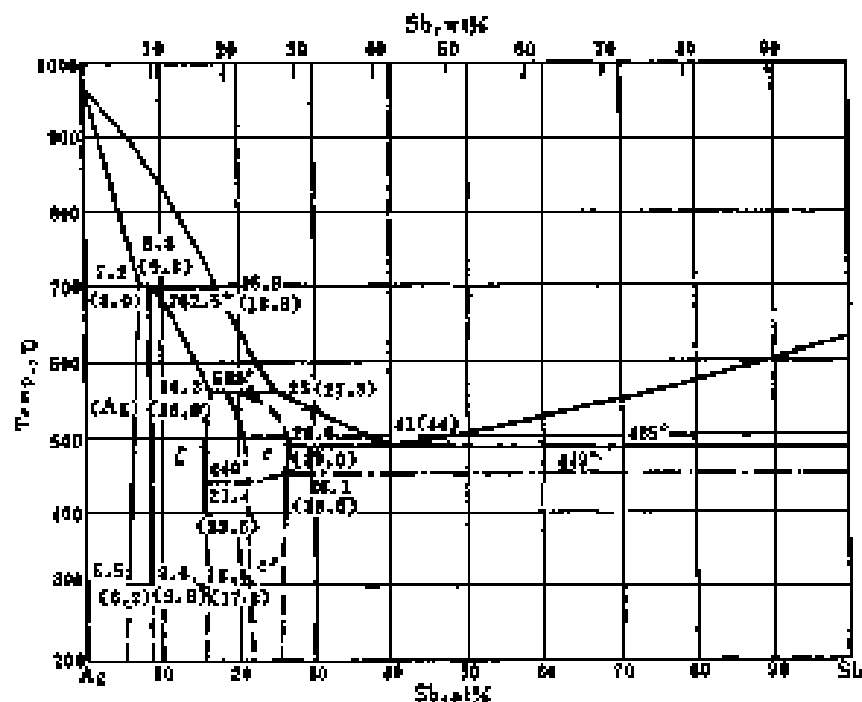


Fig. 48 Ag-Sb 銀-銻 Silver-Antimony (1)

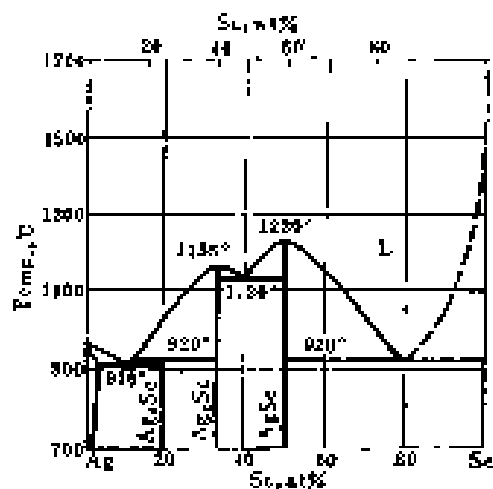


Fig.49 Ag-Sc 银-钪 Silver-Scandium(28)

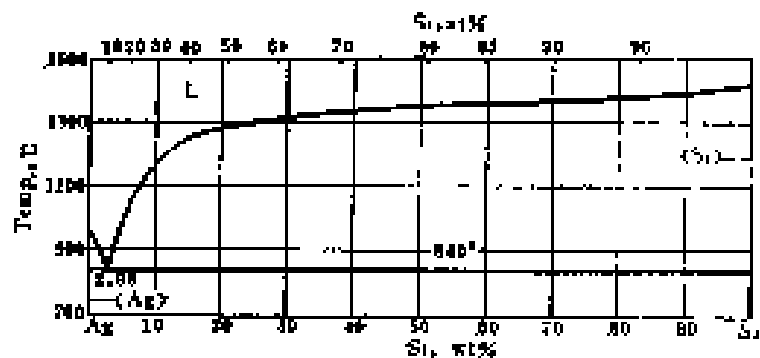


Fig.52 Ag-Si 银-硅 Silver-Silicon(6)

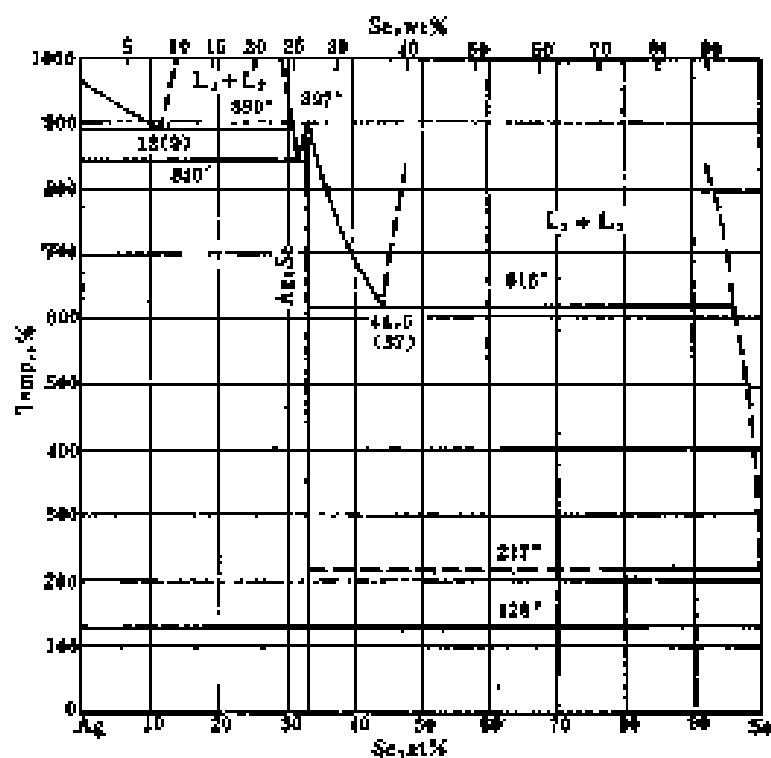


Fig.50 Ag-Se 银-硒 Silver-Selenium(1)

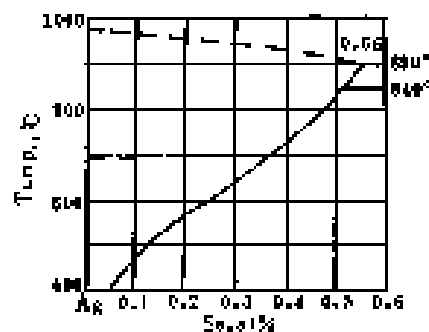


Fig.51 Ag-Se 银-硒 Silver-Selenium(28)

部分相图 Partial phase diagram

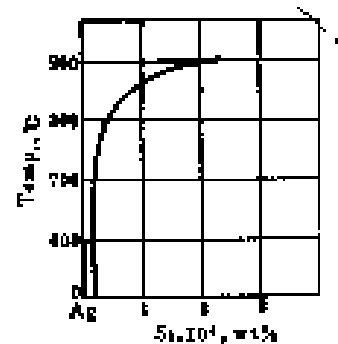


Fig.53 Ag-Si 银-硅 Silver-Silicon(30)

溶解度 Solubility

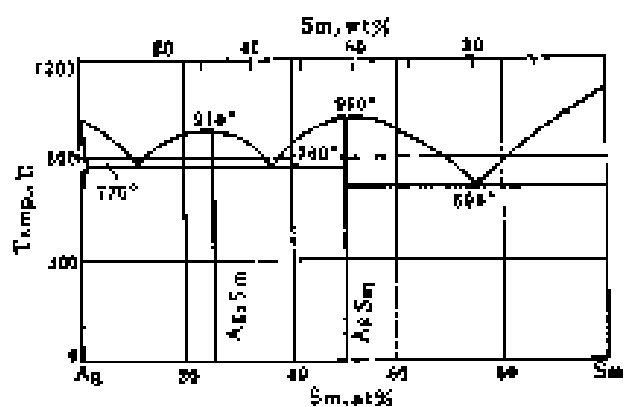


Fig. 54 Ag-Sm 銀-鈔 Silver-Samarium(3)

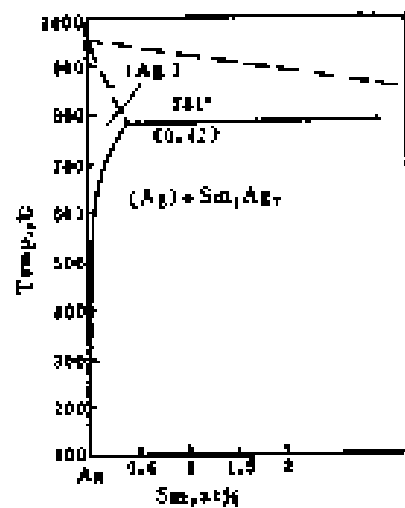


Fig. 55 Ag-Sm 銀-鈔 Silver-Samarium(14)

部分相圖 Partial phase diagram

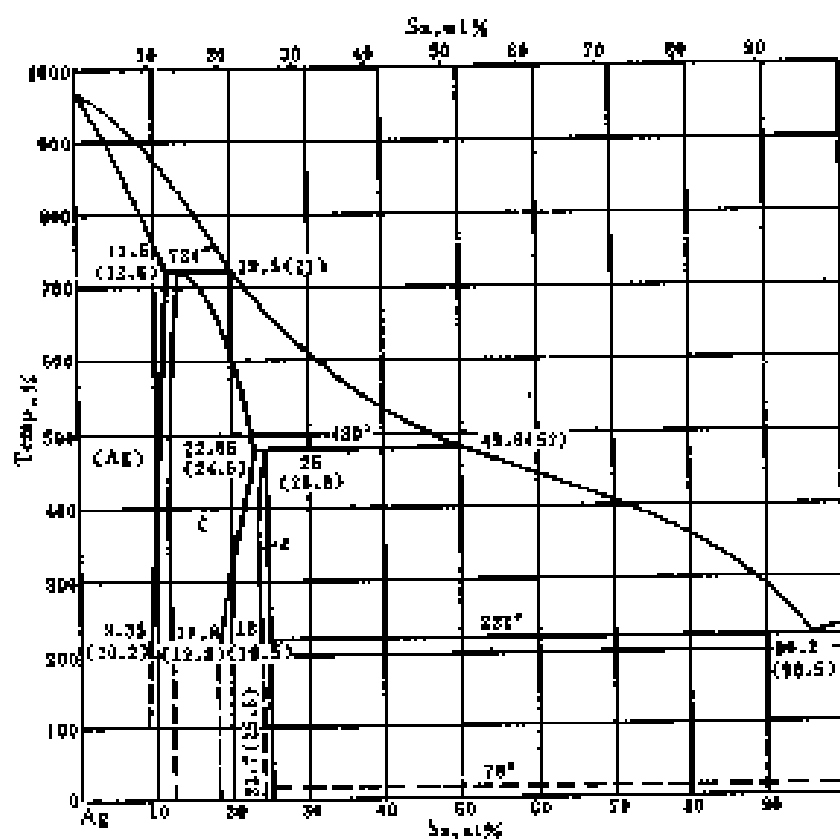


Fig. 56 Ag-Sn 銀-錫 Silver-Tin(1)

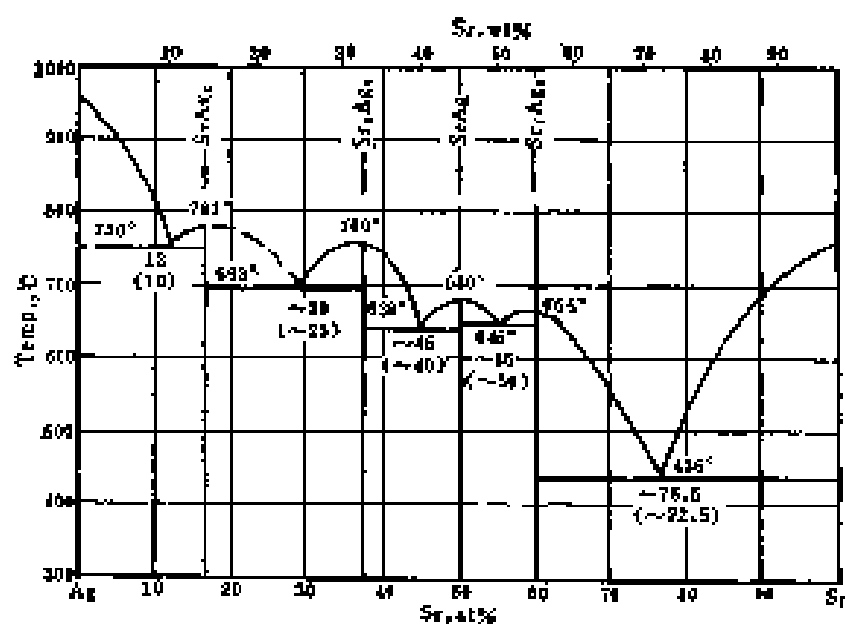


Fig. 57 Ag-Sr 銀-銻 Silver-Strontium(14)

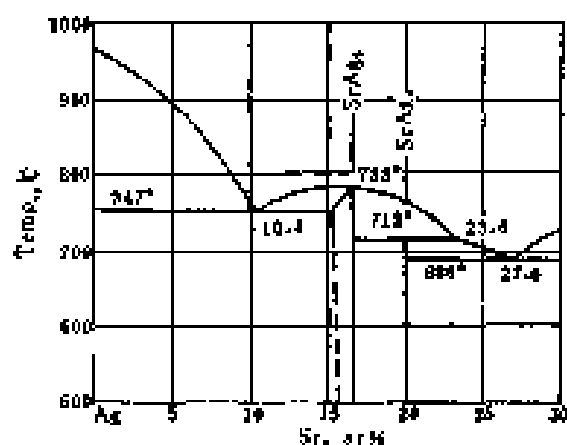


Fig. 58 Ag-Sr 銀-銻 Silver-Strontium(32)

部分相图 Partial phase diagram

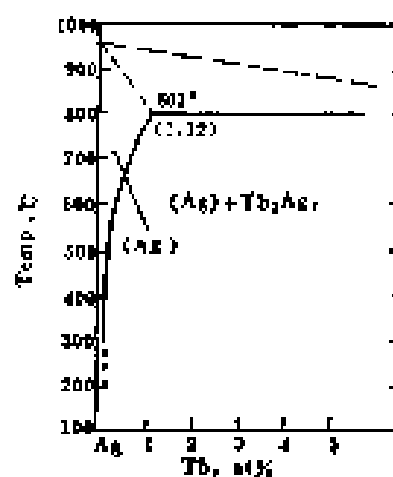


Fig. 59 Ag-Tb 銀-銻 Silver-Terbium(14)

部分相图 Partial phase diagram

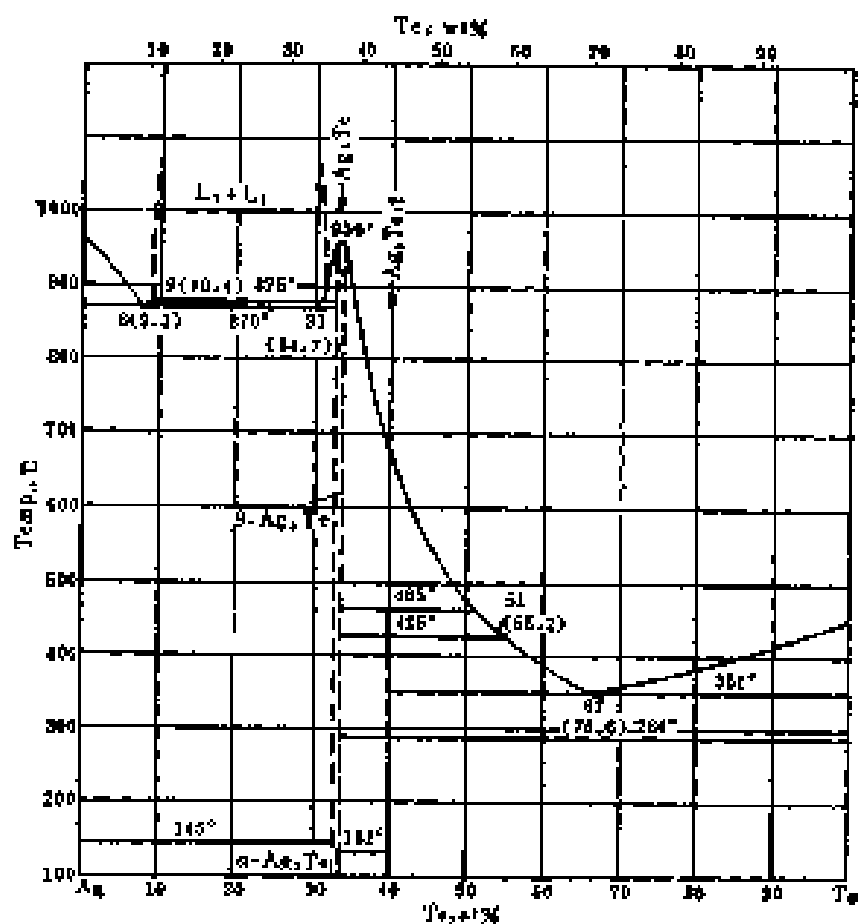


Fig 60 Ag-Te 銀-碲 Silver-Tellurium(13)

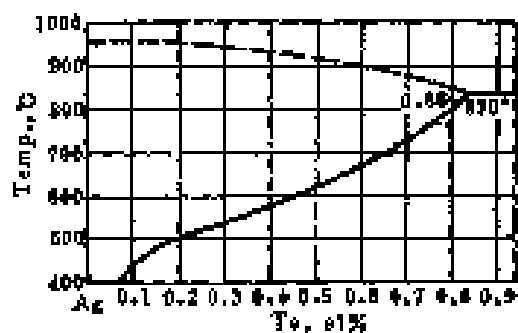


Fig 61 Ag-Te 銀-碲 Silver-Tellurium(23)

部分相图 Partial phase diagram

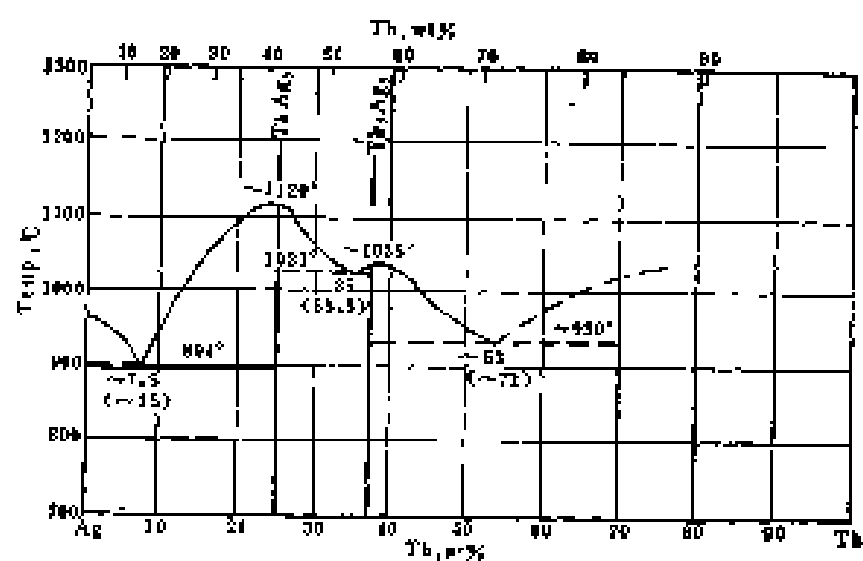


Fig 62 Ag-Th 42-41 Silver-Thorium(1)

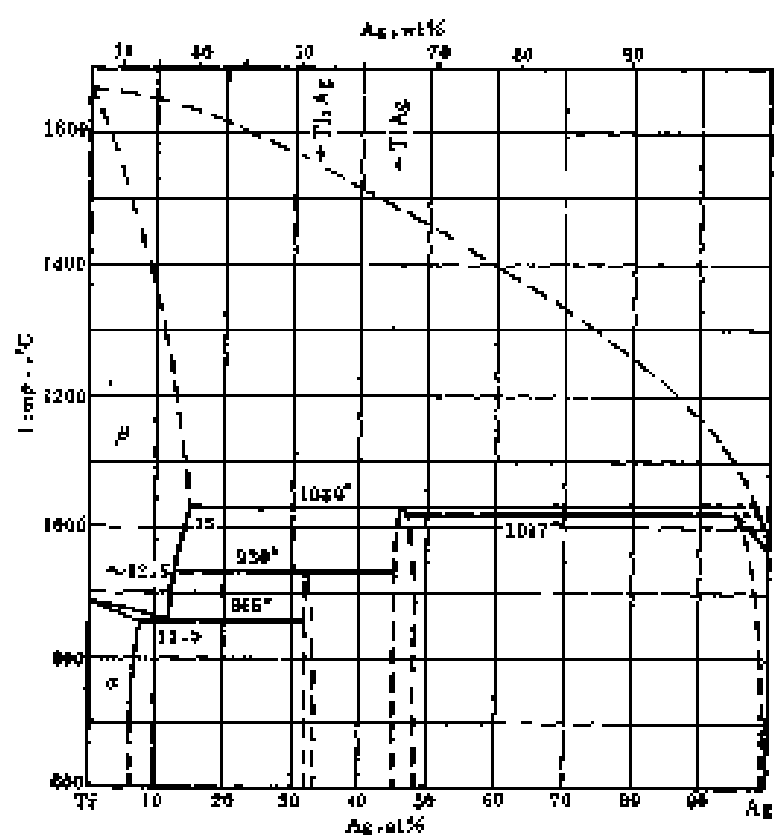


Fig. 63 Ag-Ti 銀-鈦 Silver-Titanium(2)

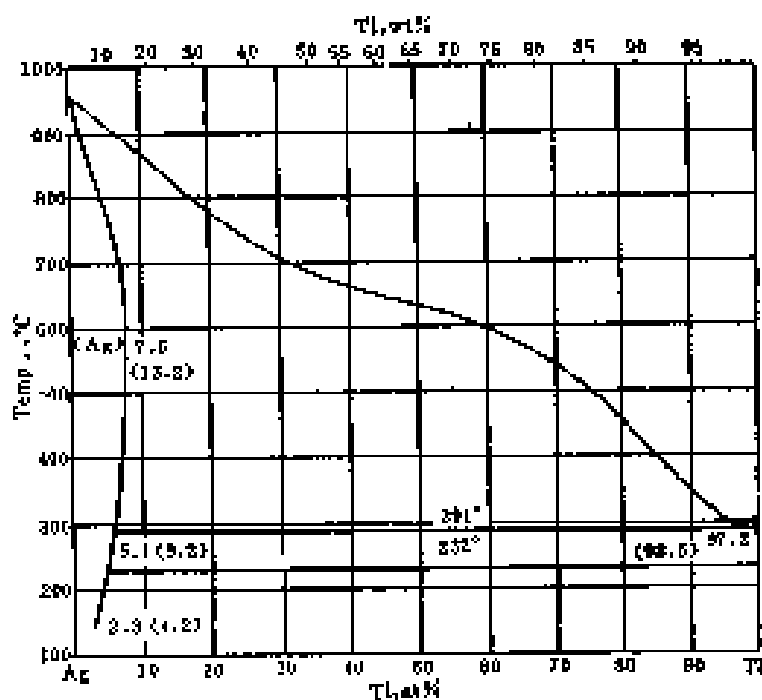


Fig.64 Ag-Tl 银-铊 Silver-Thallium(1)

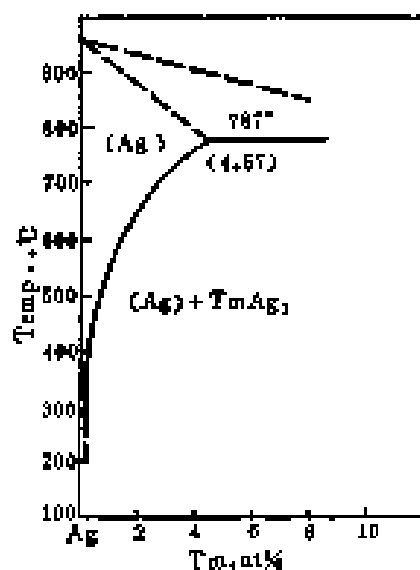


Fig.65 Ag-Tm 银-铥 Silver-Thulium(1)

部分相图 Partial phase diagram

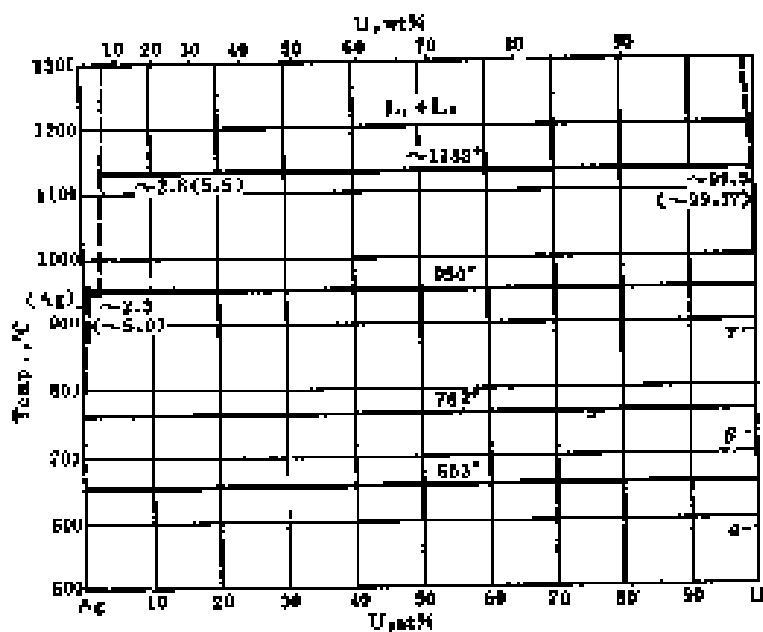


Fig.66 Ag-U 银-铀 Silver-Uranium(1)

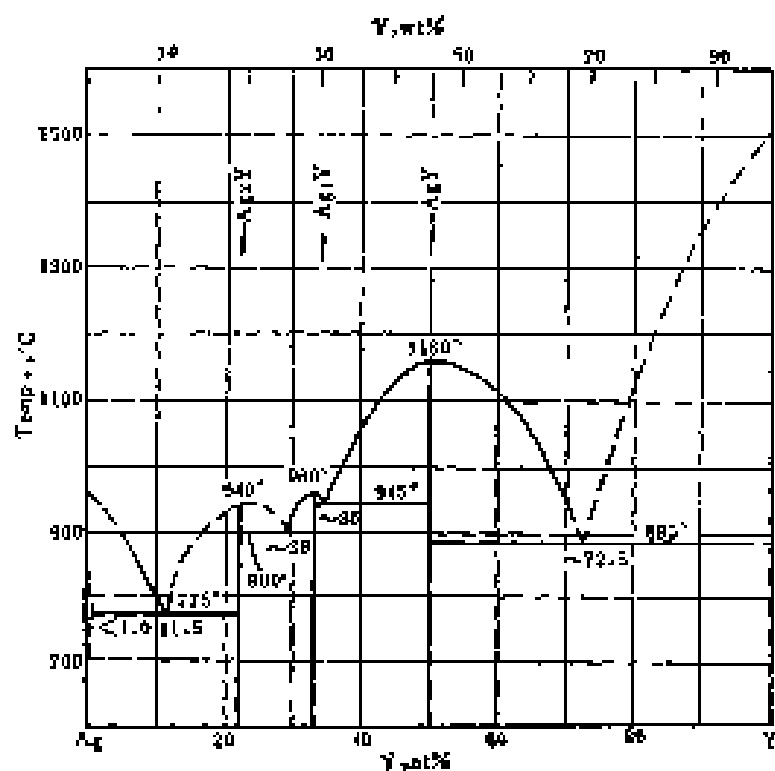


Fig. 67 Ag-Y 銀-钇 Silver-Yttrium(33)

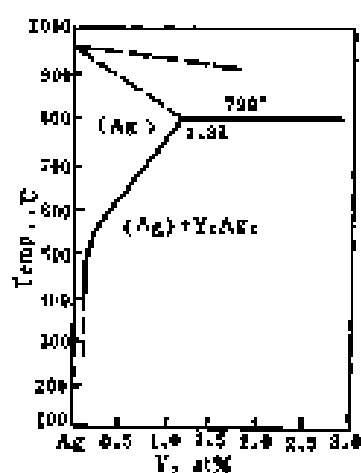


Fig. 68 Ag-Y 銀-钇 Silver-Yttrium(14)

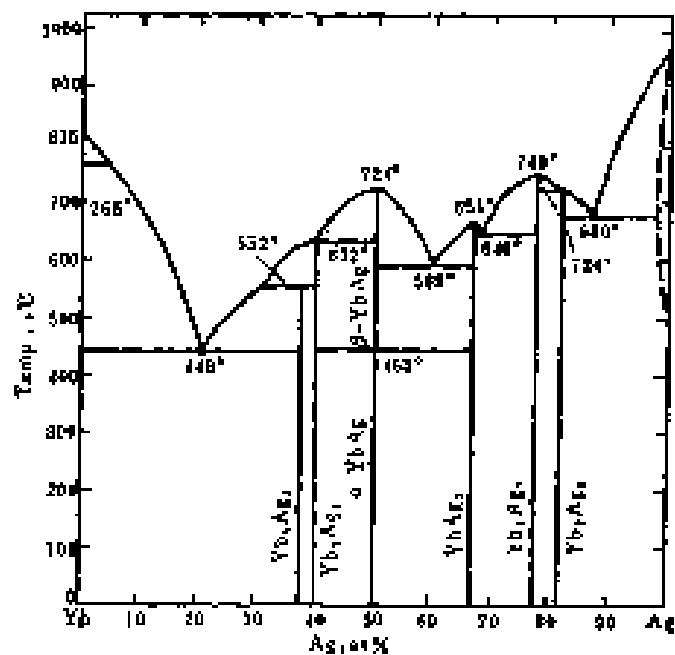


Fig. 69 Ag-Yb 銀-钇 Silver-Ytterbium(14)

部分相图 Partial phase diagram



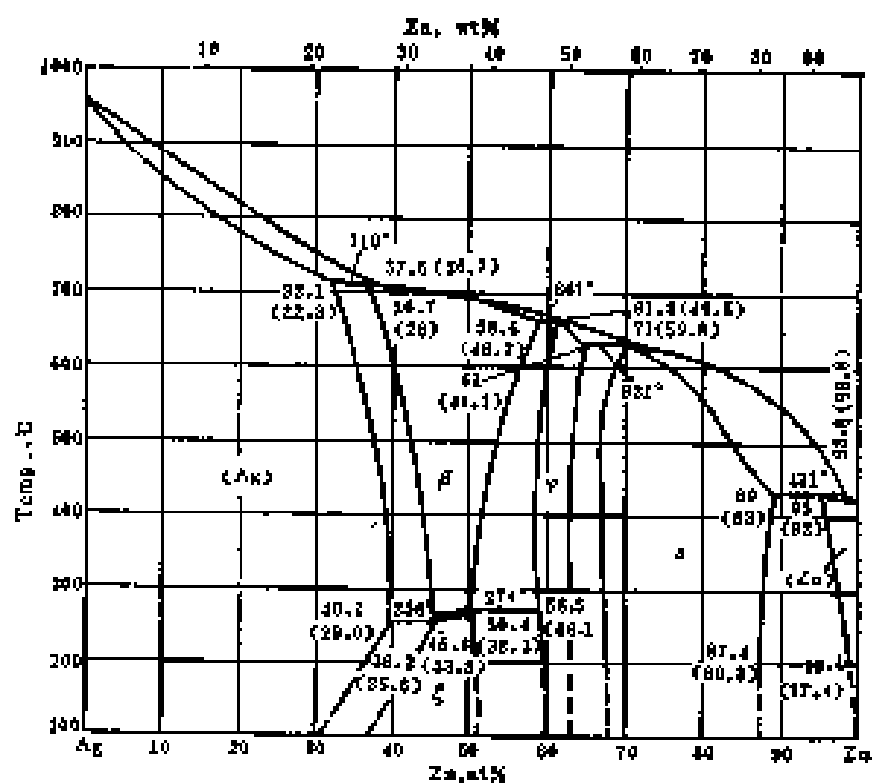


Fig.70 Ag-Zn 銀-鋅 Silver-Zinc(1)

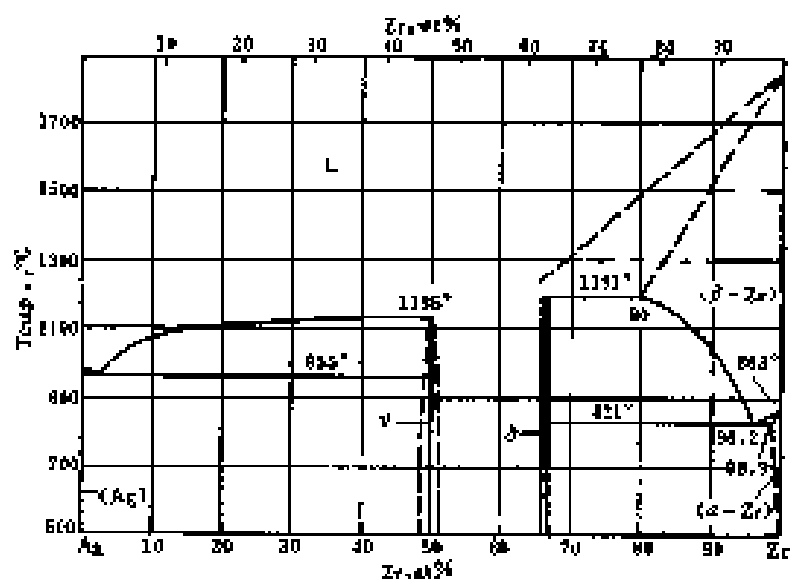


Fig.71 Ag-Zr 銀-鋯 Silver-Zirconium(4)

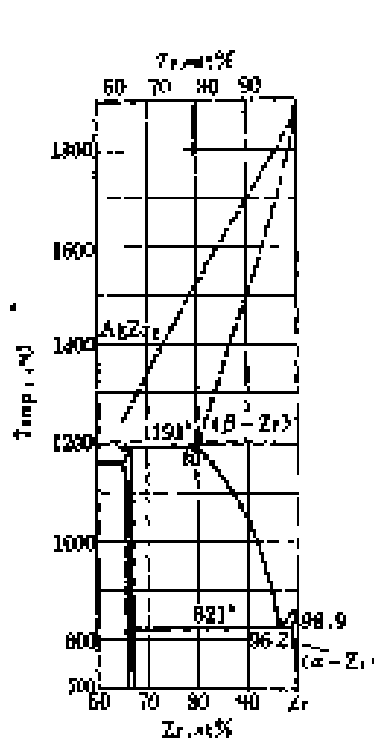


Fig.72 Ag-Zr 银-锆 Silver-Zirconium(33)

部分相图 Partial phase diagram

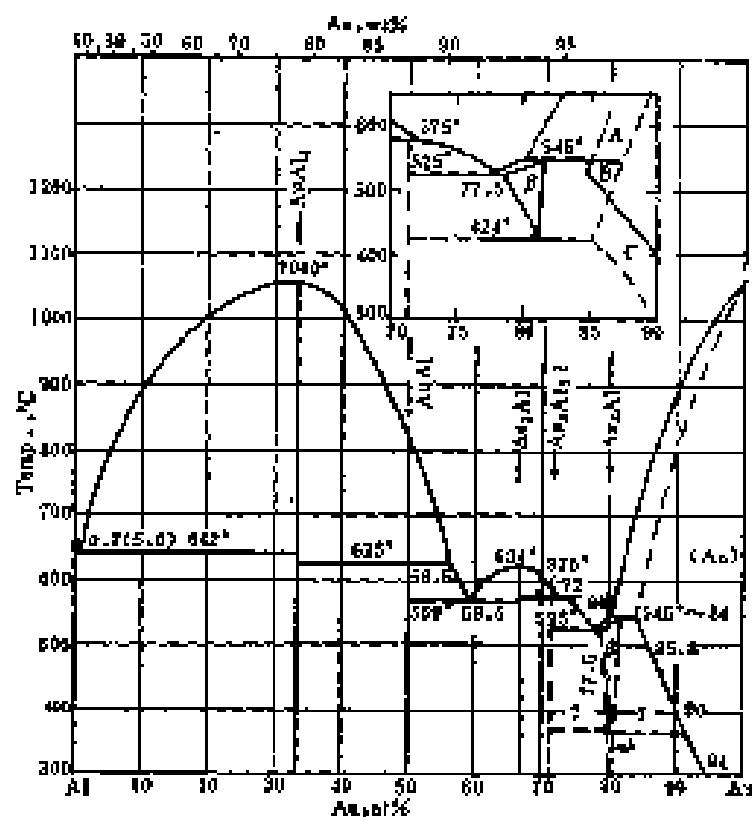


Fig.74 Al-Au 铝-金 Aluminum-Gold(12)

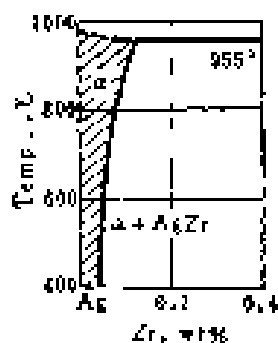


Fig.73 Ag-Zr 银-锆 Silver-Zirconium(34)

部分相图 Partial phase diagram

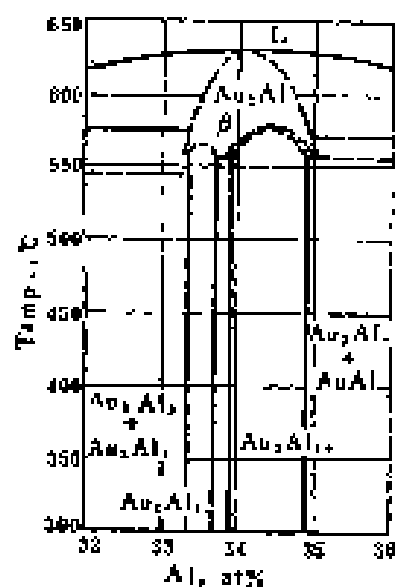


Fig.75 Al-Au 铝-金 Aluminum-Gold(35)

部分相图 Partial phase diagram

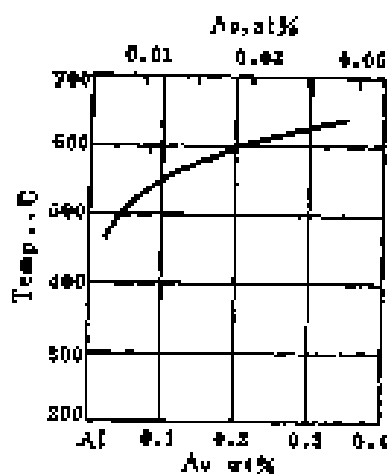


Fig. 76 Al-Au 铝-金 Aluminum-Gold(36)

溶解度 Solubility

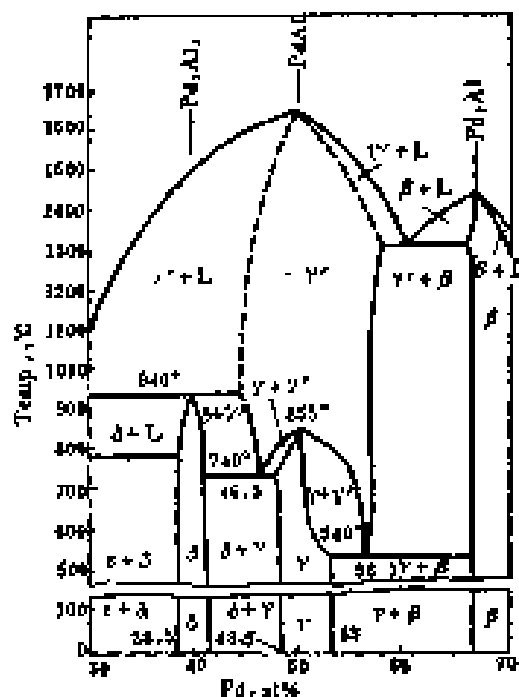


Fig. 78 Al-Pd 铝-钯 Aluminum-Palladium(37)

部分相图 Partial phase diagram

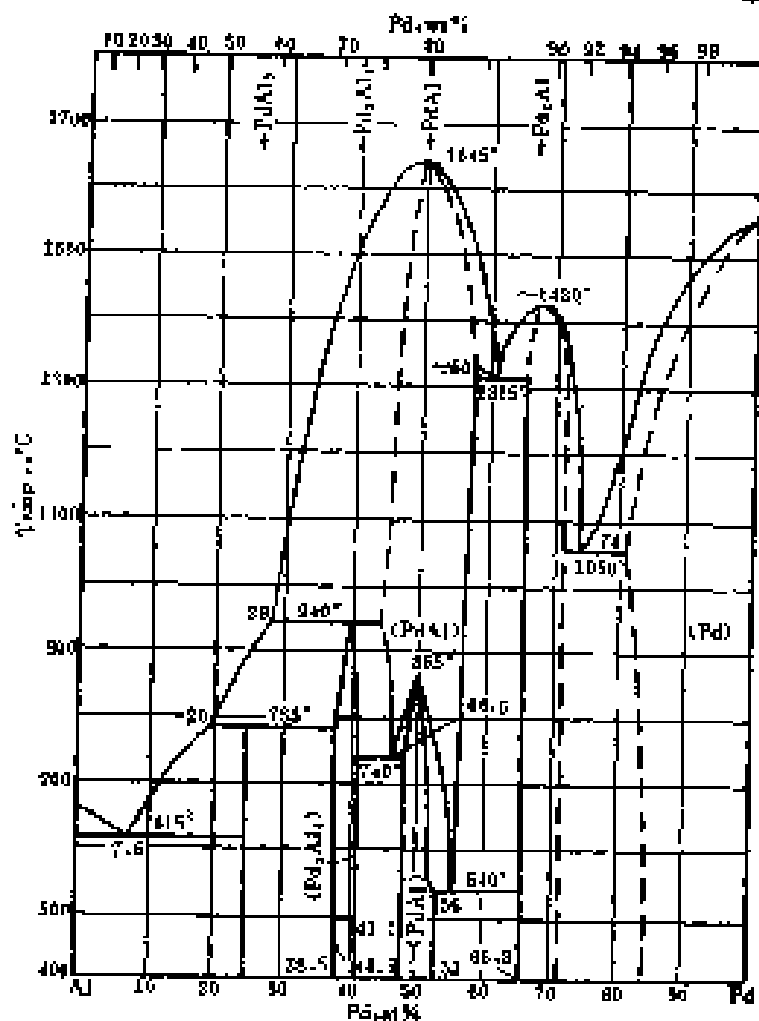


Fig. 77 Al-Pd 铝-钯  
Aluminum-Palladium(35)

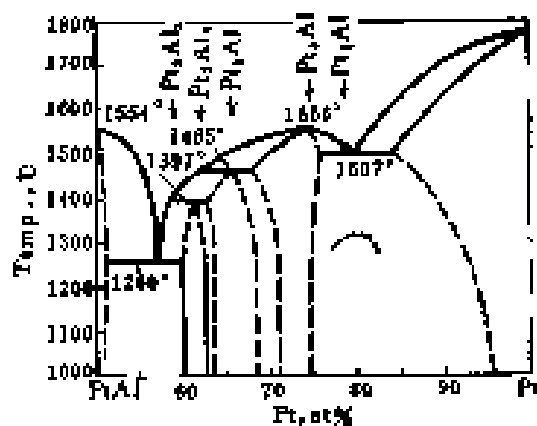
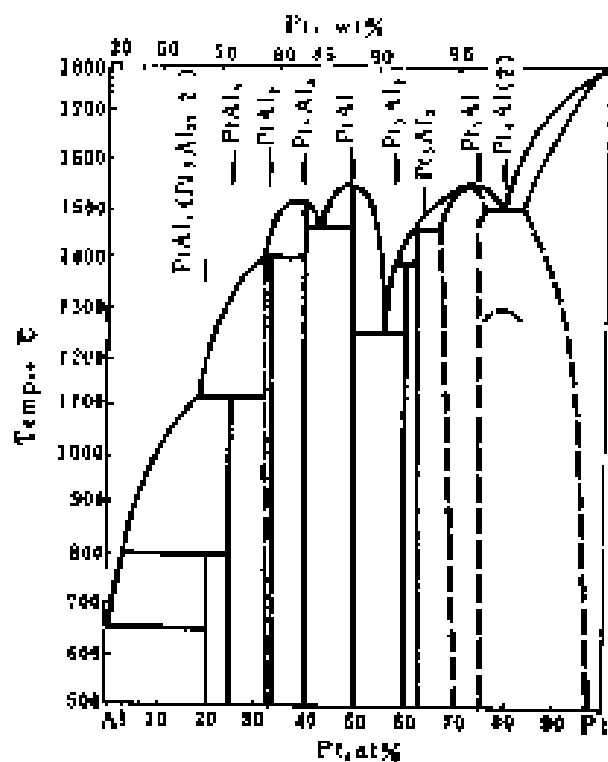


Fig.79 Al-Pt 铝-铂 Aluminum-Platinum(38) Fig.80 Al-Pt 铝-铂 Aluminum-Platinum(39)  
部分相图 Partial phase diagram

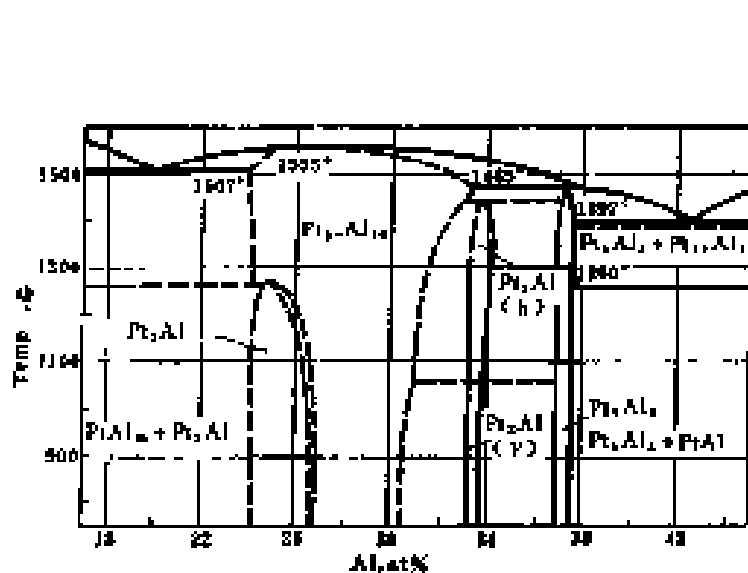


Fig.81 Al-Pt 铝-铂 Aluminum-Platinum(40)

部分相图 Partial phase diagram

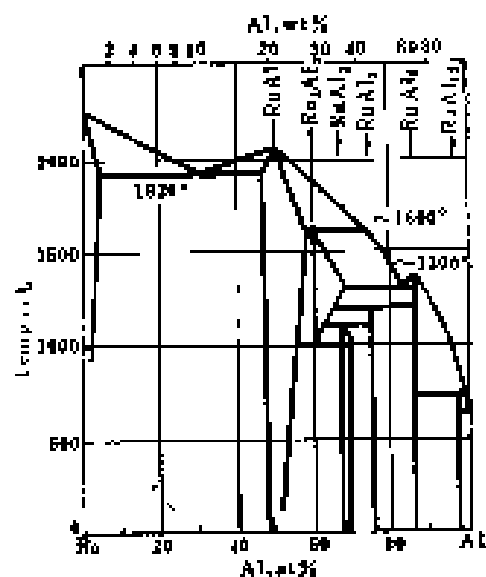


Fig.82 Al-Ru 铝-钌

Aluminum-Ruthenium(41)

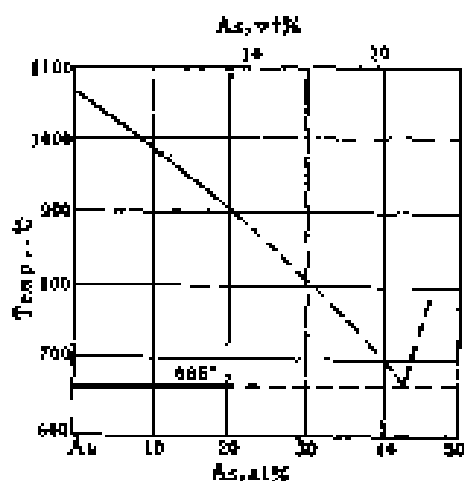


Fig. 83 As-Au 砷-金 Arsenic-Gold(1)

部分相图 Partial phase diagram

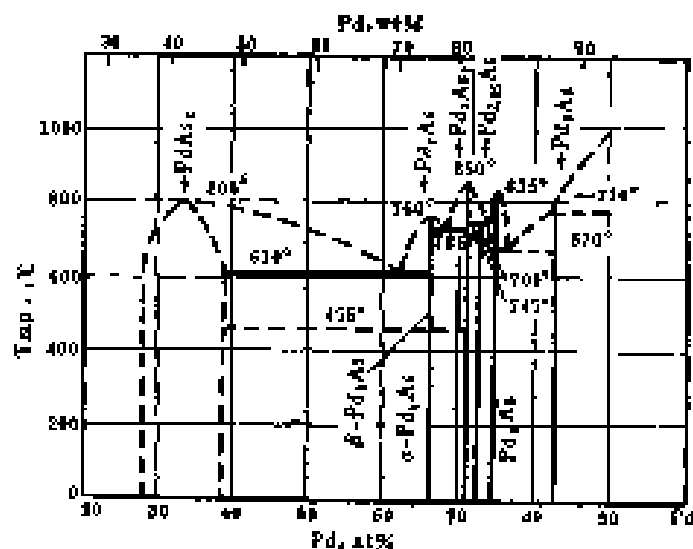


Fig. 84 As-Pd 砷-钯 Arsenic-Palladium(3)

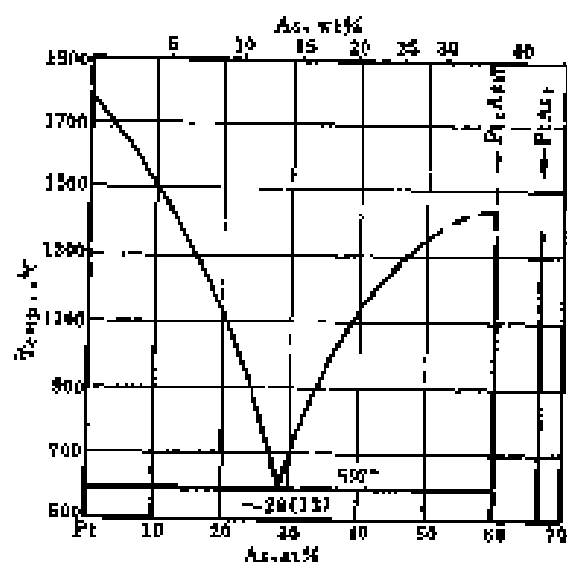


Fig. 85 As-Pt 砷-铂 Arsenic-Platinum(1)

部分相图 Partial phase diagram

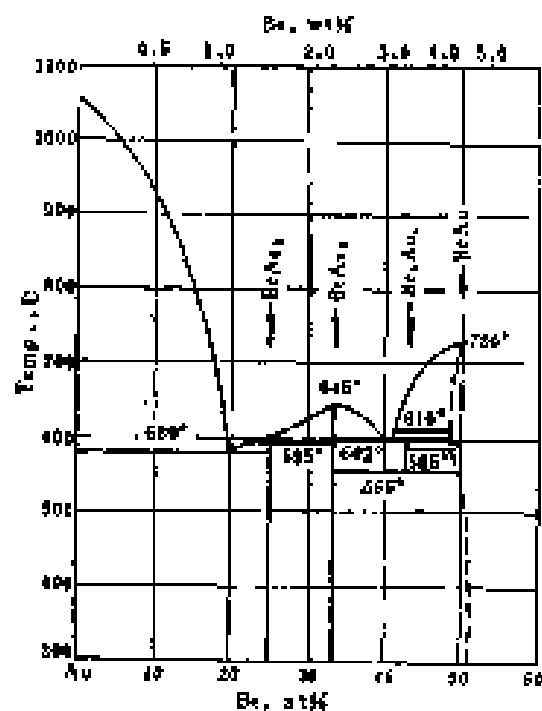


Fig. 86 Au-Be 金-铍 Gold-Beryllium(1)

部分相图 Partial phase diagram

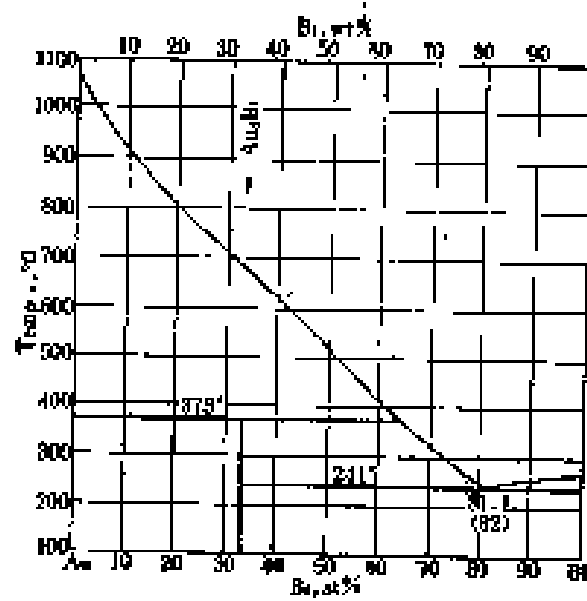


Fig.87 Au-Bi 金-铋 Gold-Bismuth(1)

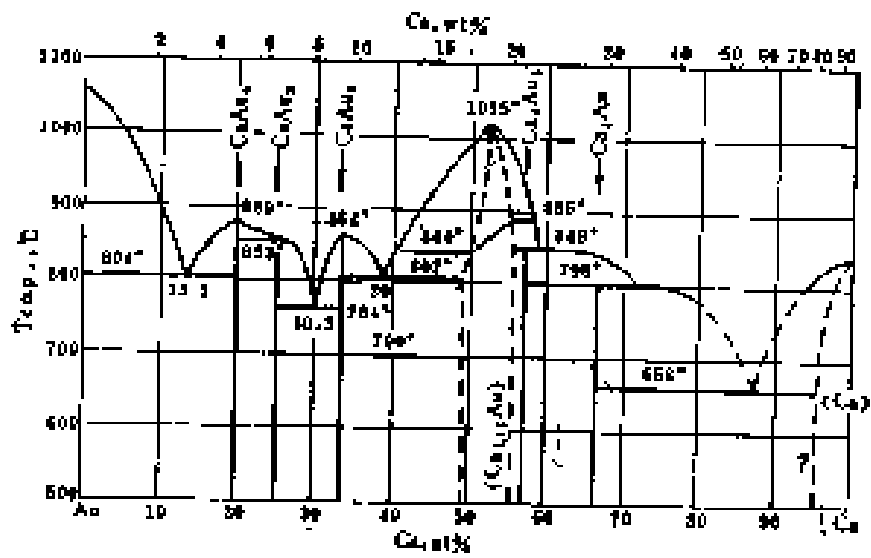


Fig.88 Au-Ca 金-钙 Gold-Calcium(42)

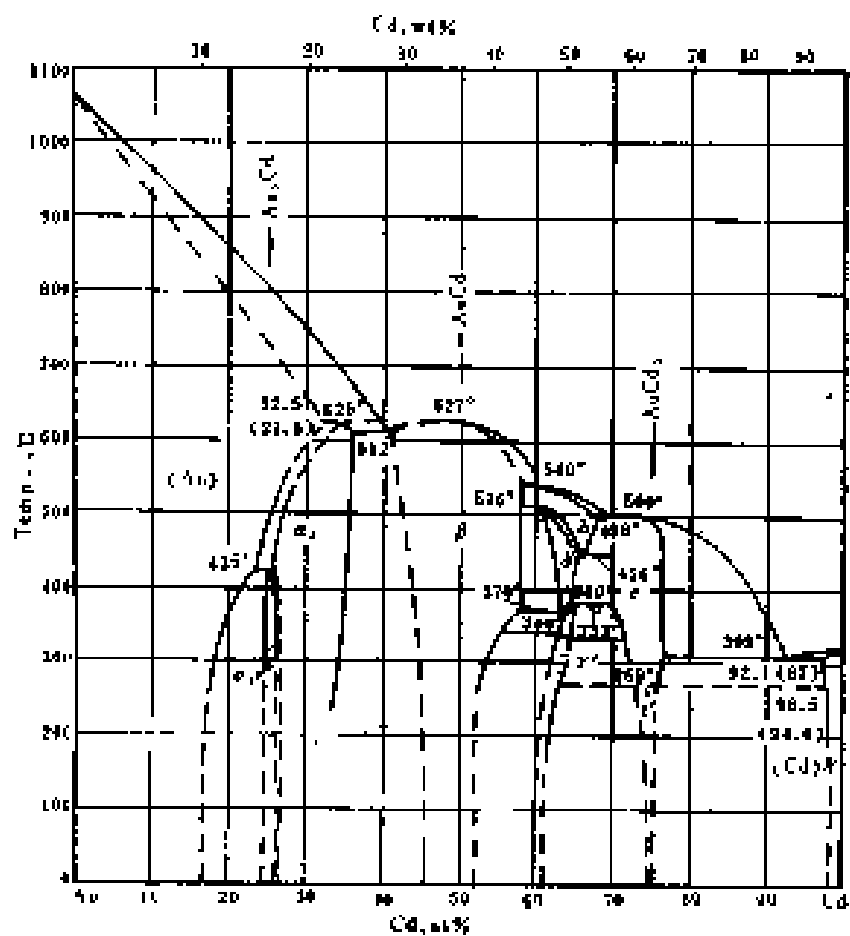


Fig. 89 Au-Cd 金-镉 Gold-Cadmium (I)

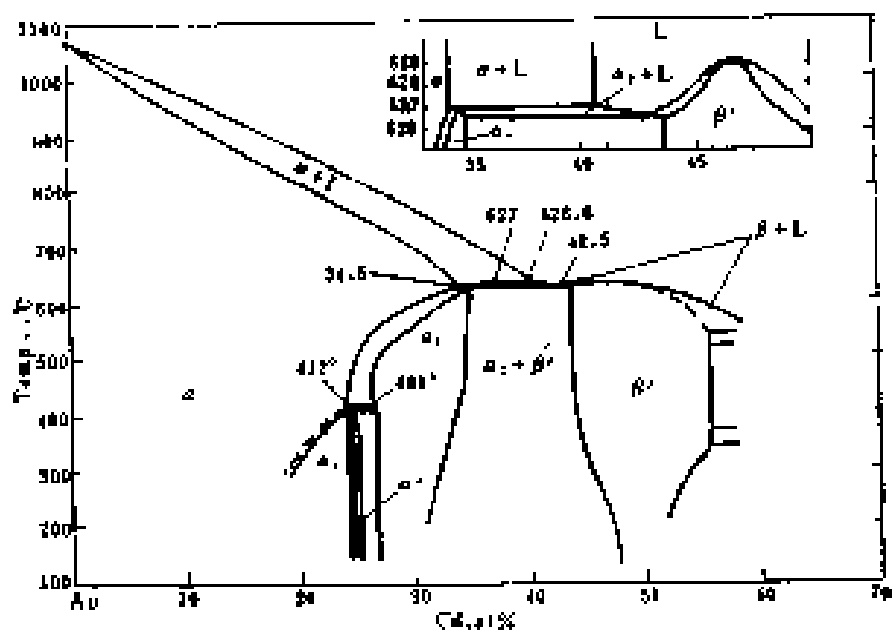


Fig. 90 Au-Cd 金-镉 Gold-Cadmium (II)  
部分相图 Partial phase diagram

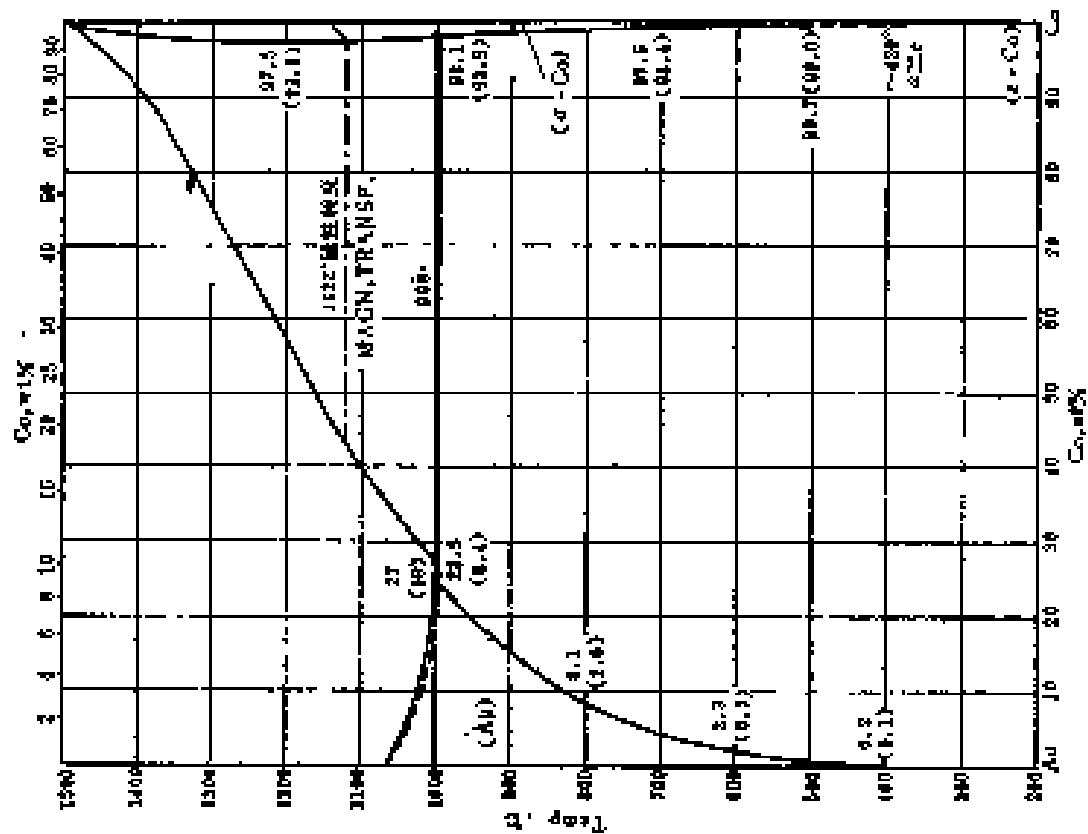


Fig. 92 Au-Co 金-钴 Gold-Cobalt (45)

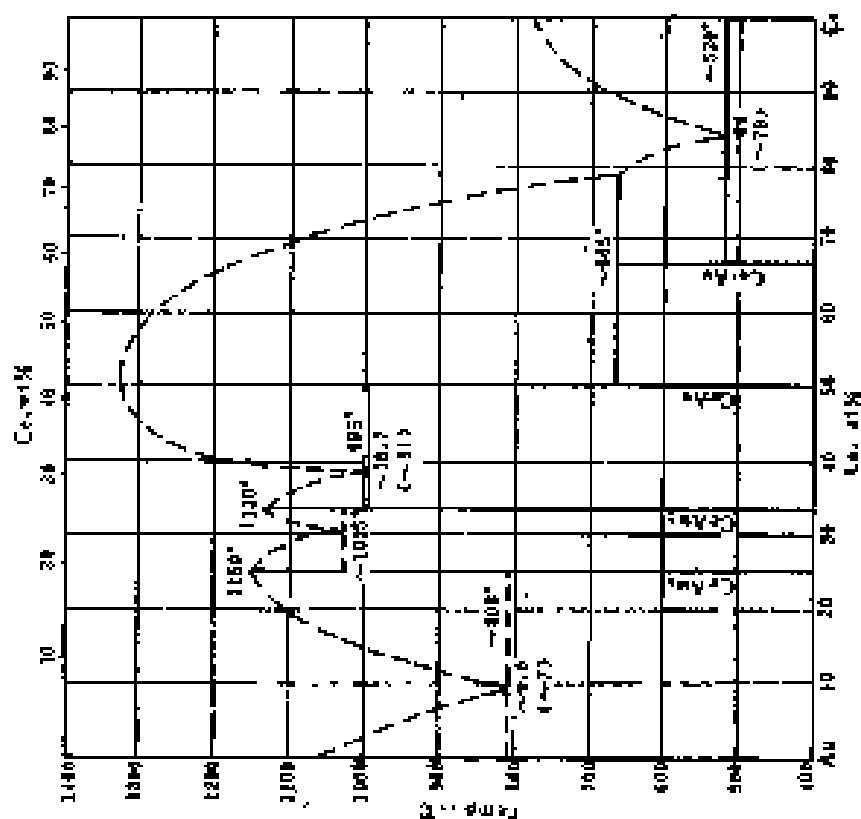


Fig. 91 Au-Ce 金-铈 Gold-Cerium (44)



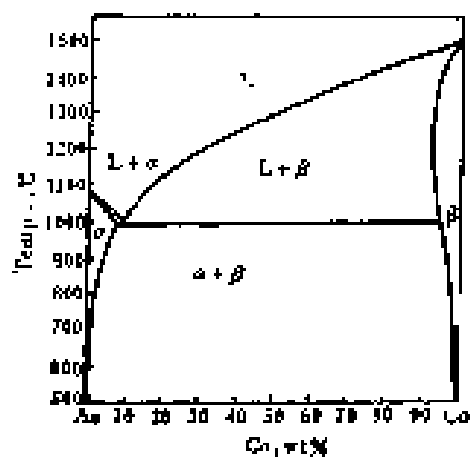


Fig.93 Au-Co 金-钴  
Gold-Cobalt(46)

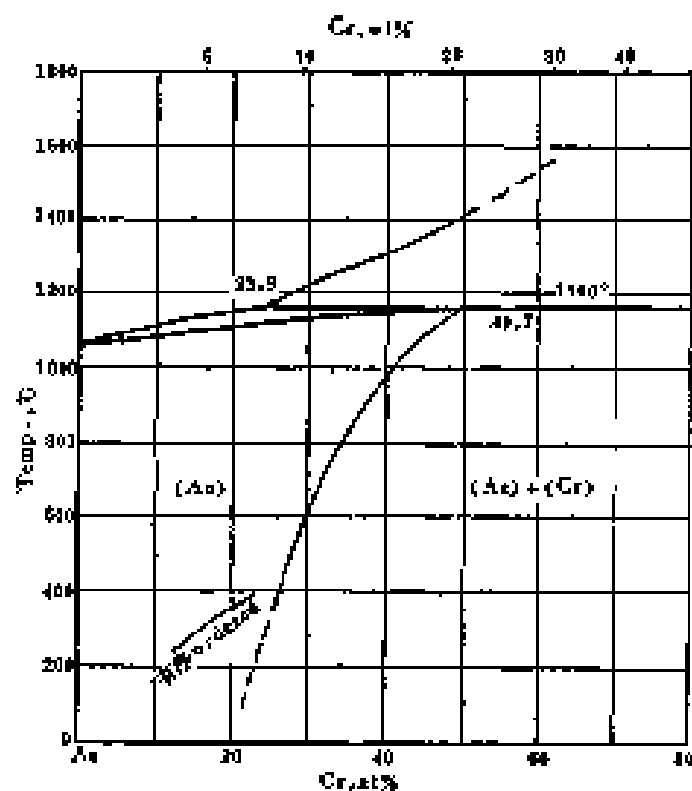


Fig.94 Au-Cr 金-铬 Gold-Chromium(2)  
部分相图 Partial phase diagram

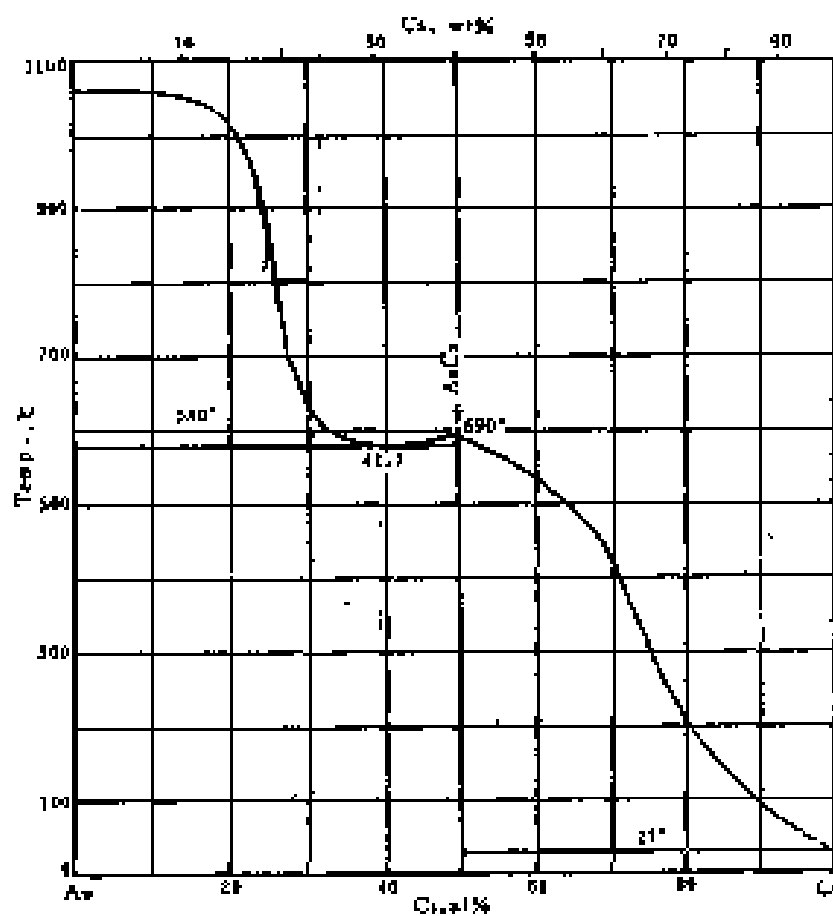


Fig.95 Au-Cs 金-铯  
Gold-Caesium(47)

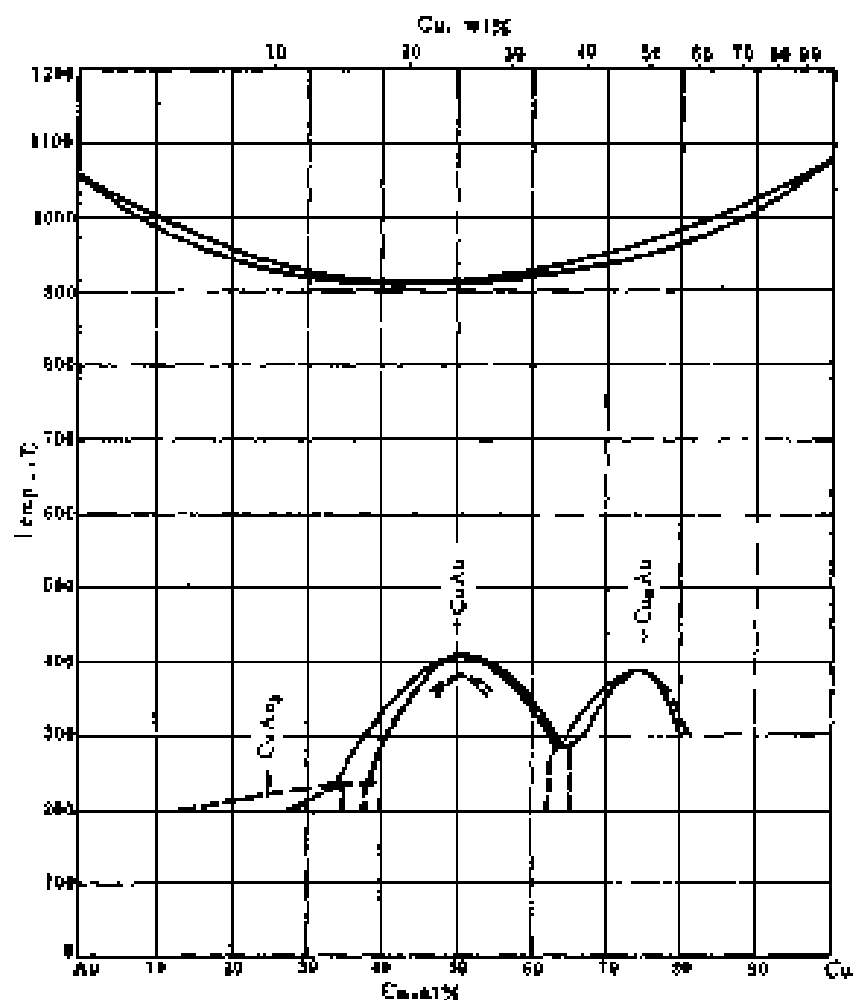


Fig.96 Au-Cu 金-铜 Gold-Copper(48)

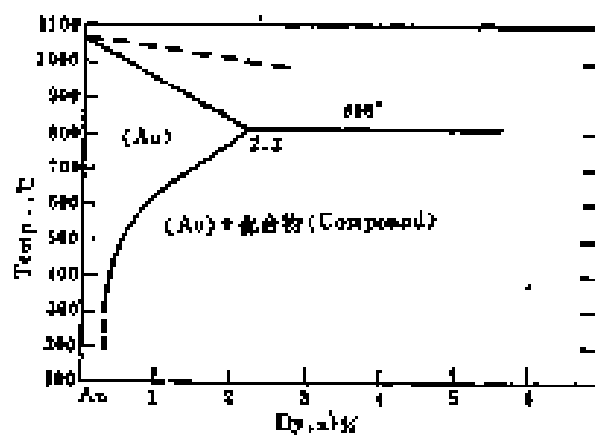


Fig.98 Au-Dy 金-鐳 Gold-Dysprosium(50)

部分相图 Partial phase diagram

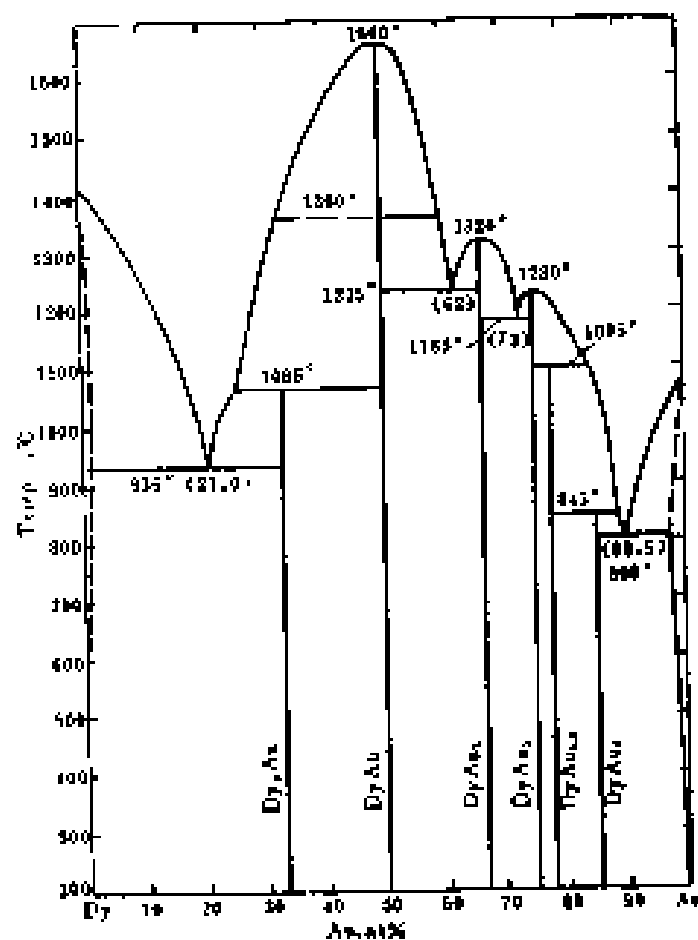


Fig 97 Au-Dy 金-镝 Gold-Dysprosium(48)

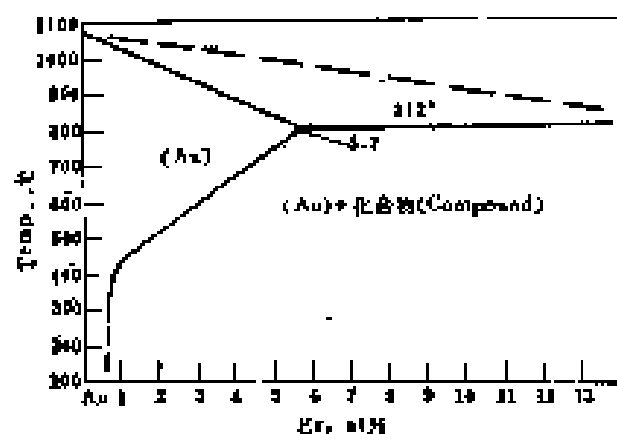


Fig 99 Au-Br 金-溴 Gold-Bromine(50)

部分相图 Partial phase diagram

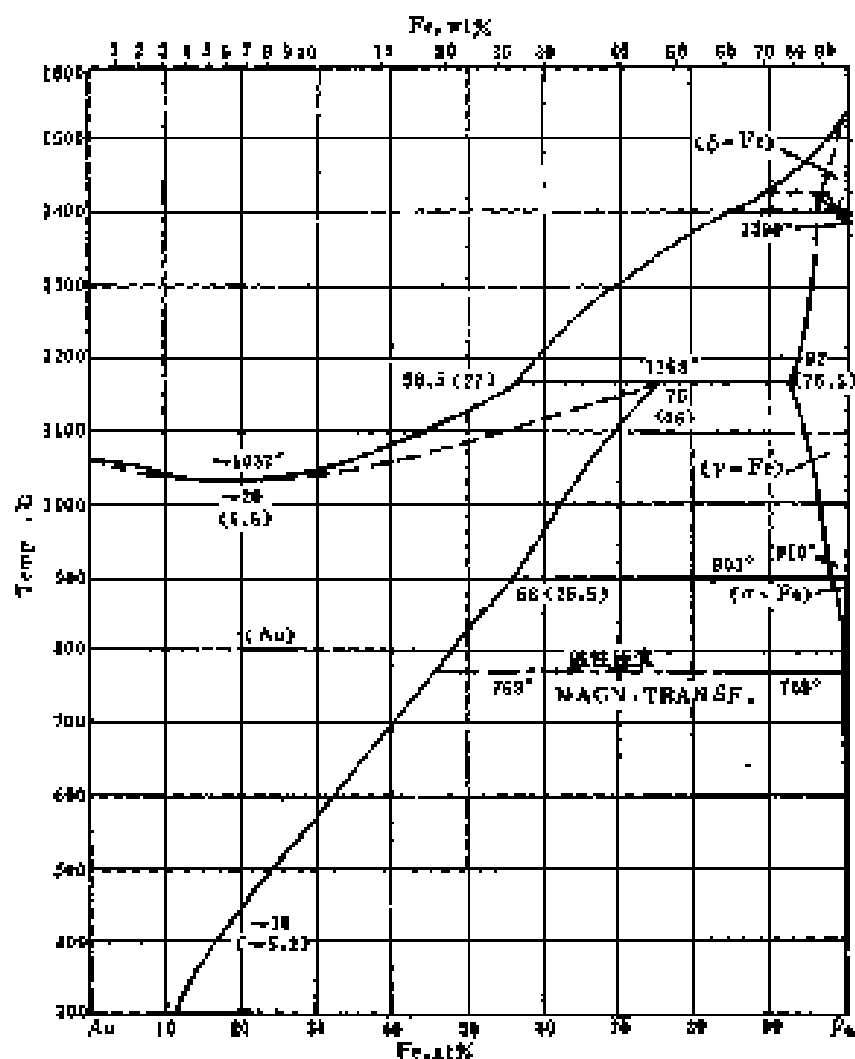


Fig.100 Au-Fe 金-铁 GOLD-IRON(1)

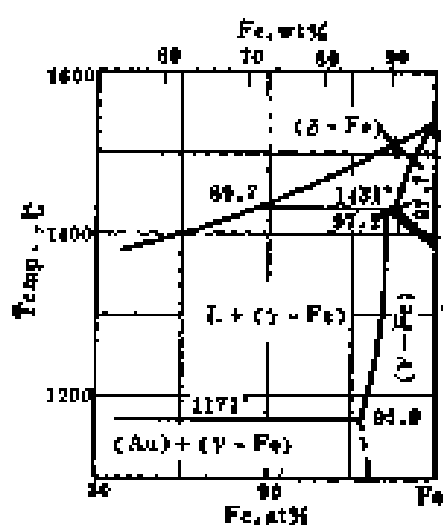


Fig.101 Au-Fe 金-铁 Gold-Iron(3)  
部分相图 Partial phase diagram

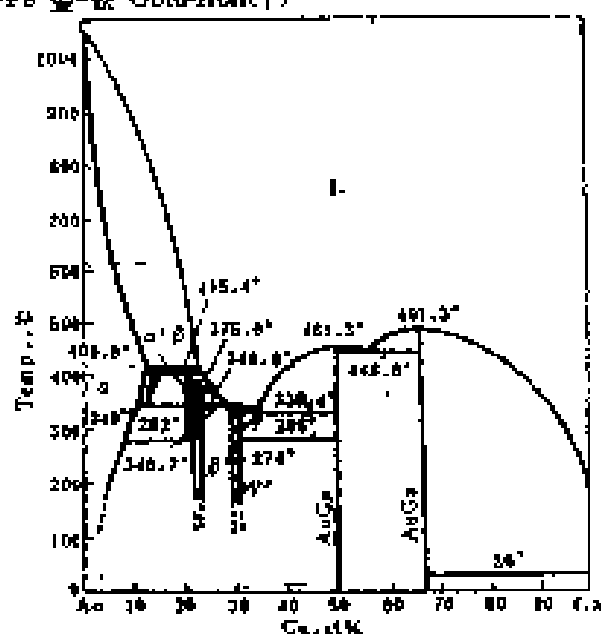


Fig.102 Au-Ga 金-镓 Gold-Gallium(513)

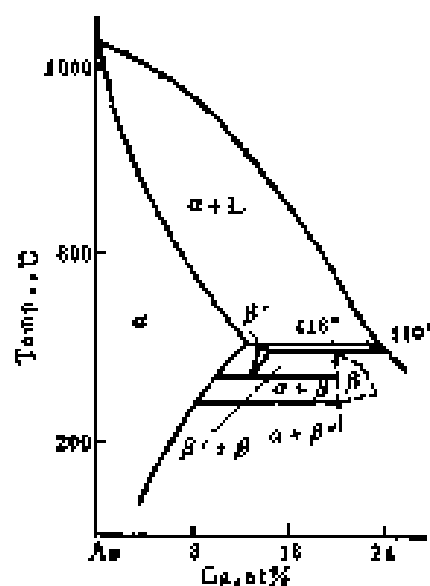


Fig.103 Au-Ga 金-镓 Gold-Gallium(52)  
部分相图 Partial phase diagram

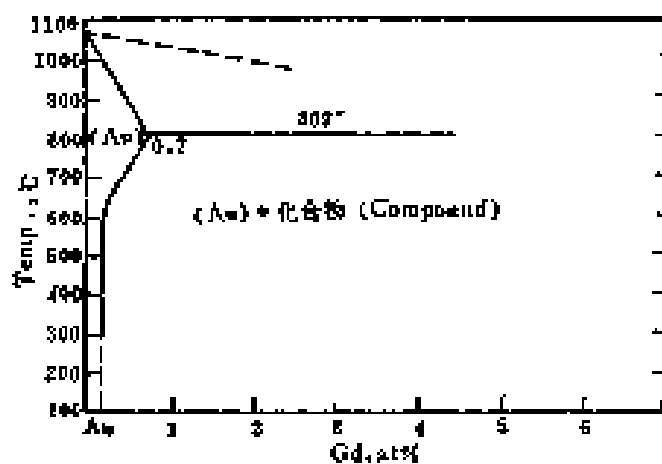


Fig.105 Au-Gd 金-钆 Gold-Gadolinium(30)  
部分相图 Partial phase diagram

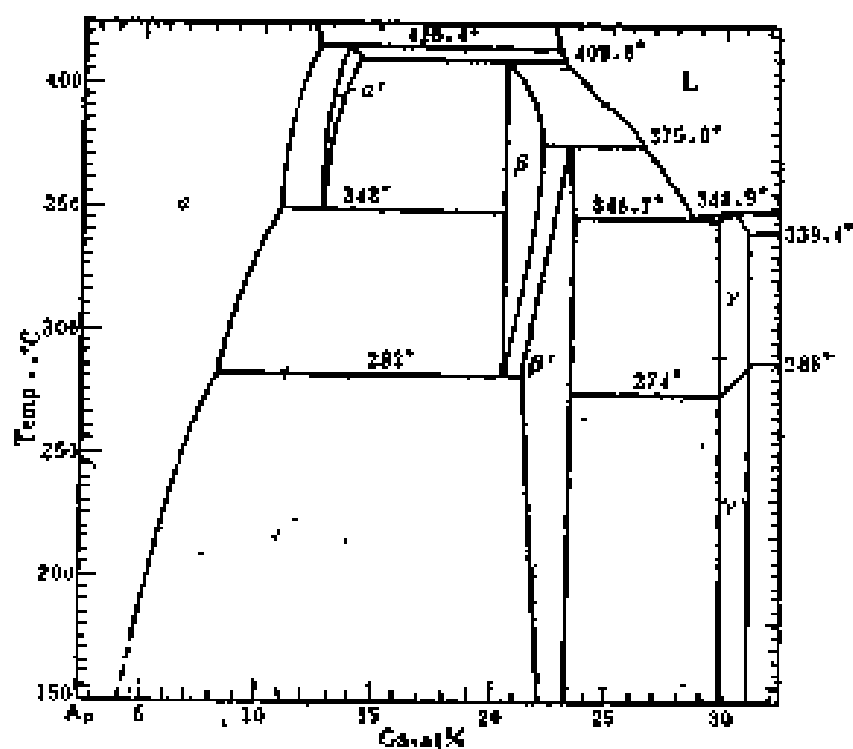


Fig.104 Au-Ga 金-镓 Gold-Gallium(51)  
部分相图 Partial phase diagram

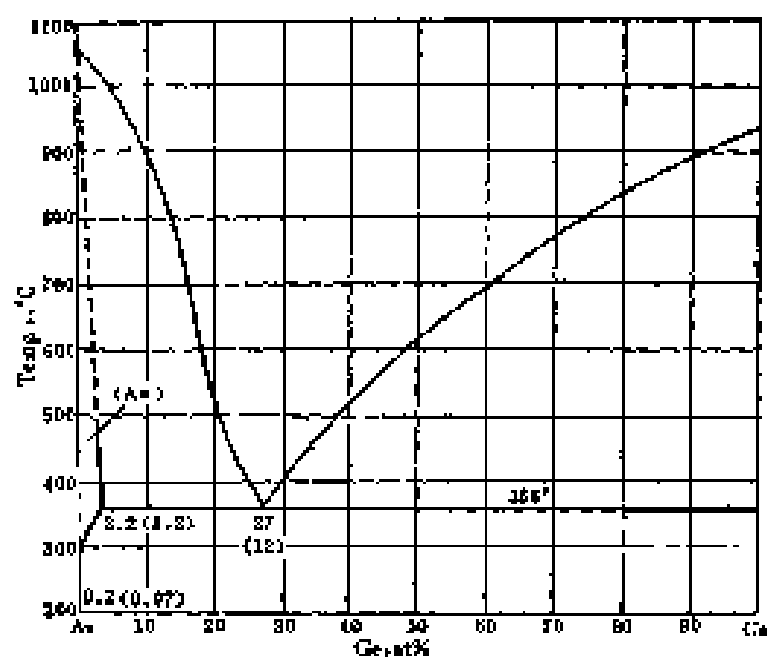


Fig.106 Au-Ge 金-锗 Gold-Germanium(1)

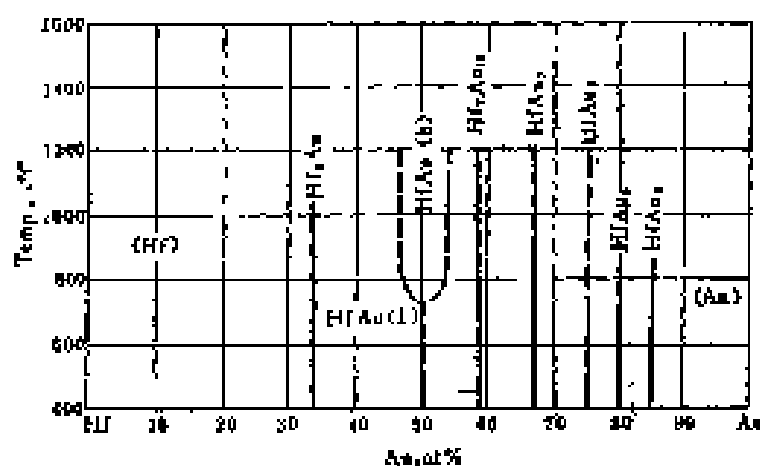


Fig.107 Au-Hf 金-铪 Gold-Hafnium(53)

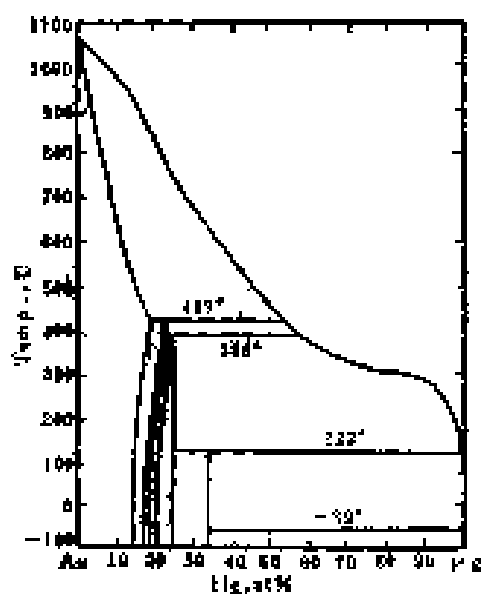


Fig.108 Au-Hg 金-汞 Gold-Mercury(54)

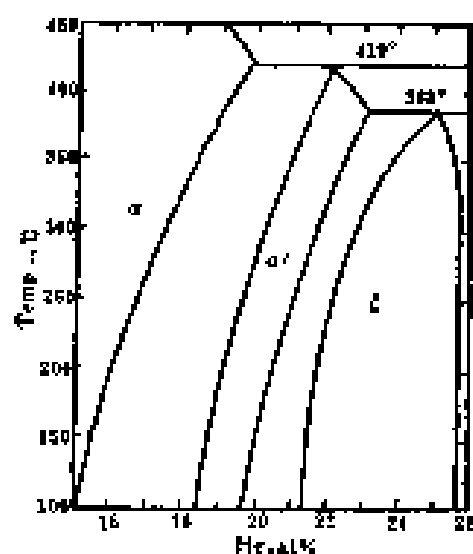


Fig.109 Au-Hg 金-汞 Gold-Mercury(54)

部分相图 Partial phase diagram

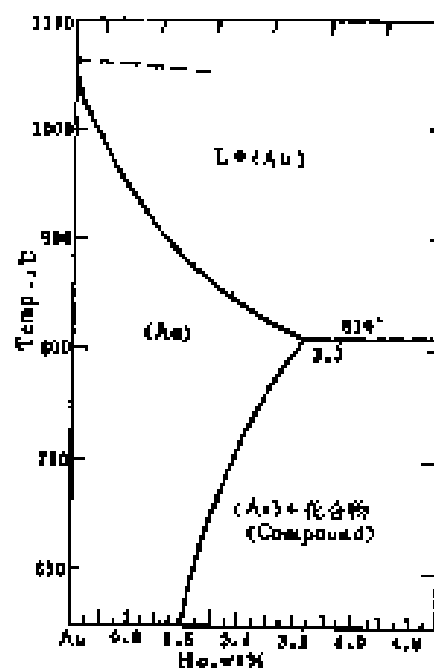


Fig.110 Au-Hg 金-汞 Gold-Mercury(55)

部分相图 Partial phase diagram

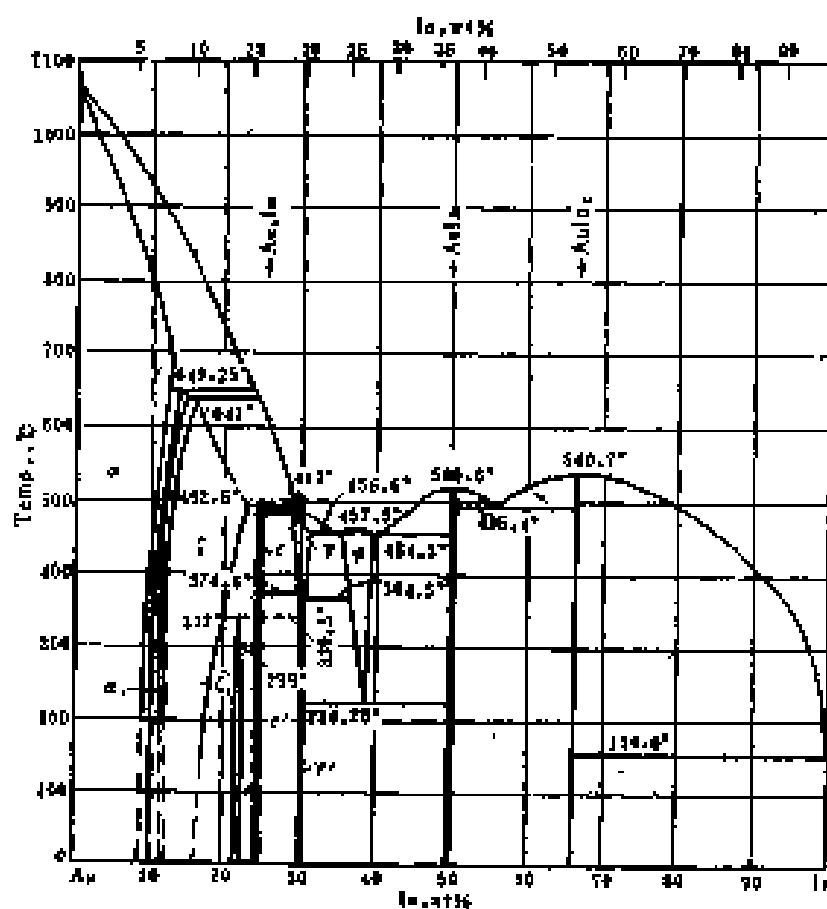


Fig.111 Au-In 金-铟 Gold-Indium(3)

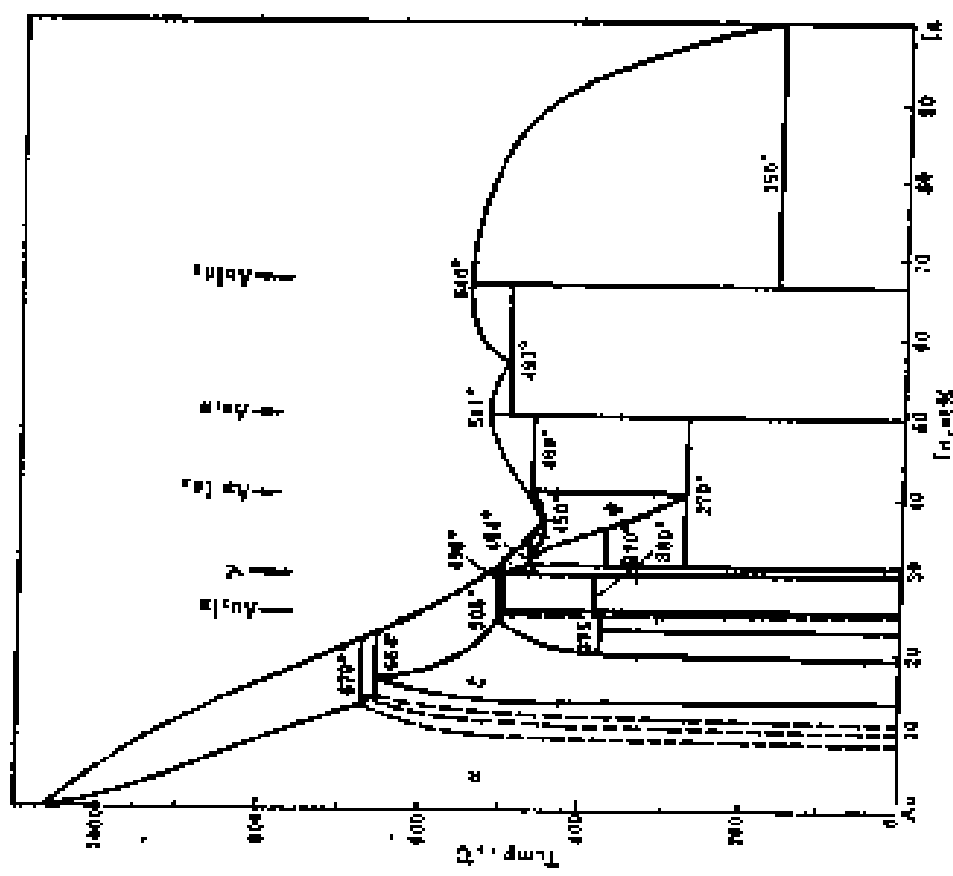


Fig 112 Au-In 金-铟 Gold-indium(58)

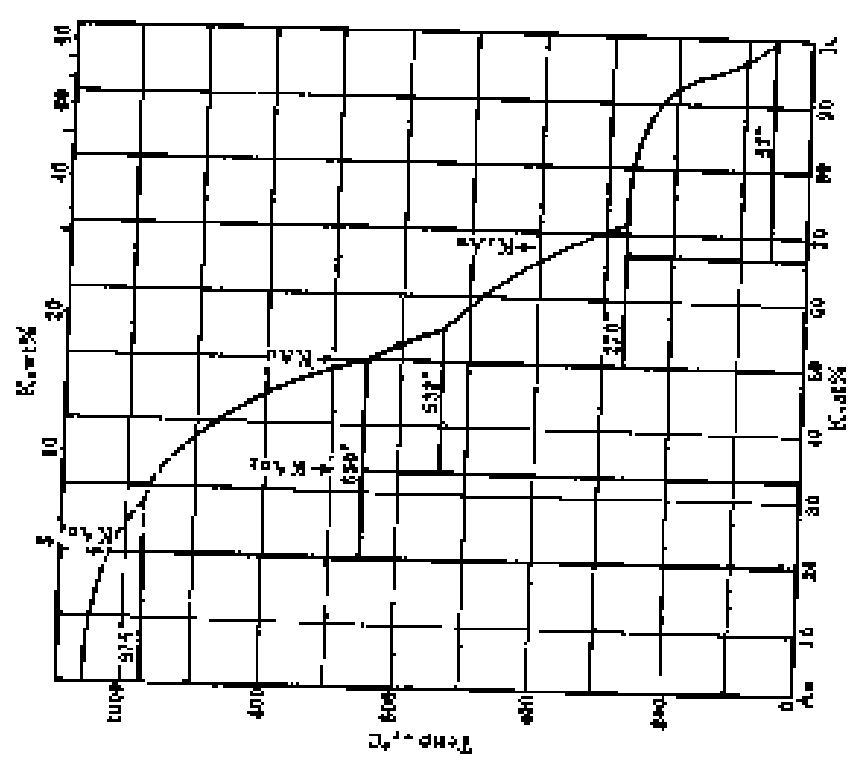
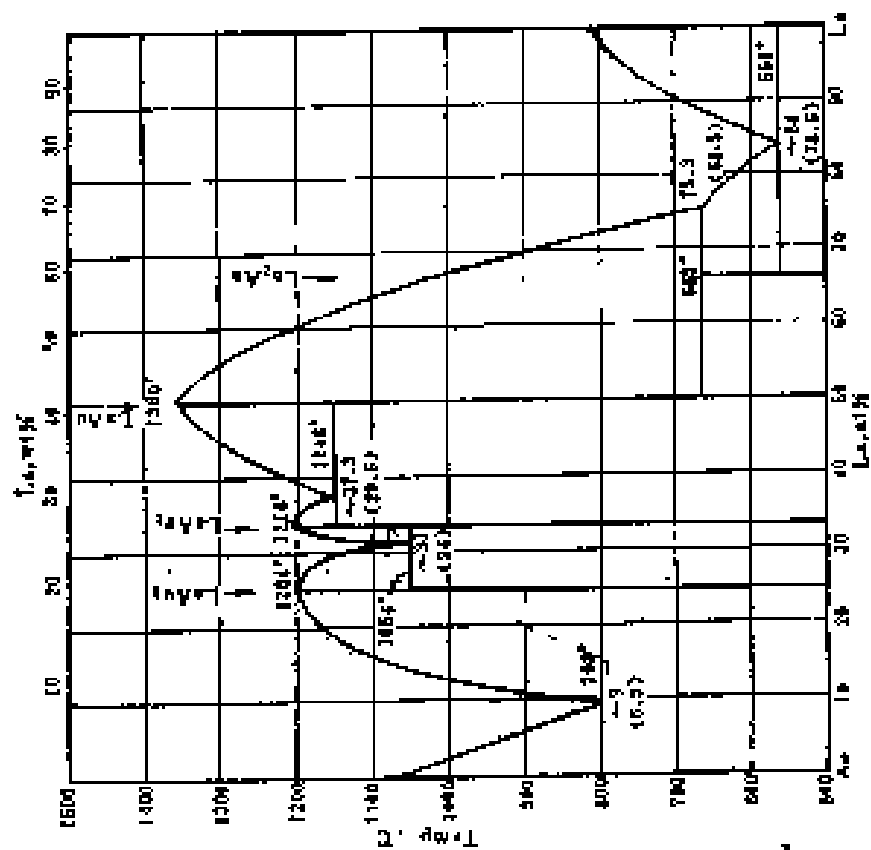
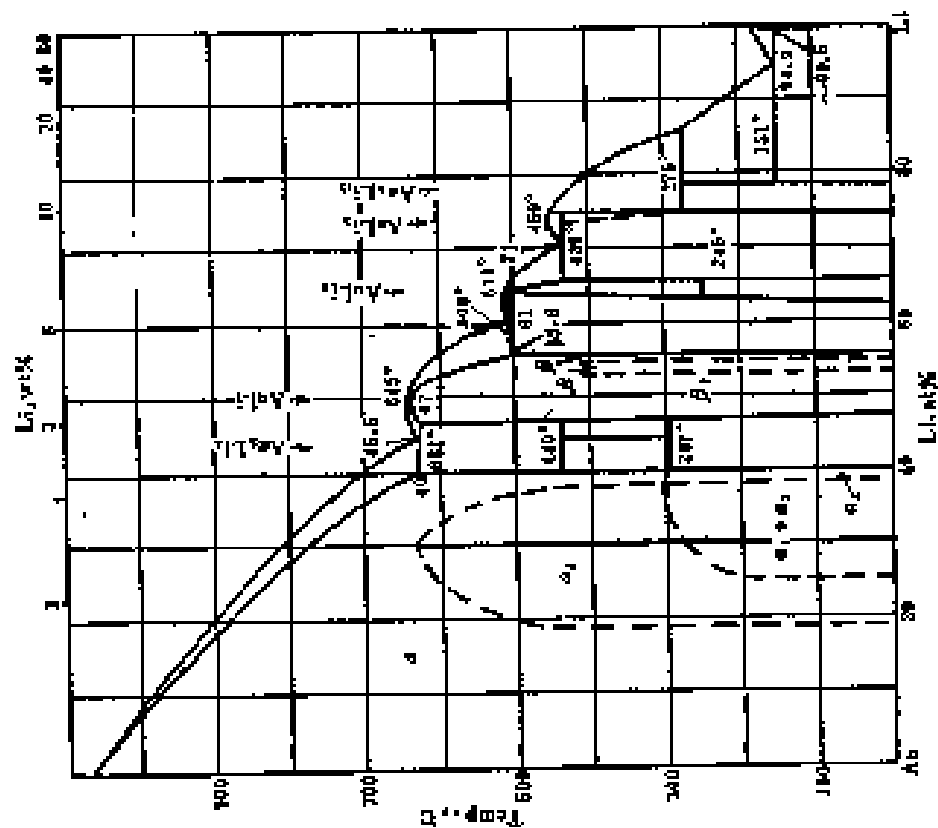


Fig 113 Au-K 金-鉀 Gold-Potassium(57)





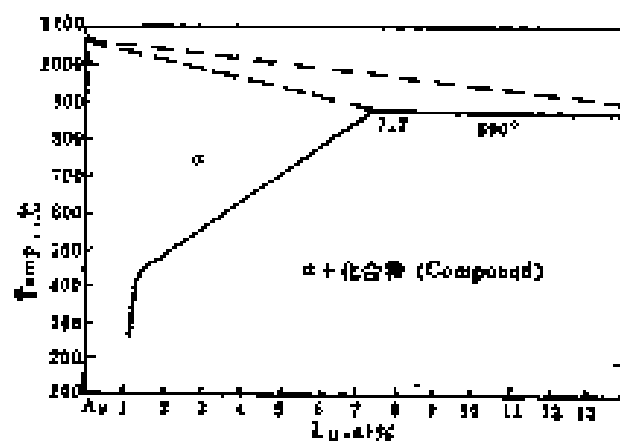


Fig.116 Au-Lu 金-镥 Gold-Lutetium(50)

部分相图 Partial phase diagram

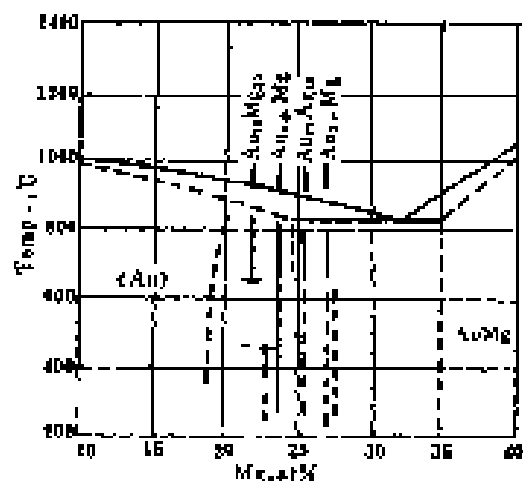


Fig.117 Au-Mg 金-镁 Gold-Magnesium(50)

部分相图 Partial phase diagram

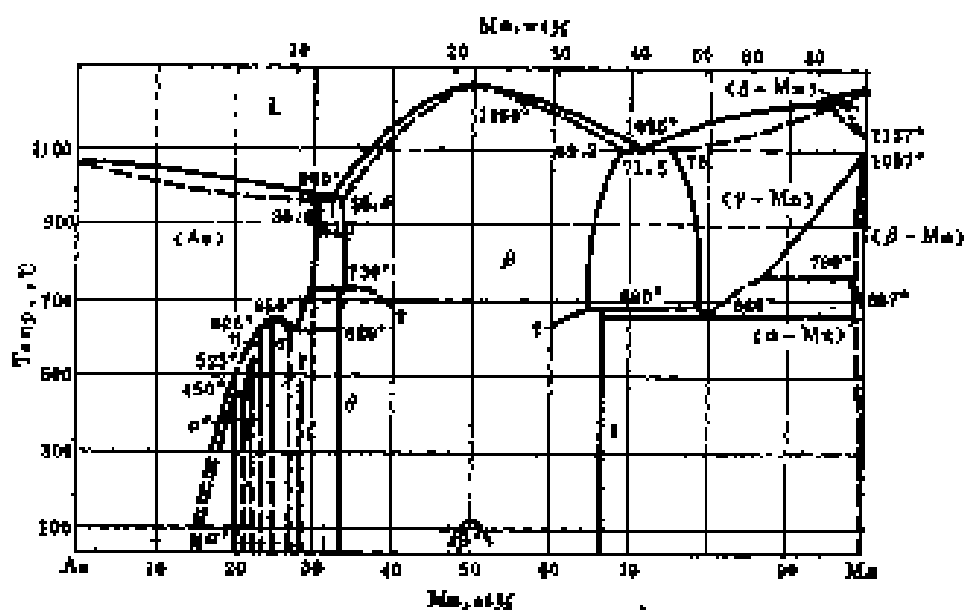
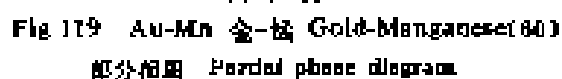


Fig.118 Au-Mn 金-锰 Gold-Manganese(4)



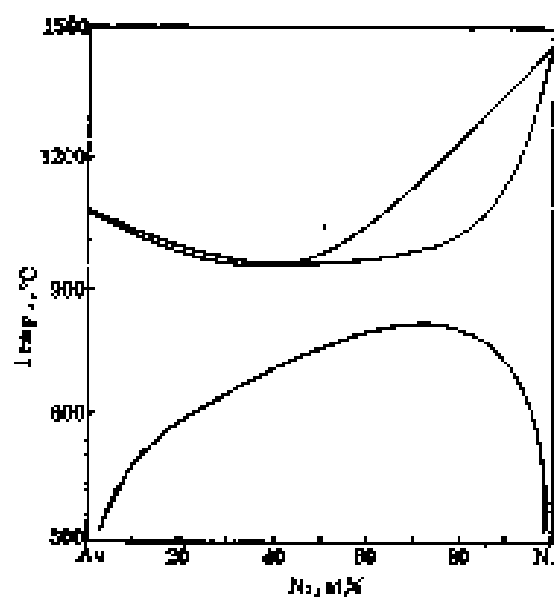
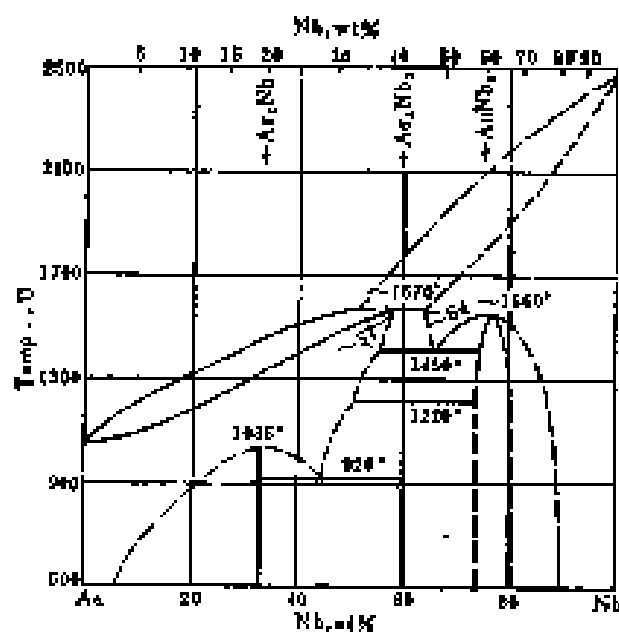


Fig. 121 Au-Nb 金-鉬 Gold-Niobium(61) . Fig. 123 Au-Ni 金-鎳 Gold-Nickel(62)

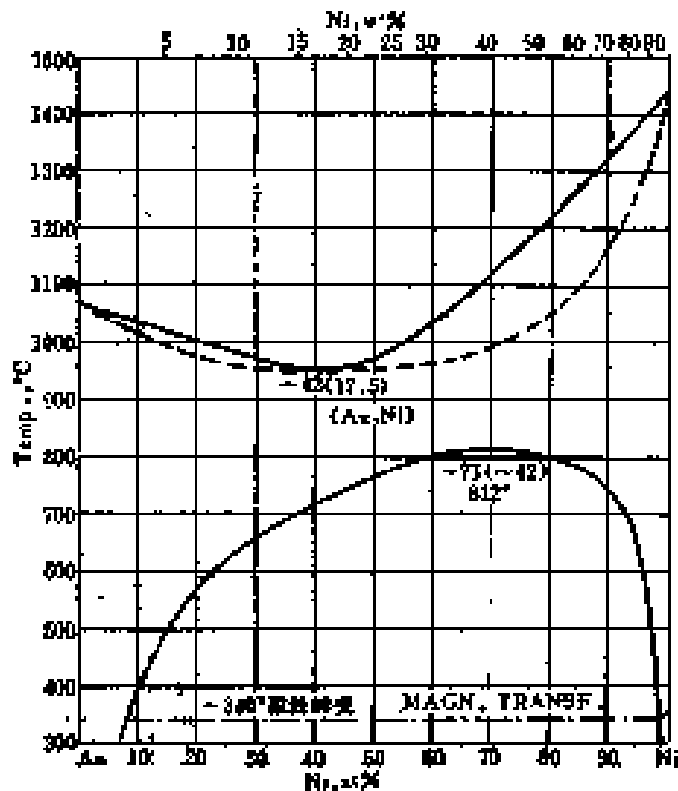


Fig. 122 Au-Ni 金-鎳 Gold-Nickel(11)

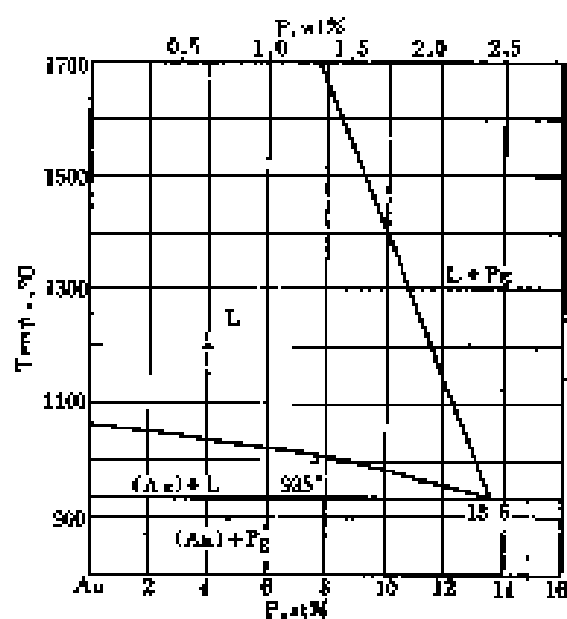


Fig.124 Au-P 金-磷 Gold-Phosphorus(63)

部分相图 Partial phase diagram

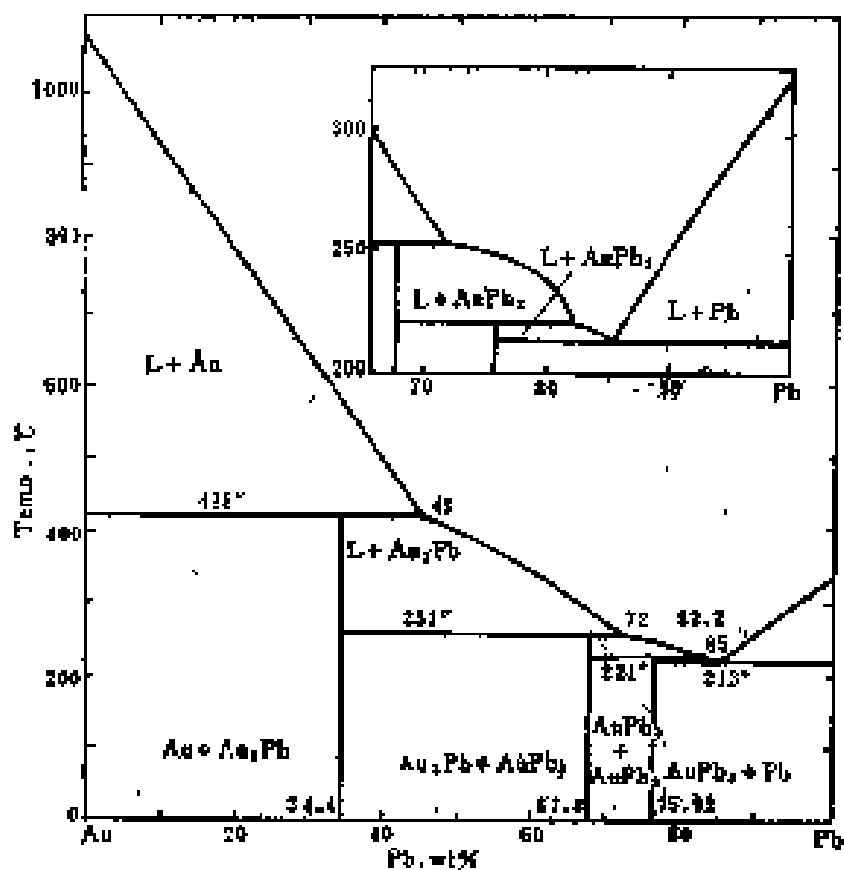


Fig.125 Au-Pb 金-铅 Gold-Lead(64)





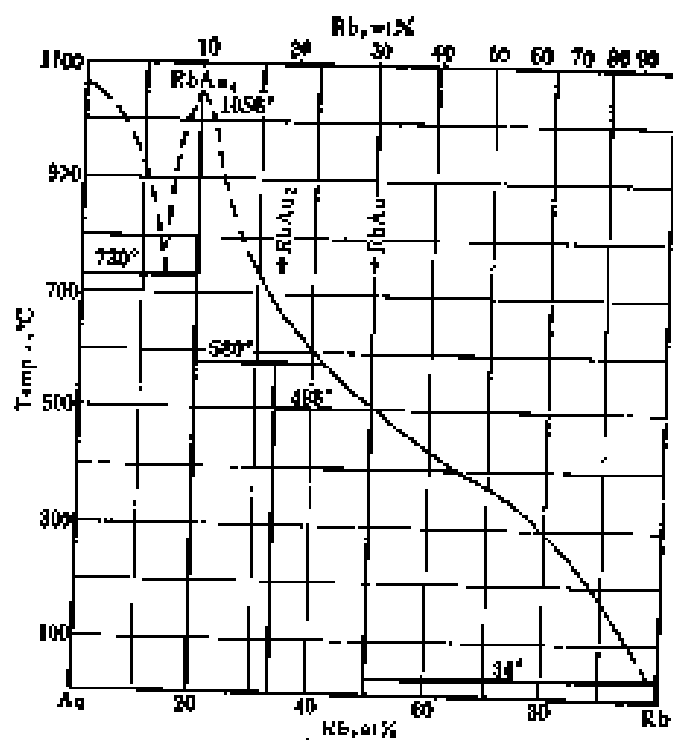


Fig. 131 Au-Rb 金-鉀 Gold-Rubidium (86)

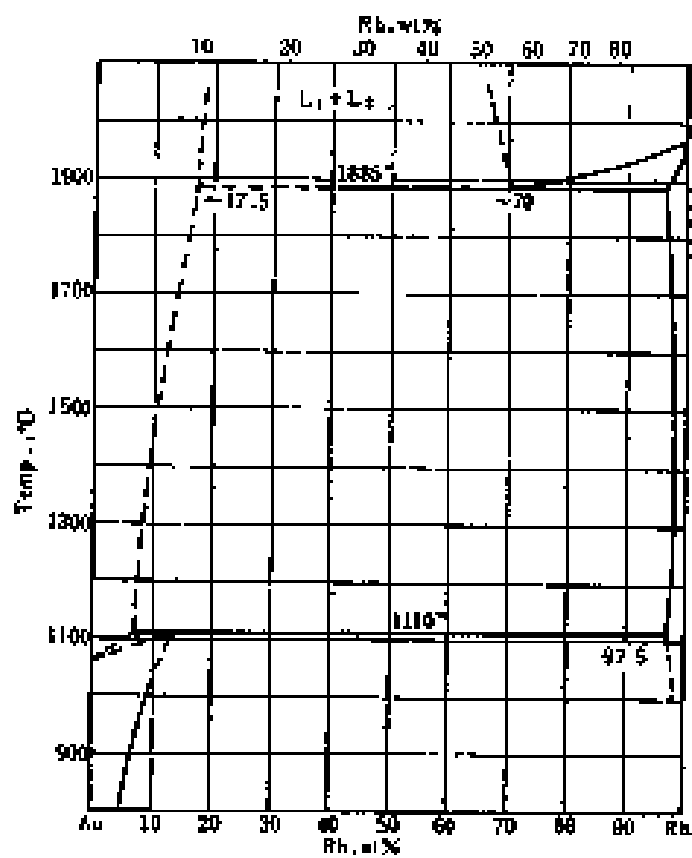


Fig. 132 Au-Rh 金-銲 Gold-Rhodium (2)



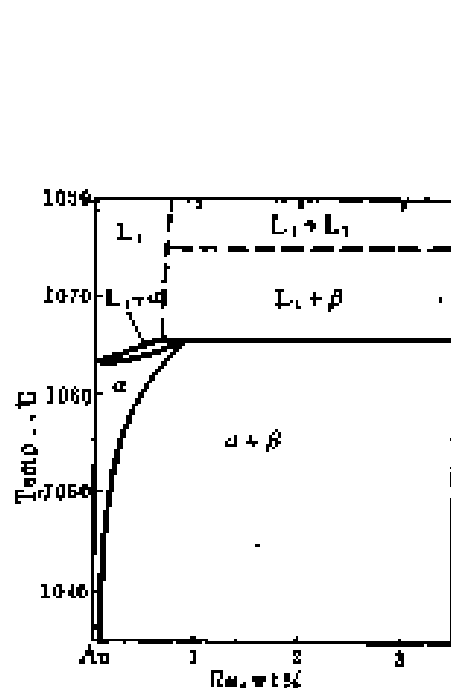


Fig.133 Au-Ru 金-鈷 Gold-Ruthenium(87)

部分相图 Partial phase diagram

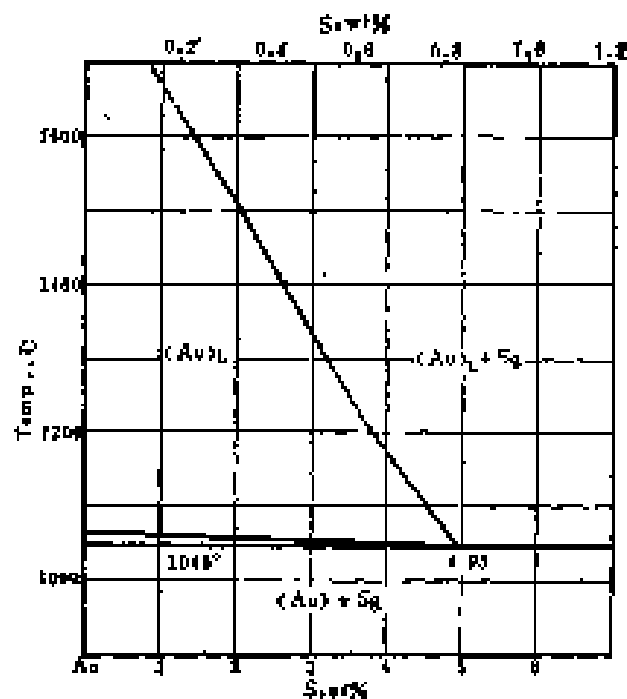


Fig.134 Au-S 金-硫 Gold-Sulfur(88)

部分相图 Partial phase diagram

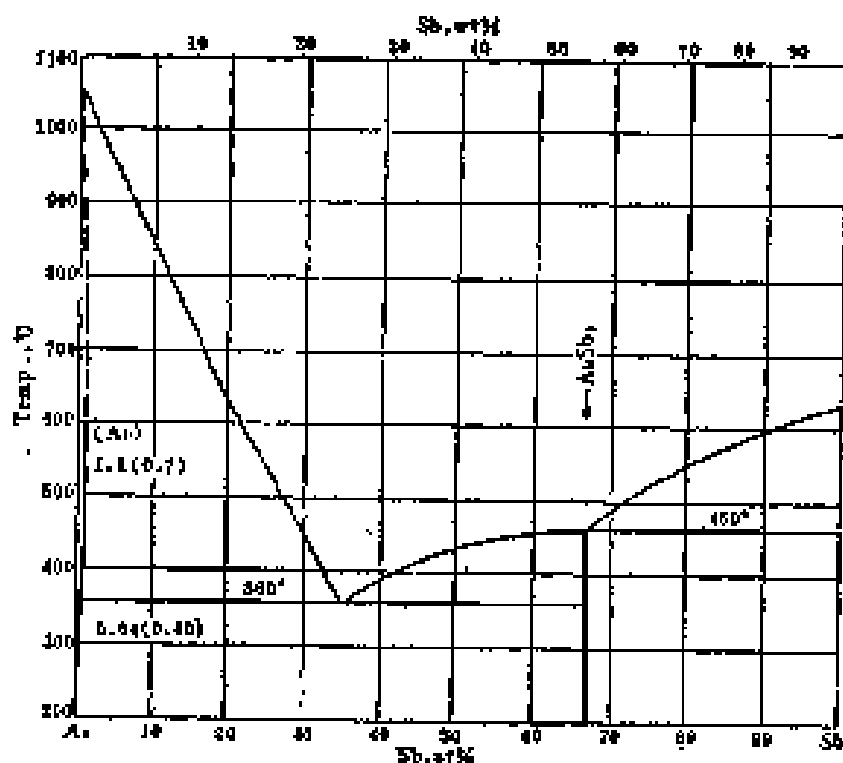


Fig.135 Au-Sb 金-銻 Gold-Antimony(1)

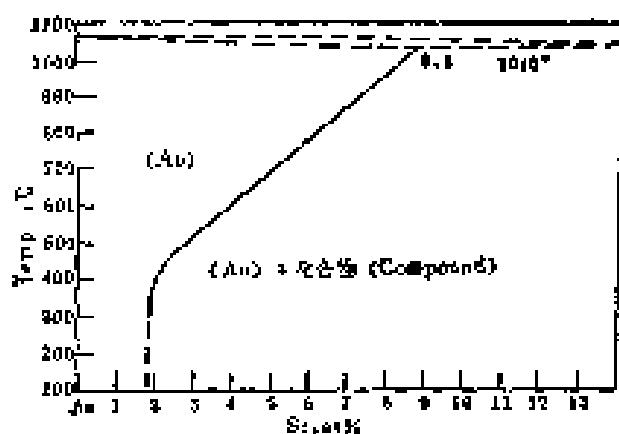


Fig.136 Au-Se 金-硒 Gold-Selenium(50)

部分相图 Partial phase diagram

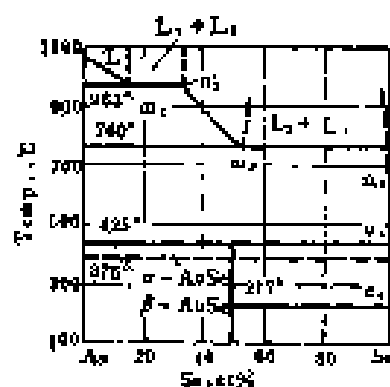


Fig.138 Au-Se 金-硒 Gold-Selenium(60)

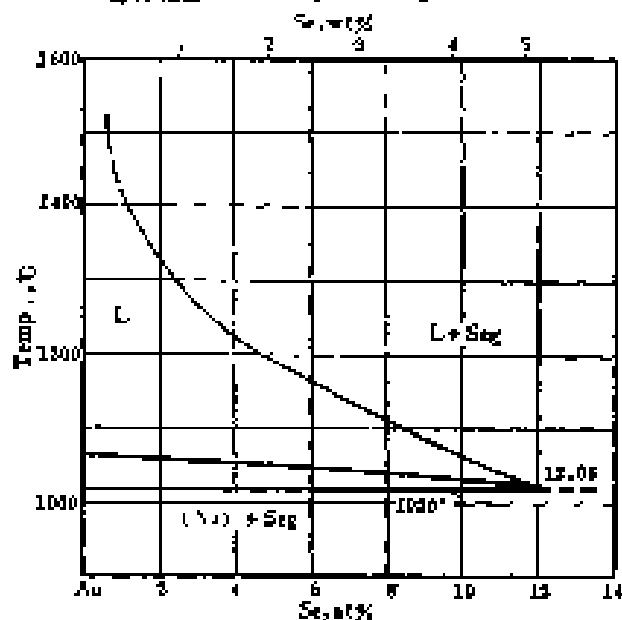


Fig.137 Au-Se 金-硒 Gold-Selenium(68)

部分相图 Partial phase diagram

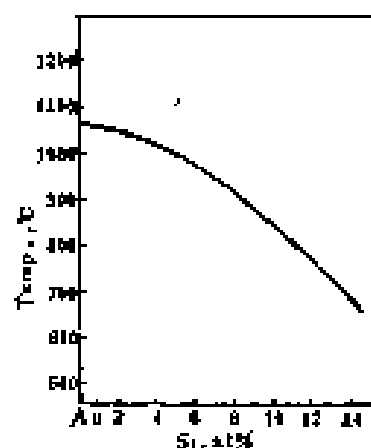


Fig.140 Au-Si 金-硅 Gold-Silicon(76)

液相线 Liquidus

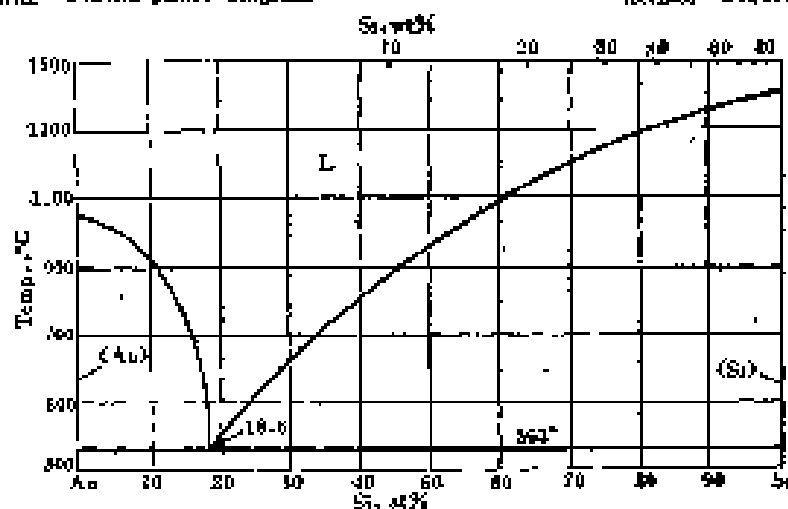


Fig.139 Au-Si 金-硅 Gold-Silicon(4)

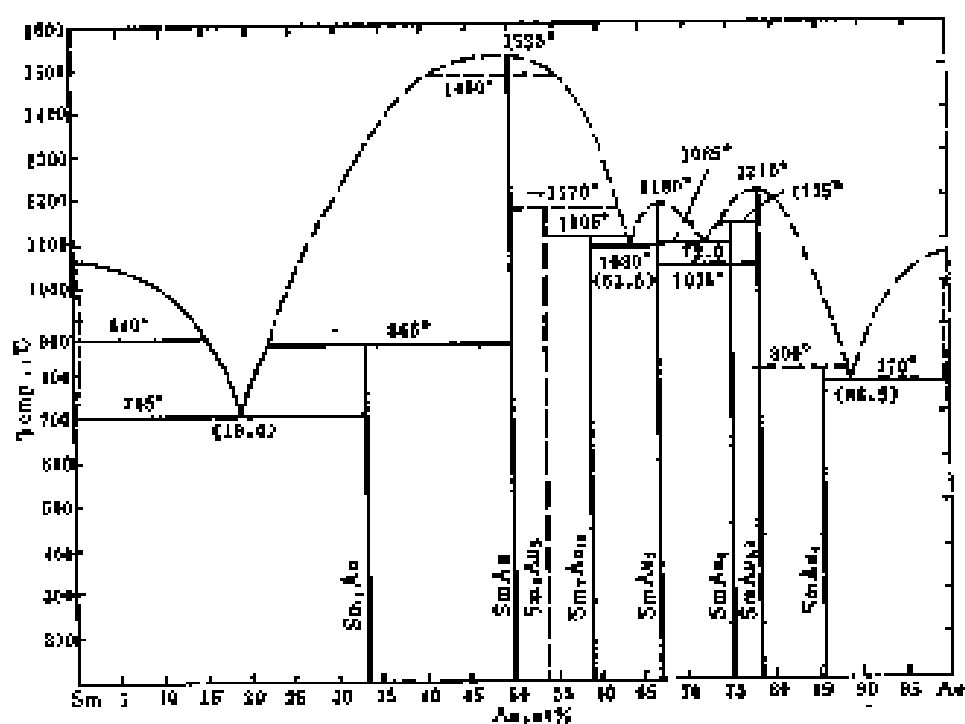


Fig. 141 Au-Sm 金-鈔 Gold-Samarium(49)

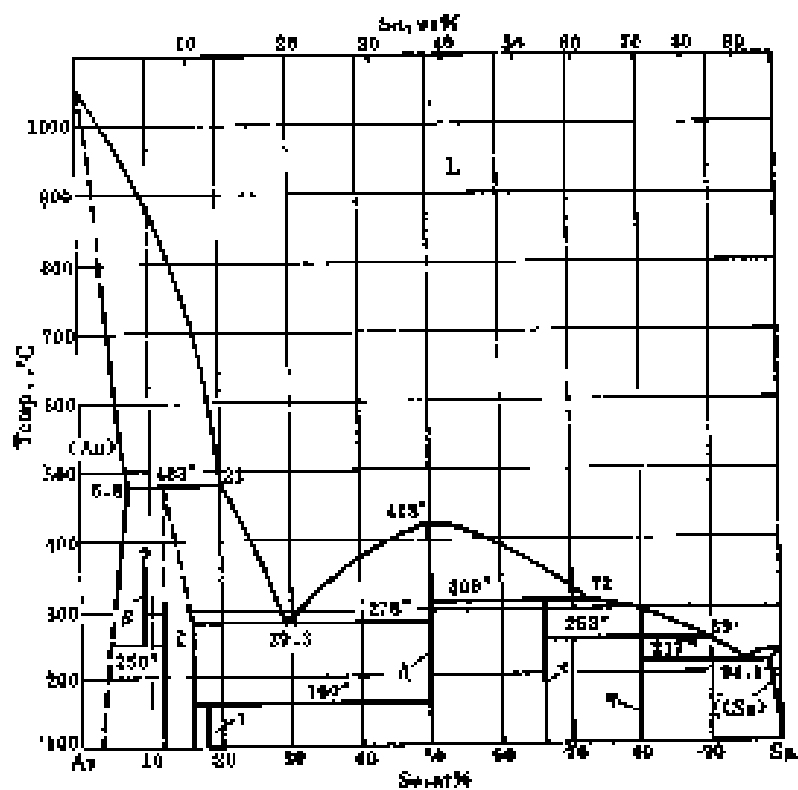


Fig. 142 Au-Sn 金-錫 Gold-Tin(49)

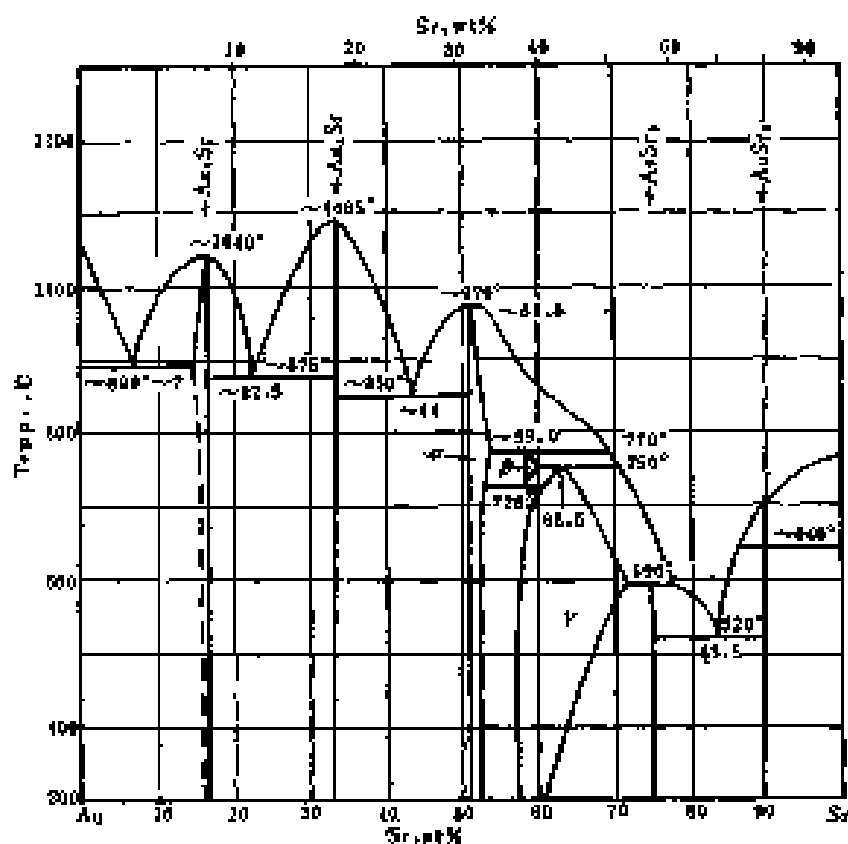


Fig.144 Au-Sr 金-锶 Gold-Strontium(72)

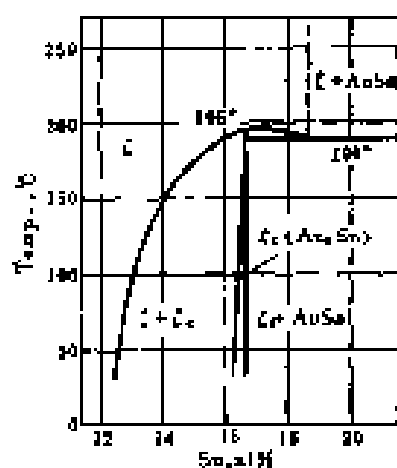


Fig.143 Au-Sn 金-锡 Gold-Tin(71)

部分相图 Partial phase diagram

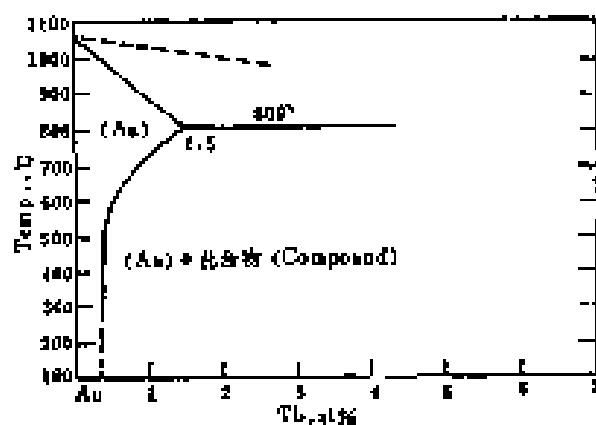


Fig.145 Au-Tb 金-铽 Gold-Terbium(60)

部分相图 Partial phase diagram

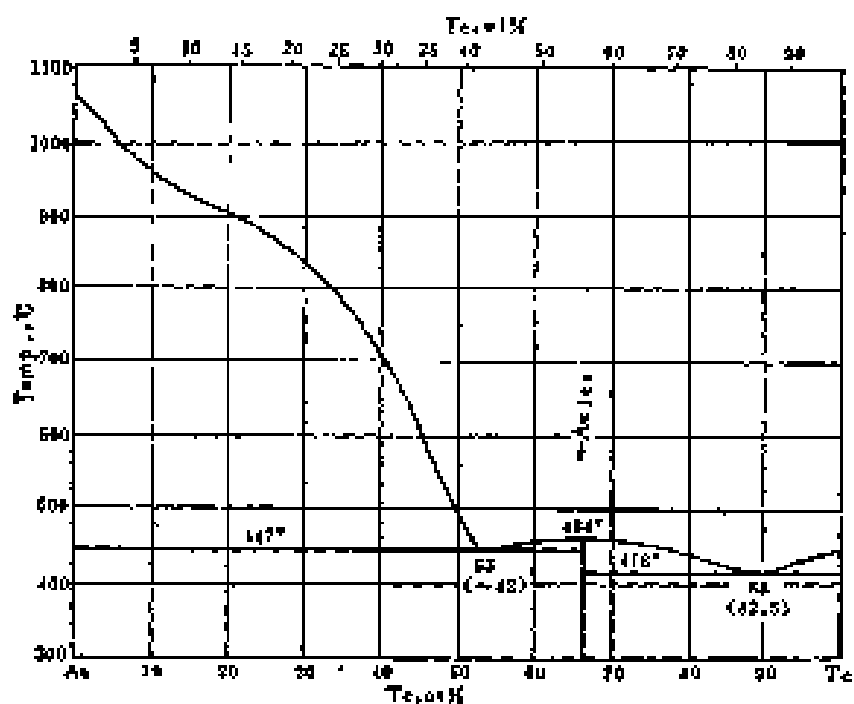


Fig.146 Au-Te 金-碲 Gold-Tellurium(1)

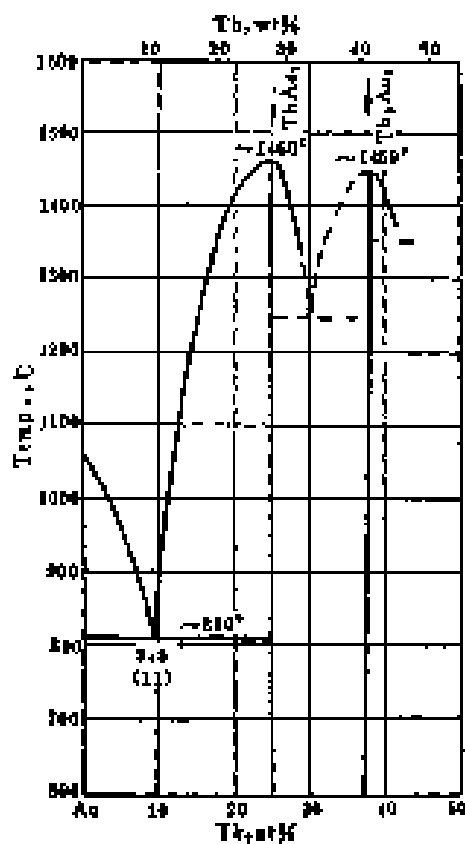


Fig.147 Au-Th 金-鈷 Gold-Thorium(73)

部分相图 Partial phase diagram

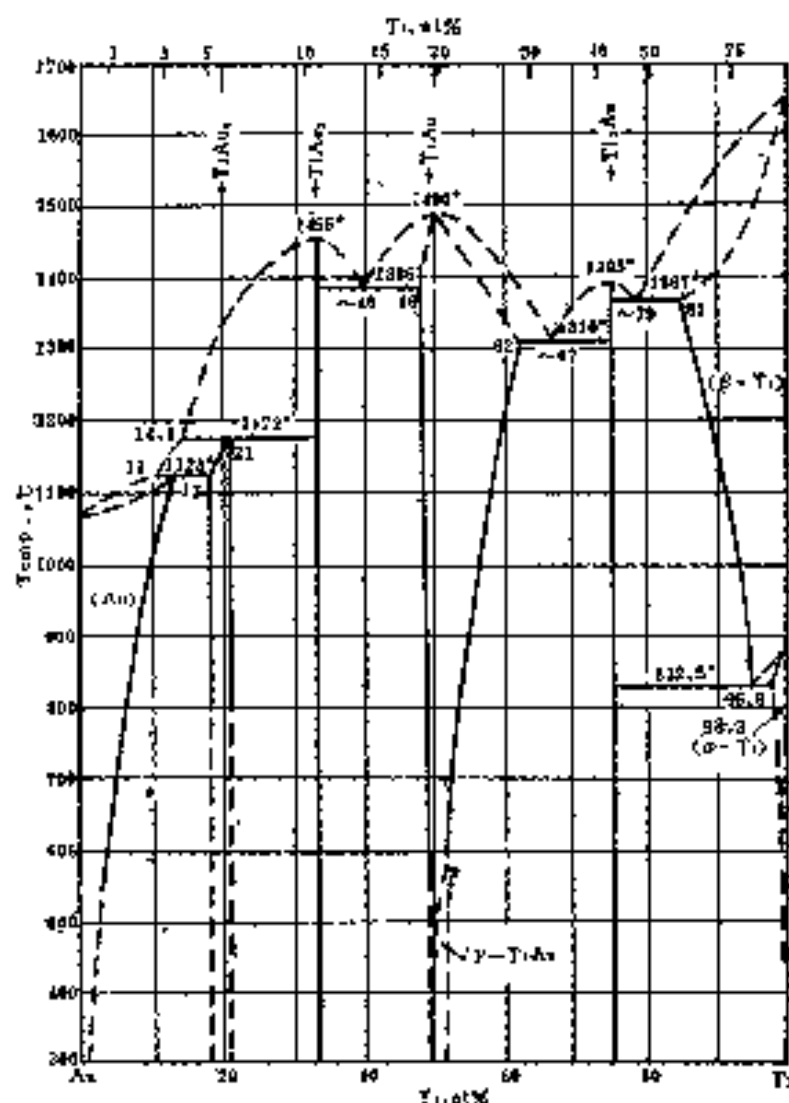


Fig. 148 Au-Ti 金-鈦 Gold-Titanium(3)

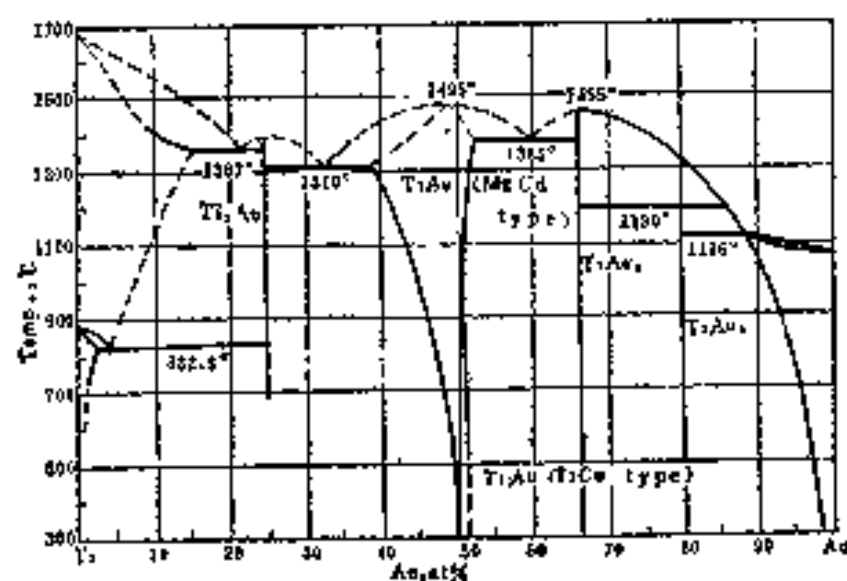


Fig. 149 Au-Ti 金-鈦 Gold-Titanium(53)



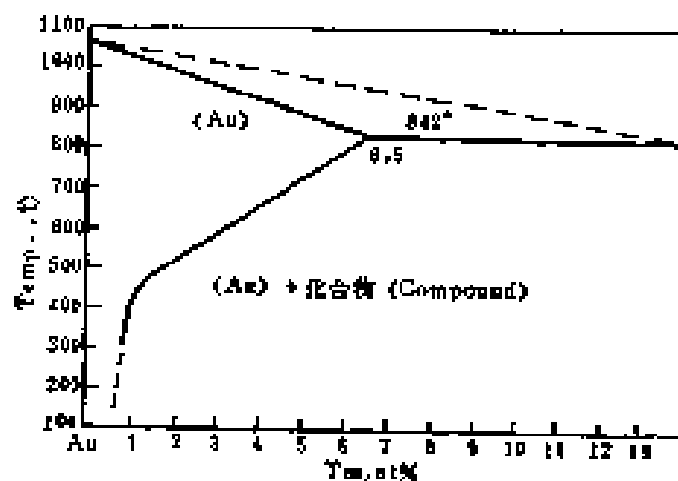


Fig.151 Au-Th 金-铊 Gold-Thulium(50)

部分相图 Partial phase diagram

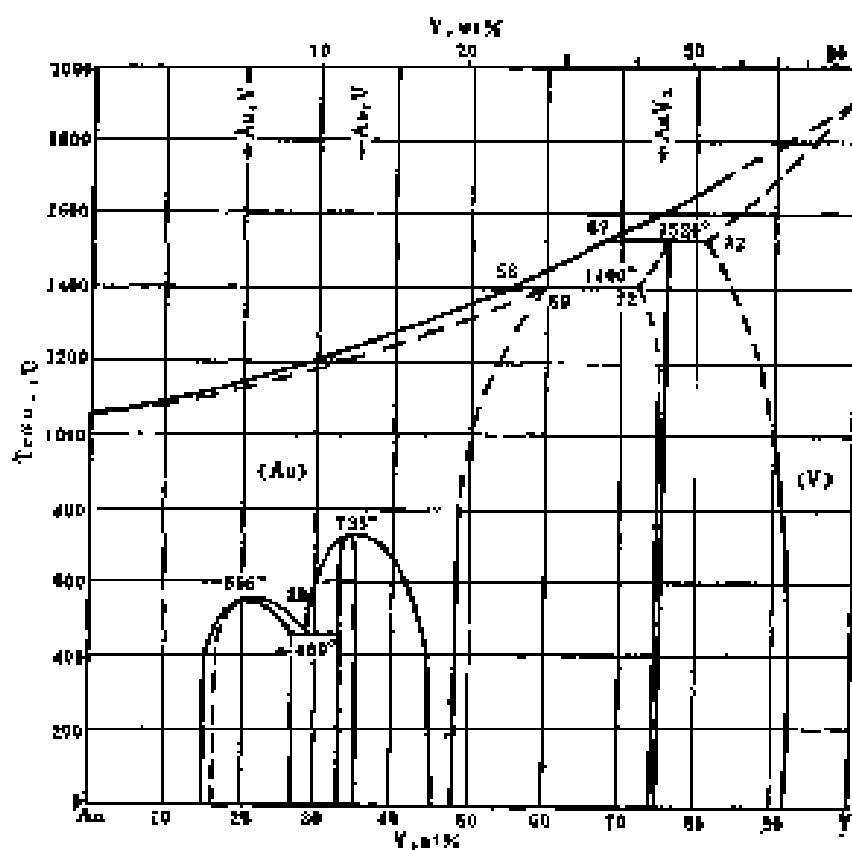


Fig.153 Au-V 金-钒 Gold-Vanadium(2)



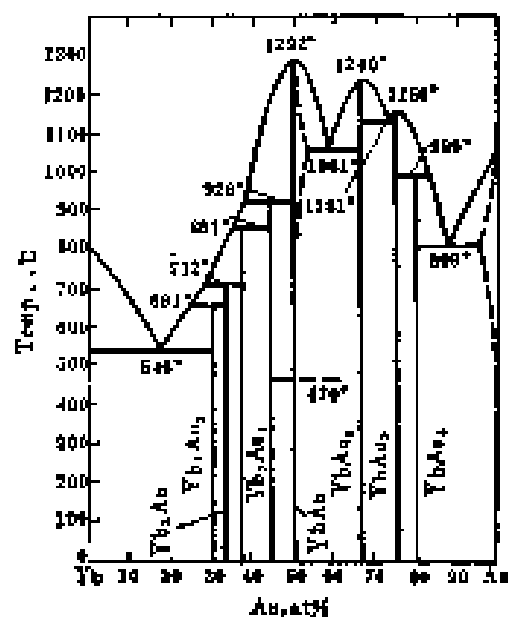


Fig.154 Au-Yb 金-铈 Gold-Ytterbium(74)

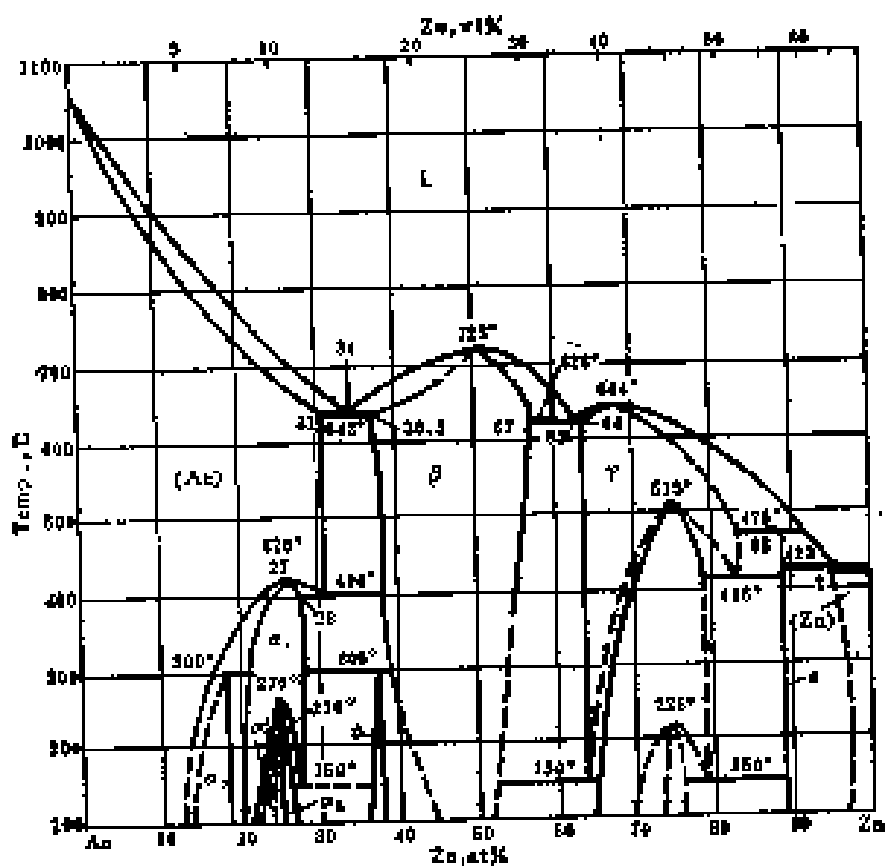


Fig.155 Au-Zn 金-锌 Gold-Zinc(4)

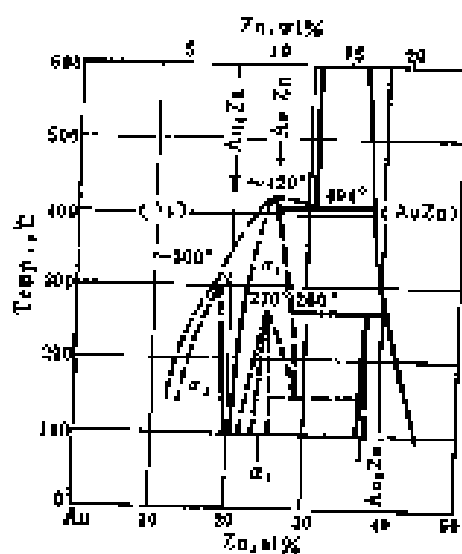


Fig.156 Au-Zn 金-鋅 Gold-Zinc(2)

部分相图 Partial phase diagram

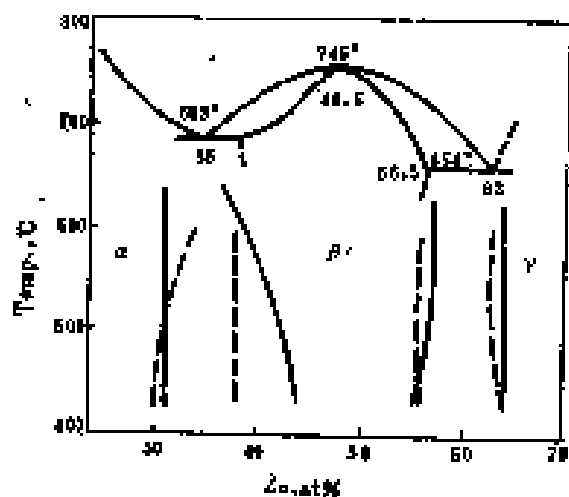


Fig.157 Au-Zn 金-鋅 Gold-Zinc(75)

部分相图 Partial phase diagram

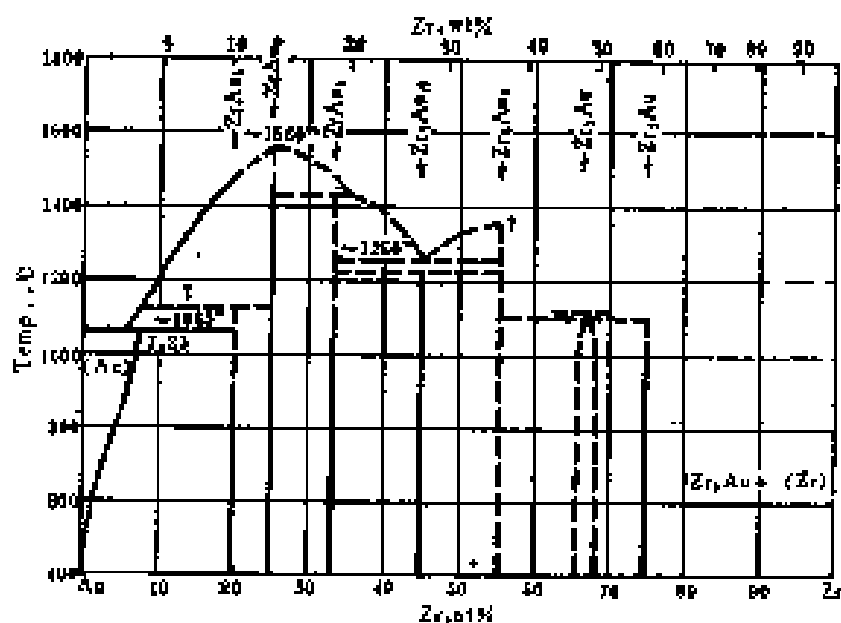


Fig.158 Au-Zr 金-鋯 Gold-Zirconium(4)





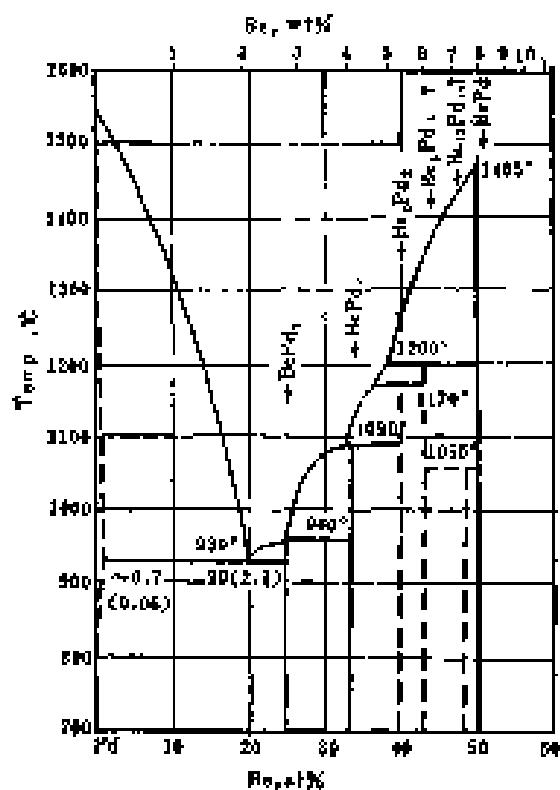


Fig.167 Be-Pd 铍-钯 Beryllium-Palladium(1)

部分相图 Partial phase diagram

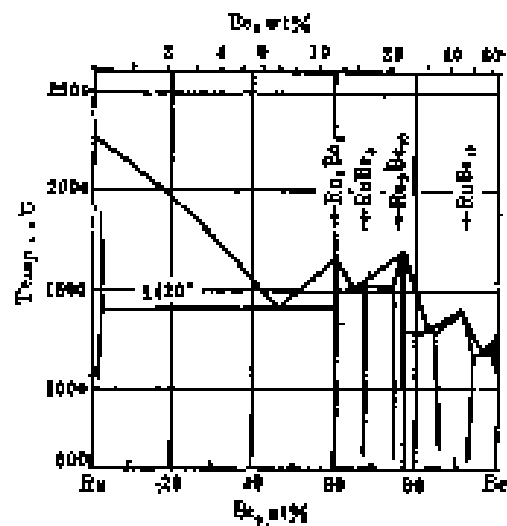


Fig.169 Be-Ru 铍-钌  
Beryllium-Ruthenium(77)

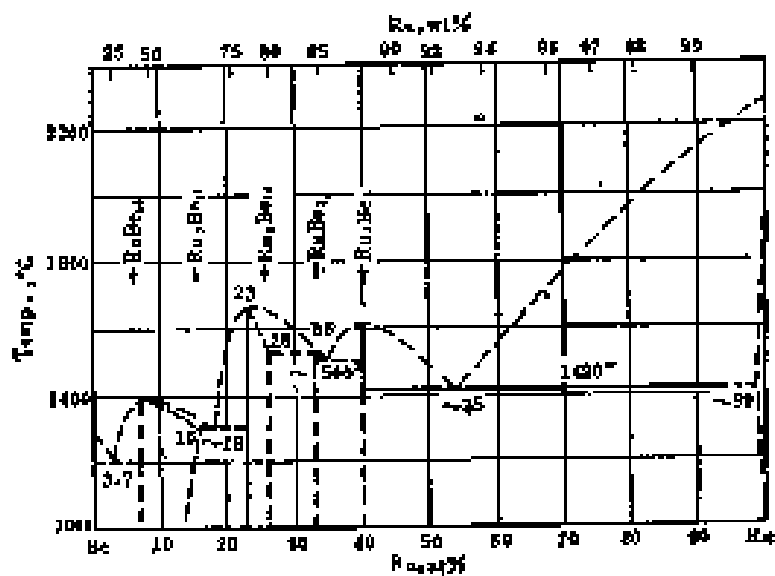


Fig.168 Be-Ru 铍-钌 Beryllium-Ruthenium(9)

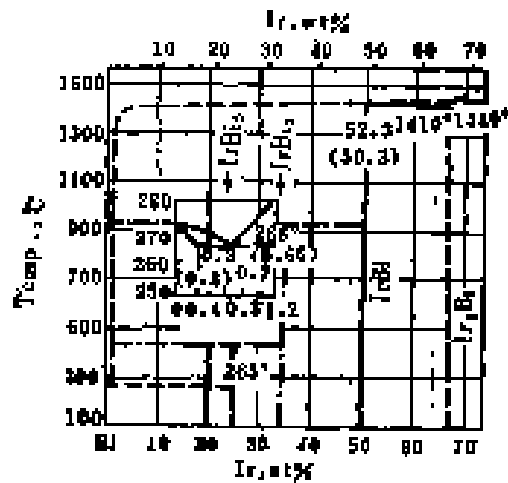


Fig.170 Bi-Ir 铋-铱 Bismuth-Iridium(31)  
部分相图 Partial phase diagram

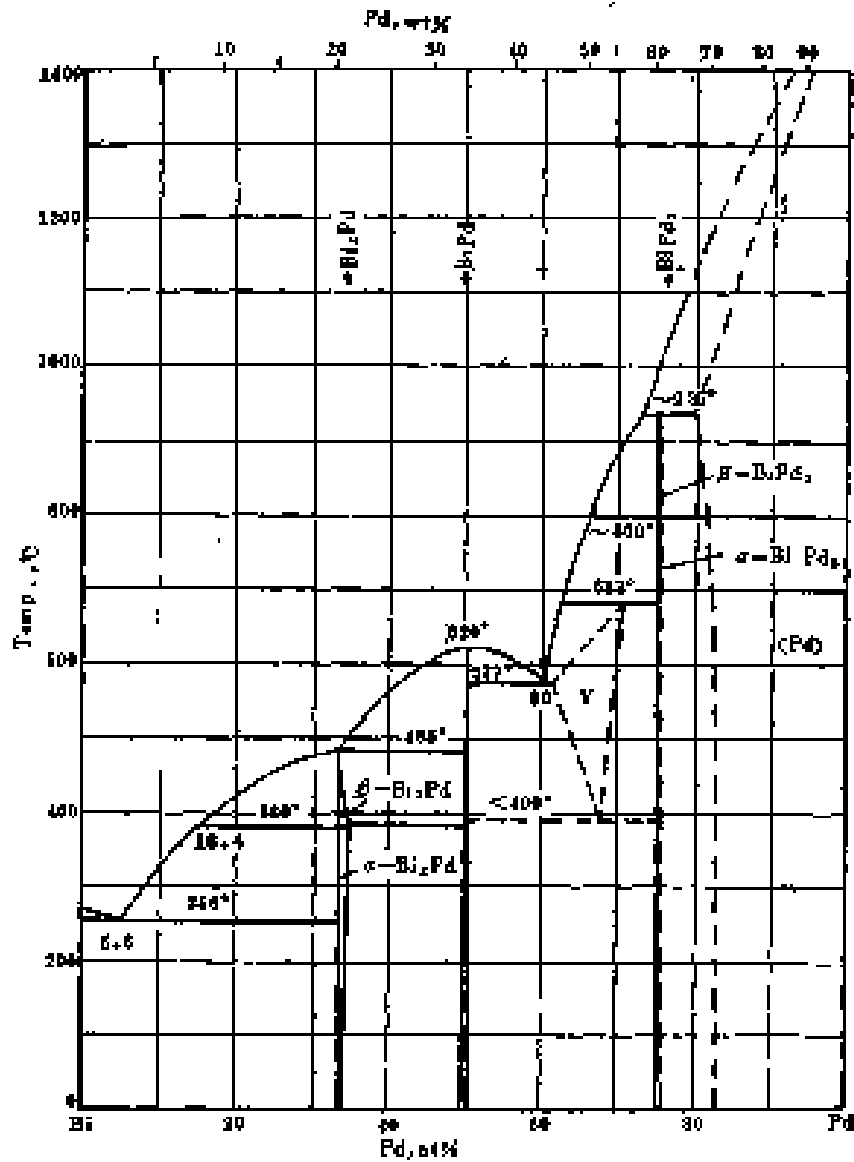


Fig.171 Bi-Pd 铋-钯 Bismuth-Palladium(2)

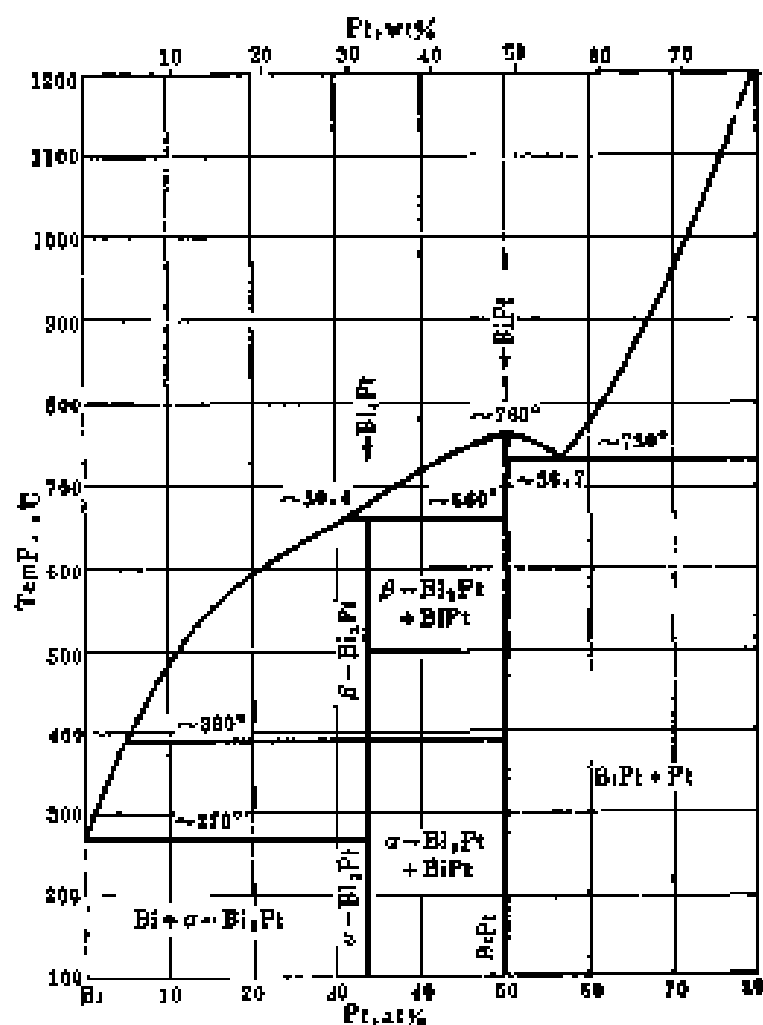


Fig.172 Bi-Pt 铋-铂 Bismuth-Platinum(2)

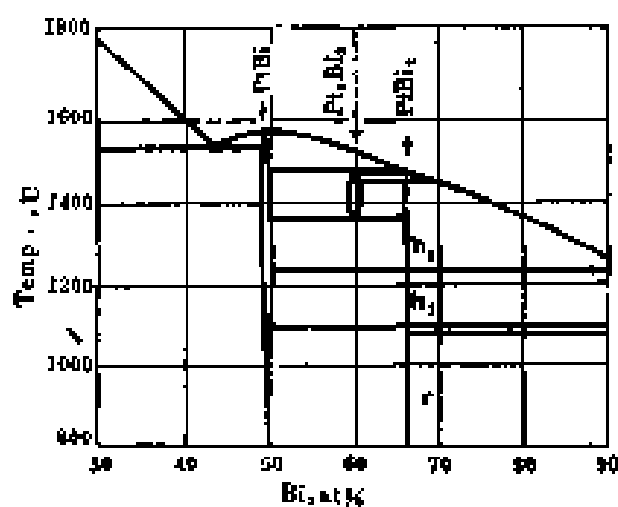


Fig.173 Bi-Pt 铋-铂 Bismuth-Platinum(82)

部分相图 Partial phase diagram

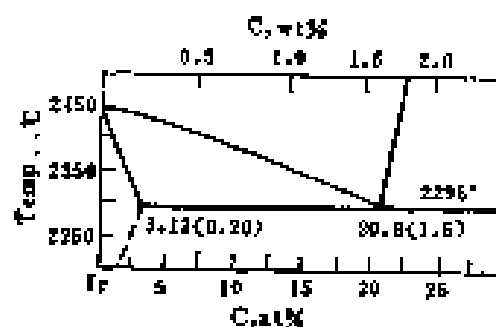


Fig.175 C-It 碳-铈 Carbon-Iridium(83)

部分相图 Partial phase diagram

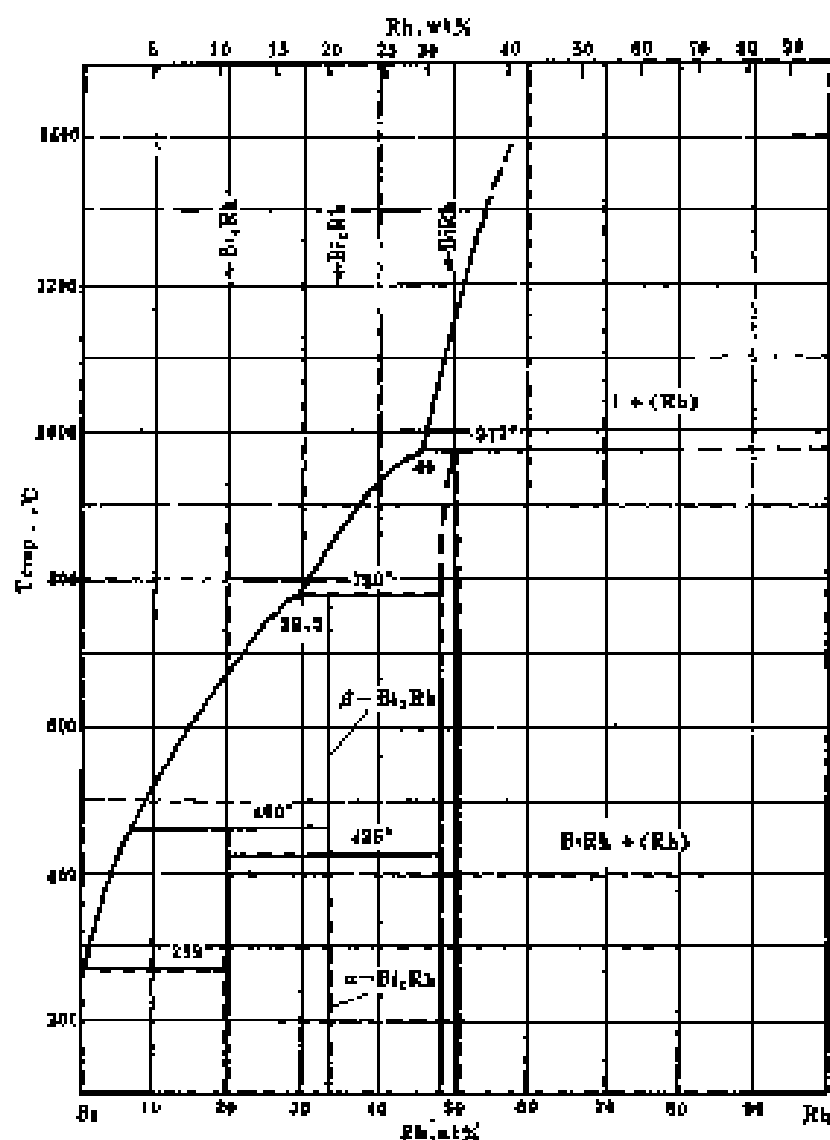


Fig.174 Bi-Rh 铋-铑 Bismuth-Rhodium[3]

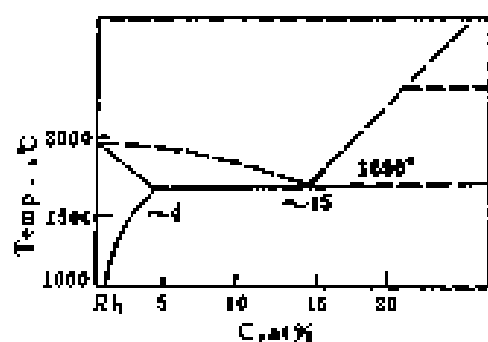


Fig.176 C-Rh 碳-铑 Carbon-Rhodium[84]

部分相图 Partial phase diagram

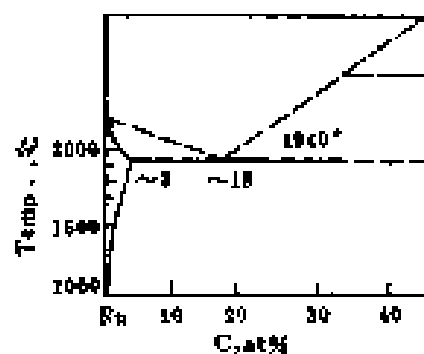
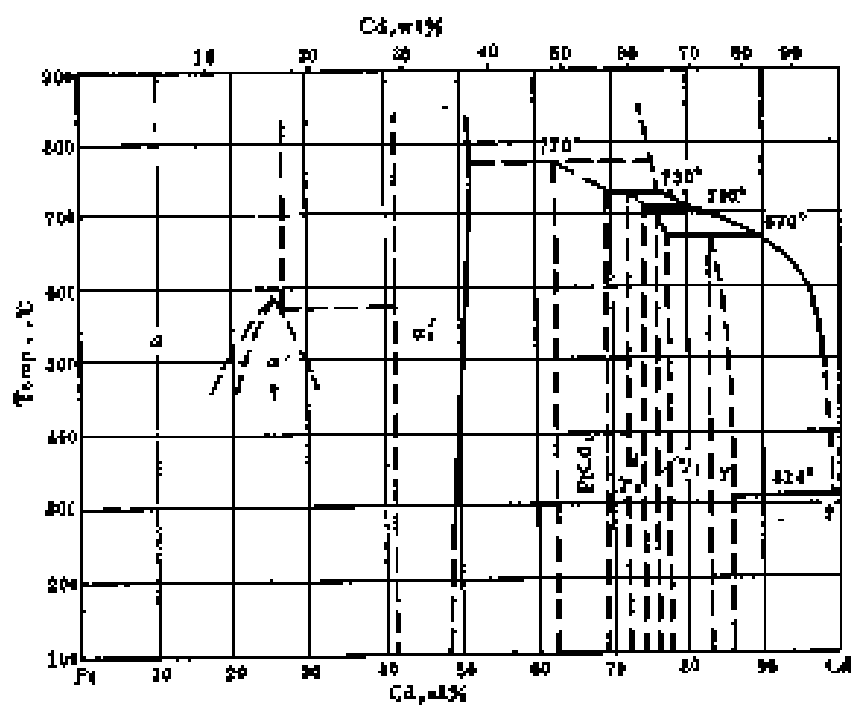
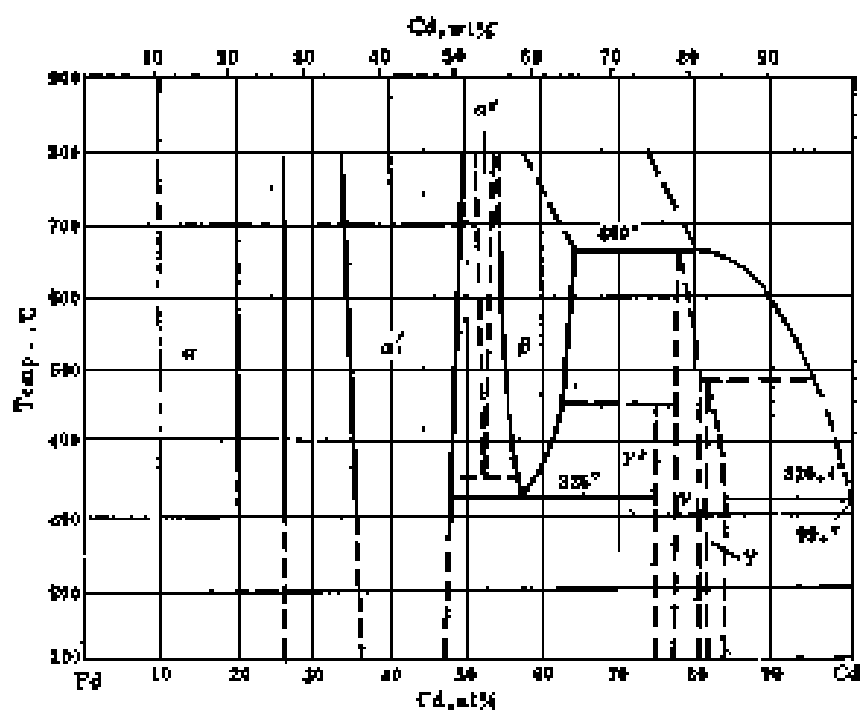


Fig.177 C-Ru 碳-钌 Carbon-Ruthenium[84]

部分相图 Partial phase diagram





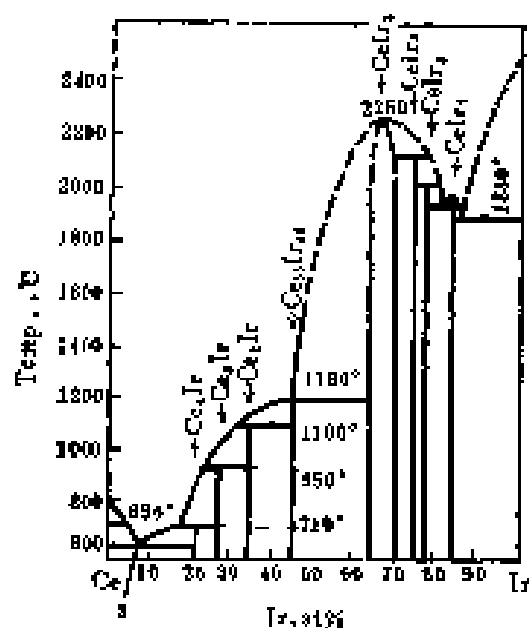


Fig 180 Ce-Pr 铈-镨 Cerium-Indium(88)

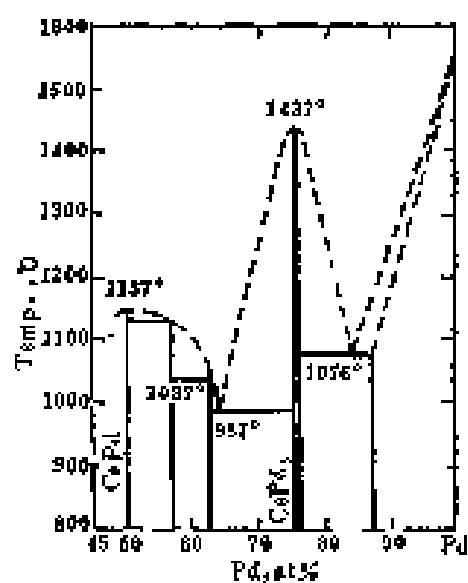


Fig 181 Ce-Pd 铈-钯 Cerium-Palladium(87)

部分相图 Partial phase diagram

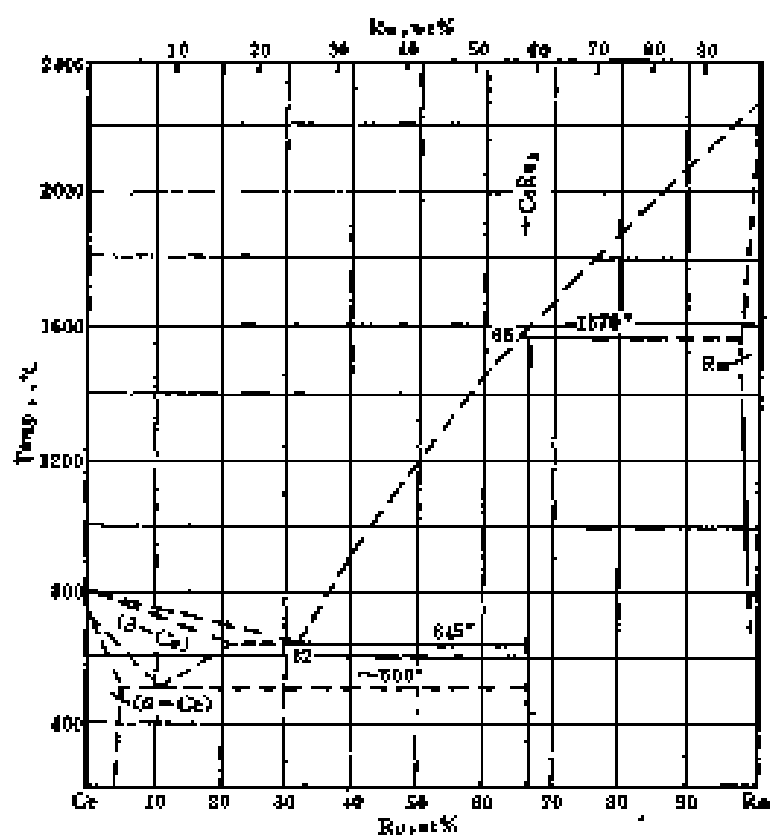


Fig 182 Ce-Ru 铈-钌 Cerium-Ruthenium(88)

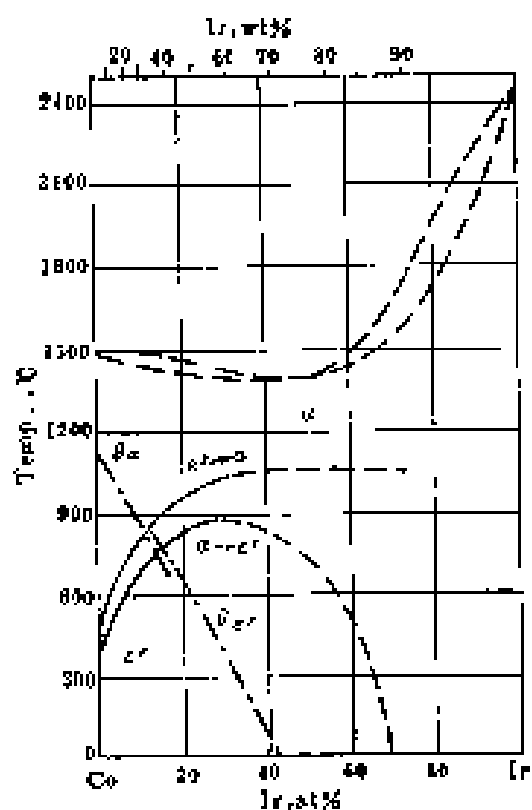


Fig.183 Co-Ir 鈔-鈔 Cobalt-Iridium(89)

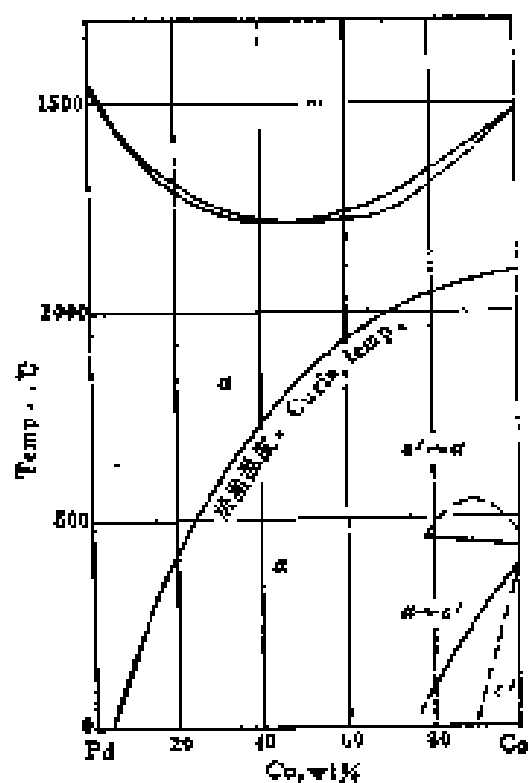


Fig.185 Co-Pd 鈔-鈔  
Cobalt-Palladium(81)

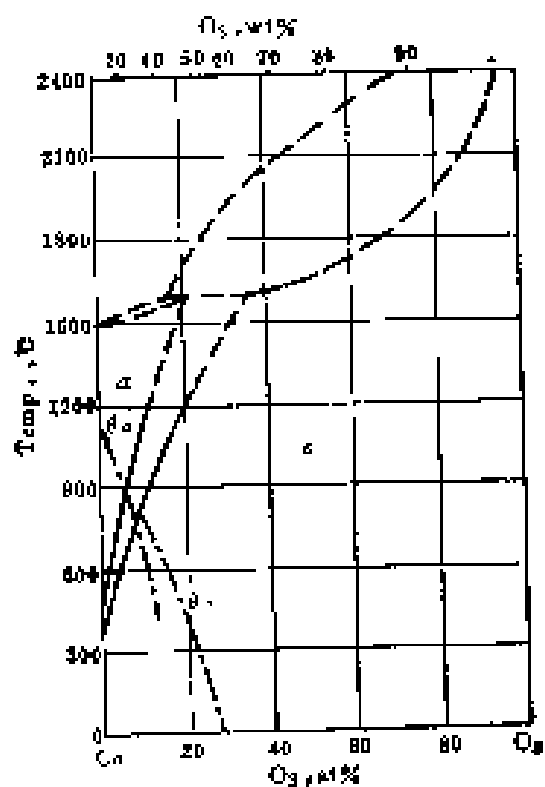


Fig.184 Co-Os 鈔-鈔 Cobalt-Osmium(90)

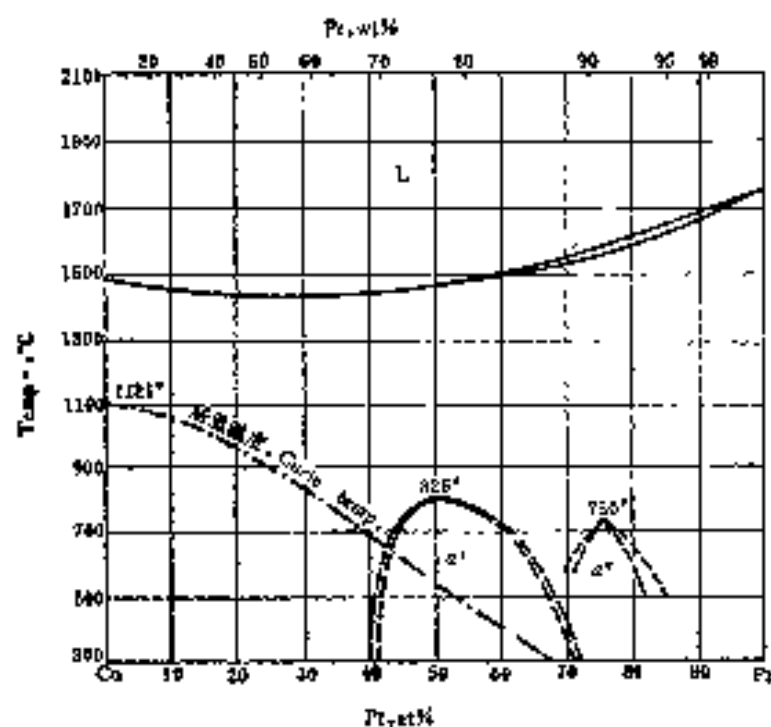


Fig.186 Co-Pt 钴-铂 Cobalt-Platinum(4)

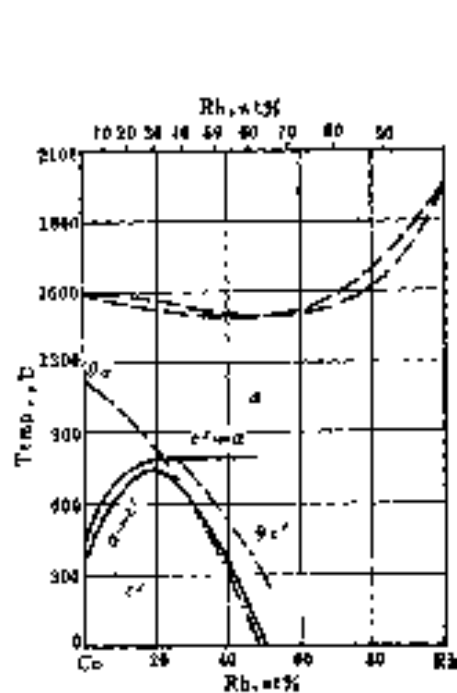


Fig.187 Co-Rh 钴-铑 Cobalt-Rhodium(89)

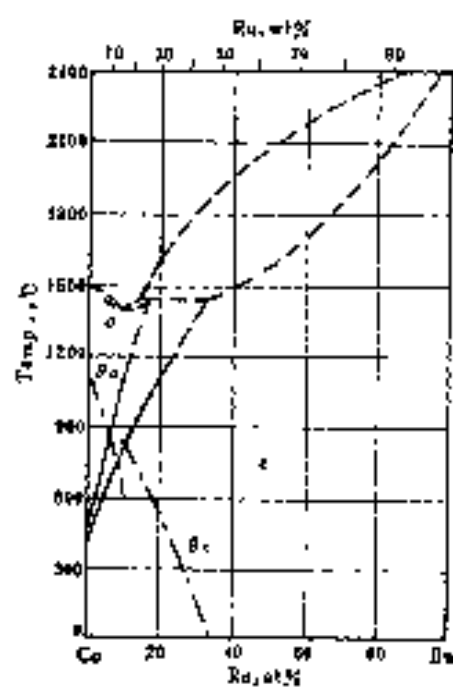


Fig.188 Co-Ru 钴-钌 Cobalt-Ruthenium(89)

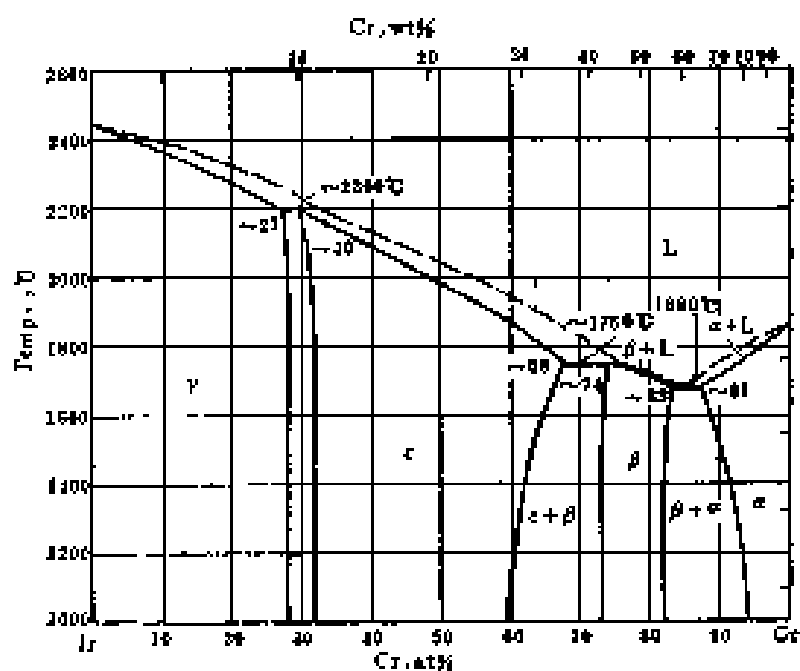


Fig.189 Cr-Ir 铬-铱 Chromium-Iridium(92)

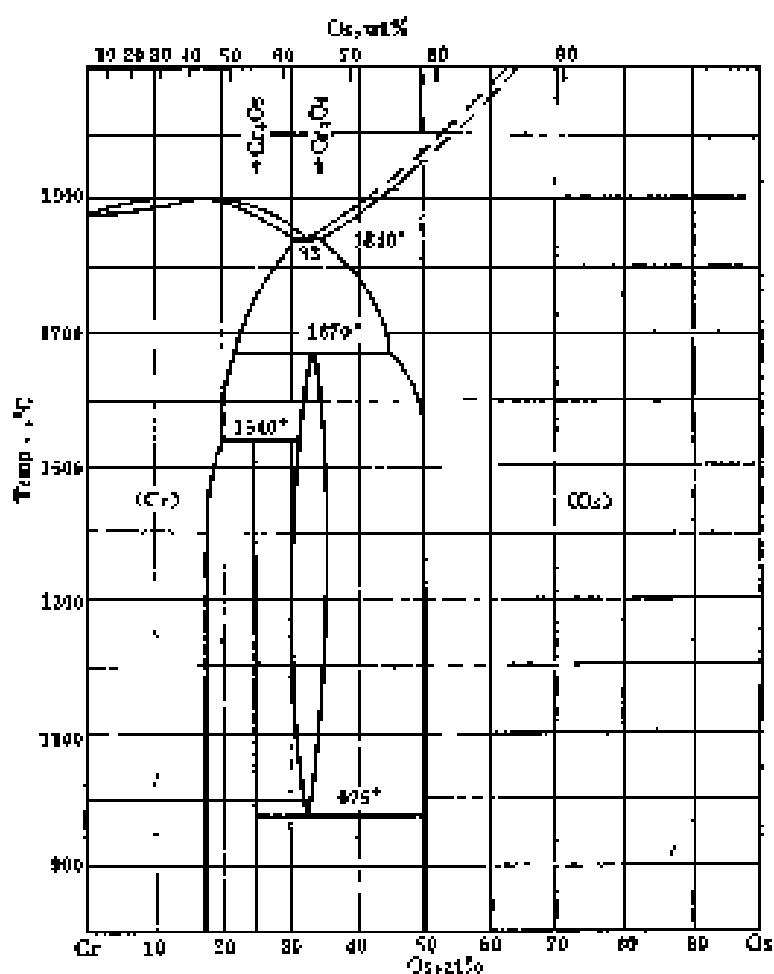


Fig.190 Cr-Os 铬-锇 Chromium-Osmium(93)



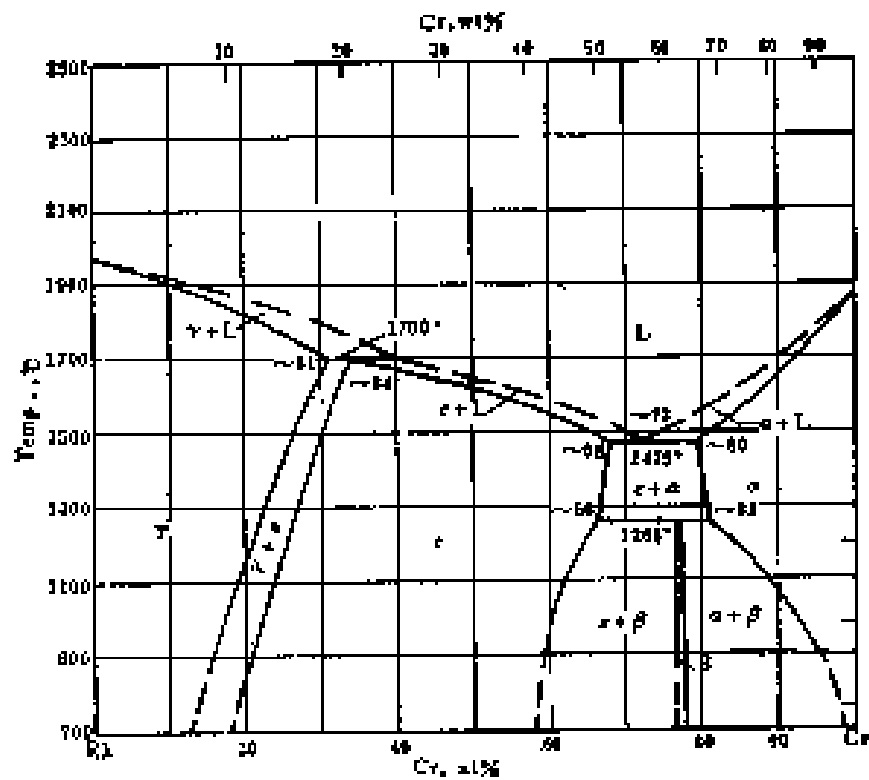


Fig.194 Cr-Rh 铬-铑 Chromium-Rhodium(973)

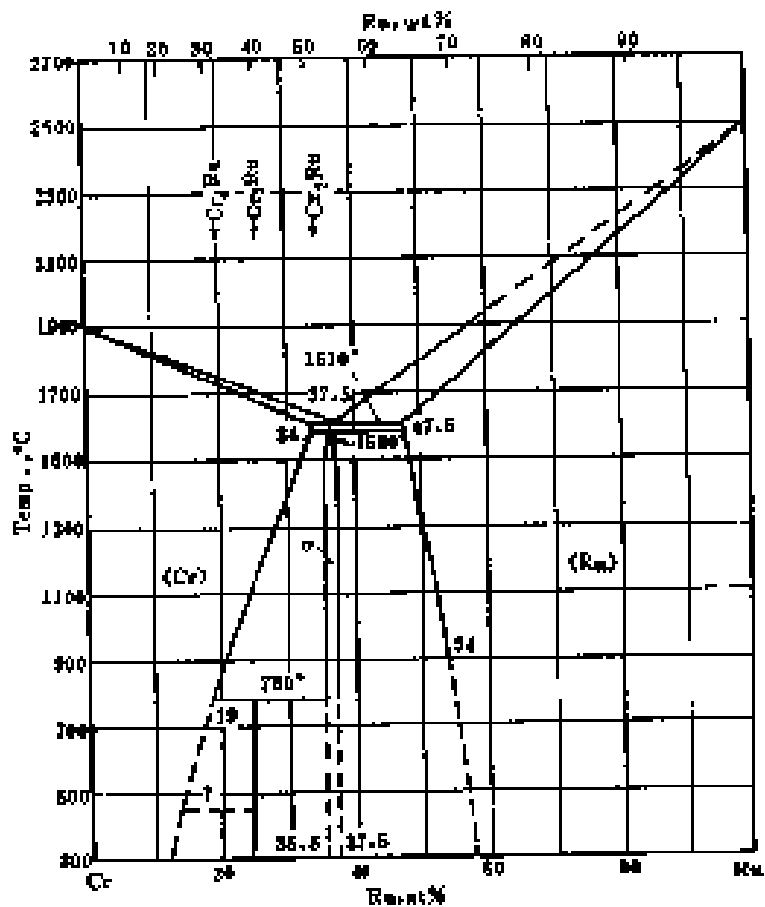


Fig.195 Cr-Ru 铬-钌 Chromium-Ruthenium(97)

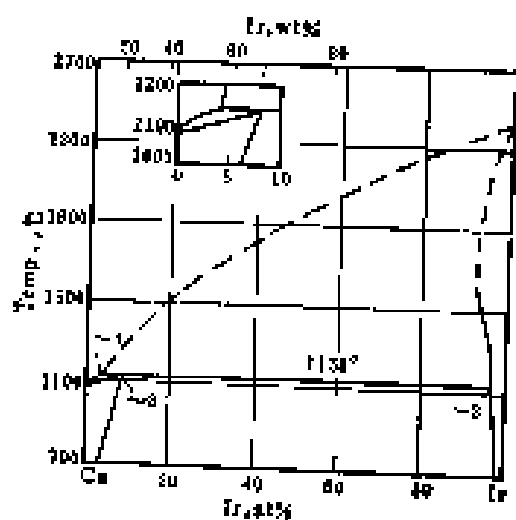


Fig. 196 Cu-Ir 銅-銨  
Copper-Iridium (9%)

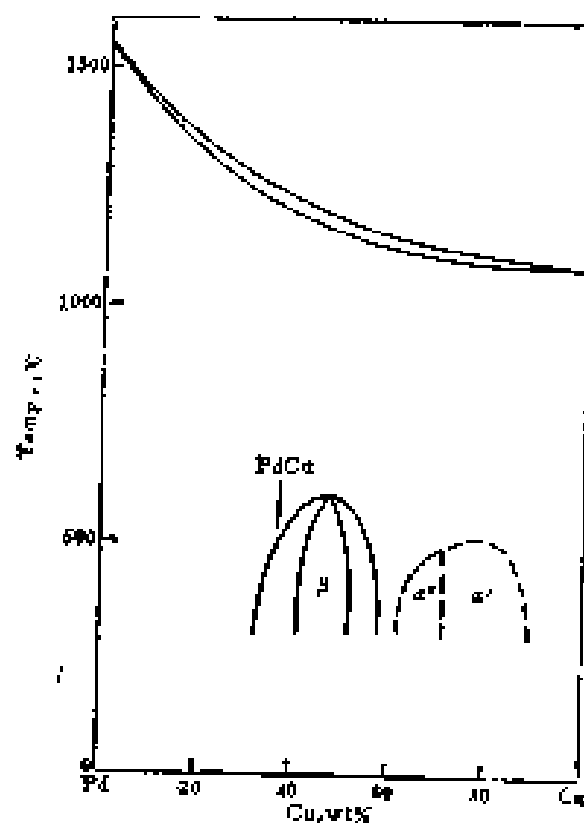


Fig. 197 Cu-Pd 銅-鈀 Copper-Palladium (91)

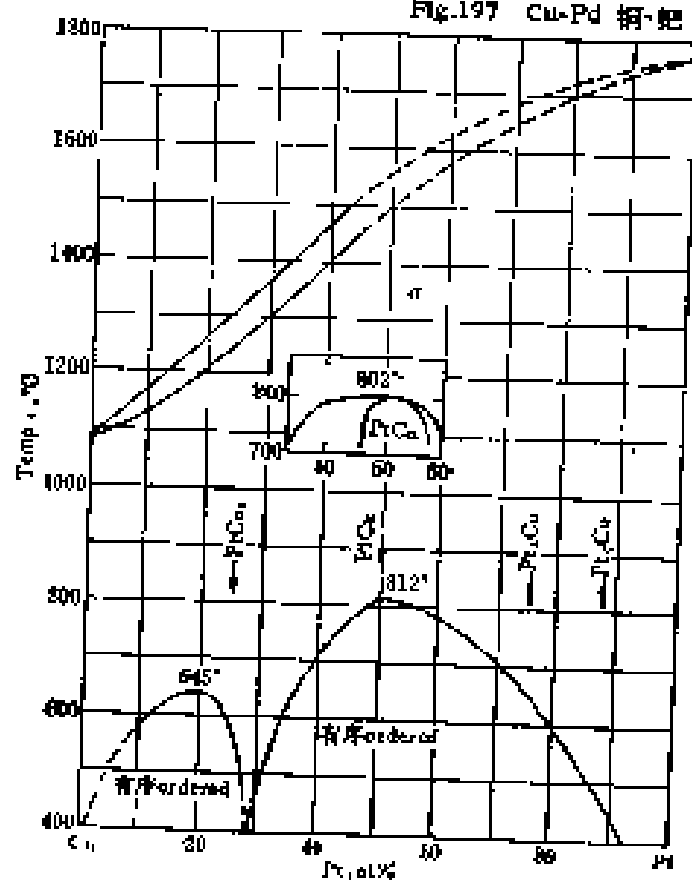


Fig. 198 Cu-Pt 銅-鉑 Copper-Platinum (1)



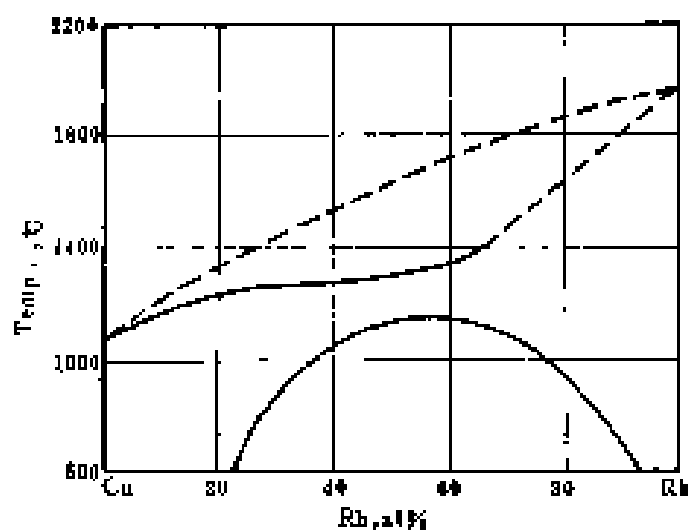


Fig.199 Cu-Rh 铜-铑 Copper-Rhodium(99)

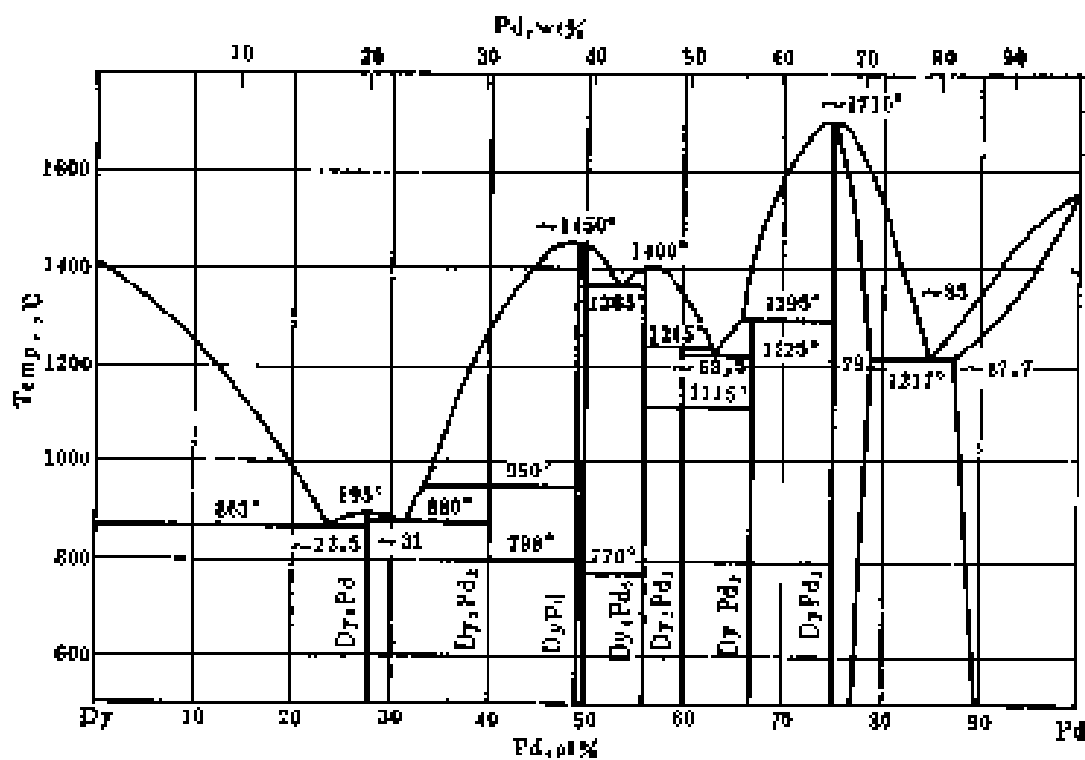


Fig.200 Dy-Pd 镨-钯 Dysprosium-Palladium(100)



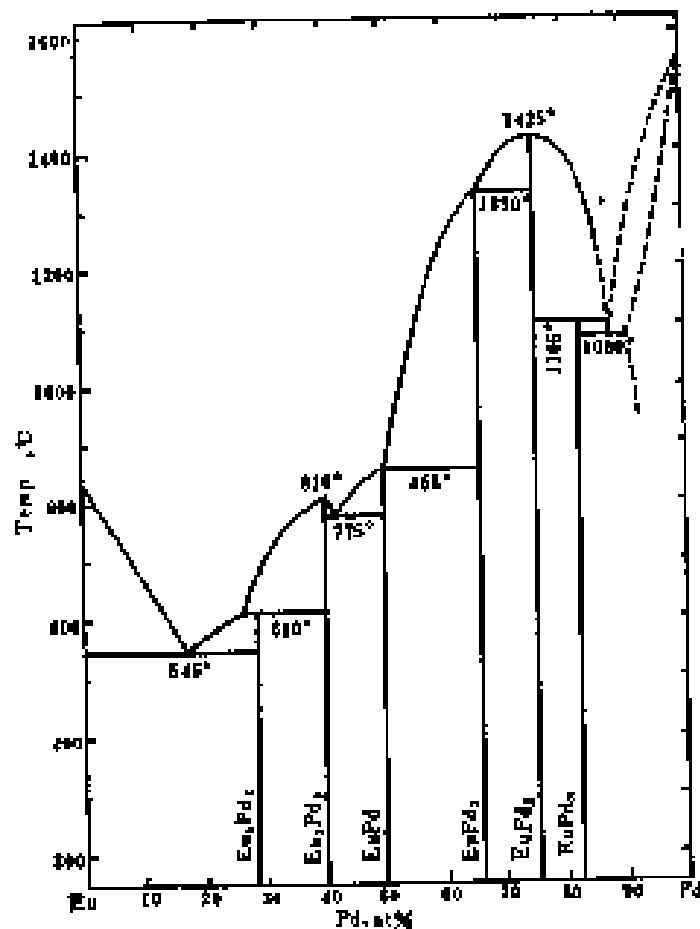


Fig.204 Eu-Pd 銥-銲 Europium-Palladium(103)

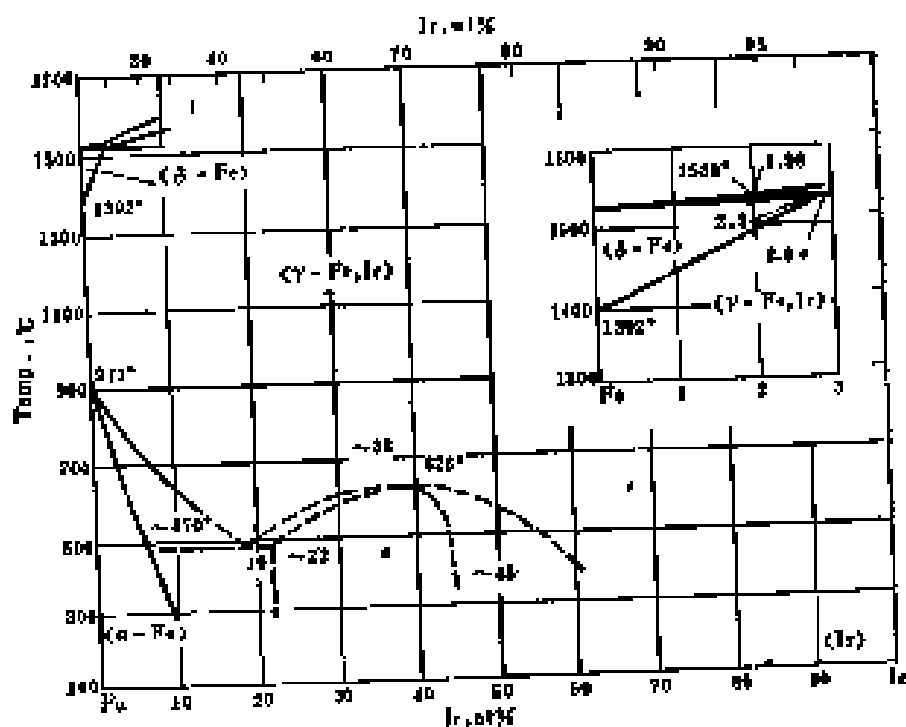


Fig.205 Fe-Ir 銲-銲 Iron-Iridium(4)

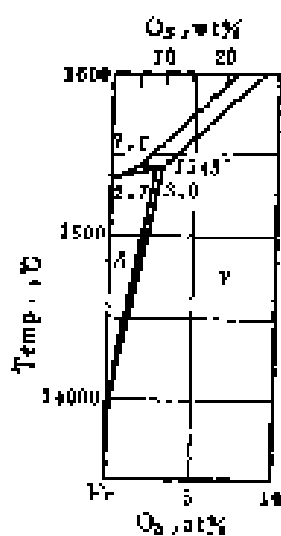


Fig 206 Fe-Os 铁-锇  
Iron-Osmium(104)

部分相图  
Partial phase diagram

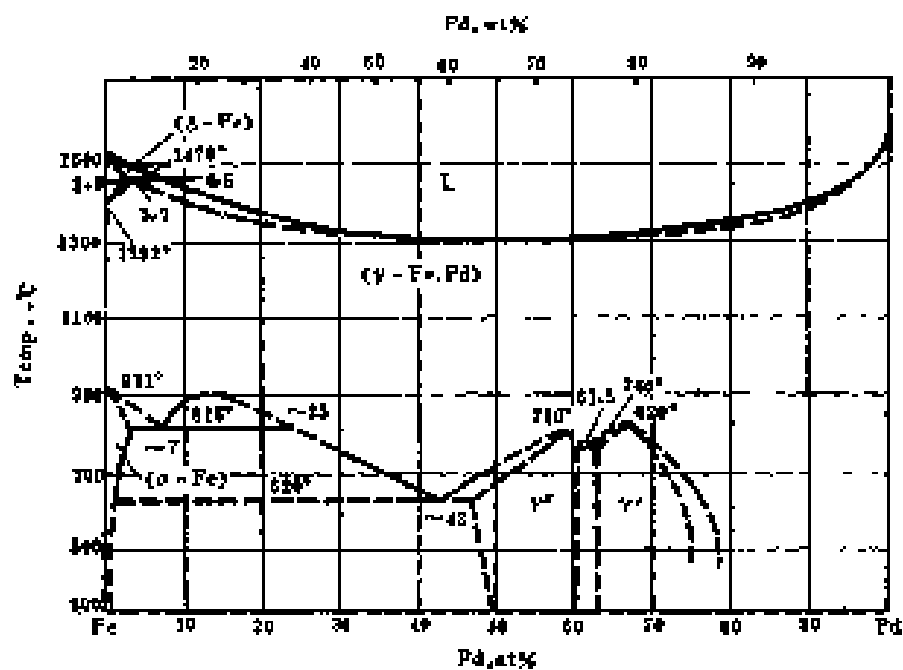


Fig 207 Fe-Pd 铁-钯 Iron-Palladium(4)

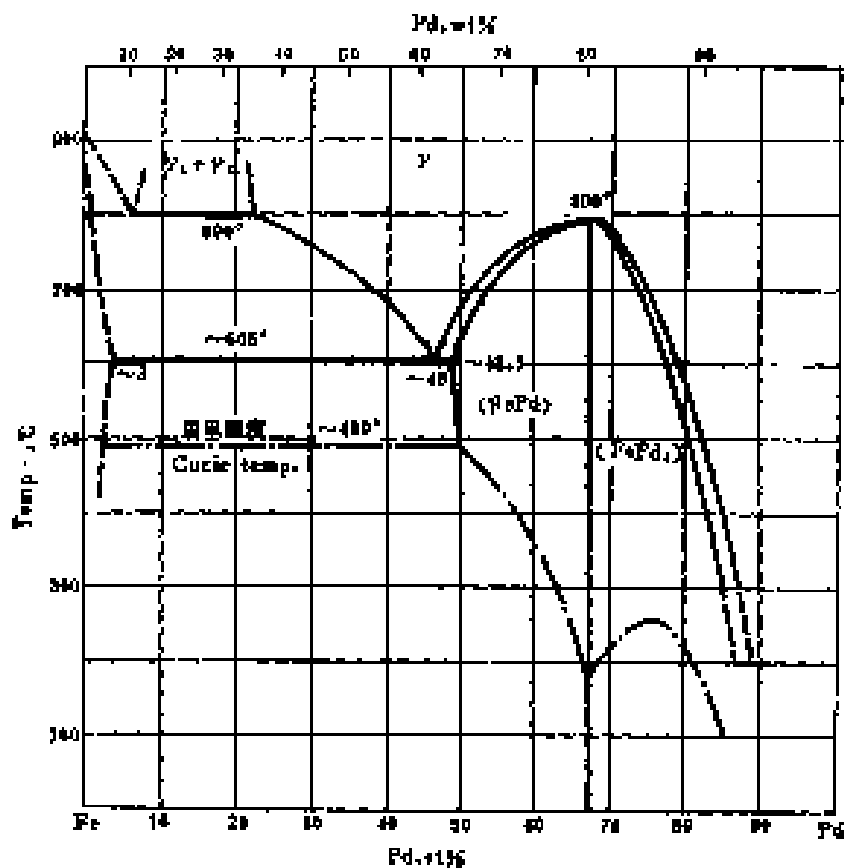


Fig.208 Fe-Pd 铁-钯 Iron-Palladium(3)



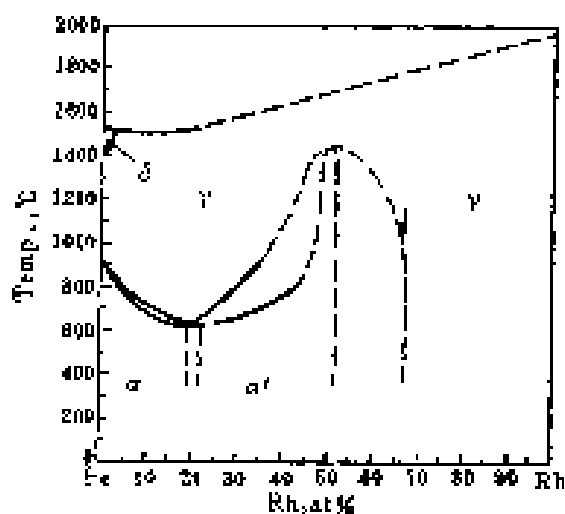


Fig. 211 Fe-Rh 铁-铑 Iron-Rhodium(105)

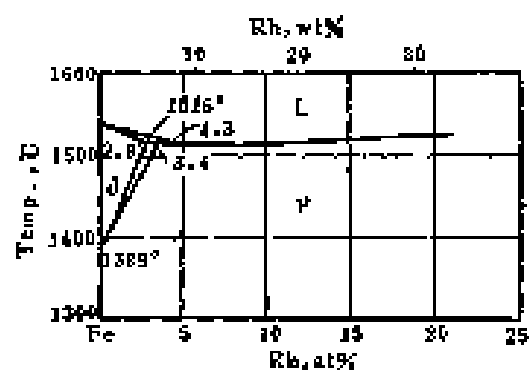


Fig. 212 Fe-Rh 铁-铑 Iron-Rhodium(2)

部分相图 Partial phase diagram

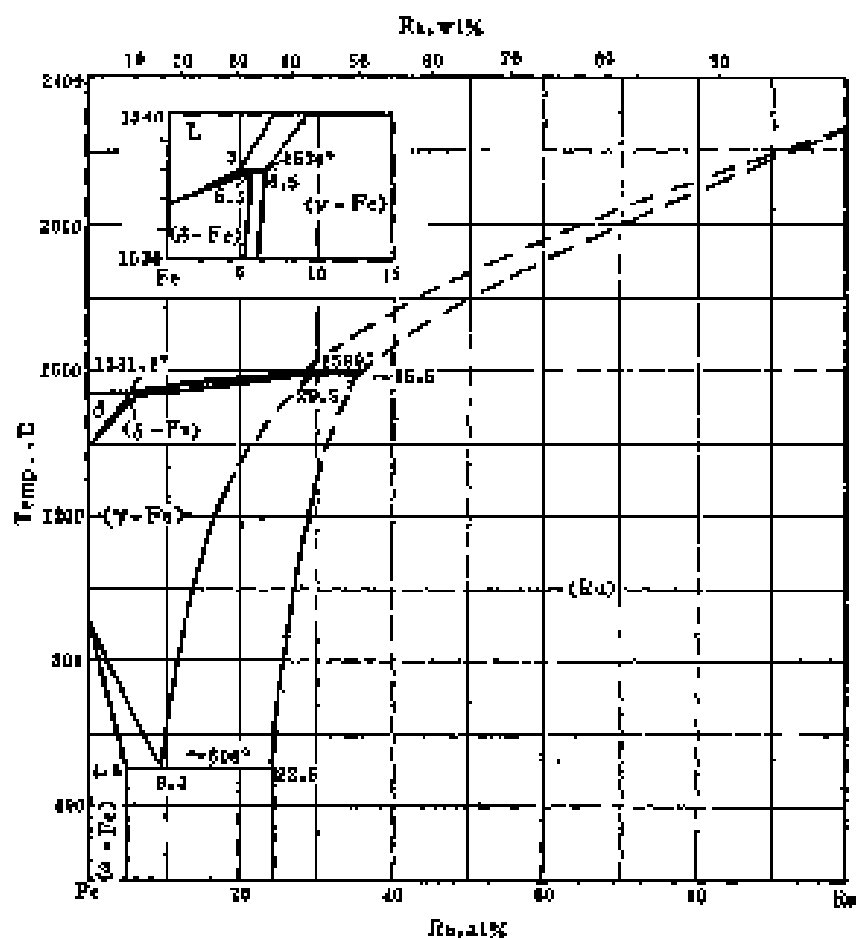


Fig. 213 Fe-Ru 铁-钌 Iron-Ruthenium(108)

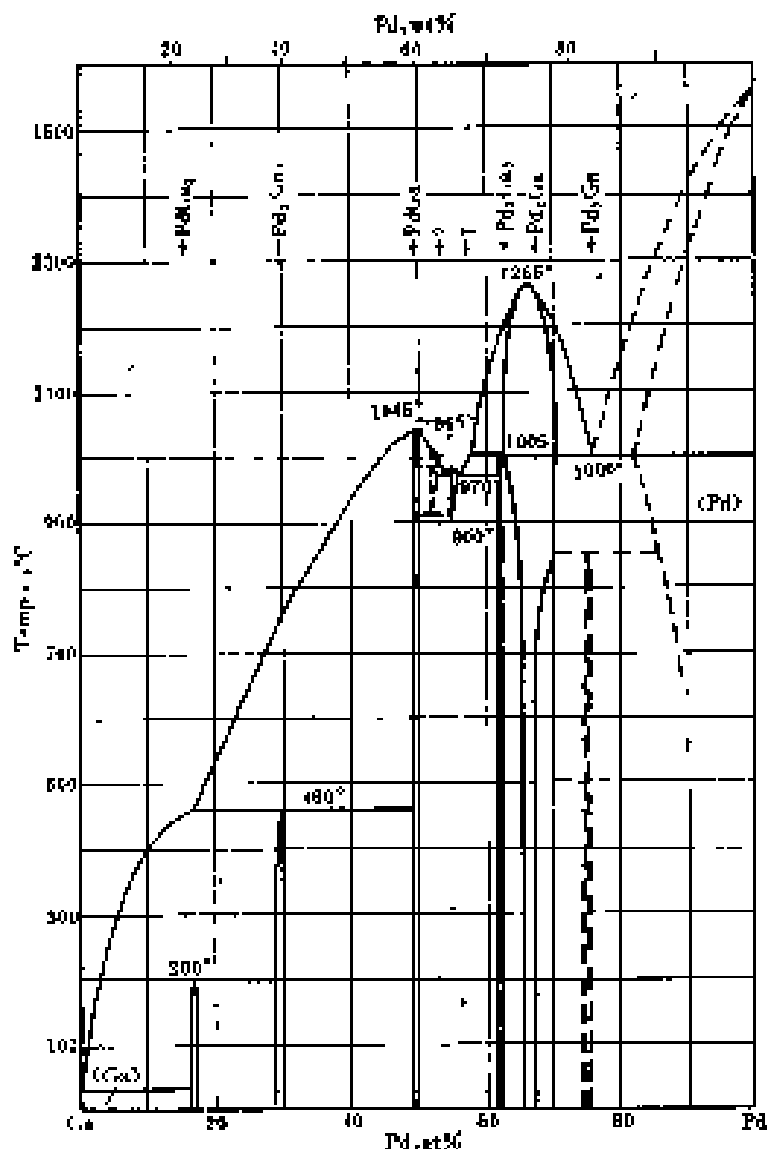


Fig.214 Ga-Pd 铟-钯 Gallium-Palladium(2)

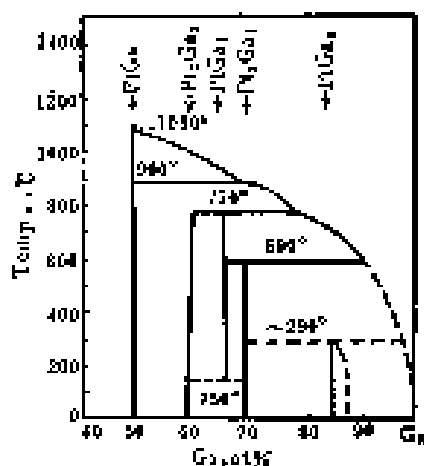


Fig.215 Ge-Pt 铟-铂 Gallium-Platinum(107)

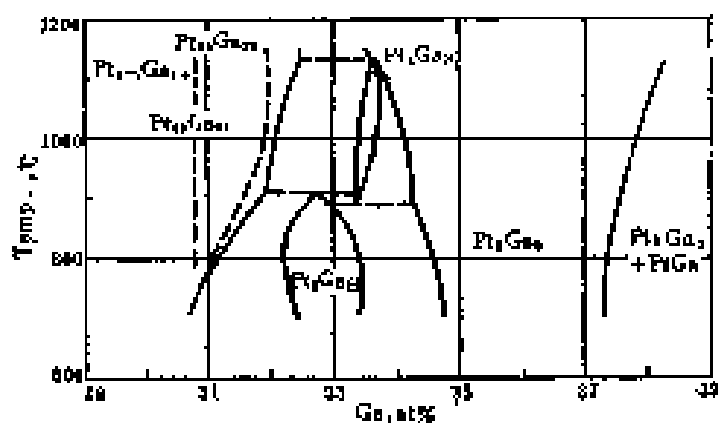


Fig.216 Ge-Pt 铟-铂 Gallium-Platinum(108)

部分相图 Partial phase diagram

部分相图 Partial phase diagram  
B—高温变体 High temperature modification  
H—低温变体 Low temperature modification

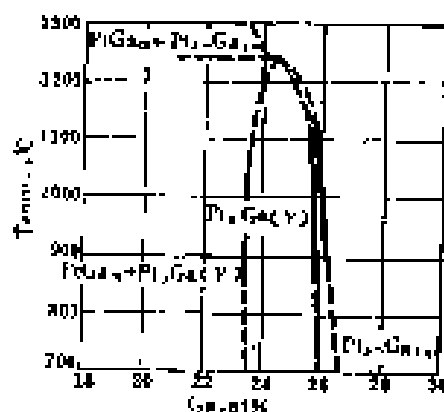


Fig 217 Ga-Pt 铟-铂

Gallium-Platinum (400)

部分相图 Partial phase diagram

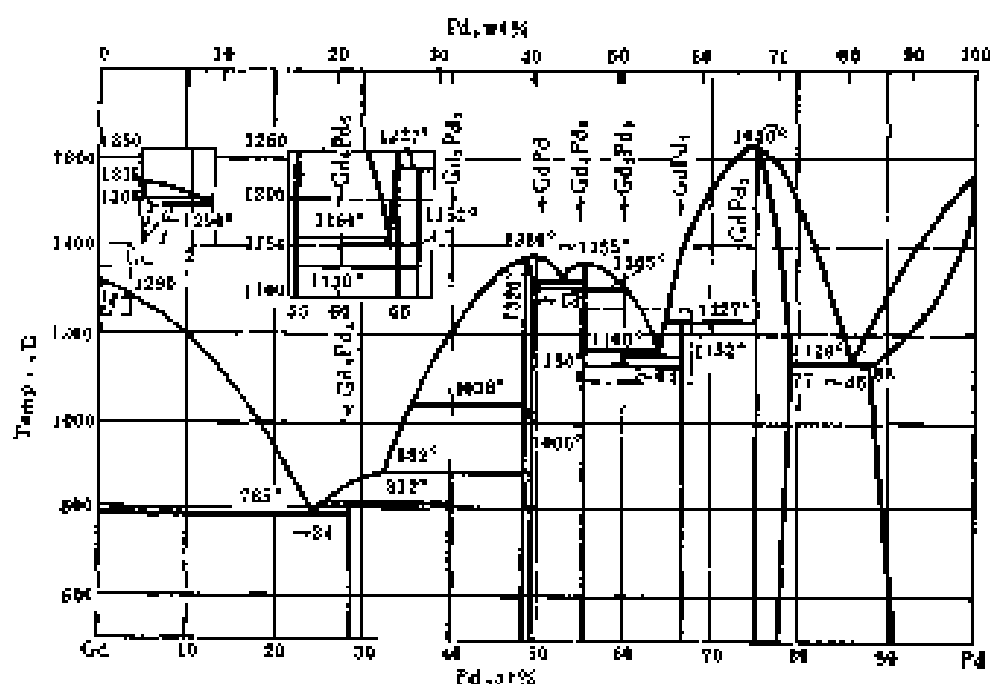


Fig 218 Gd-Pd 钆-钯 Gadolinium-Palladium (100)

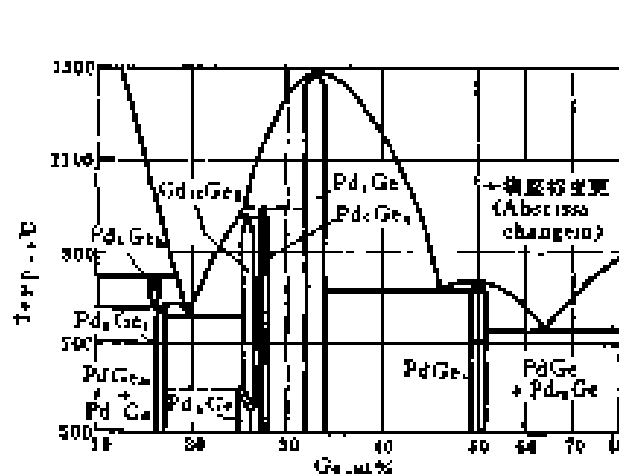


Fig 219 Ge-Pd 锗-钯  
Germanium-Palladium (109)

部分相图 Partial phase diagram

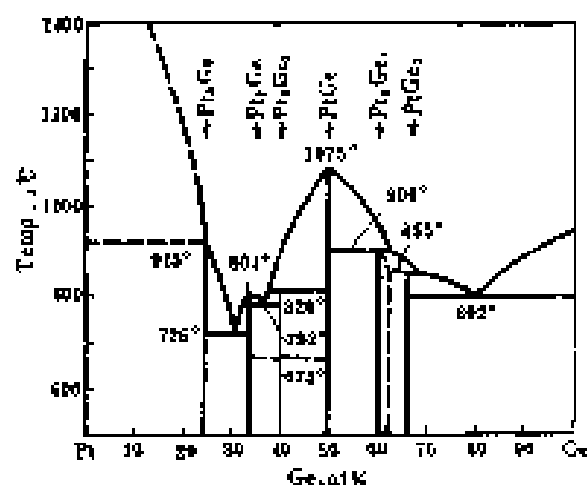


Fig 220 Ge-Pt 锗-铂 Germanium-Platinum (110)



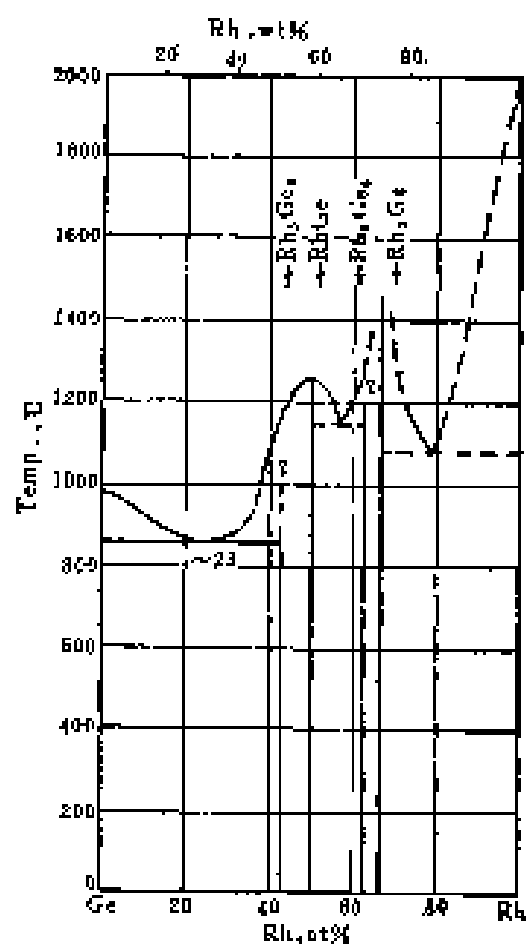


Fig.221 Ge-Rh 锗-铑 Germanium-Rhodium(111)

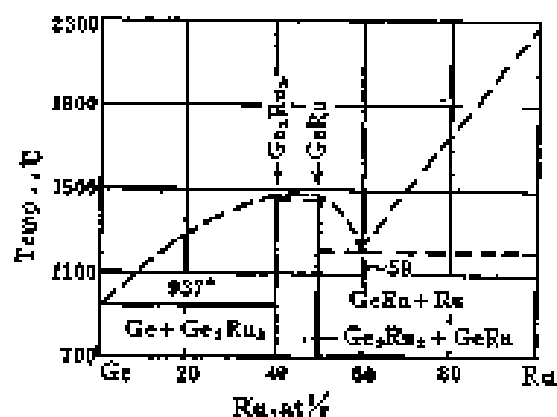


Fig.222 Ge-Ru 锗-钌  
Germanium-Ruthenium(112)

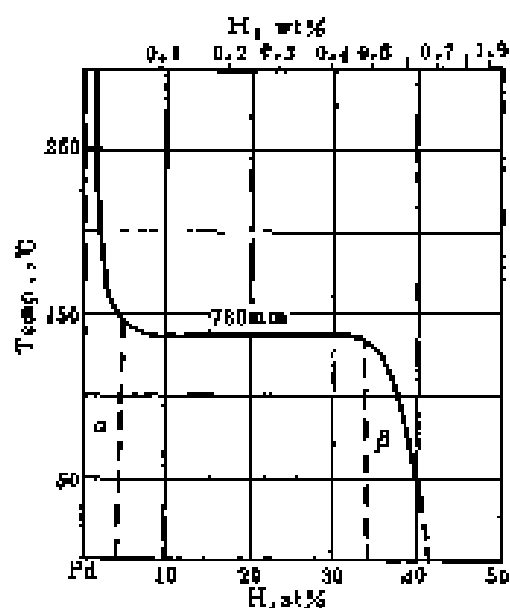


Fig.223 H-Pd 氢-钯  
Hydrogen-Palladium(2)

部分相图 Partial phase diagram

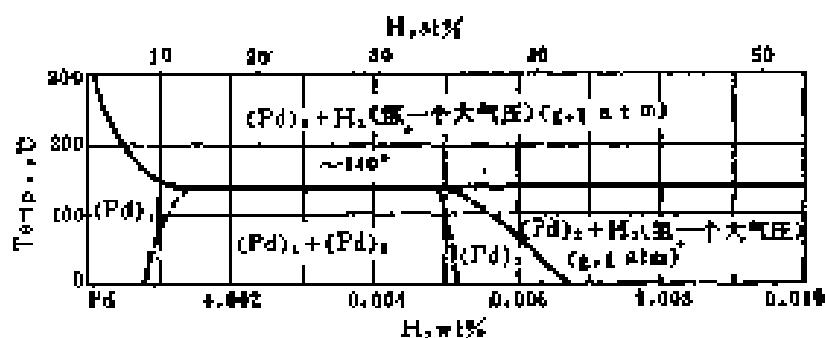


Fig.224 H-Pd 氢-钯 Hydrogen-Palladium(6)

部分相图 Partial phase diagram

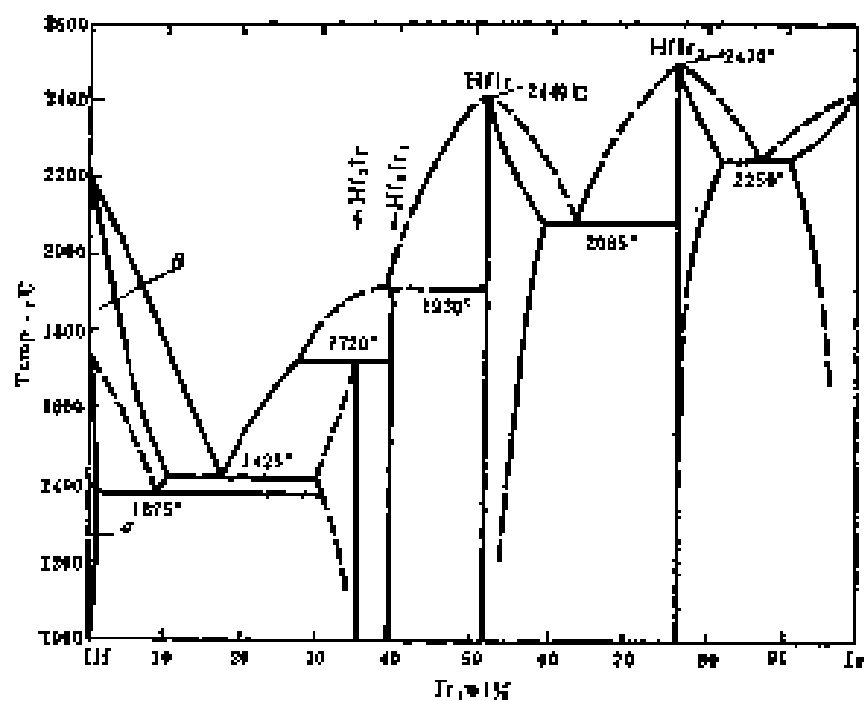


Fig.225 Hf-Ir 合金 Hafnium-Iridium(113)

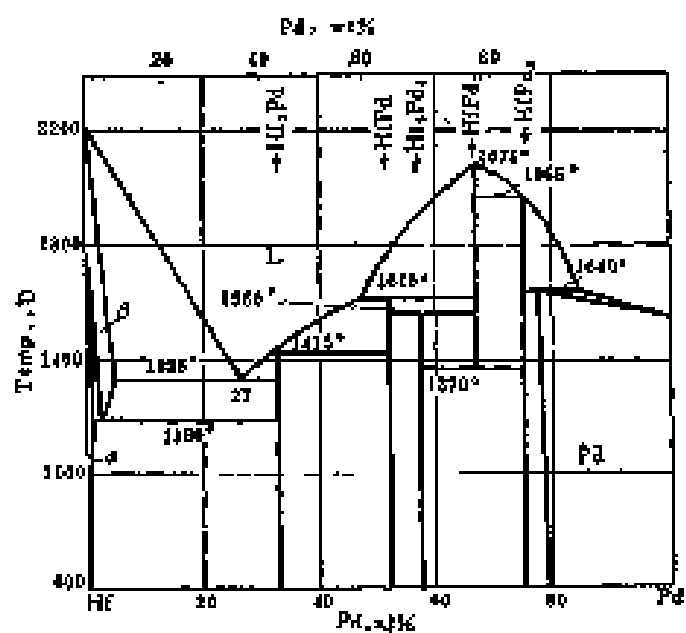


Fig.226 Hf-Pd 合金 Hafnium-Palladium(114)

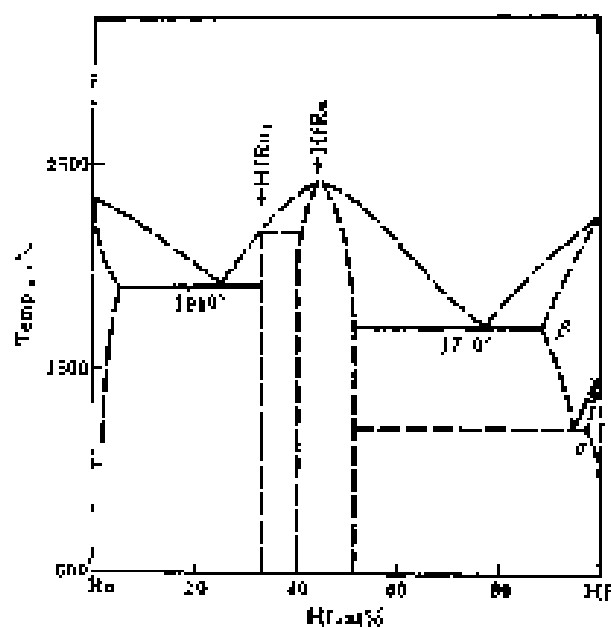


Fig.227 Hf-Ru 铪-钌 Hafnium-Ruthenium(101)

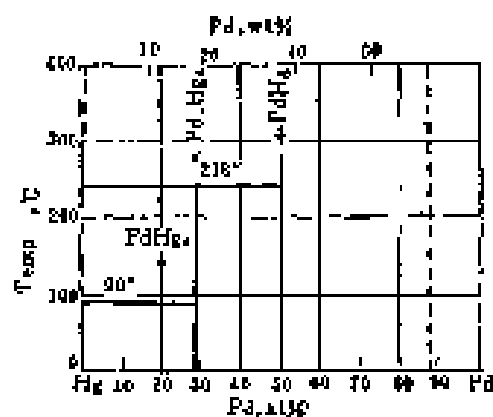


Fig.228 Hg-Pd 汞-钯  
Mercury-Palladium(115)

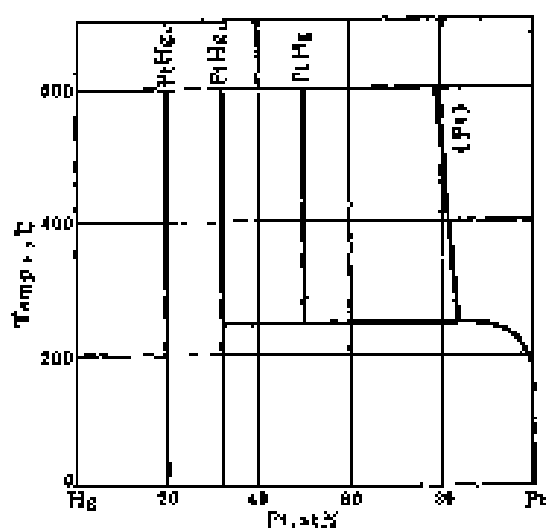


Fig.229 Hg-Pt 汞-铂 Mercury-Platinum(118)

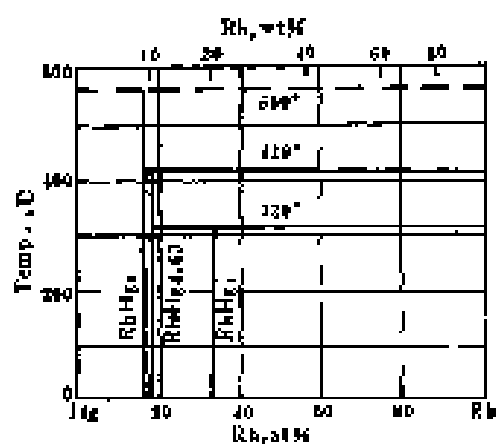
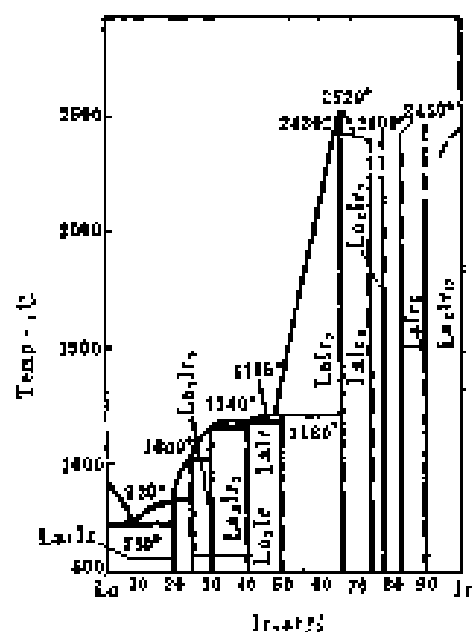


Fig.230 Hg-Rh 汞-铑 Mercury-Rhodium(117)





**Fig.234** 大葉 欖 Indivua-Laothanum(120)

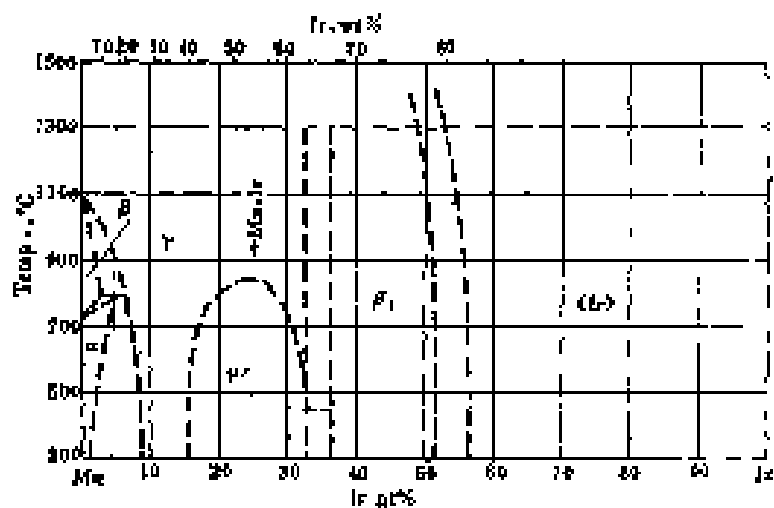


Fig.236 Ir-Asn 66-51: Iridium-Manganese(132)

56

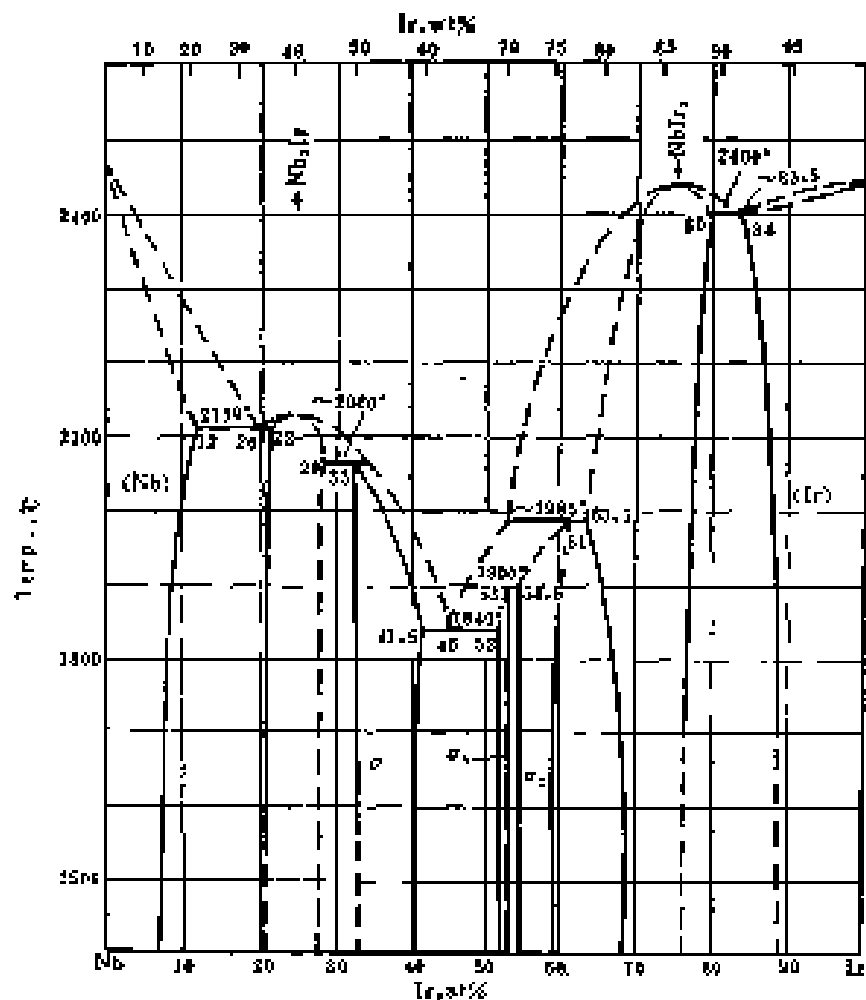


Fig. 236 Ir-Nb 铱-铌 Iridium-Niobium(124)

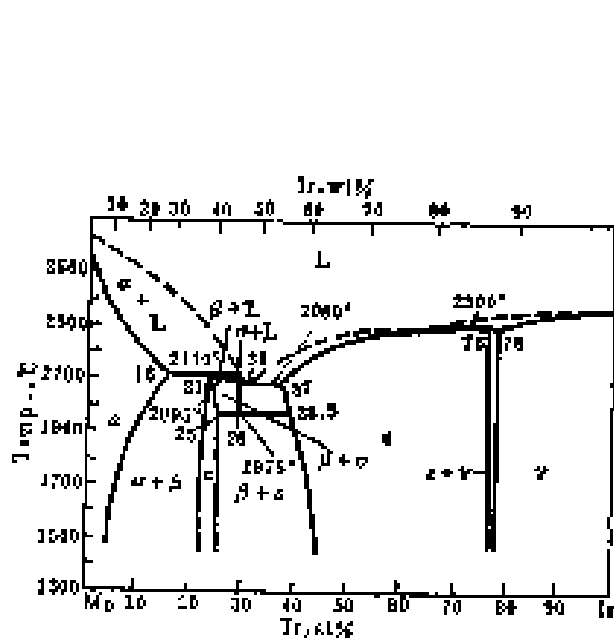


Fig. 237 Ir-Mo 铱-钼 Iridium-Molybdenum(123)

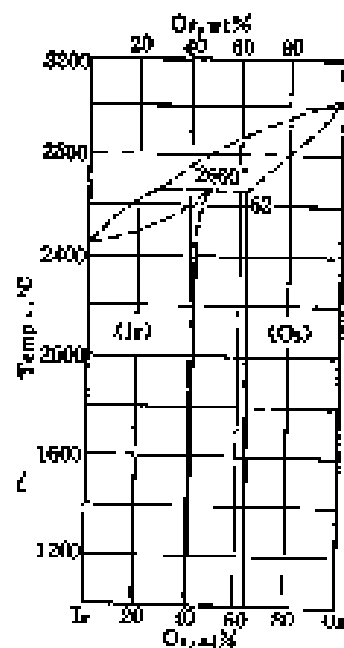


Fig. 238 Ir-Os 铱-锇 Iridium-Osmium(125)

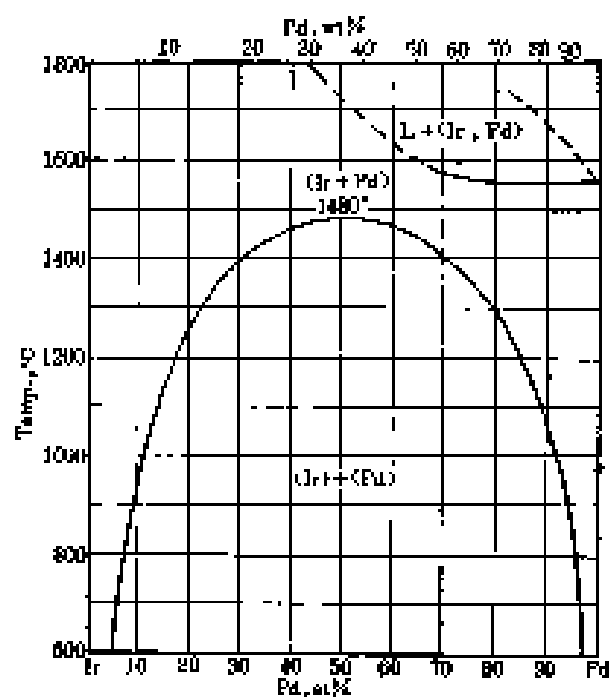


Fig 240 Ir-Pd 铱-钯 Indium-Palladium (200)

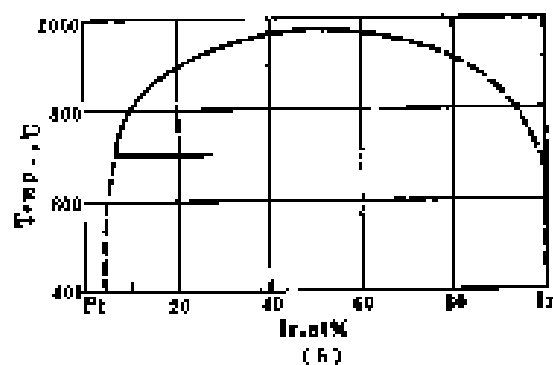
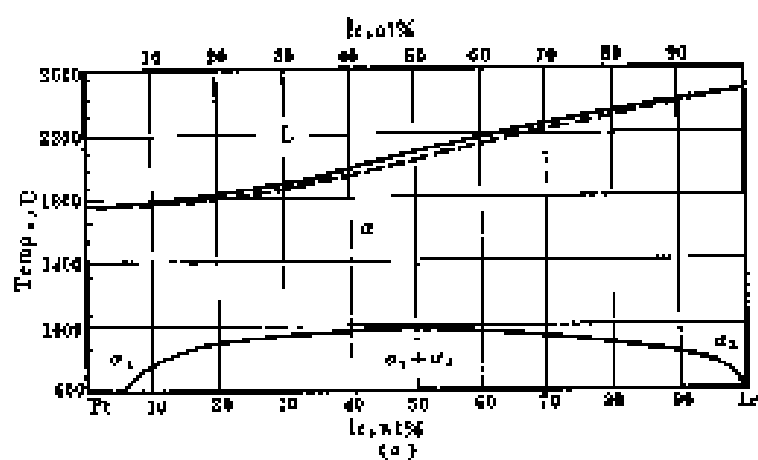


Fig 241 Ir-Pt 铱-铂 Indium-Platinum (273)

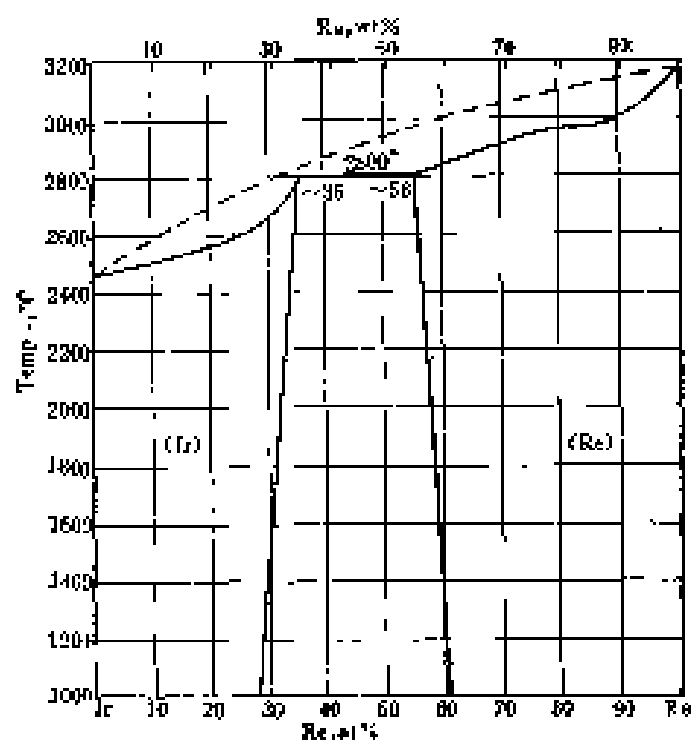


Fig. 242 Ir-Rh 铱-铑 Iridium-Rhodium(128)

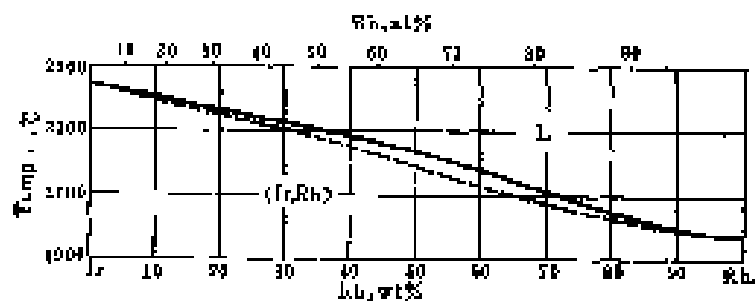


Fig. 243 Ir-Rh 铱-铑 Iridium-Rhodium(6)

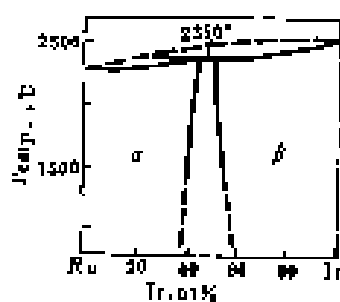


Fig. 244 Ir-Ru 铱-钌 Iridium-Ruthenium(129)



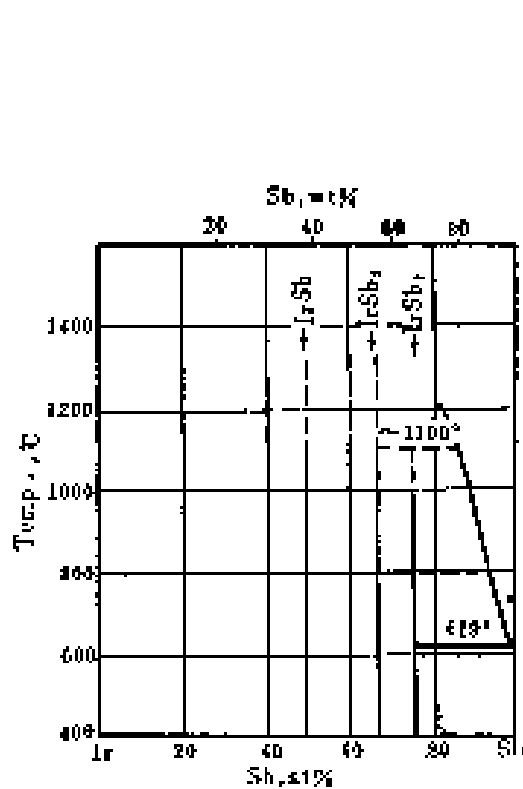


Fig.245 Ir-Sb 族-銻 Iridium-Antimony(2)

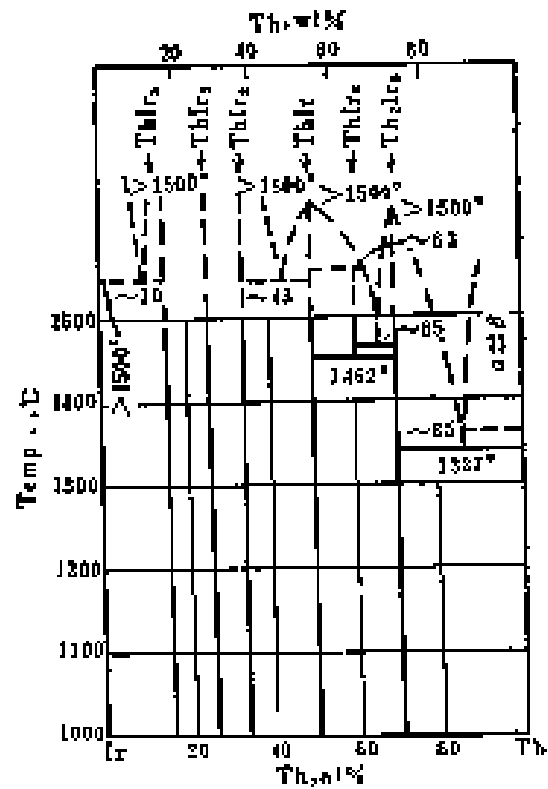


Fig.247 Ir-Th 族 鈷 Iridium-Thorium(131)

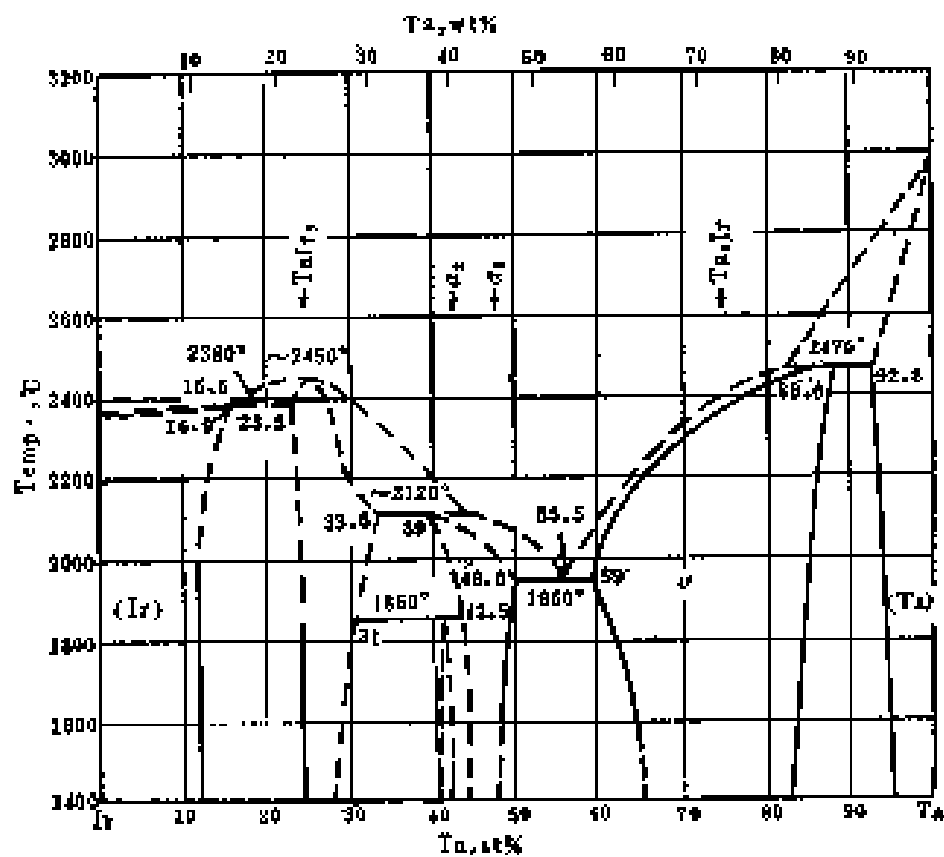


Fig.246 Ir-Ta 族-鎢 Iridium-Tantalum(130)

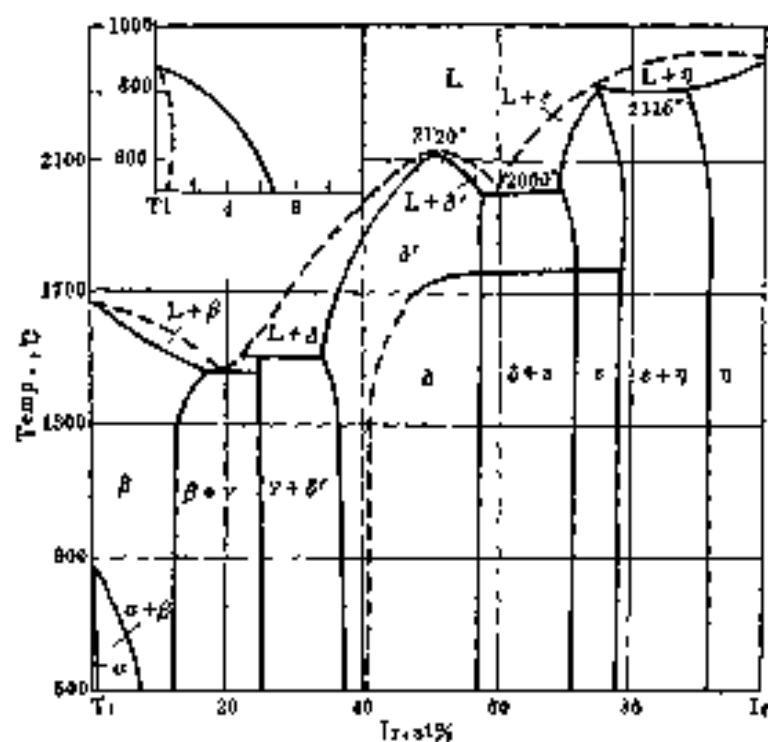


Fig. 245 Ir-Ti ~~铱-钛~~ Iridium-Titanium(182)

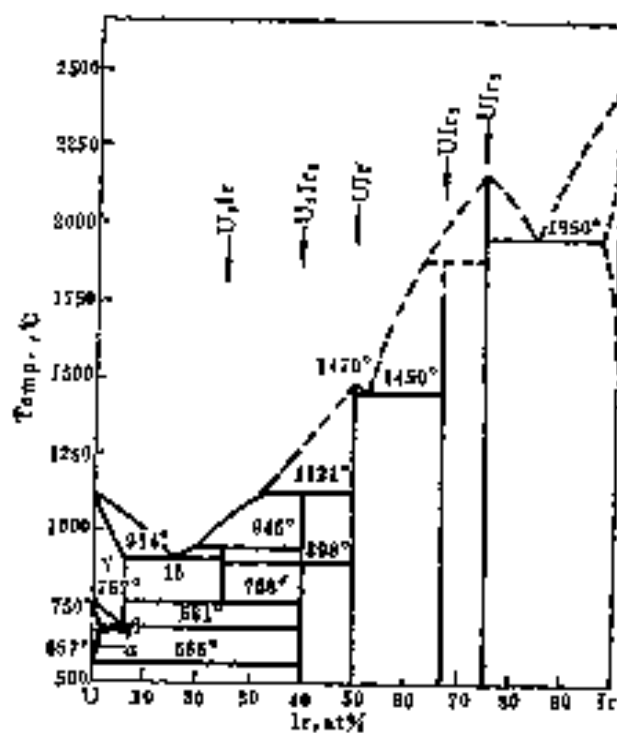


Fig.249 Ir-U 铱-铀 Iridium-Uranium(138)

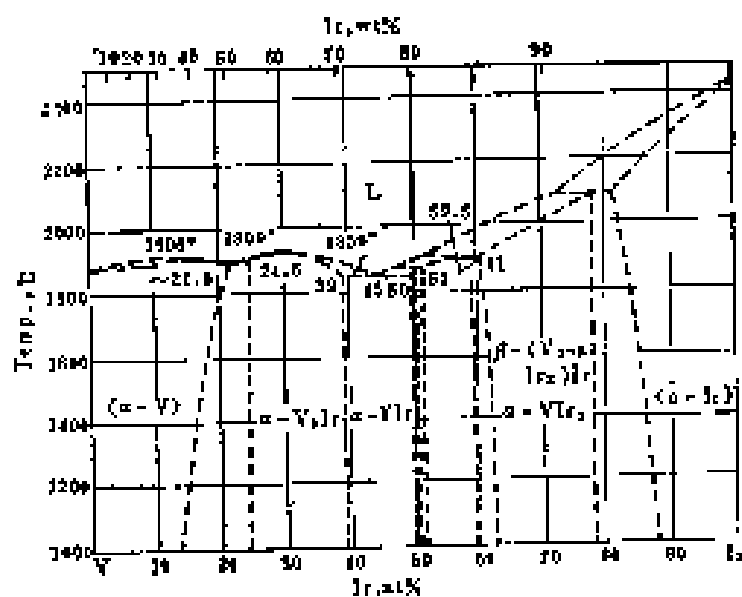


Fig.250 Ir-V 铱-钒 Iridium-Vanadium(134)

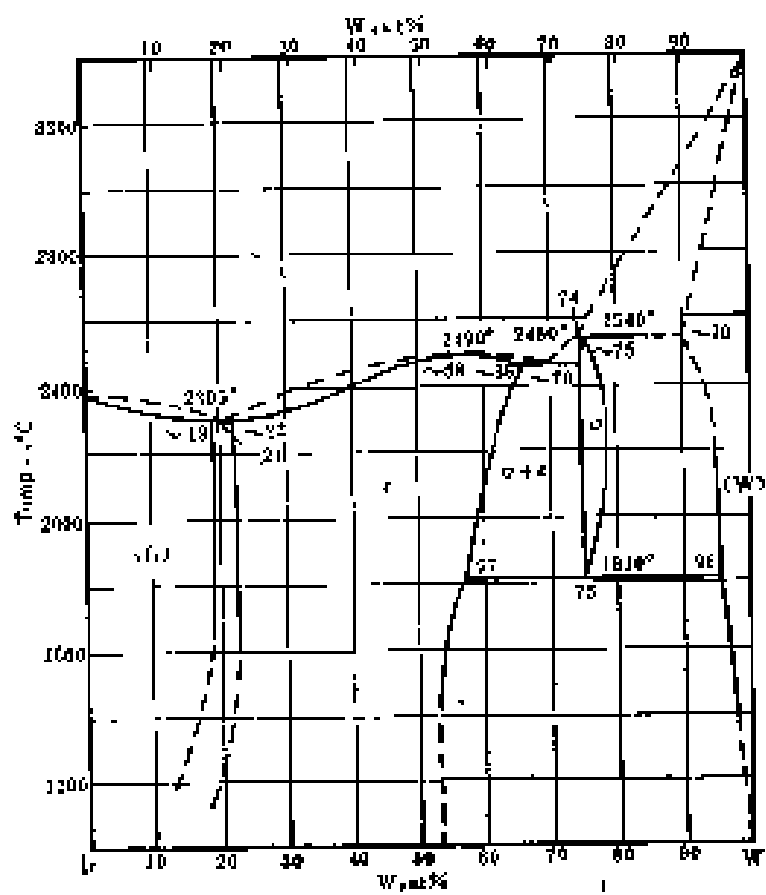


Fig.251 Ir-W 铱-钨 Iridium-Tungsten(135)

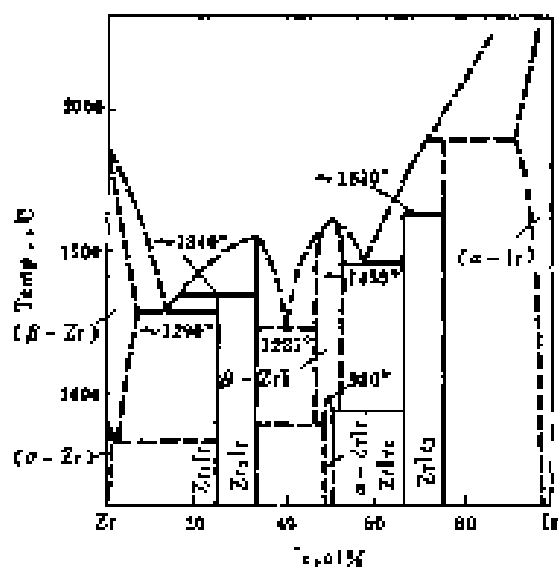


Fig. 252 Ir-Zr 铱-铪 Iridium-Zirconium (126)

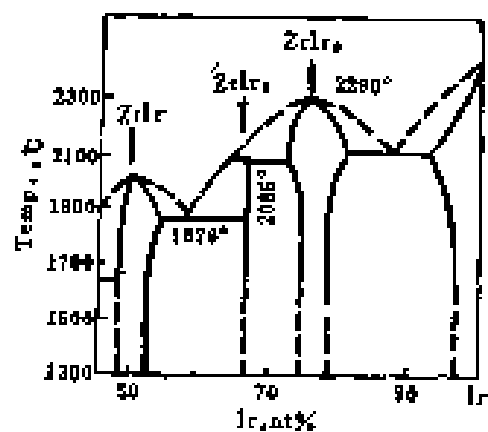


Fig. 253 Ir-Zr 铱-铪 Iridium-Zirconium (137)

部分相图 Partial phase diagram

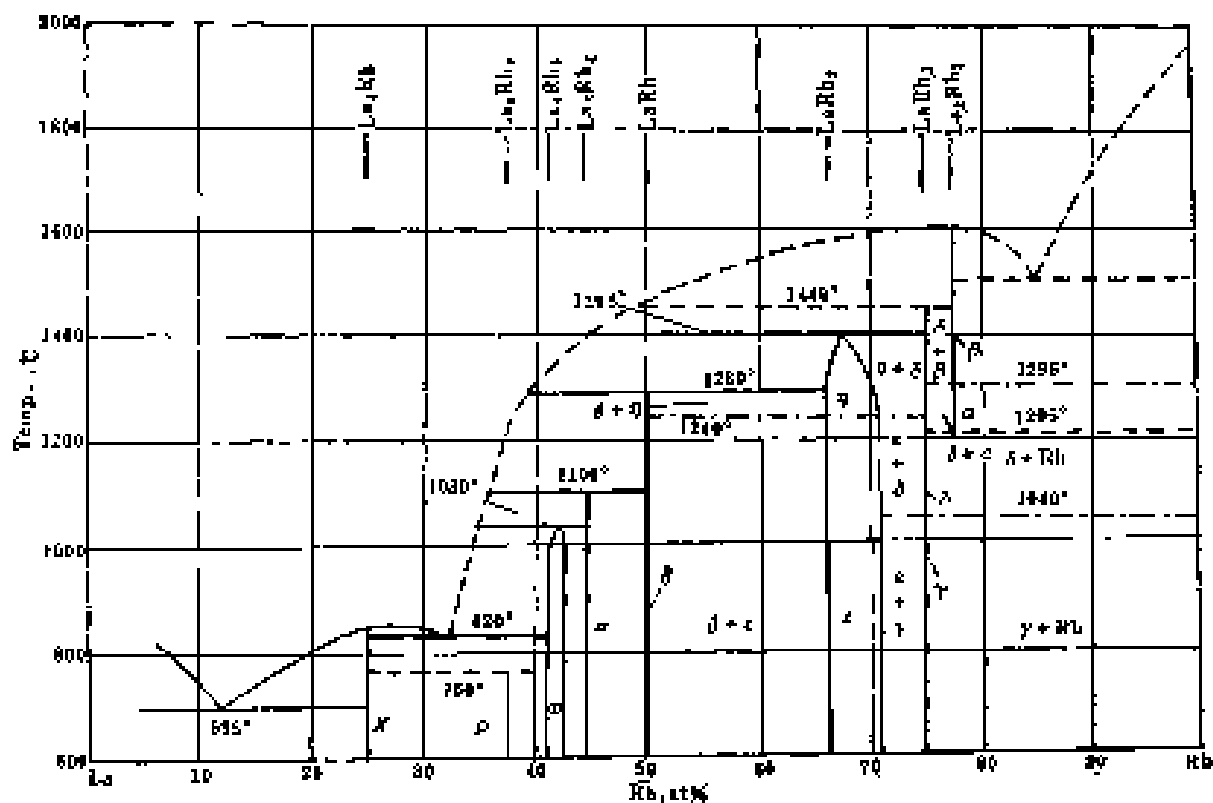


Fig. 254 La-Rh 镧-铑 Lanthanum-Rhodium (138)

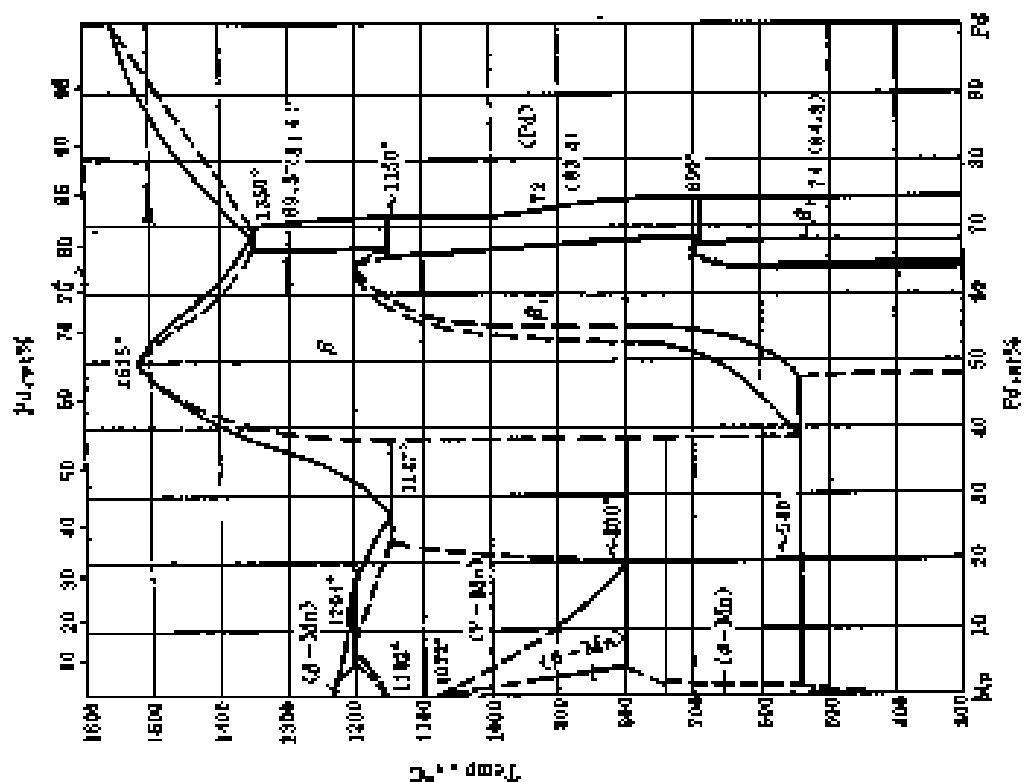


Fig. 278 Mn-Pd 銀-錳 Manganese-Palladium(1)

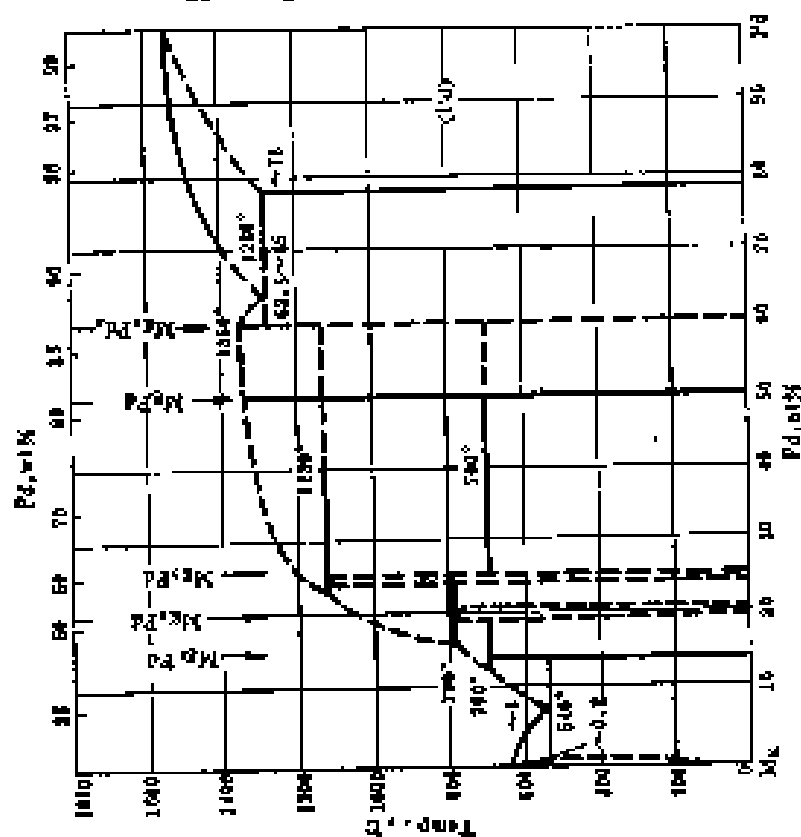


Fig. 285 Mg-Pd 鎂-鉑 Magnesium-Palladium(139)

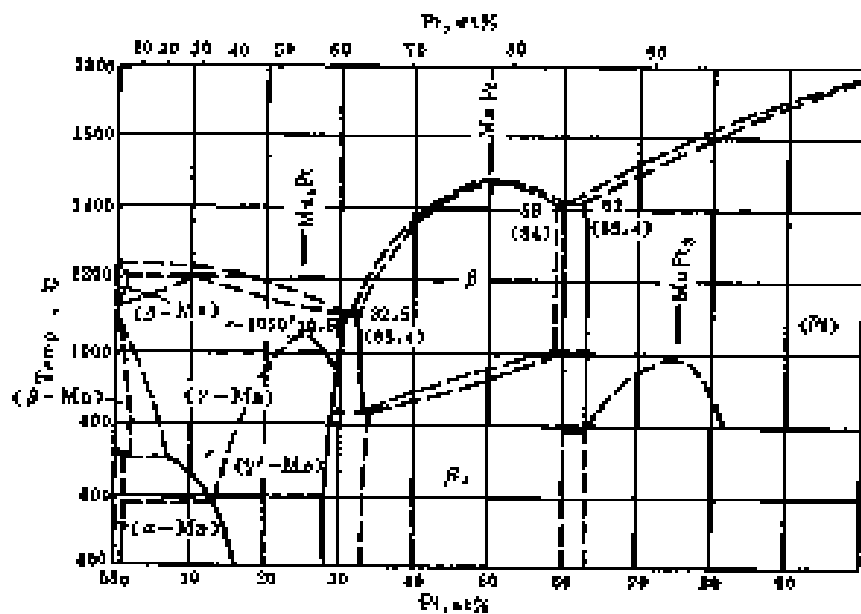


Fig.257 Mn-Pt 锰-铂  
Manganese-Platinum(141)

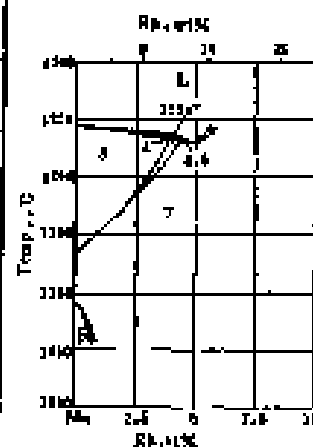


Fig.259 Mn-Rh 锰-铑 Manganese-Rhodium(142)  
高分相图 Partial phase diagram

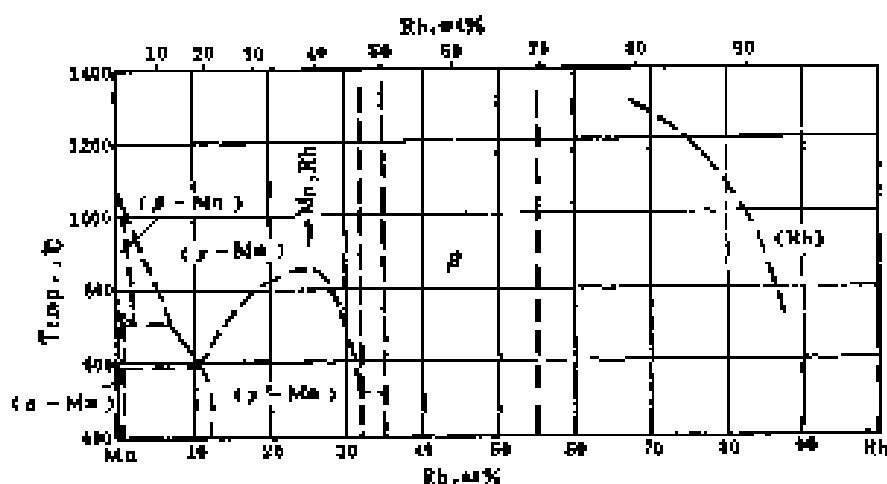


Fig.258 Mn-Rh 锰-铑 Manganese-Rhodium(141)

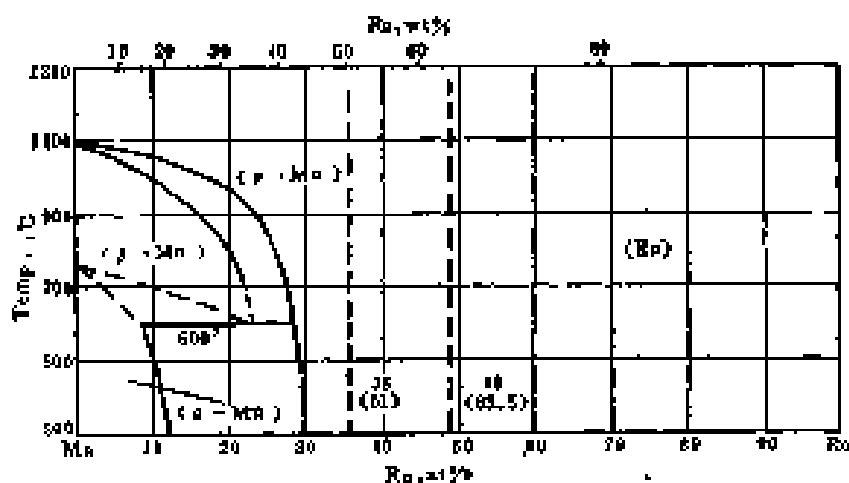


Fig.260 Mn-Ru 锰-钌 Manganese-Ruthenium(141)

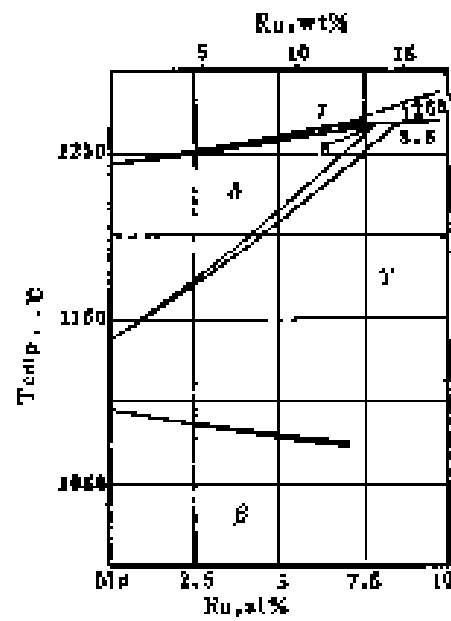


Fig.261 Mn-Ru 锰-钌 Manganese-Ruthenium(143)

部分相图 Partial phase diagram

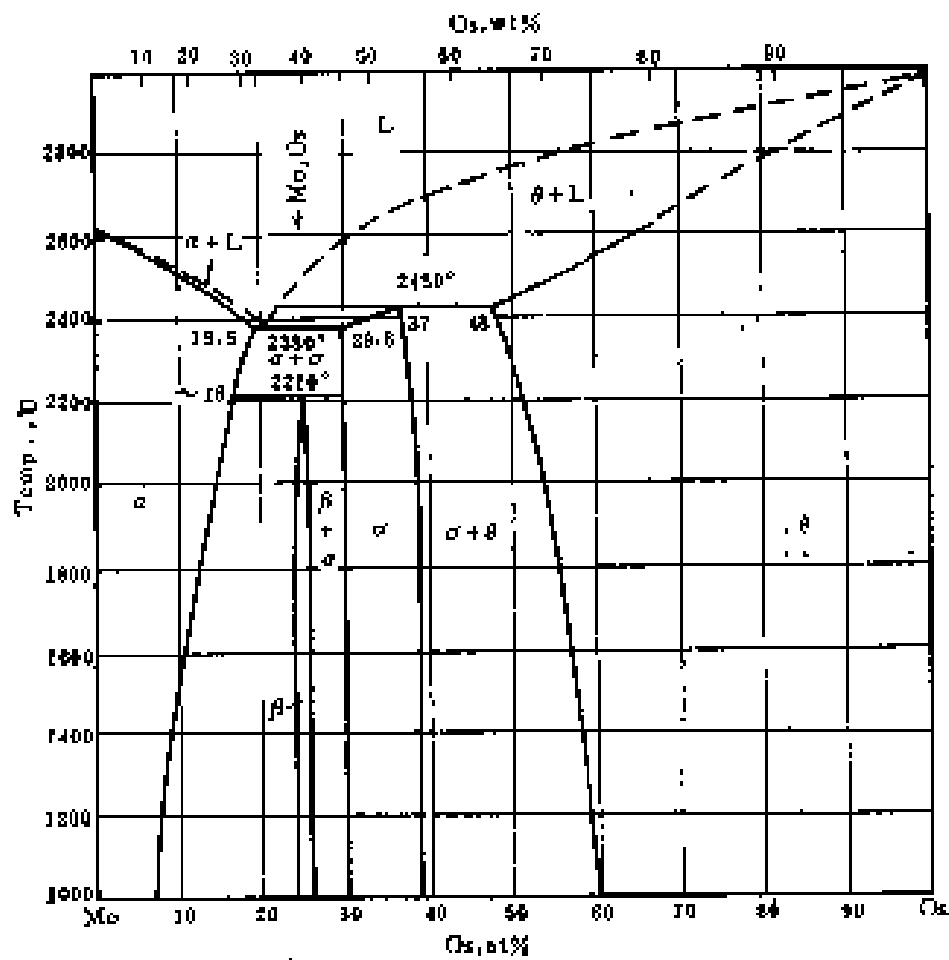


Fig 262 Mo-Os 钼-锇 Molybdenum-Osmium(143)

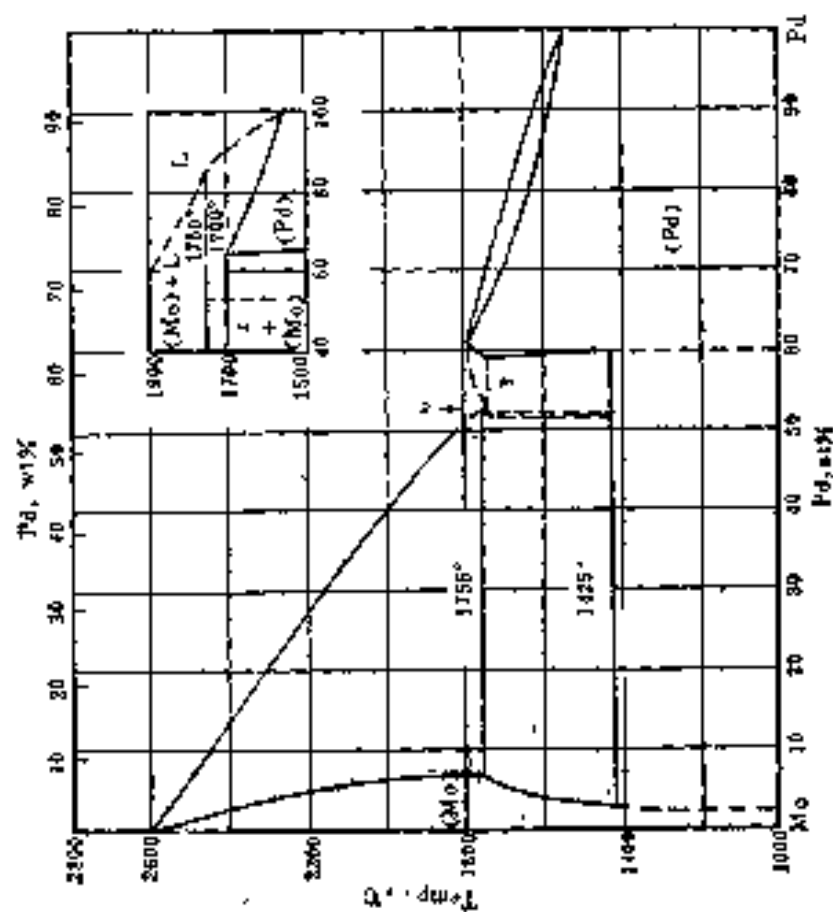


Fig. 263 Mo-Pd 相图 Molybdenum-Palladium(3)

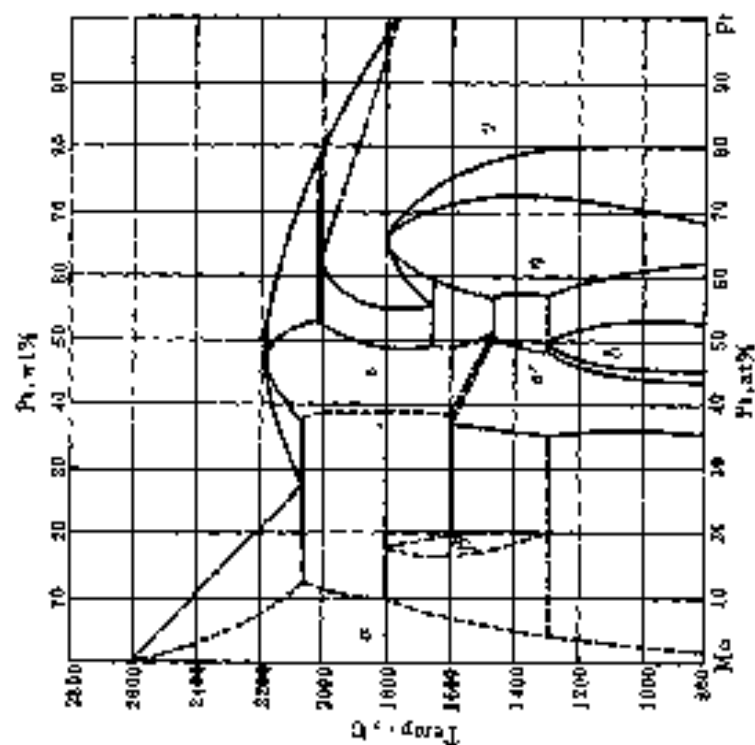


Fig. 264 Mo-Pt 相图 Molybdenum-Platinum(14)



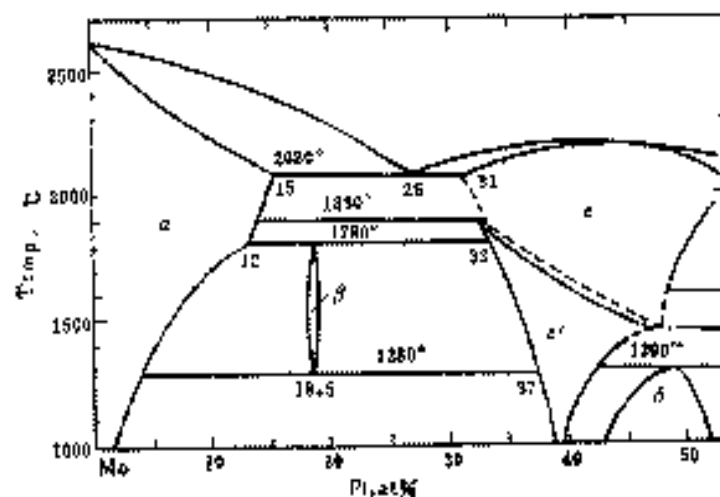


Fig.265 Mo-Pt 钼-铂 Molybdenum-Platinum(145)

部分相图 Partial phase diagram

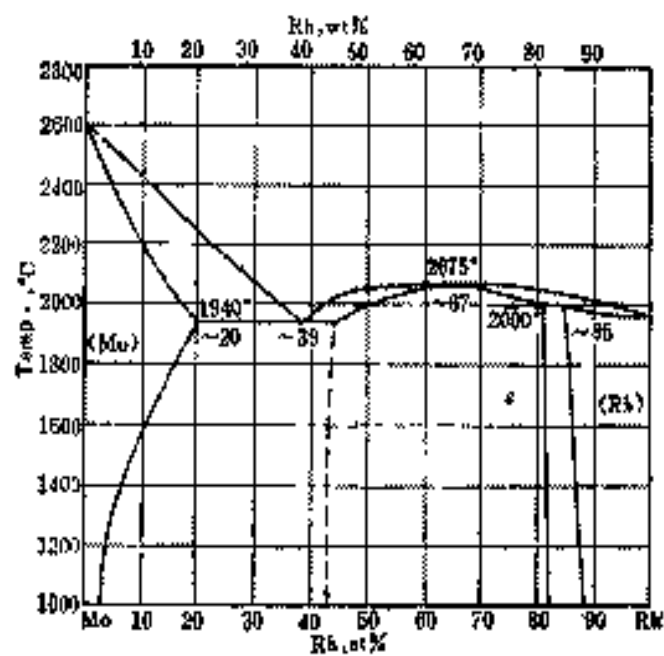


Fig.266 Mo-Rh 钼-铑 Molybdenum-Rhodium(2)

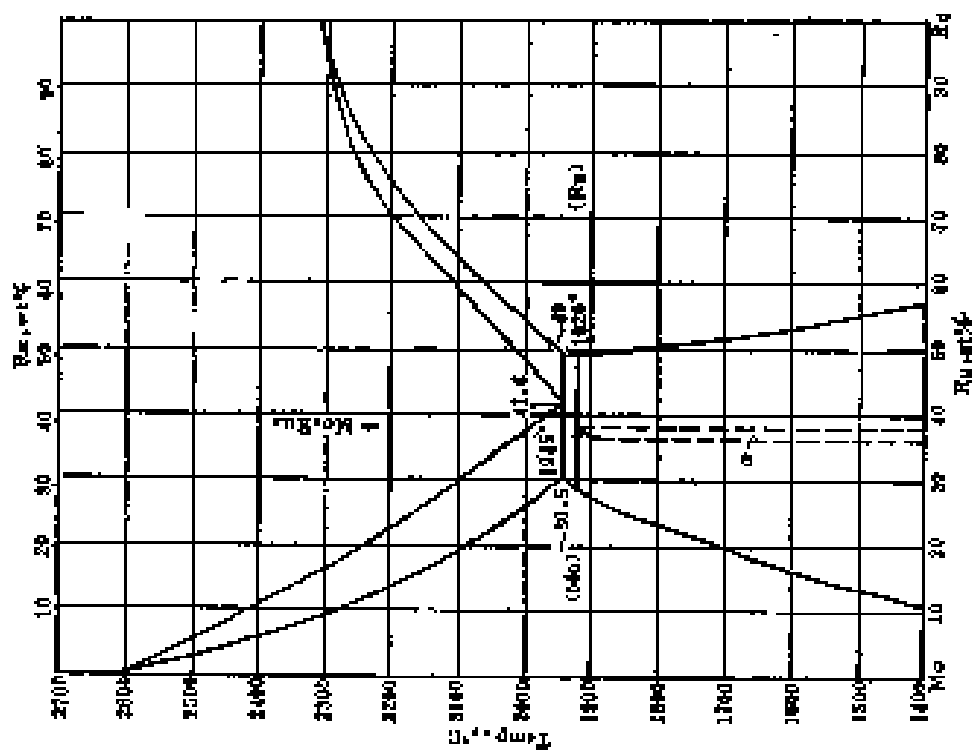


Fig. 267 Mo-Ru 钼-钌 Molybdenum-Ruthenium(148)

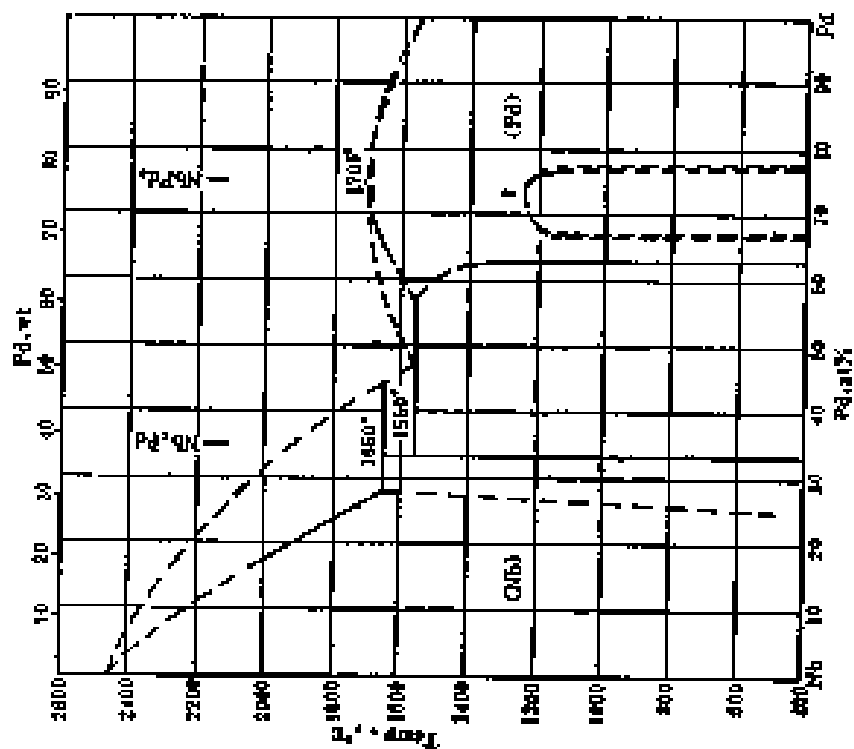


Fig. 268 Ni-Pd 镍-钯 Nickelum-Palladium(147)

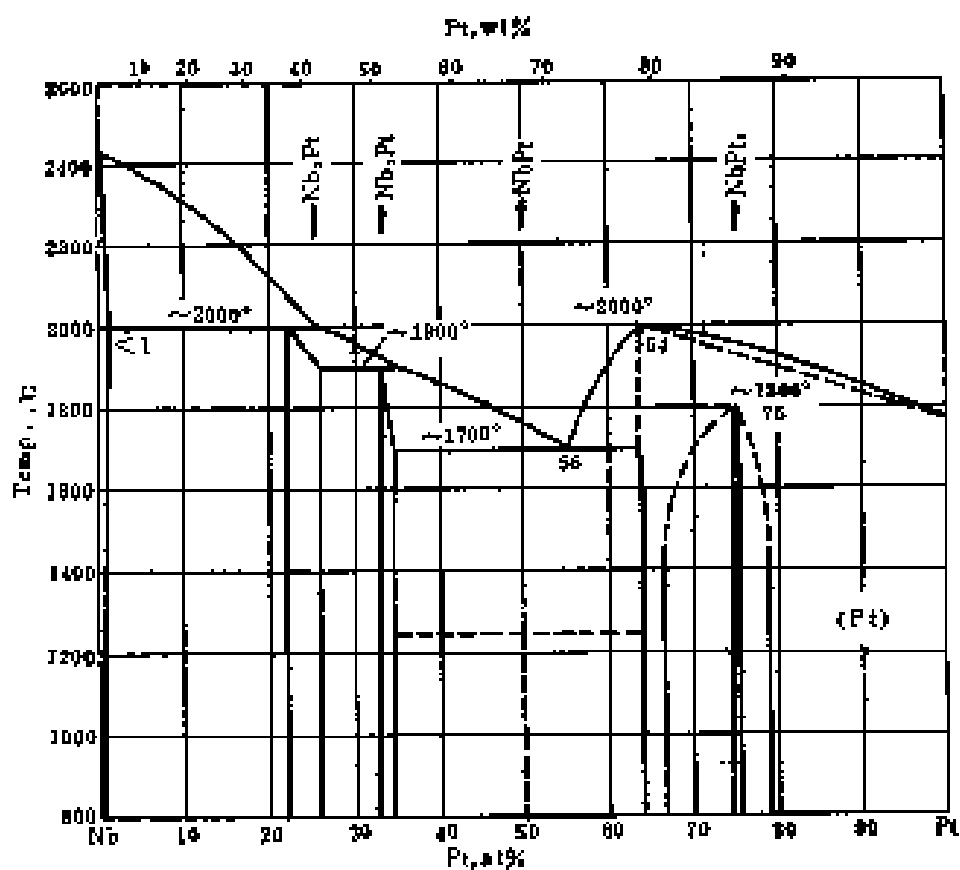


Fig.269 Nb-Pt 铌-铂 Niobium-Platinum(148)

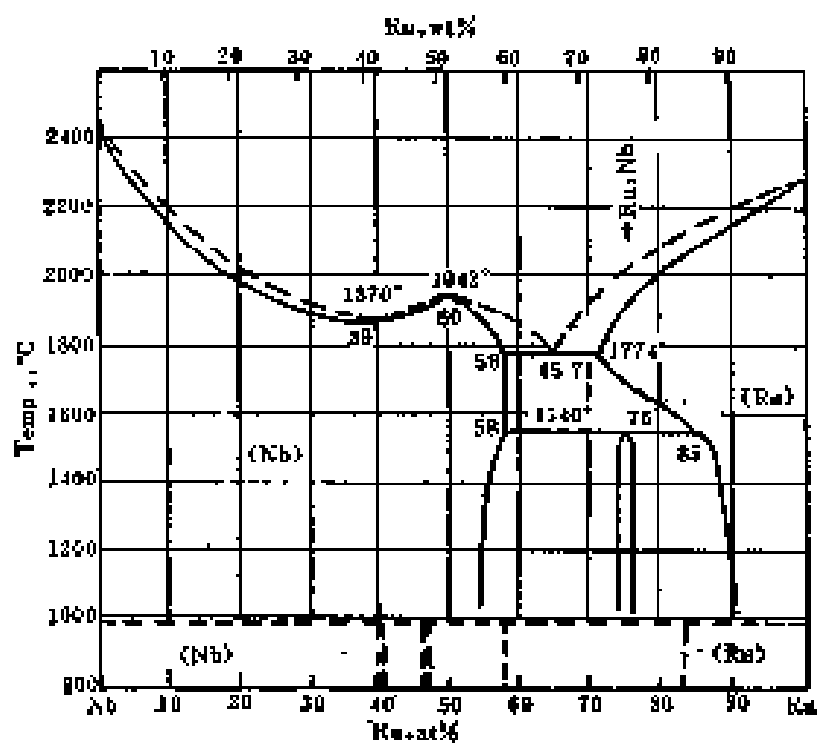


Fig.271 Nb-Ru 铌-钌 Niobium-Ruthenium(3)

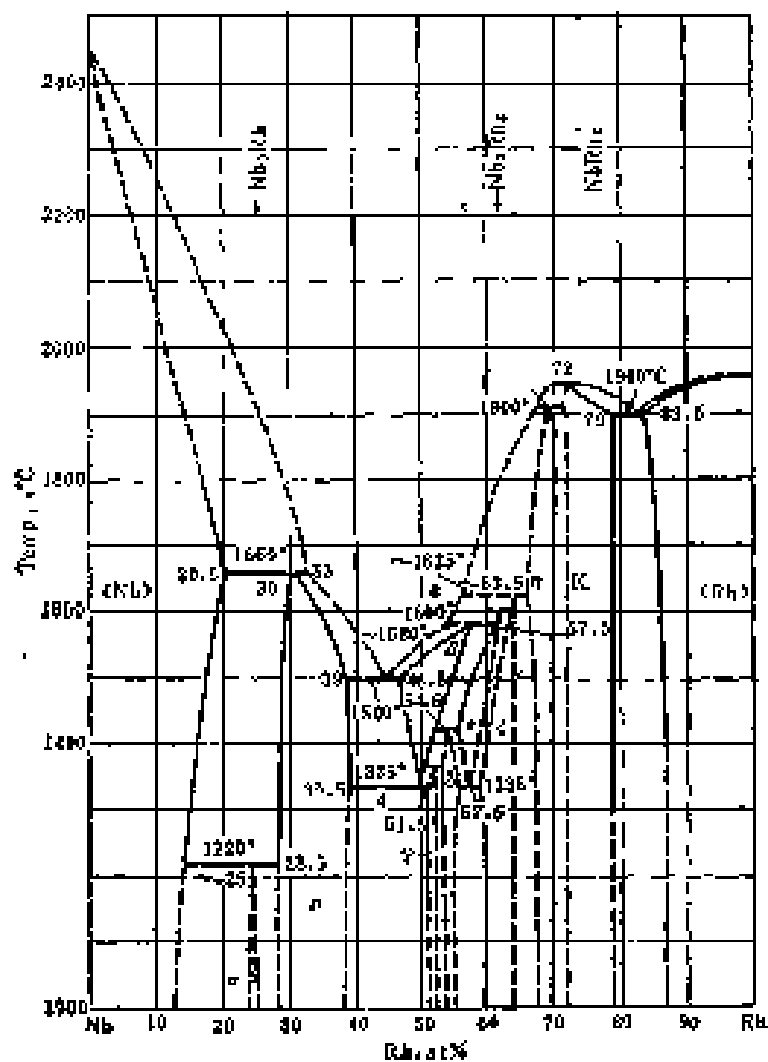


Fig.270 Nb-Rh 堀-睦  
Niobium-Rhodium(148)

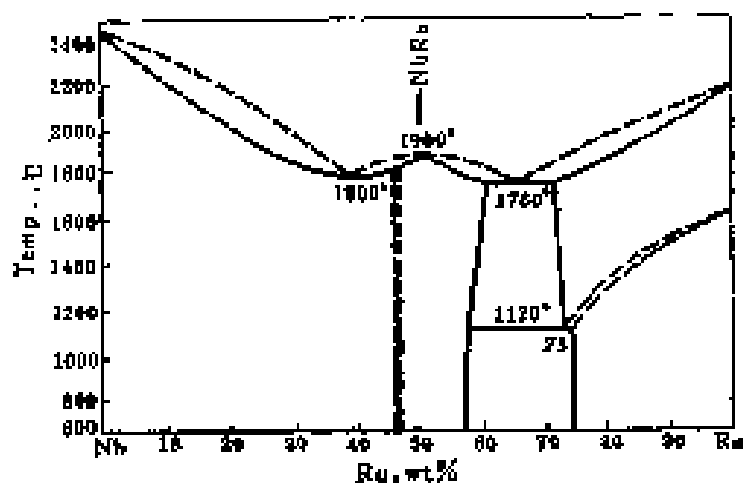


Fig.272 Nb-Ru 堀-打  
Niobium-Ruthenium(150)

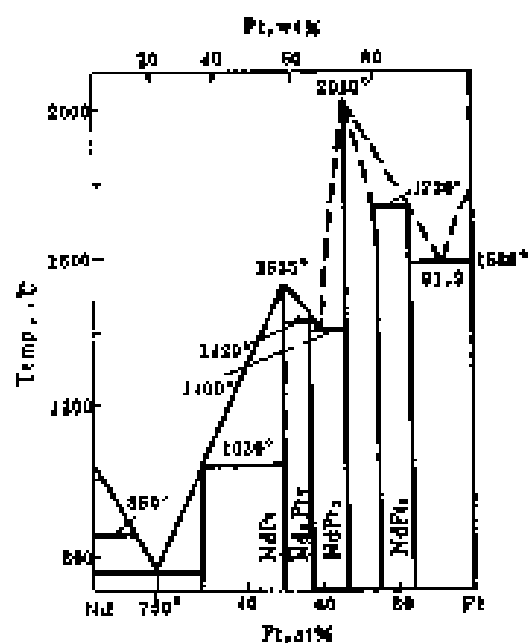


Fig. 273 Nd-Pt 钕-铂 Neodymium-Platinum(101)

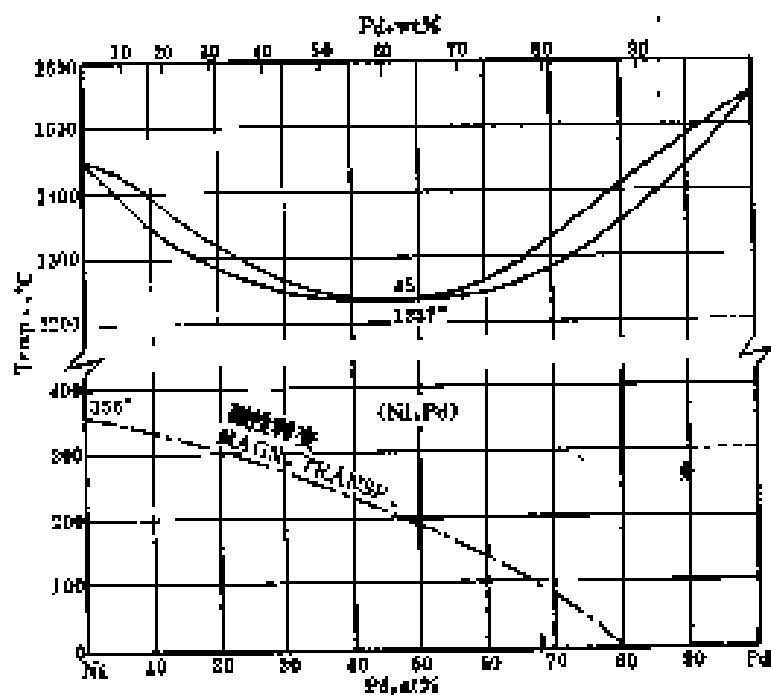


Fig. 275 Ni-Pd 镍-钯 Nickel-Palladium(1)

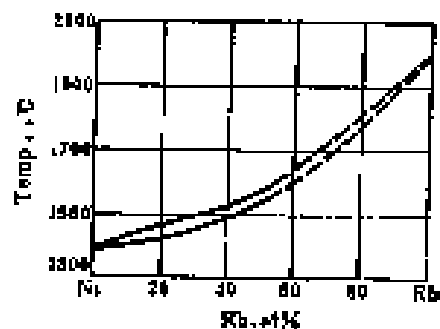
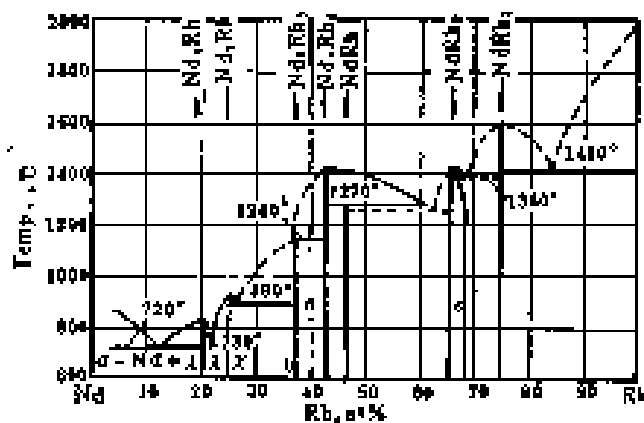


Fig.274 Nd-Rh 鈳-銩 Neodymium-Rhodium(151) Fig.277 Ni-Rh 鎳-銩 Nickel-Rhodium(152)

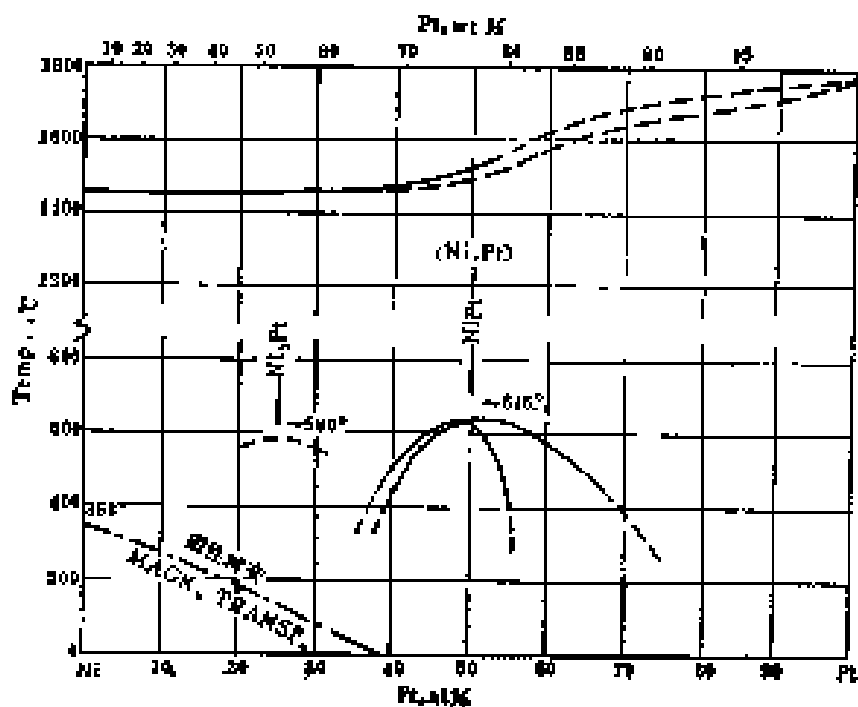


Fig.276 Ni-Pt 鎳-鉑 Nickel-Platinum(1)

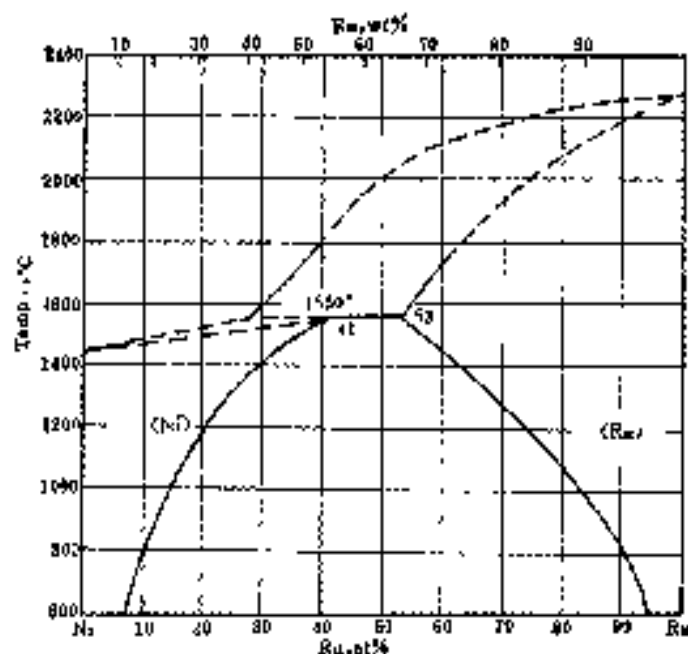


Fig-278 Ni-Ru 镍-钌 Nickel-Ruthenium(153)

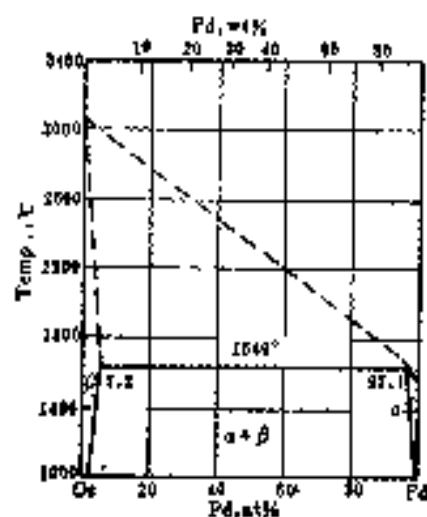


Fig-279 Os-Pd 锇-钯 Osmium-Palladium(154)

Fig 280 Os-Pr 铱-镨  
Osmium-Praseodymium(GB)

部分相图  
Partial phase diagram

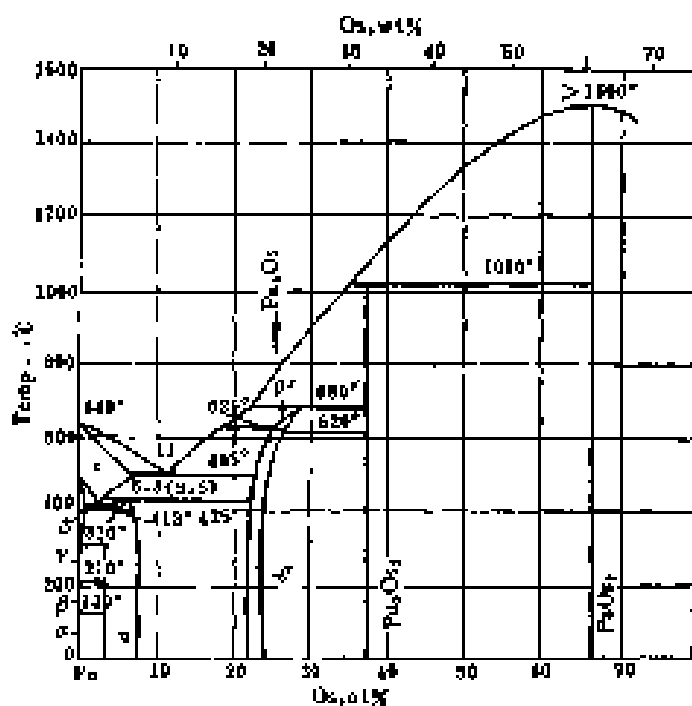
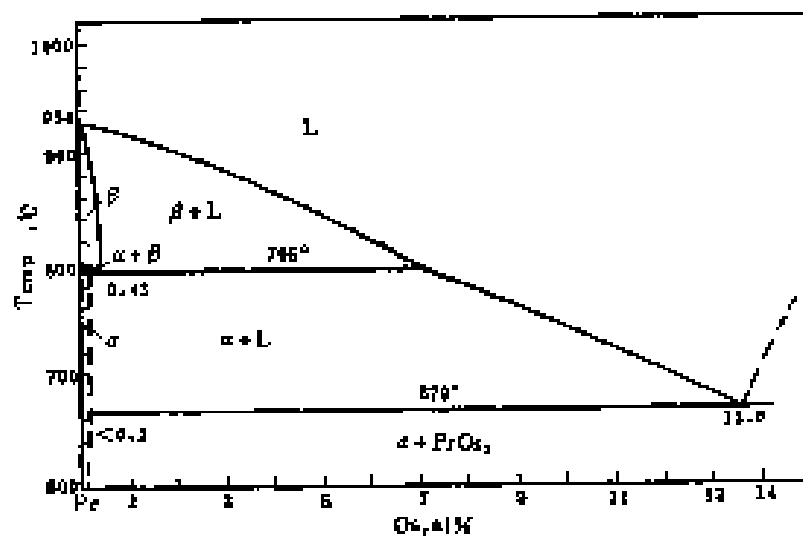


Fig 281 Os-Pu 铱-钚  
Osmium-Plutonium(1561)

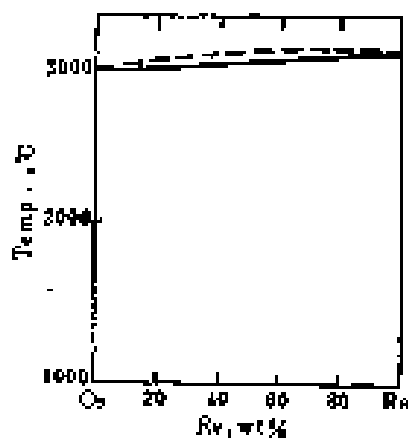


Fig 282 Os-Re 铱-铼 Osmium-Rhenium(158)

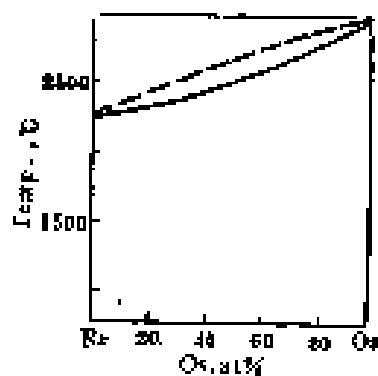


Fig 283 Os-Ru 铱-钌 Osmium-Ruthenium(167)



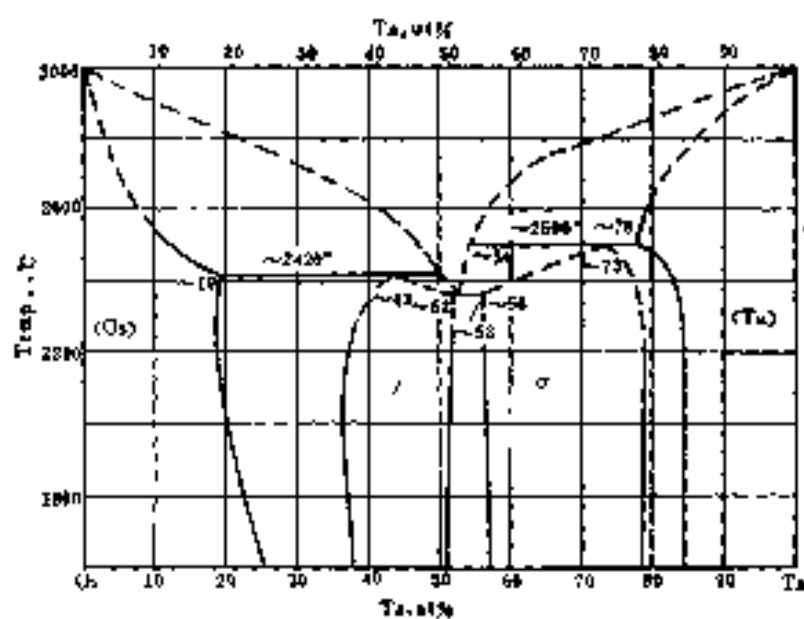


Fig. 284 Os-Ta 鐵-鉭 Osmium-Tantalum (158)

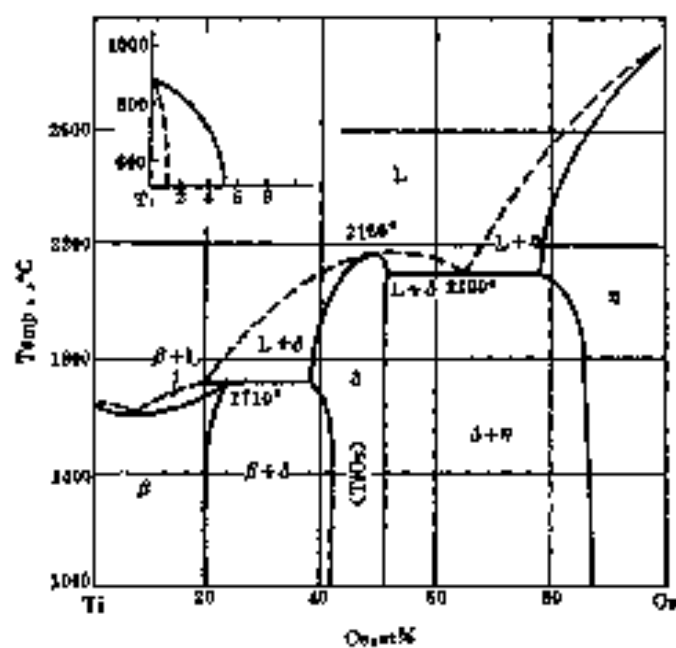


Fig. 286 Os-Ti 鐵-鈦 Osmium-Titanium (160)

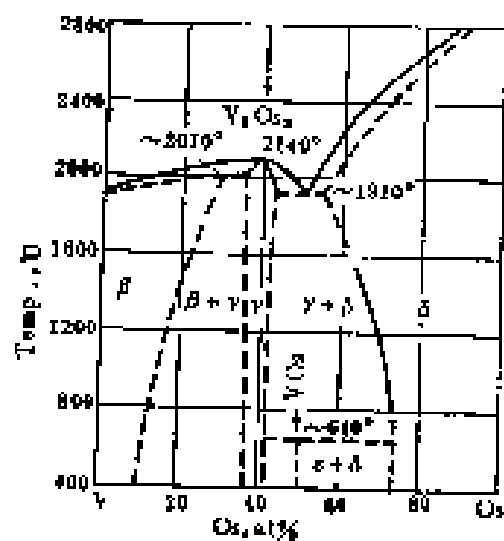
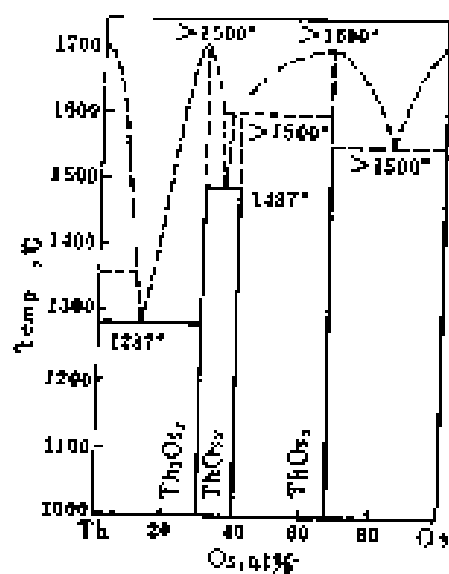


Fig. 285 Os-Th 酸-土 Osmium-Thorium(169) Fig. 286 Os-V 酸-鉬 Osmium-Vanadium(162)

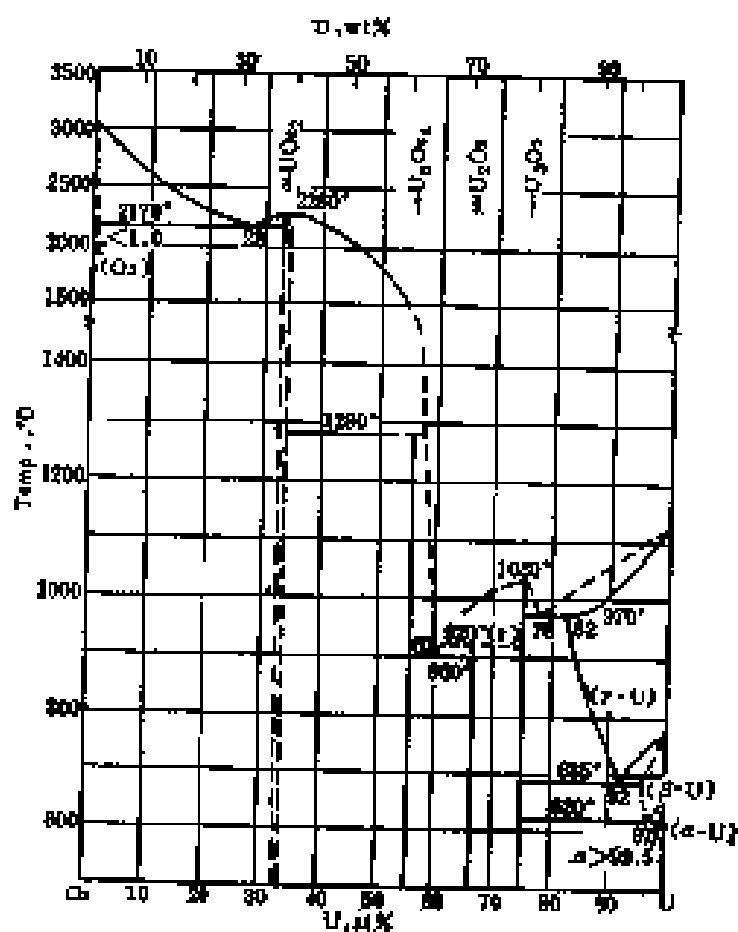


Fig. 287 Os-U 酸-鈾 Osmium-Uranium(161)

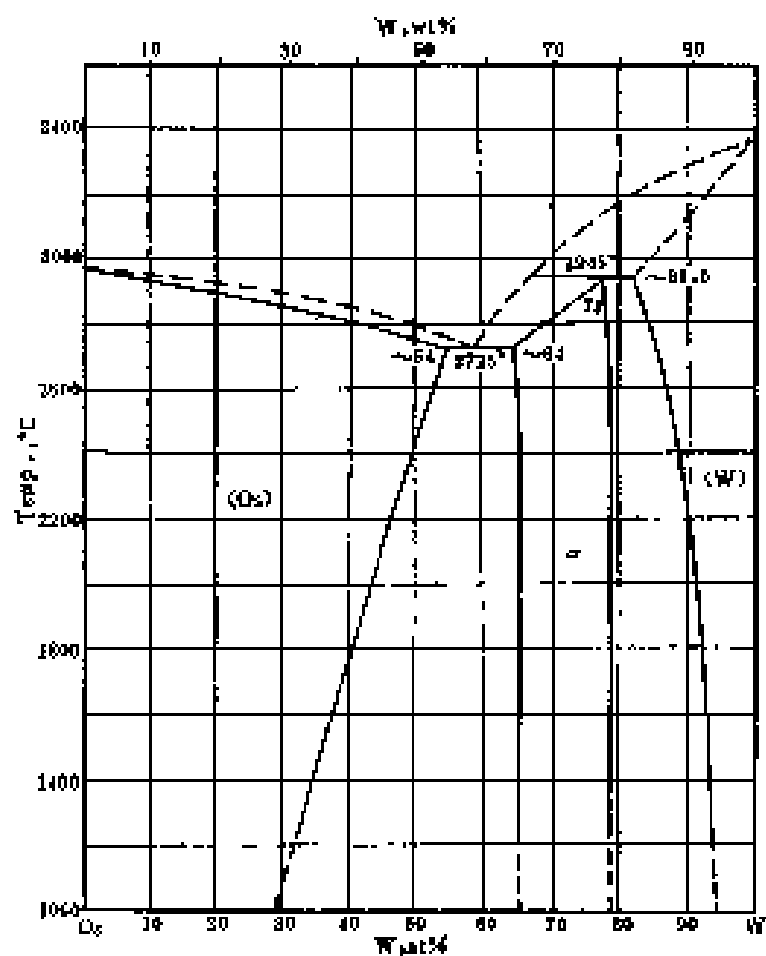


Fig 289 Os-W 銻-鎢 Osmium-Tungsten(1881)

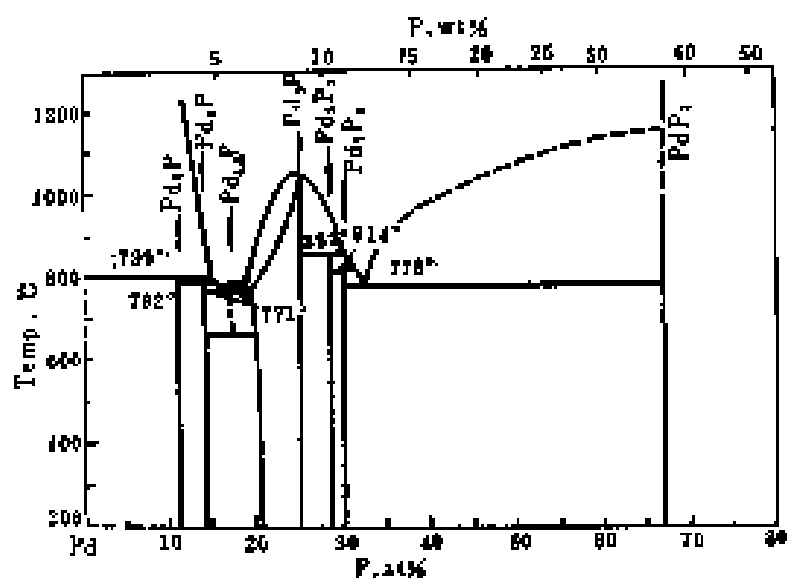


Fig 290 P-Pd 磷-鉑 Phosphorus-Palladium(184)

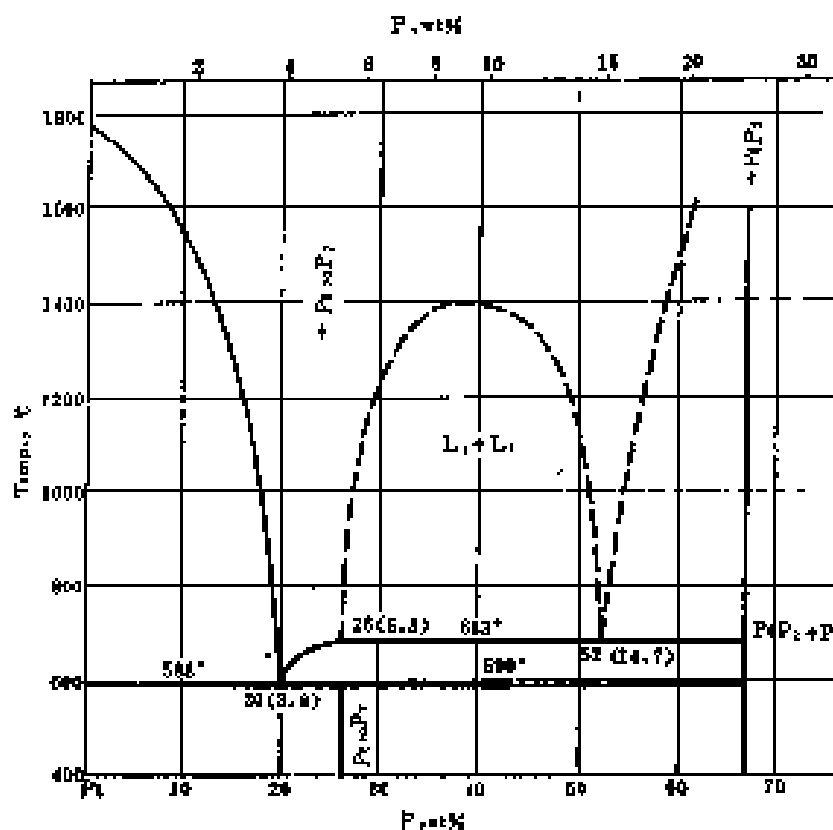


Fig.291 P-Pt 磷-鉑 Phosphorus-Platinum(140)

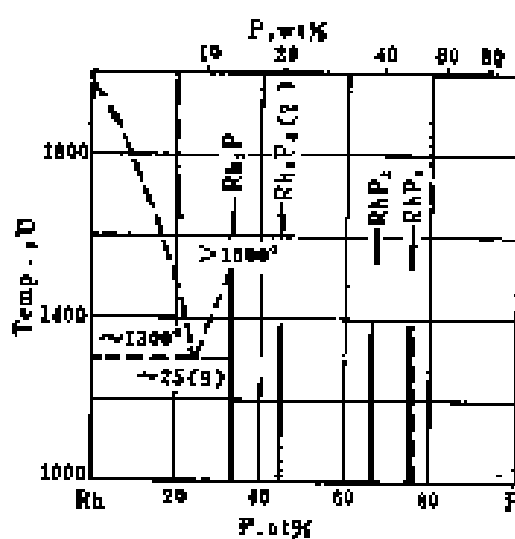


Fig.292 P-Rh 磷-銲 Phosphorus-Rhodium(165)

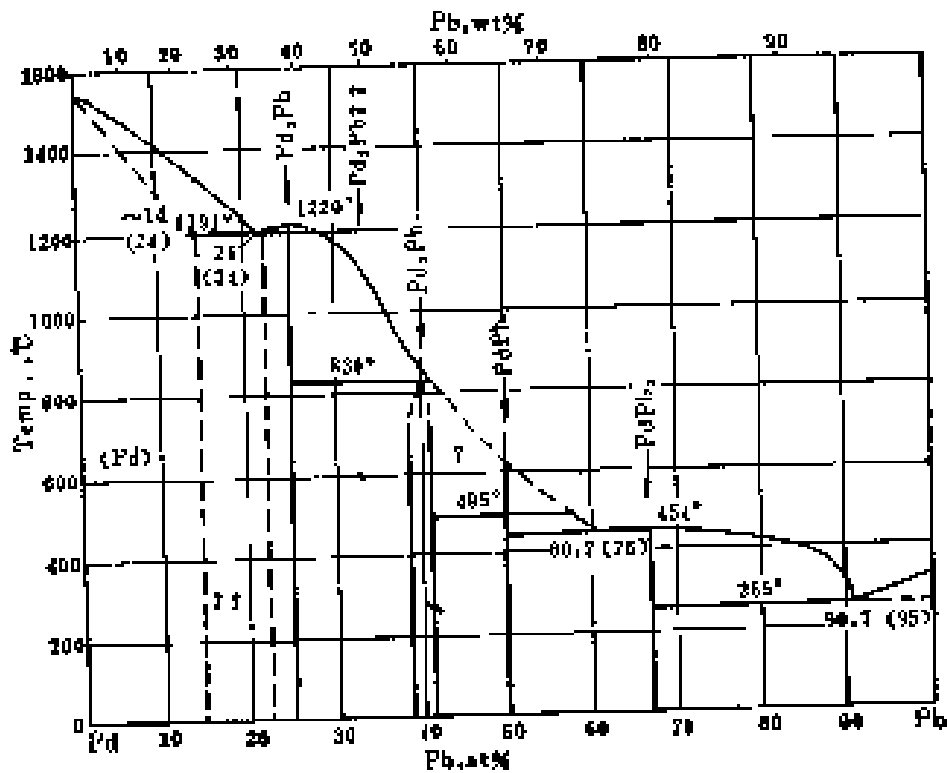


Fig. 293 Pb-Pd 铅-钯 Lead-Palladium. (66)

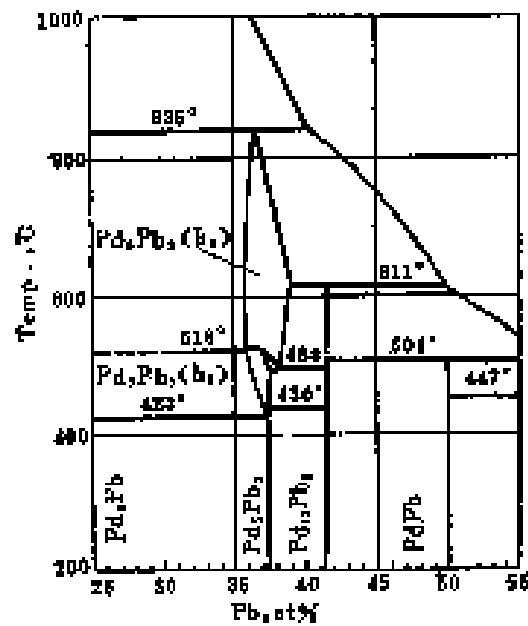


Fig. 294 Pb-Pd 铅-钯 Lead-Palladium. (67)

部分相图 Partial phase diagram

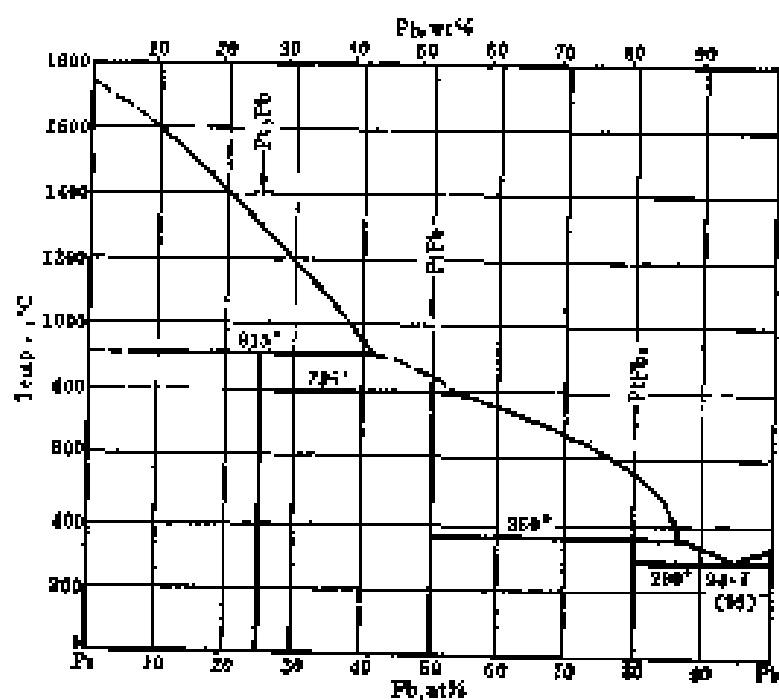


Fig.295 Pb-Pt 鉛-鉑 Lead-Platinum(168)

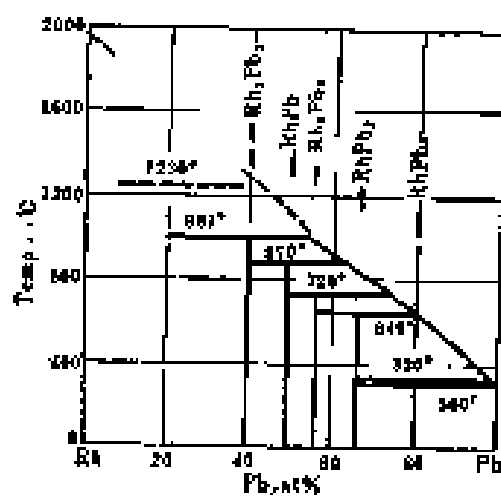


Fig.296 Pb-Rh 鉛-銲 Lead-Rhodium(168)

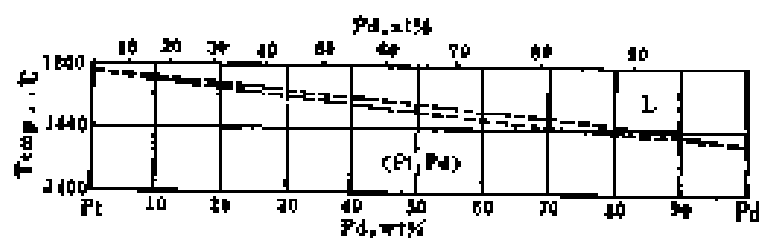


Fig.297 Pd-Pt 鈀-鉑 Palladium-Platinum(6)

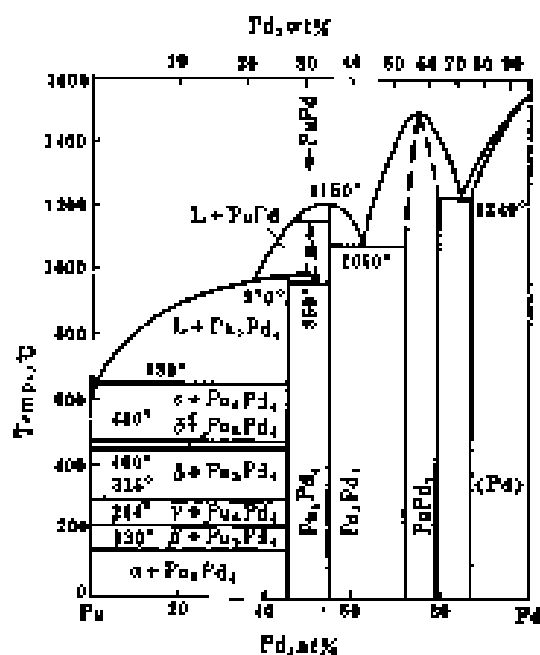


Fig. 298 Pd-Pu 钯-钷  
Palladium-Plutonium (170)

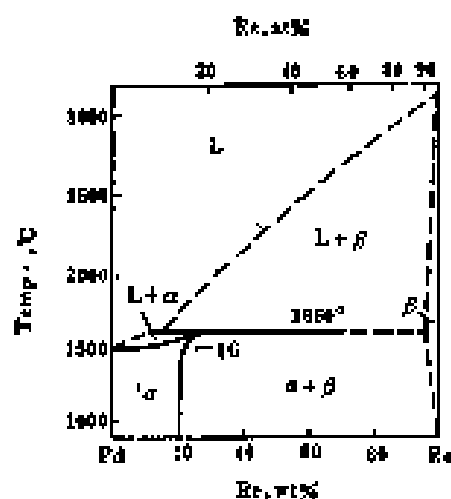


Fig. 299 Pd-Rh 钯-铑  
Palladium-Rhenium (171)

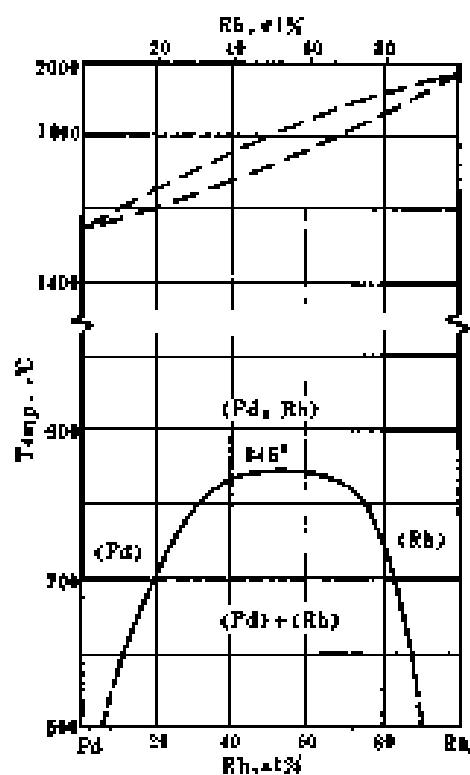


Fig. 300 Pd-Rh 钯-铑  
Palladium-Rhodium (172)

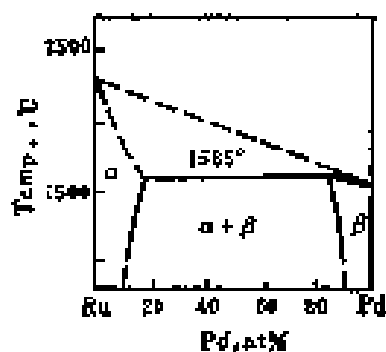


Fig. 301 Pd-Ru 钯-钌  
Palladium-Ruthenium (173)

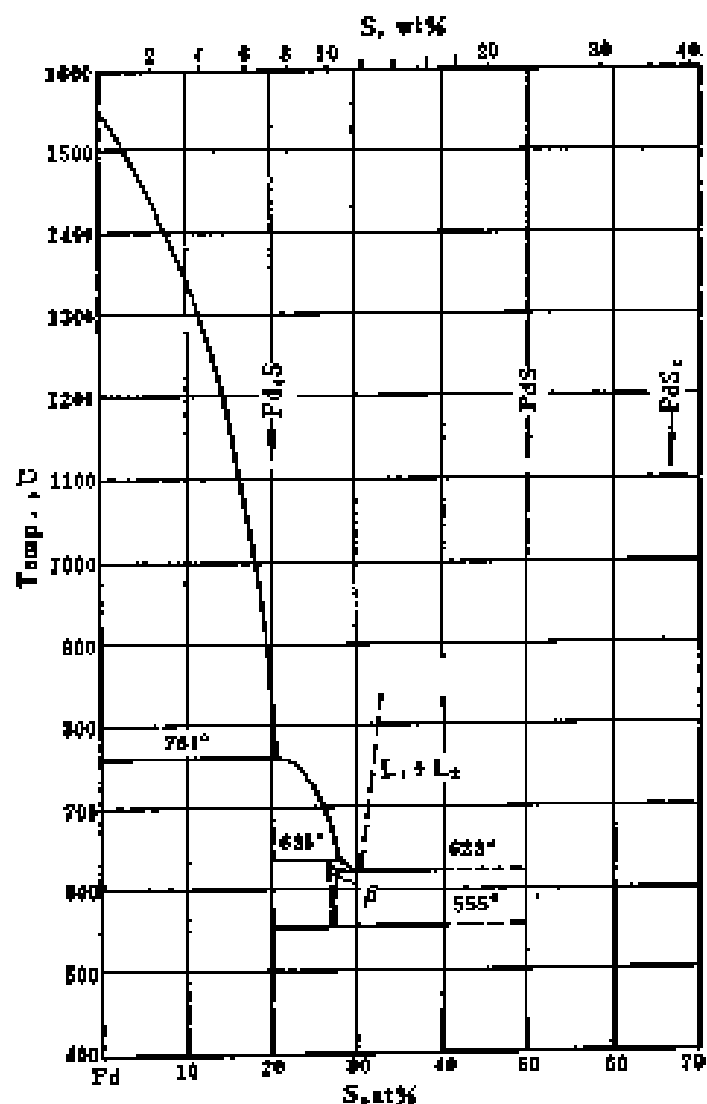


Fig.302 Pd-S 鉑-硫 Palladium-Sulfur(13)

部分相图 Partial phase diagram

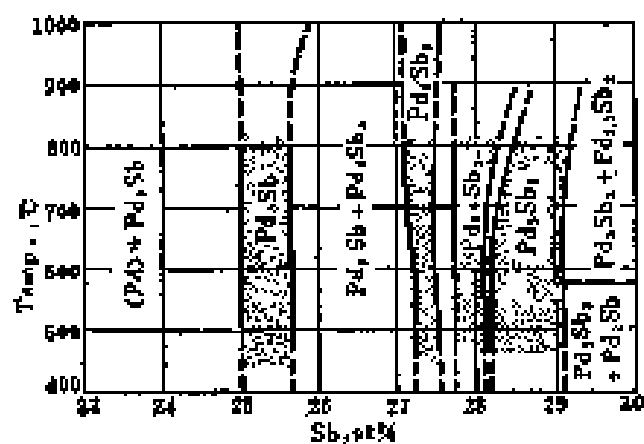


Fig.304 Pd-Sb 鉑-銻 Palladium-Antimony(174)

部分相图 Partial phase diagram



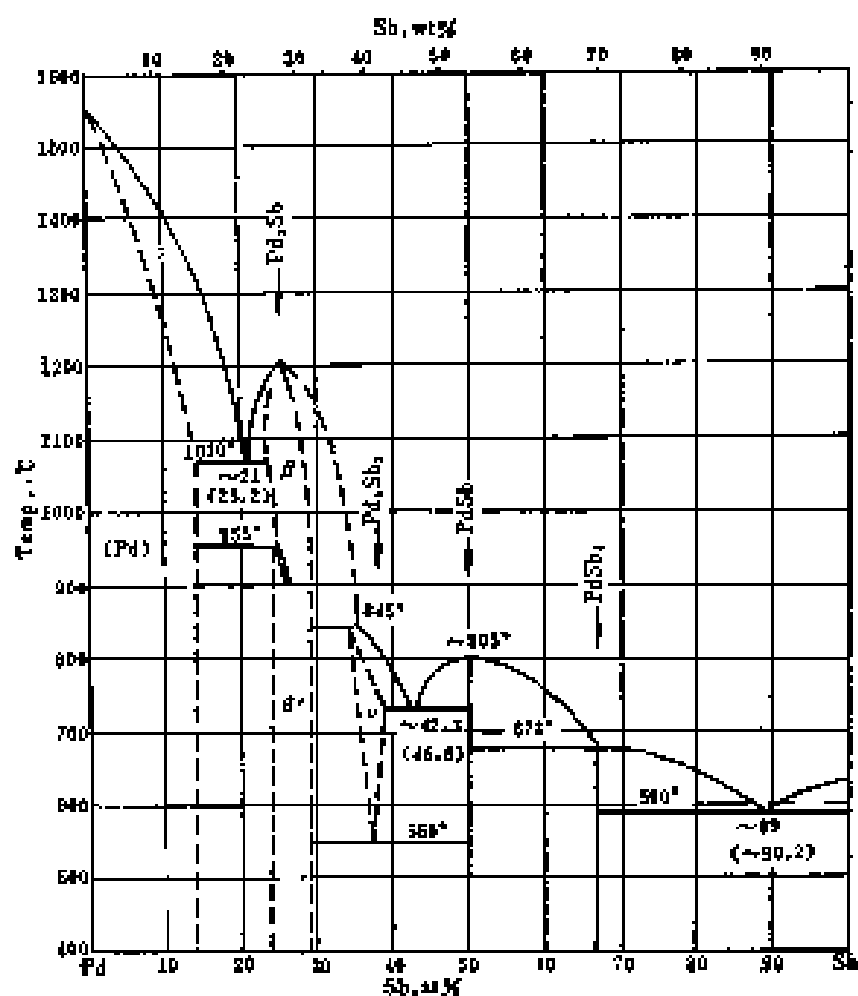


Fig.303 Pd-Sb 銀-銻 Palladium-Antimony(17)

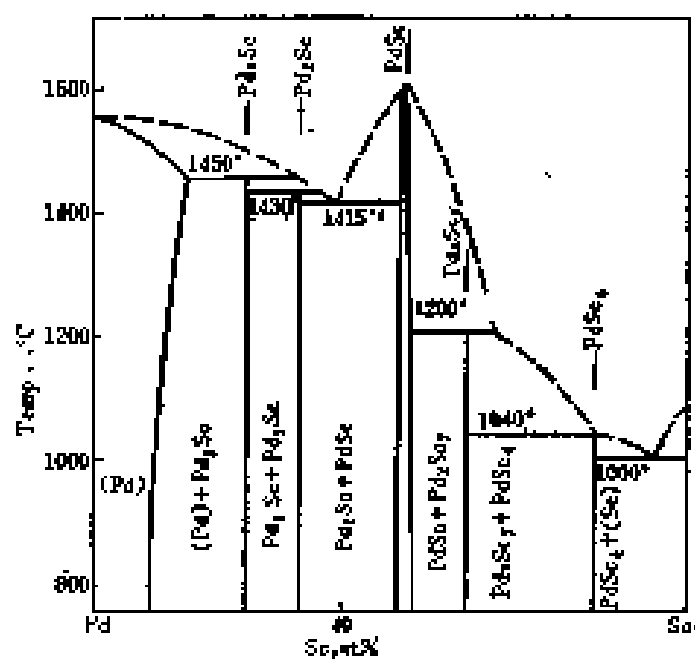


Fig.305 Pd-Sc 銀-釷 Palladium-Scandium(175)

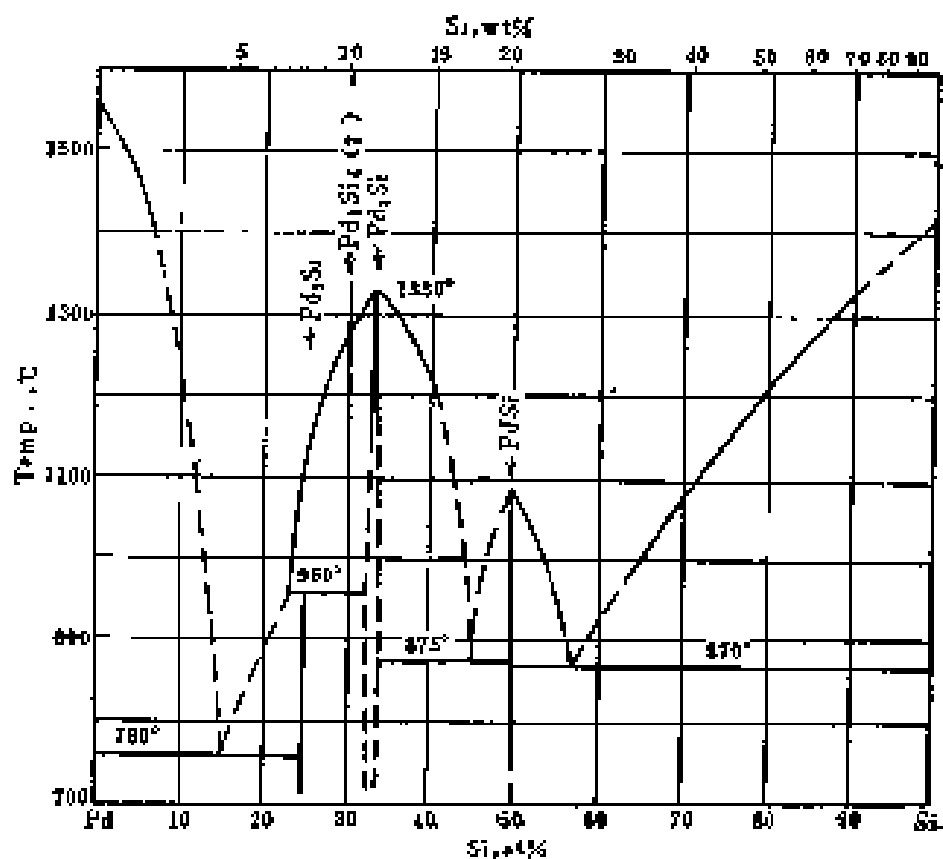


Fig. 306 Pd-Si 钯-硅 Palladium-Silicon (1963)

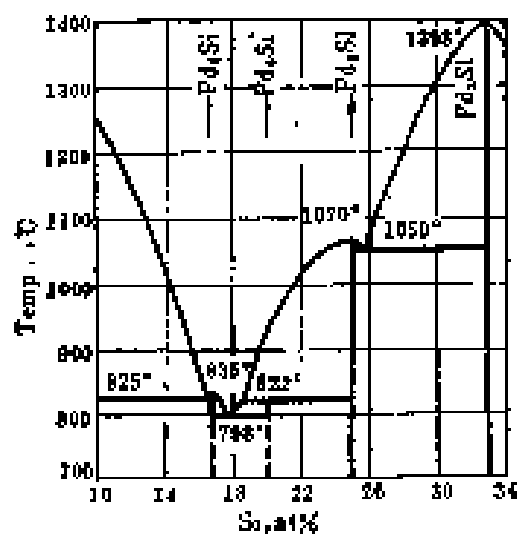


Fig. 307 Pd-Si 钯-硅 Partial phase diagram (1971)

部分相图 Partial phase diagram

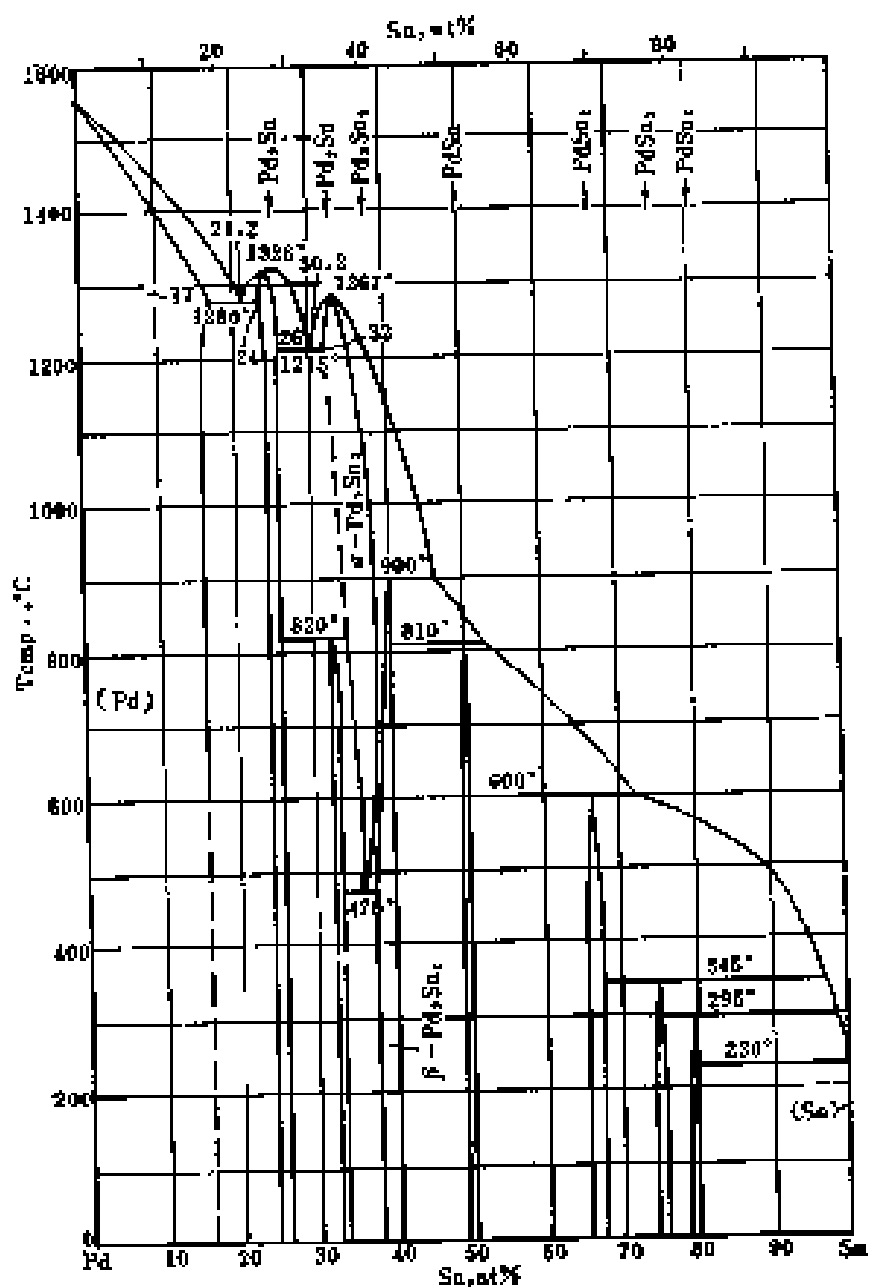


Fig.309 Pd-Sn 钯-锡 Palladium-Tin (2)

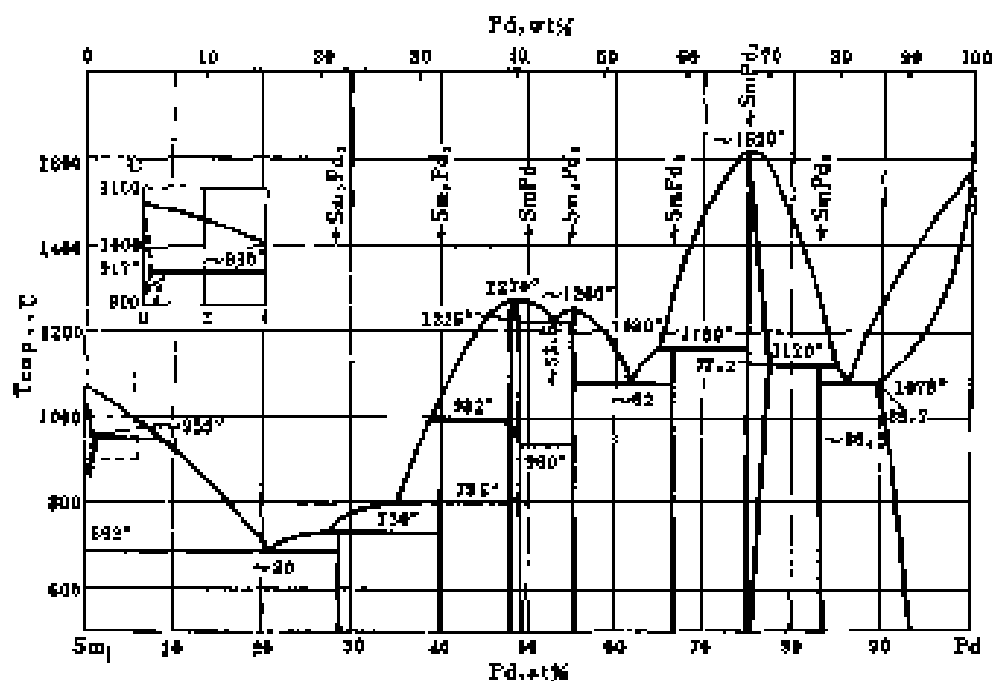


Fig.308 Pd-Sm 钯-镱 Palladium-Samarium(100)

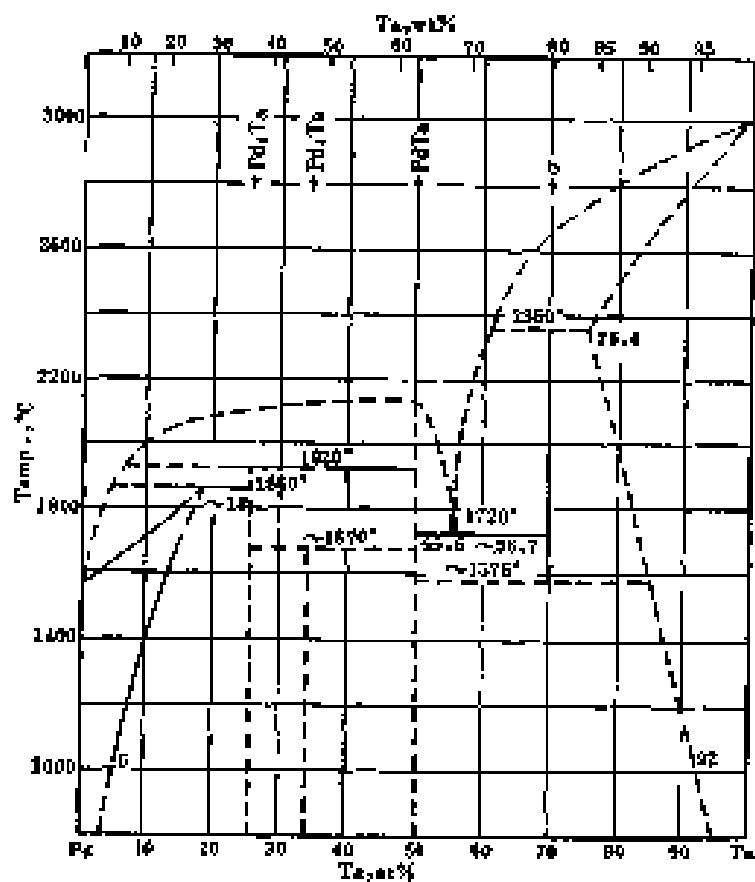


Fig.310 Pd-Ta 钯-钽 Palladium-Tantalum(178)

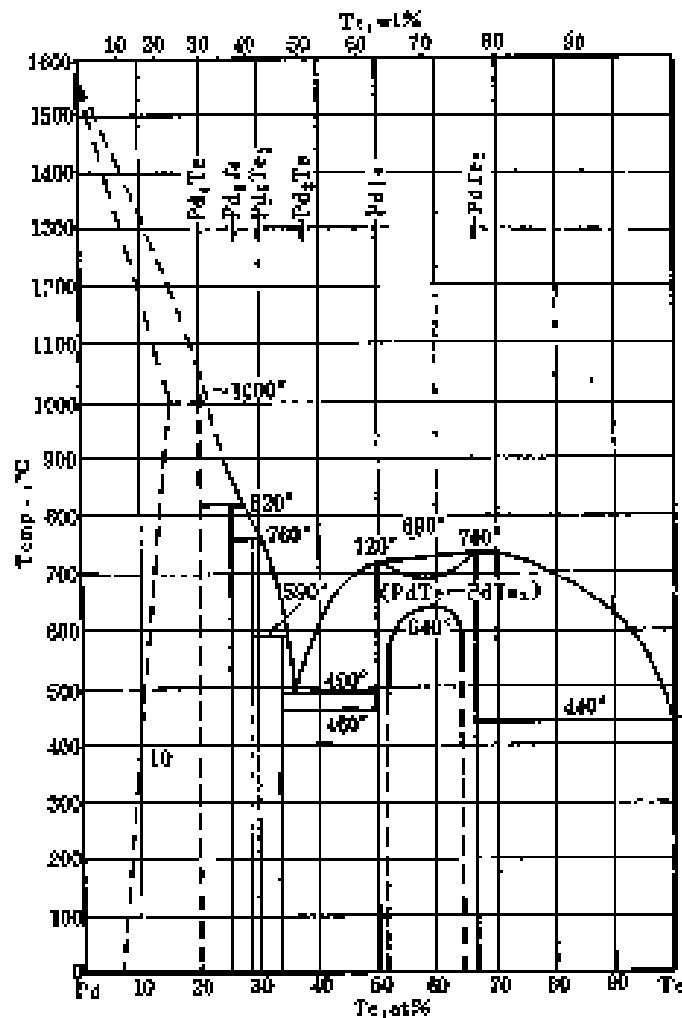


Fig.311 Pd-Te 鉑-碲 Palladium-Tellurium(179)

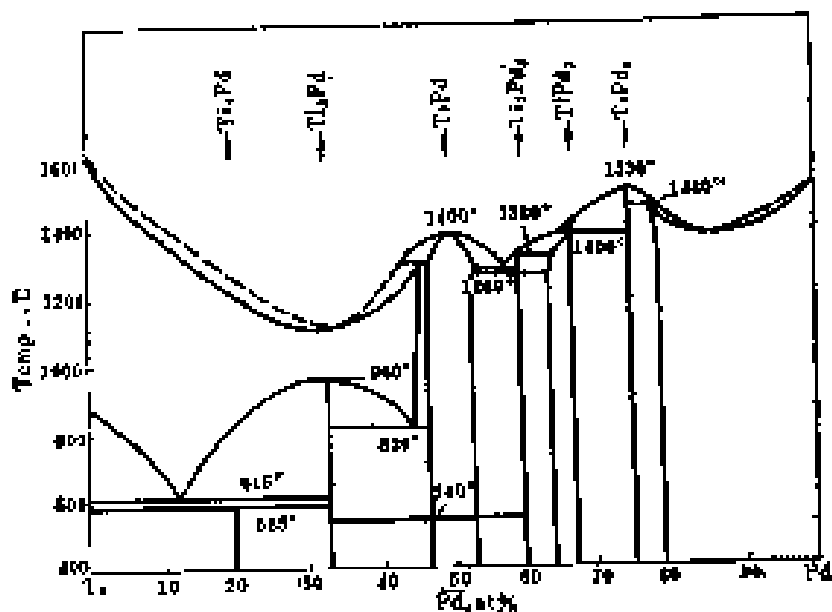


Fig.313 Pd-Ti 鉑-鈦 Palladium-Titanium(181)

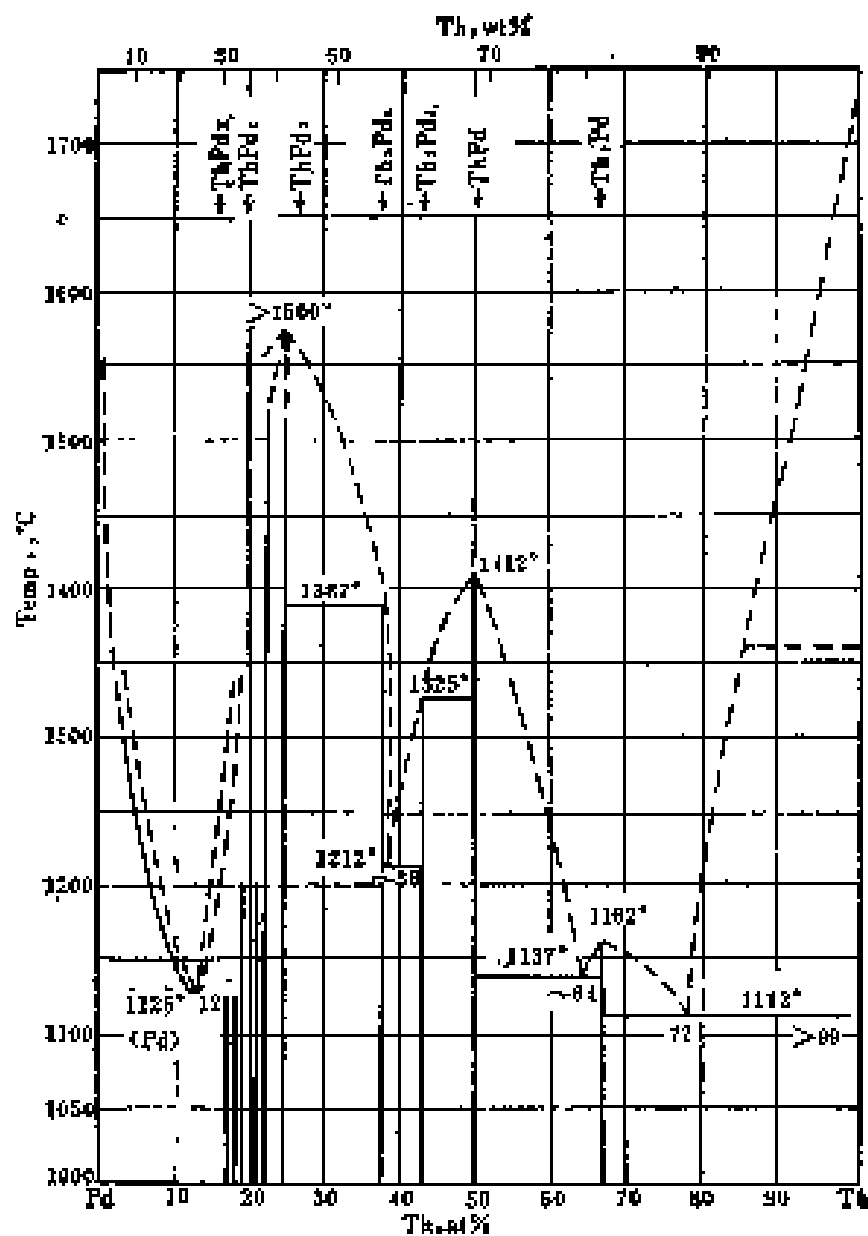


Fig.312 Pd-Th 相-図 Palladium-Thorium(130)

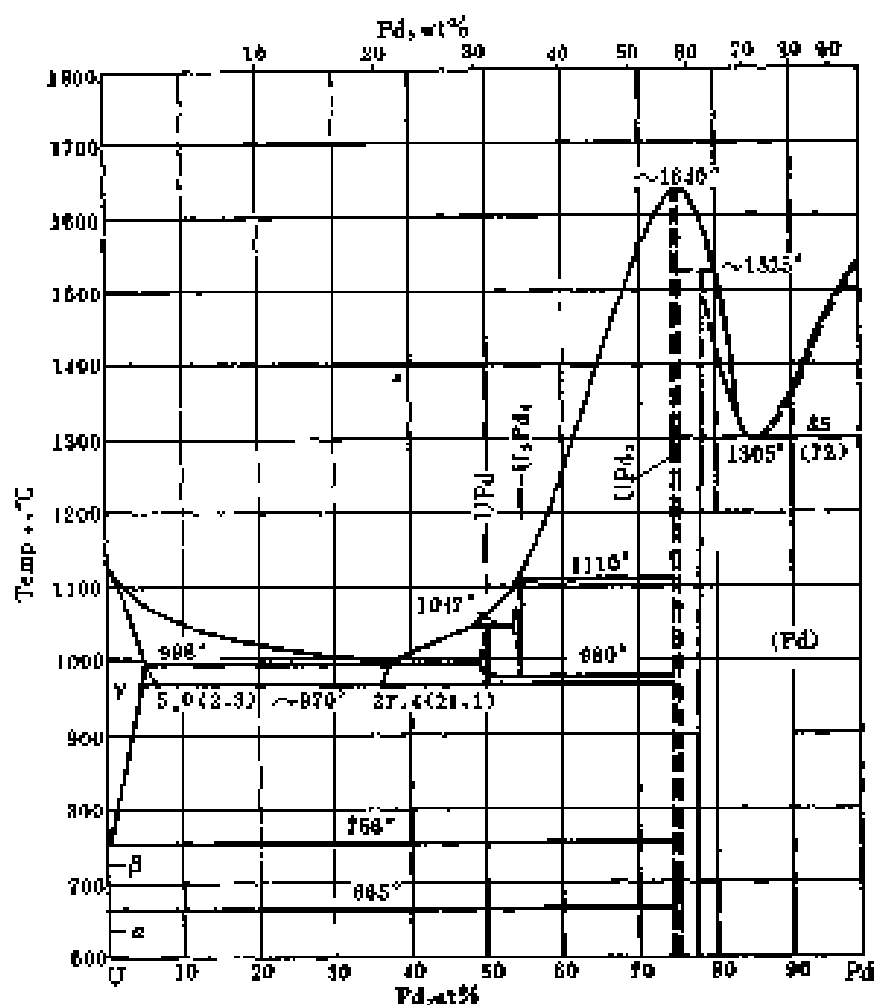


Fig.314 Pd-U 钯-铀 Palladium-Uranium(1832)

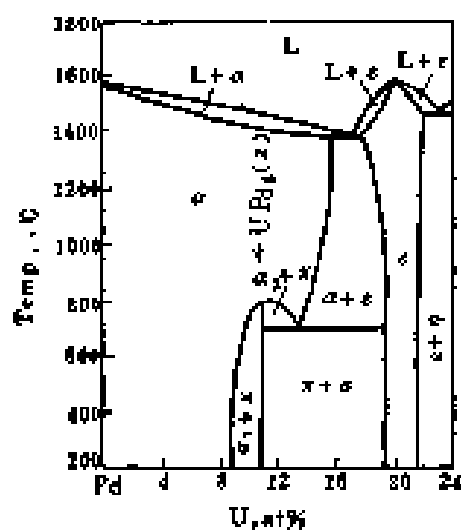


Fig.315 Pd-U 钯-铀 Palladium-Uranium(1832)

部分相图 Partial phase diagram

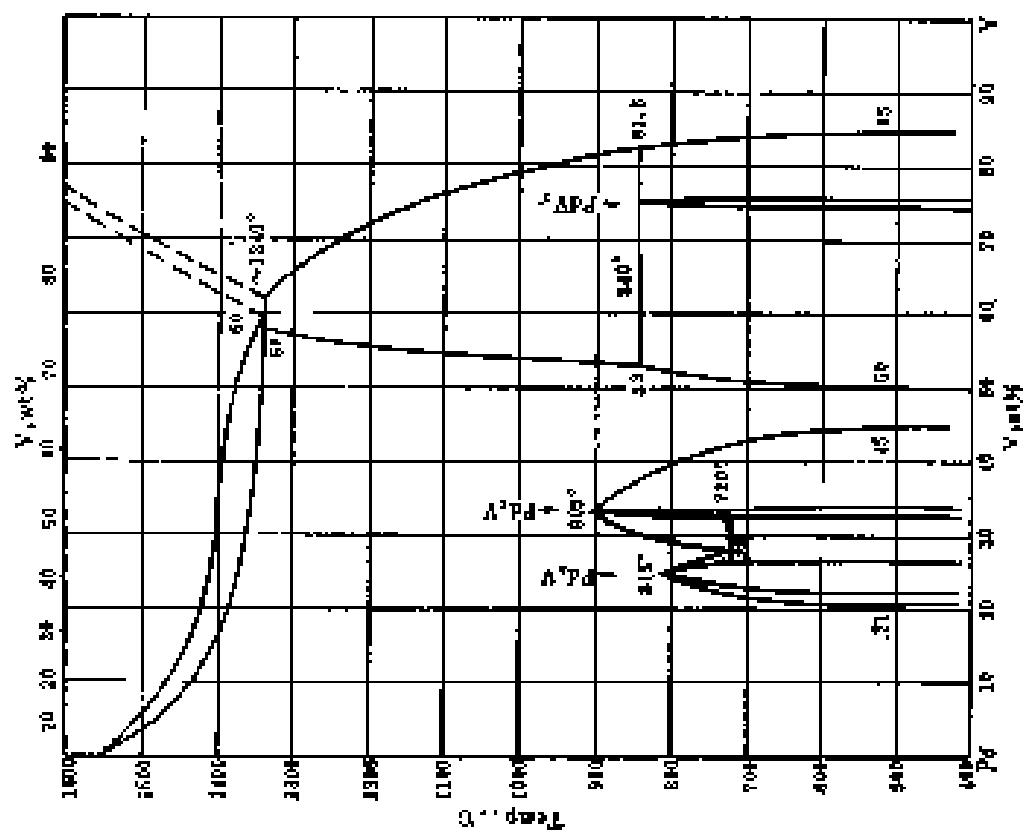


Fig 316 Pd-V 82-88 Palladium-Vanadium (184)

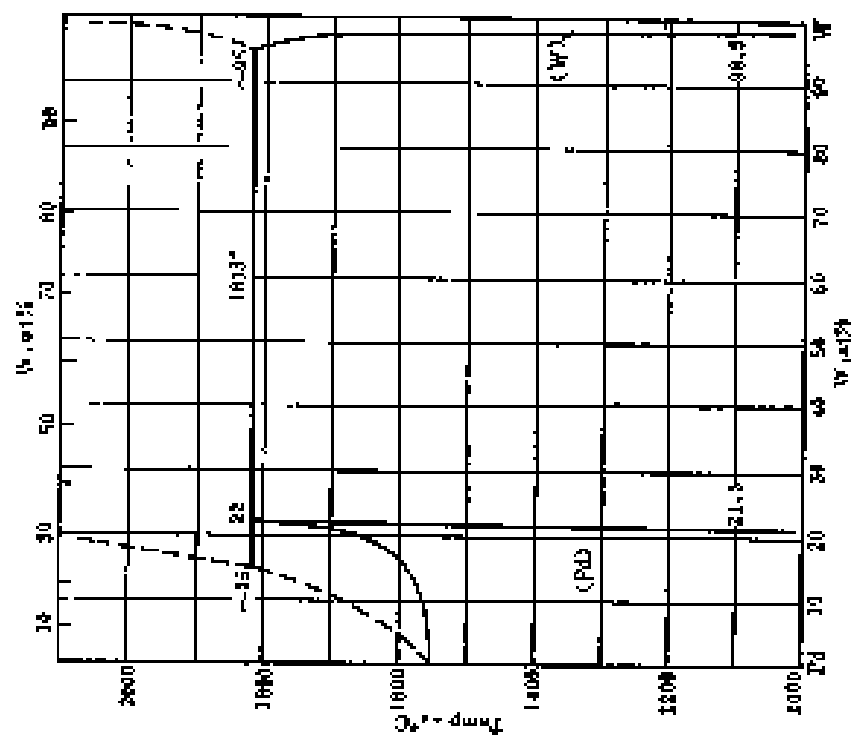


Fig 317 Pd-W 82-88 Palladium-Tungsten (185)



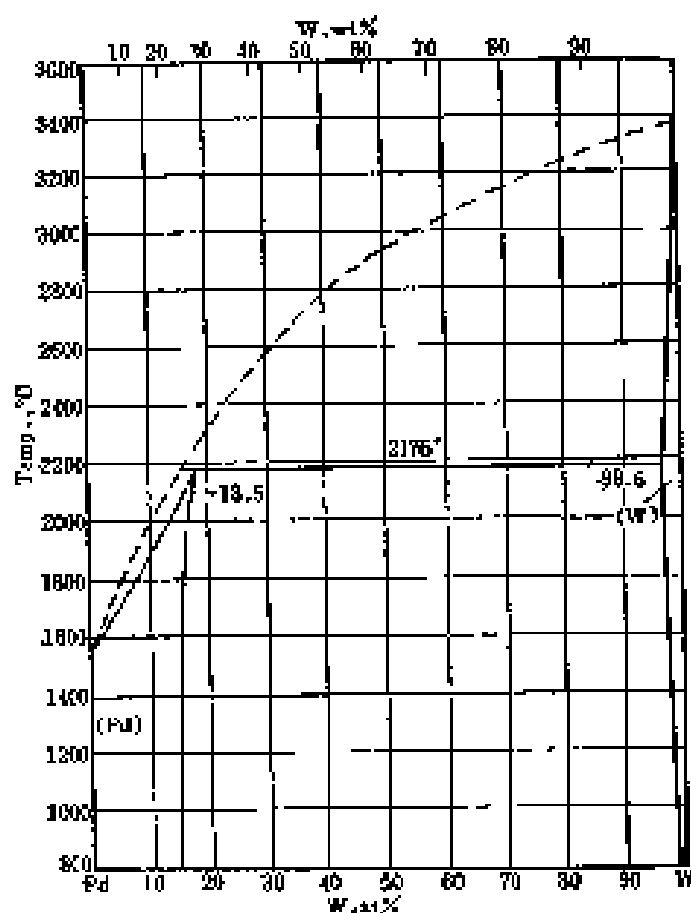


Fig 318 Pd-W 钯-钨 Palladium-Tungsten(1863)

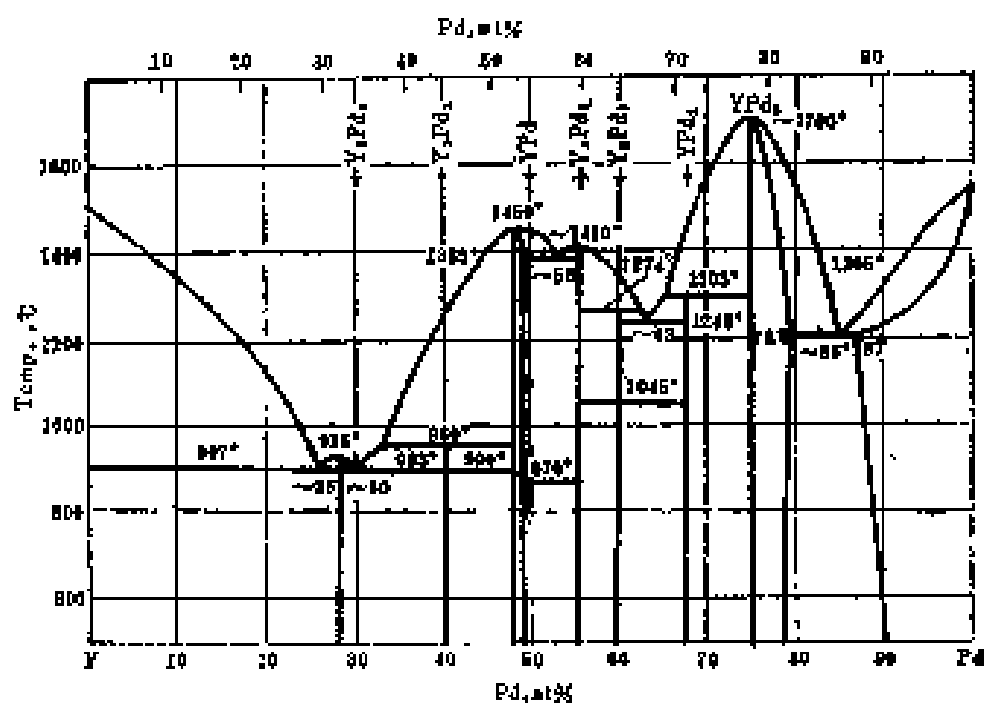


Fig 319 Pd-Y 钯-钇 Palladium-Yttrium(100)

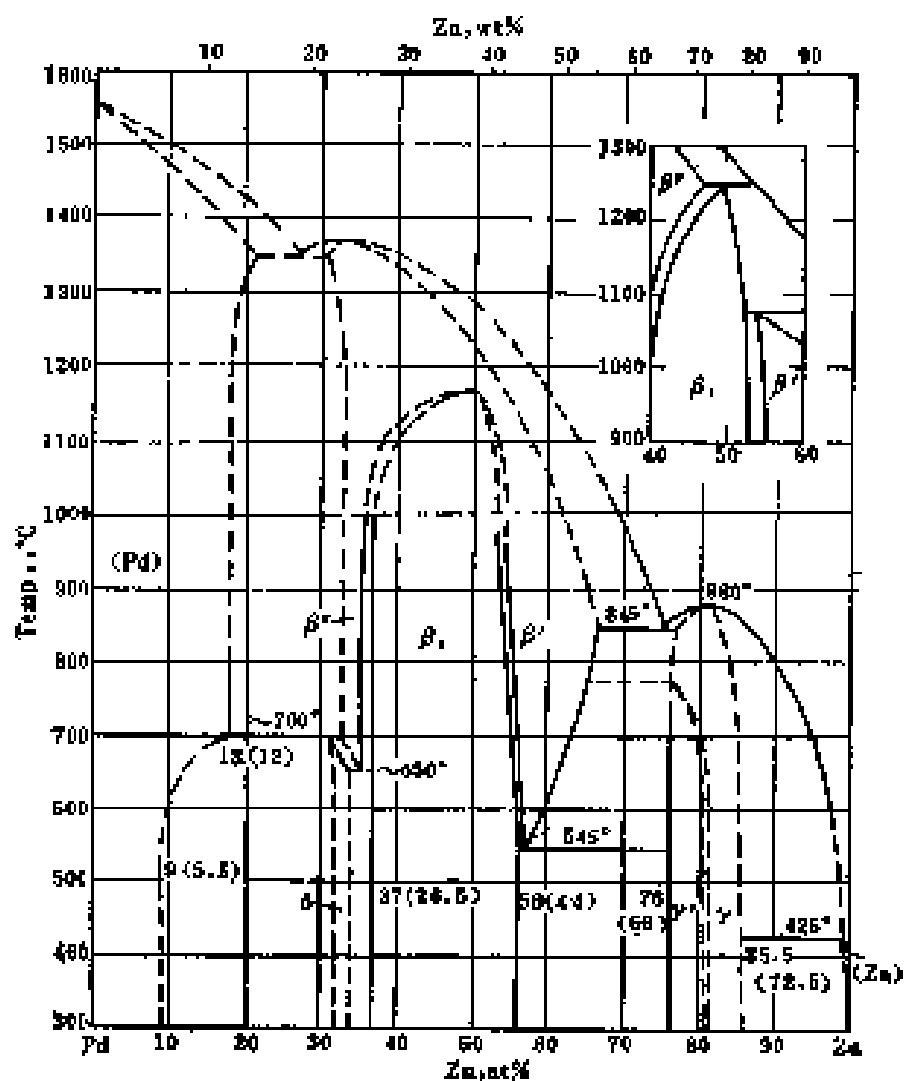


Fig.320 Pd-Zn 钯-锌 Palladium-Zinc(187)

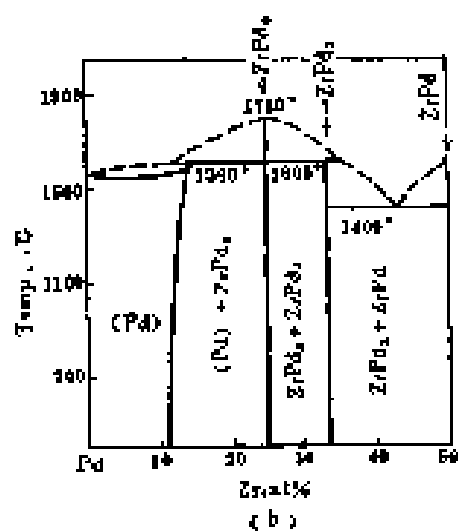
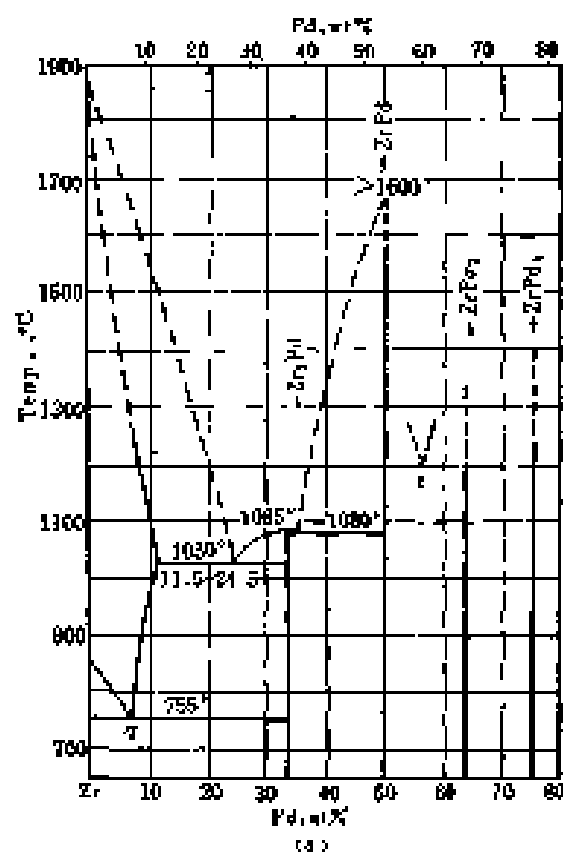


Fig.321 Pd-Zr 钯-锆 Palladium-Zirconium(188)

- (a) 富Zr合金相图(Zr-rich end);  
(b) 富Pd合金相图(Pd-rich end)

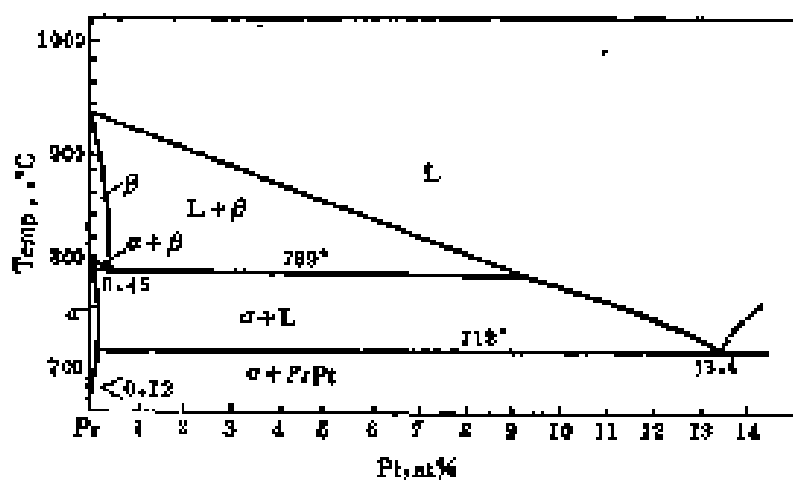


Fig.322 Pr-Pt 镨-铂 Praseodymium-Platinum(65)

部分相图 Partial phase diagram



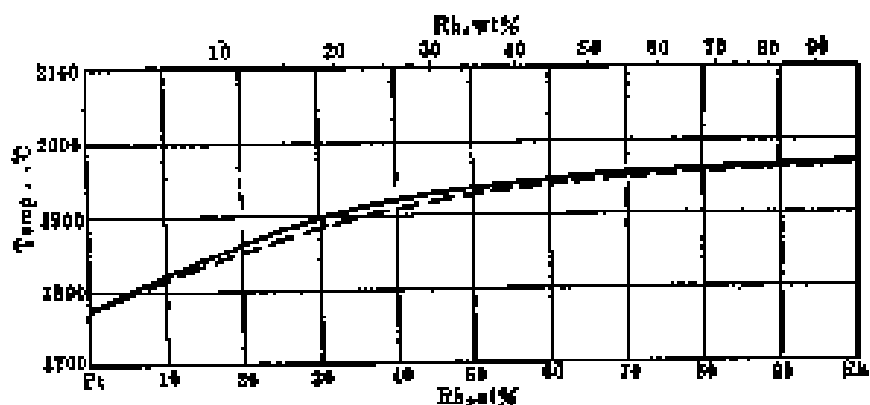


Fig. 325 Pt-Rh 铂-铑 Platinum-Rhodium(1)

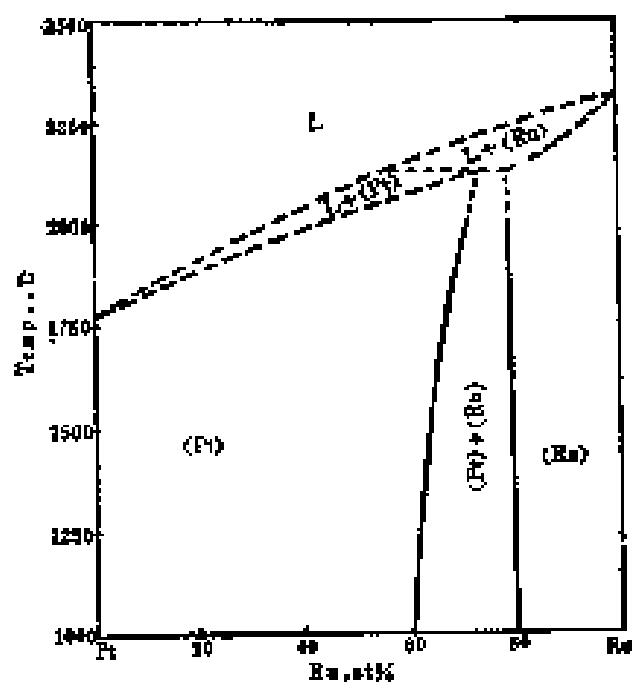


Fig. 326 Pt-Ru 铂-钌 Platinum-Ruthenium(191)

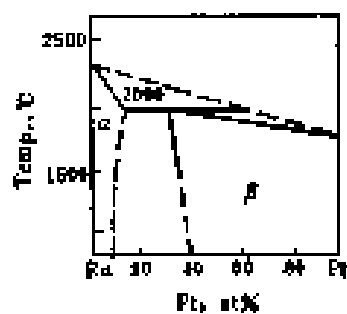


Fig. 327 Pt-Ru 铂-钌  
Platinum-Ruthenium(1173)

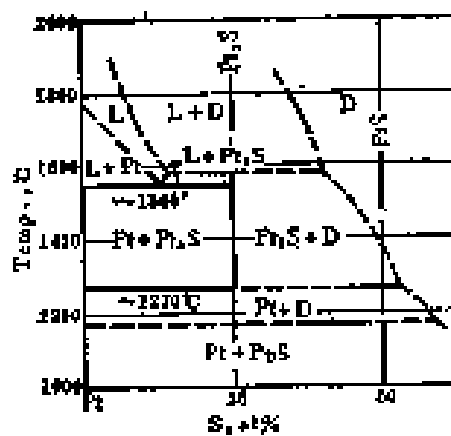


Fig. 328 Pt-S 铂-硫  
Platinum-Sulfur(1923)  
部分相图 Partial phase diagram

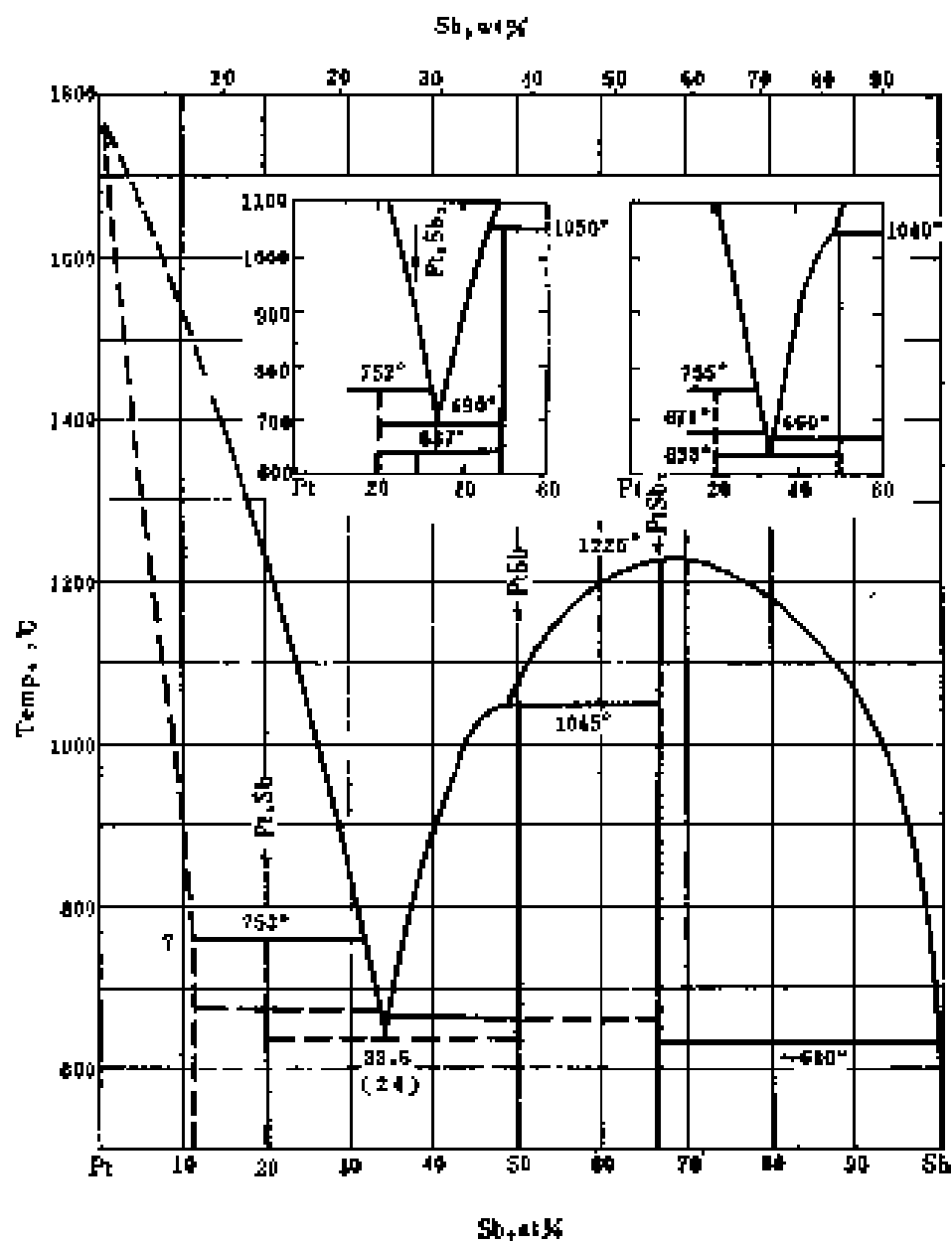


Fig.329 Pt-Sb 铂-锑 Platinum-Antimony(1)

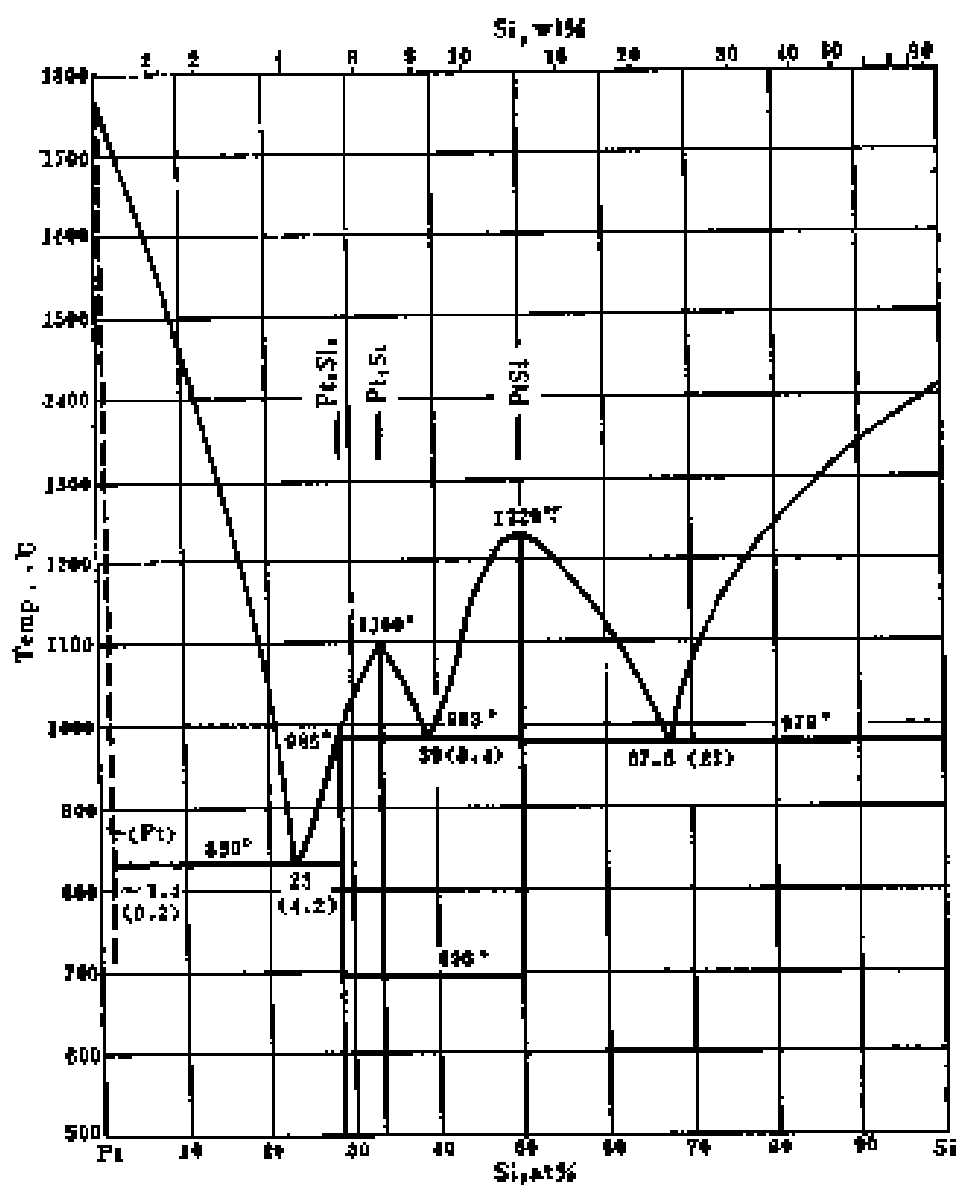


Fig.390 Pt-Si 铂-硅 Platinum-Silicon(195)

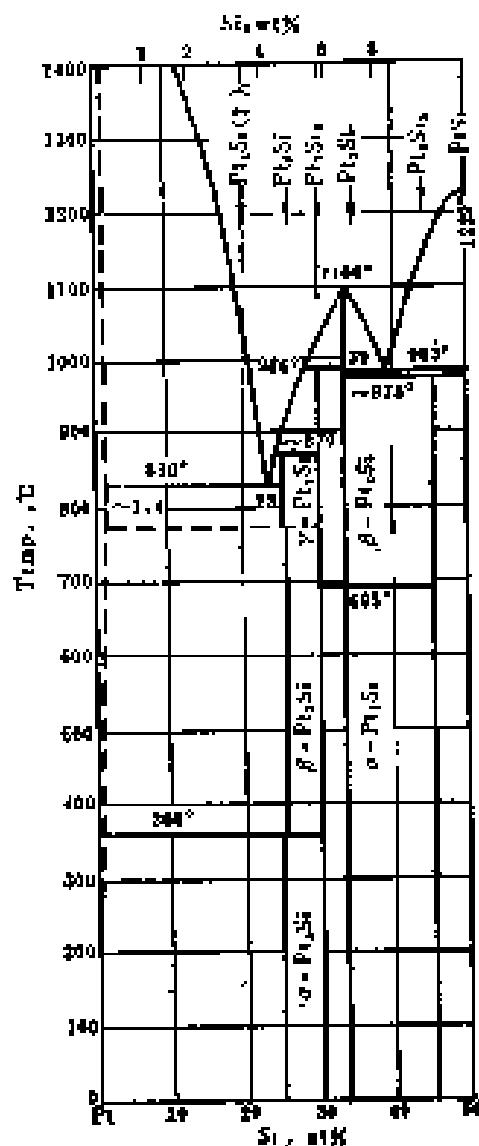


Fig.331 Pt-Si 铂-硅 Platinum-Silicon(194)  
部分相图 Partial phase diagram

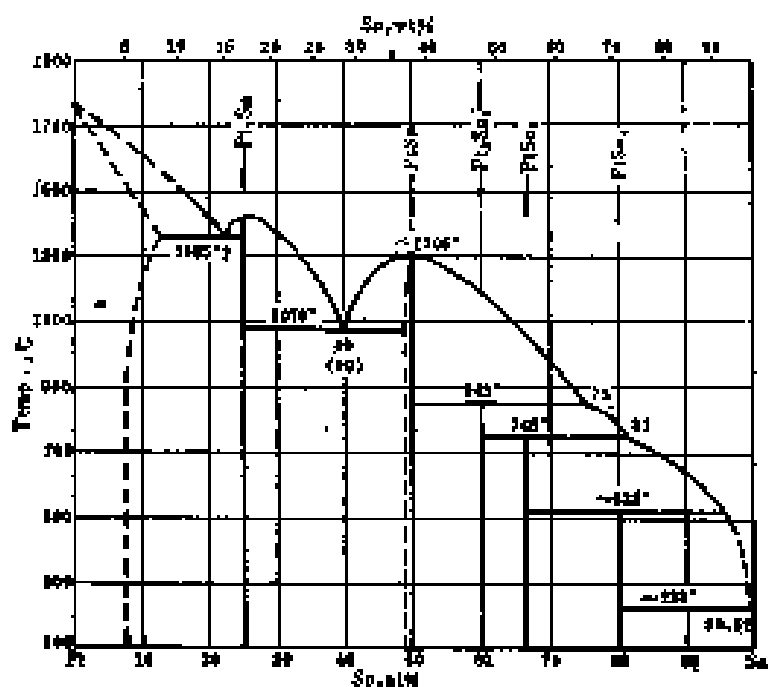


Fig.332 Pt-Sn 铂-锡 Platinum-Tin(1)

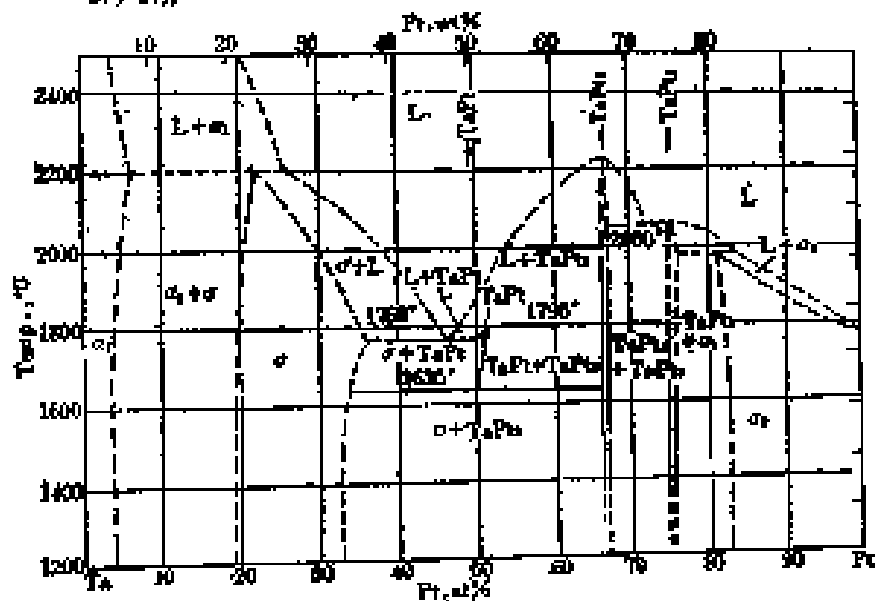
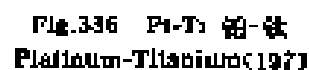


Fig.333 Pt-Ta 铂-钽 Platinum-Tantalum(195)





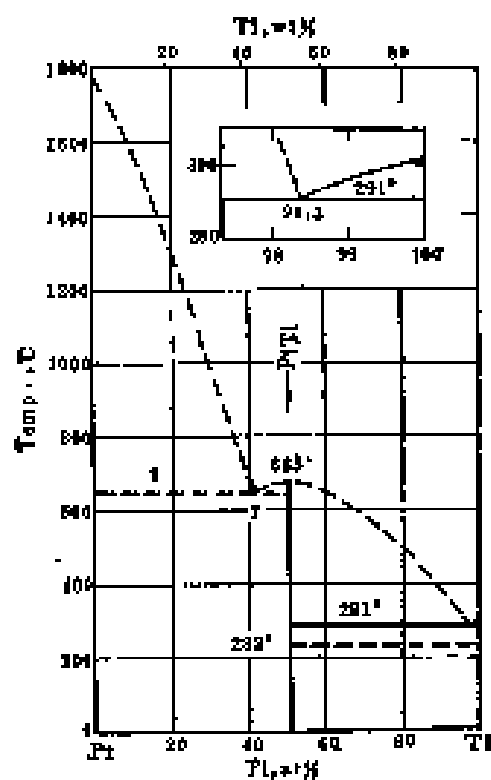


Fig.337 Pt-Tl 铂-铊 Platinum-Thallium(1)

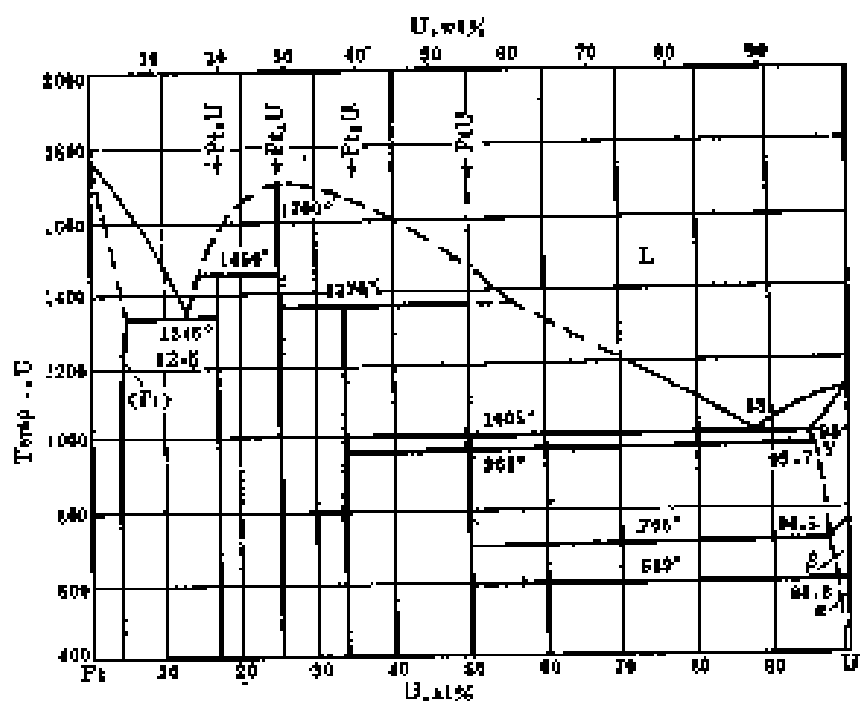


Fig.338 Pt-U 铂-铀 Platinum-Uranium(188)

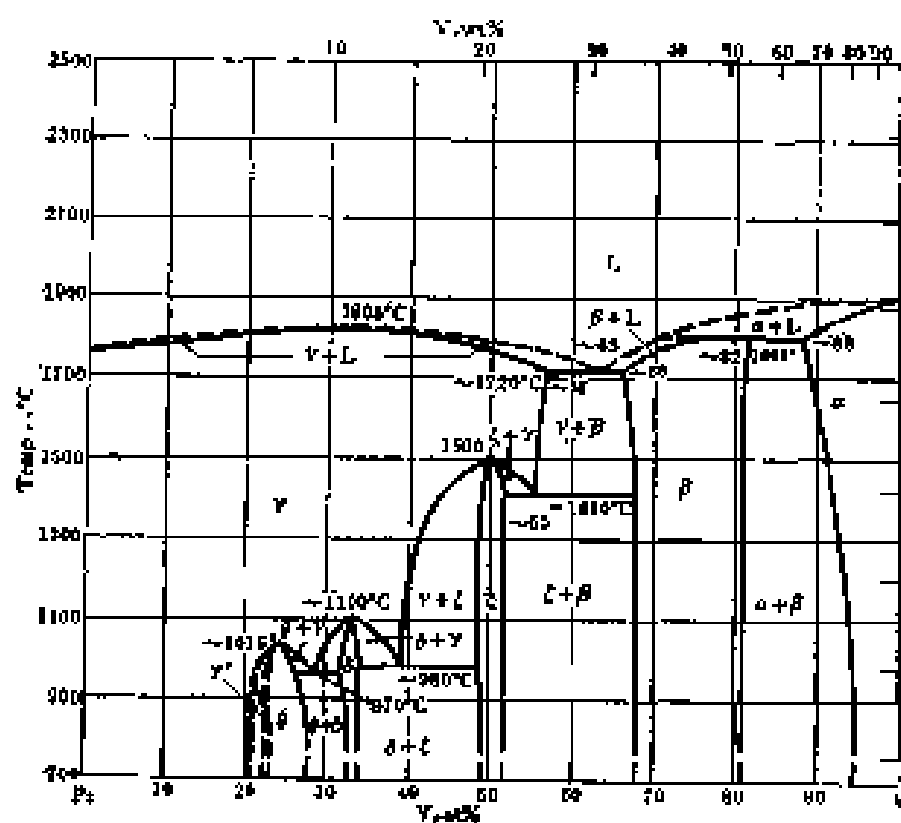


Fig.339 Pt-V 铂-钒 Platinum-Vanadium(189)

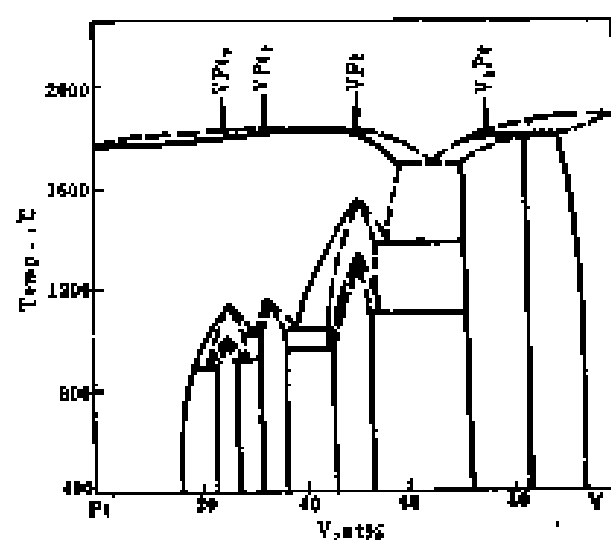


Fig.340 Pt-V 铂-钒 Platinum-Vanadium(200)

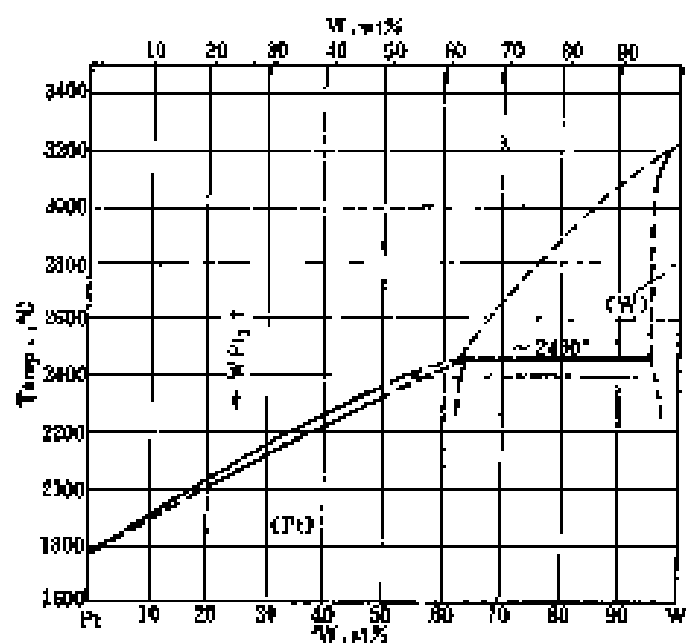


Fig.341 Pt-W 铂-钨 Platinum-Tungsten(1)

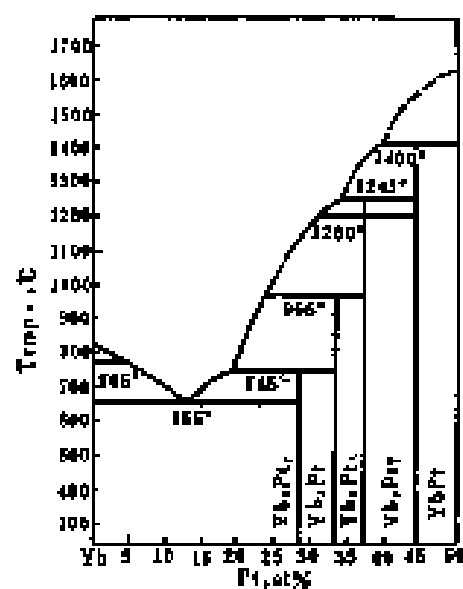


Fig.342 Pt-Yb 铂-镱 Platinum-Ytterbium(20)

部分相图 Partial phase diagram

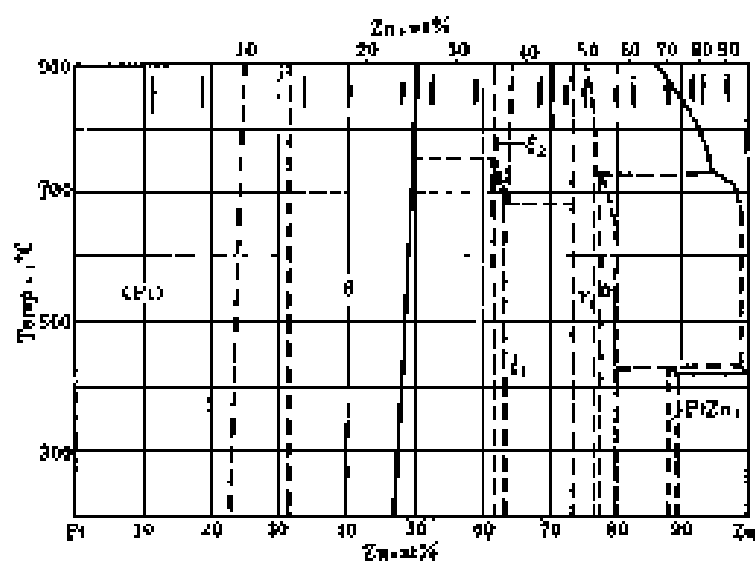


Fig.343 Pt-Zn 铂-鋅 Platinum-Zinc(202)

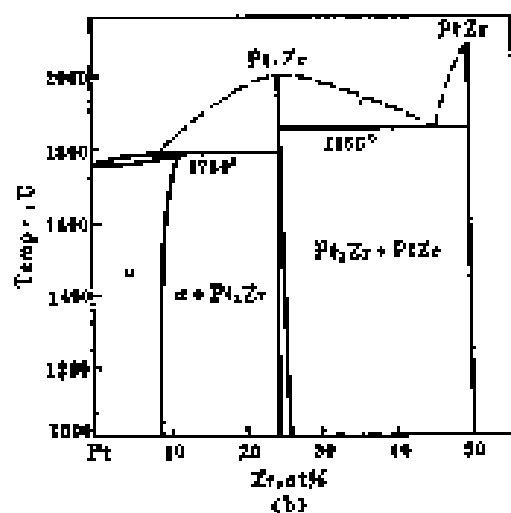
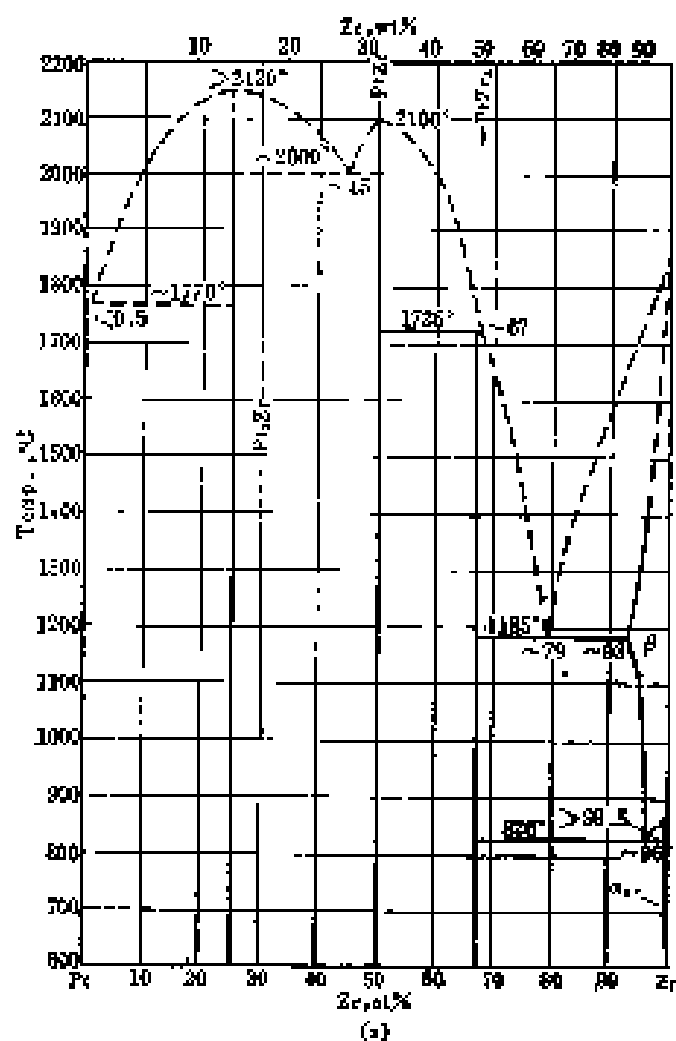


Fig.344 Pt-Zr 铂-锆  
Platinum-Zirconium(203)

部分相图(富Pt端)  
Partial phase diagram (Pt-rich end)

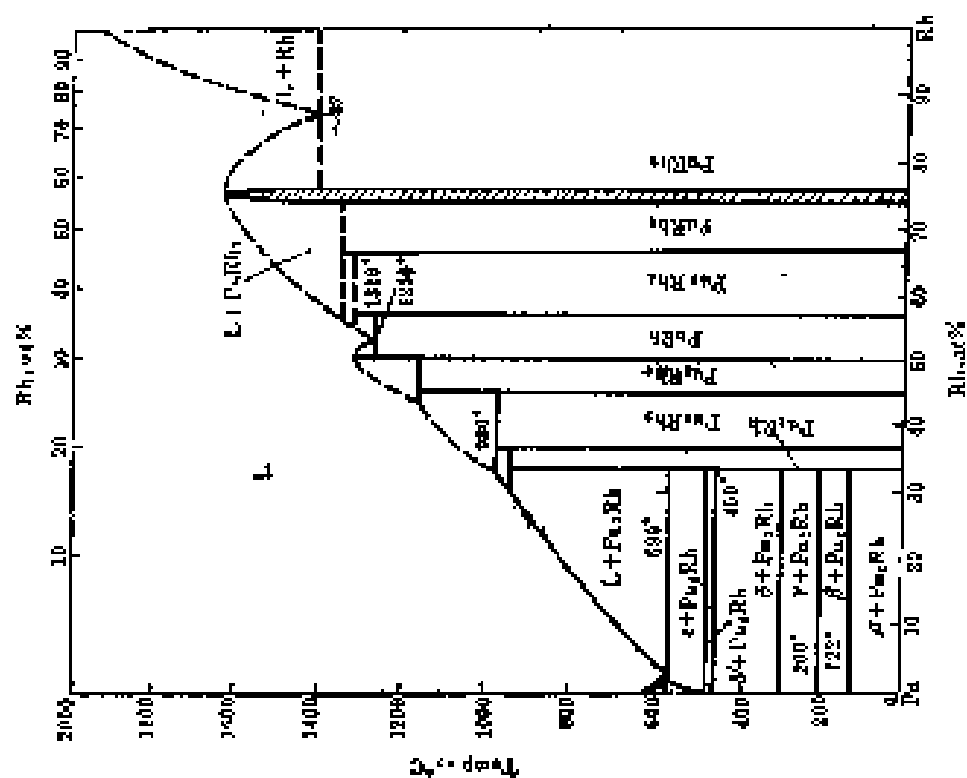


Fig. 345 Pt-Rh 铂-铑 Platinum-Rhodium (189)

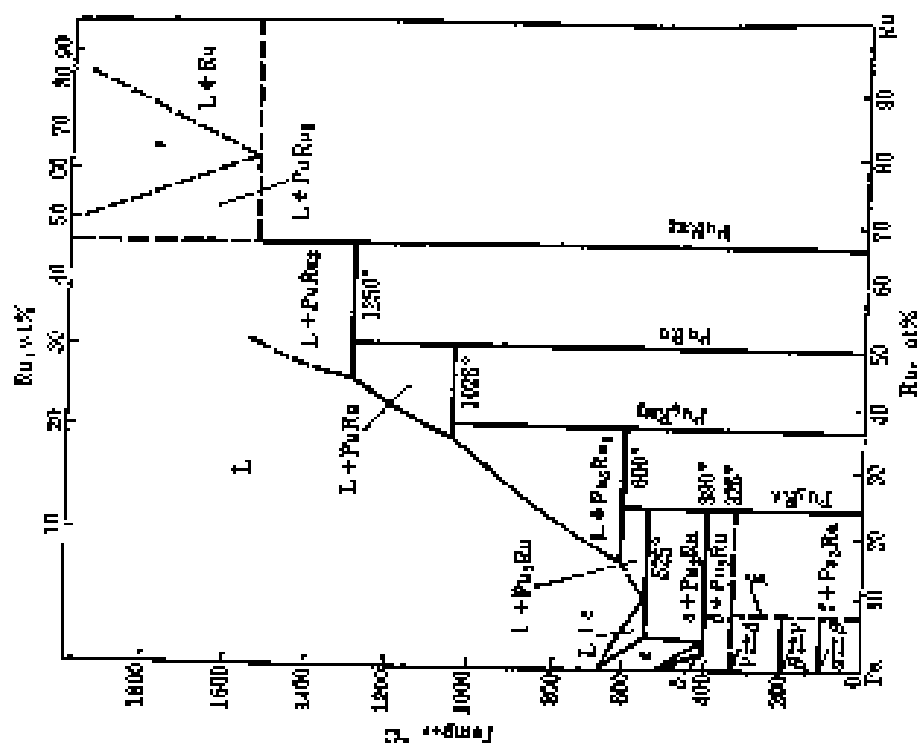


Fig. 346 Pt-Ru 铂-钌 Platinum-Ruthenium (189)

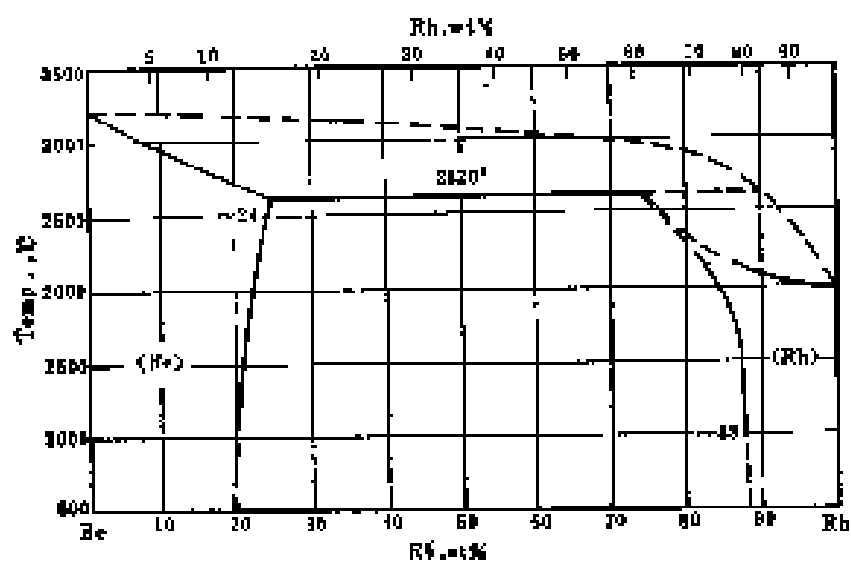


Fig.347 Re-Rh 铼-铑 Rhenium-Rhodium(204)

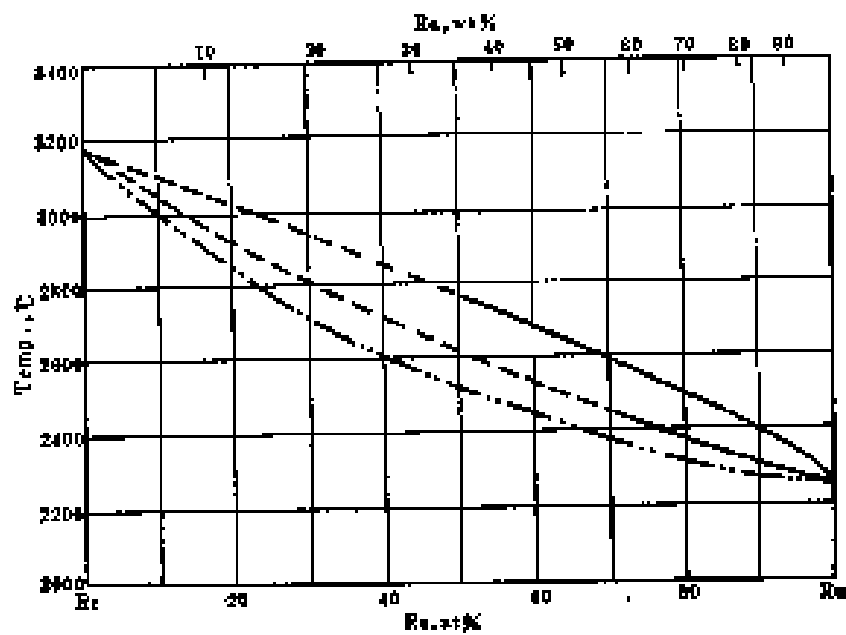


Fig.348 Re-Ru 铼-钌 Rhenium-Ruthenium(205)

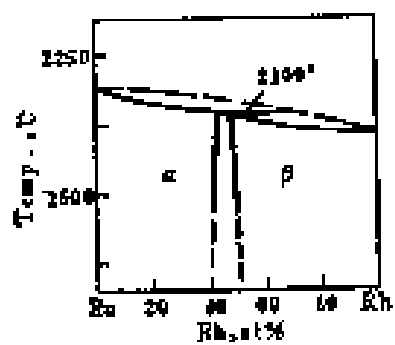


Fig.349 Rh-Ru 铑-钌 Rhodium-Ruthenium(73)

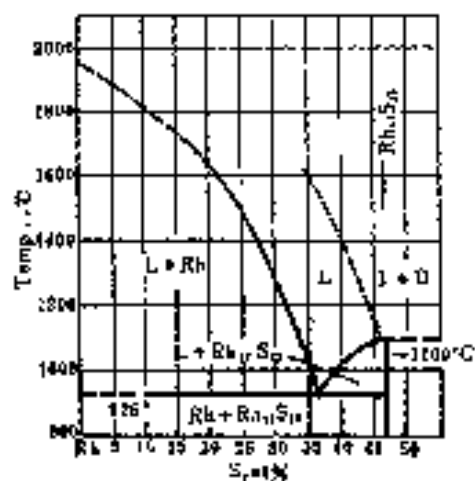


Fig.350 Rh-S 铑-硫 Rhodium-Sulfur(192)  
部分相图 Partial phase diagram

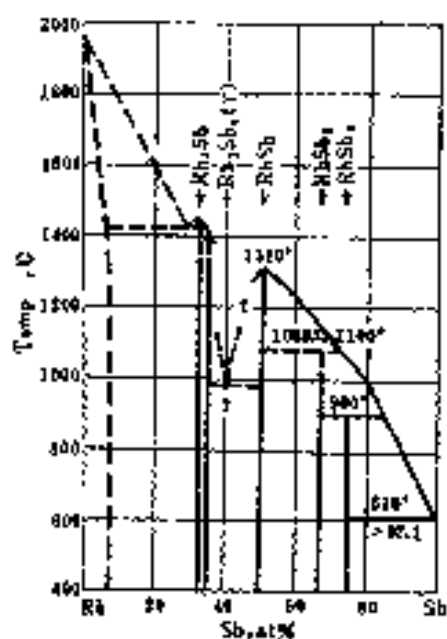


Fig.351 Rh-Sb 铑-锑 Rhodium-Antimony(33)

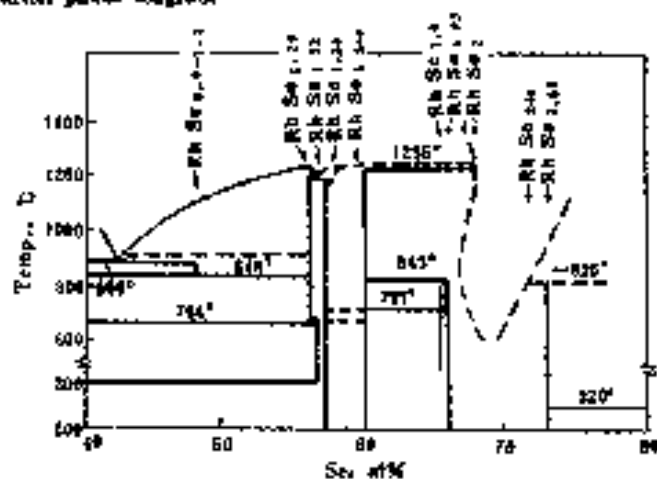


Fig.352 Rh-Se 铑-硒 Rhodium-Selenium(208)  
部分相图 Partial phase diagram

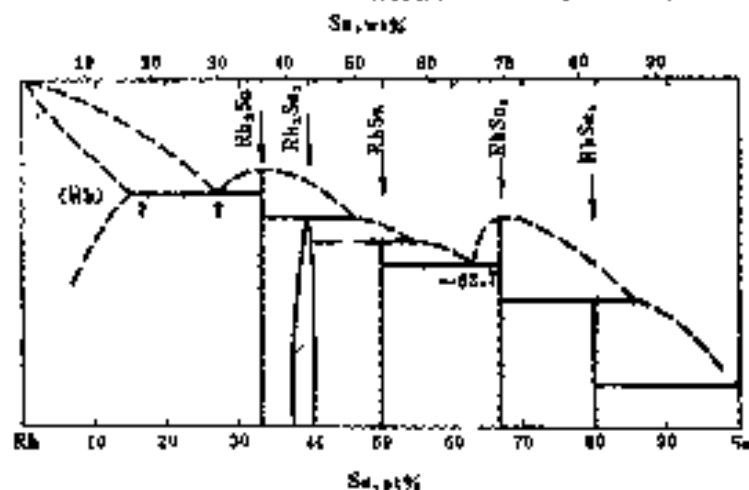


Fig.353 Rh-Sn 铑-锡  
Rhodium-Tin(1)



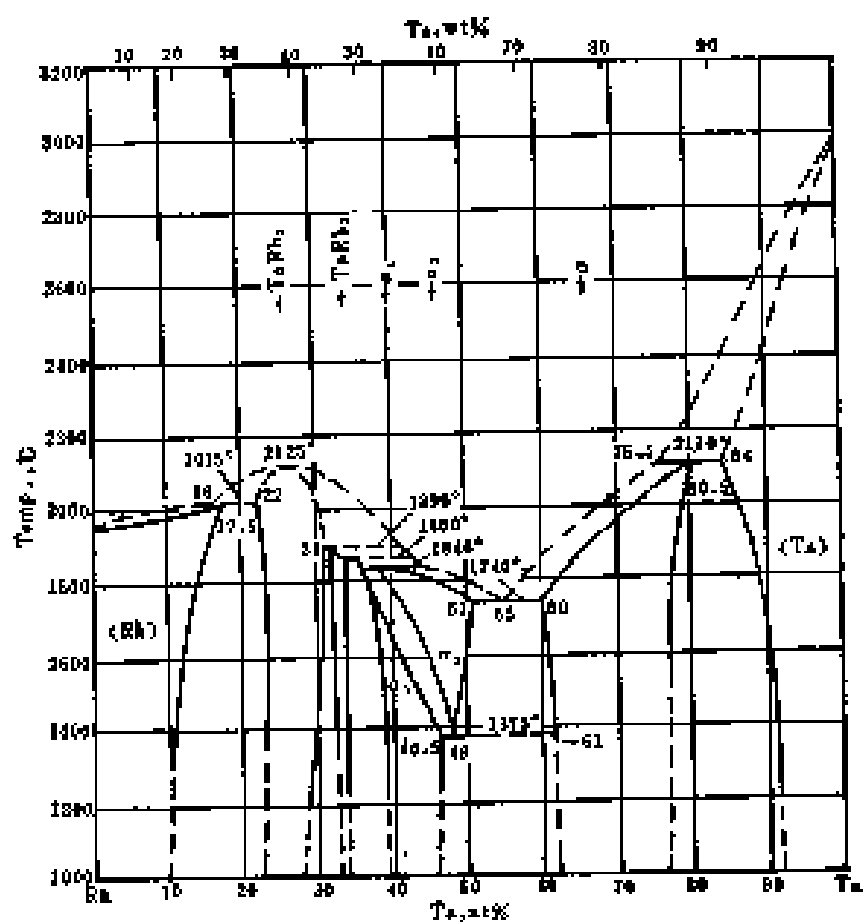


Fig. 354 Rh-Ta 組 Rhodium-Tantalum(3)

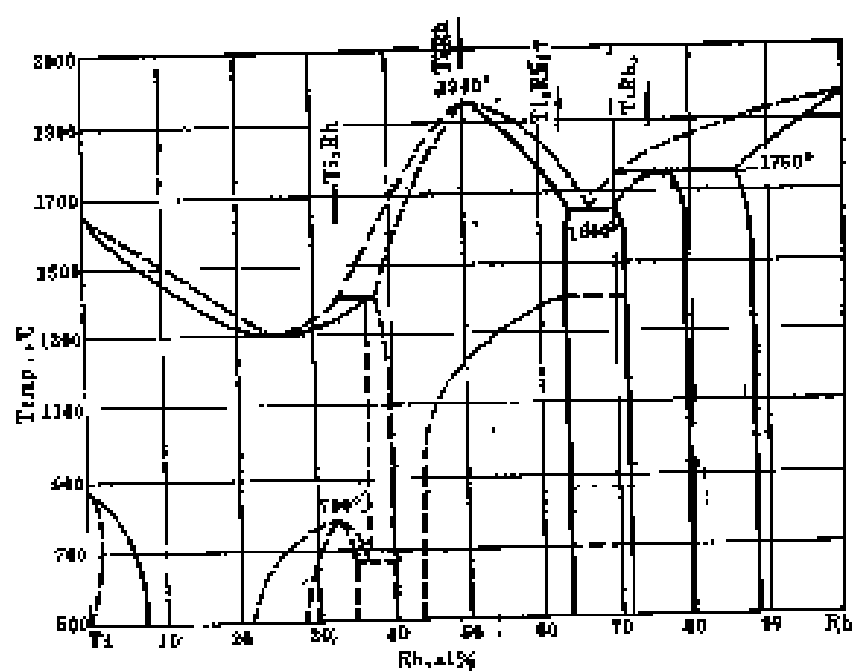


Fig. 356 Rh-Ti 組 Rhodium-Titanium(181)

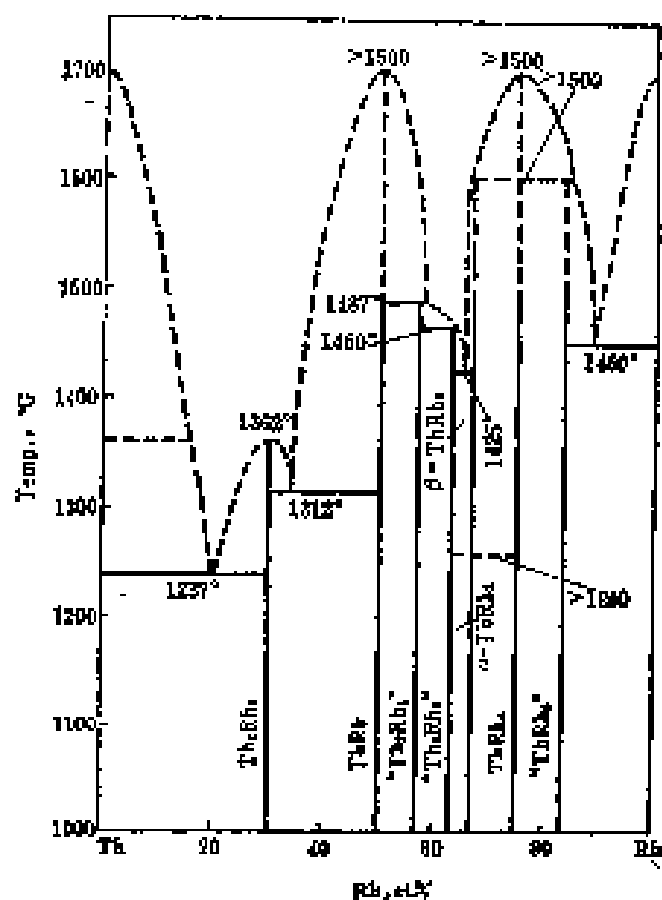


Fig.355 Rh-Tb 铑-铈 Rhodium-Thorium(207)

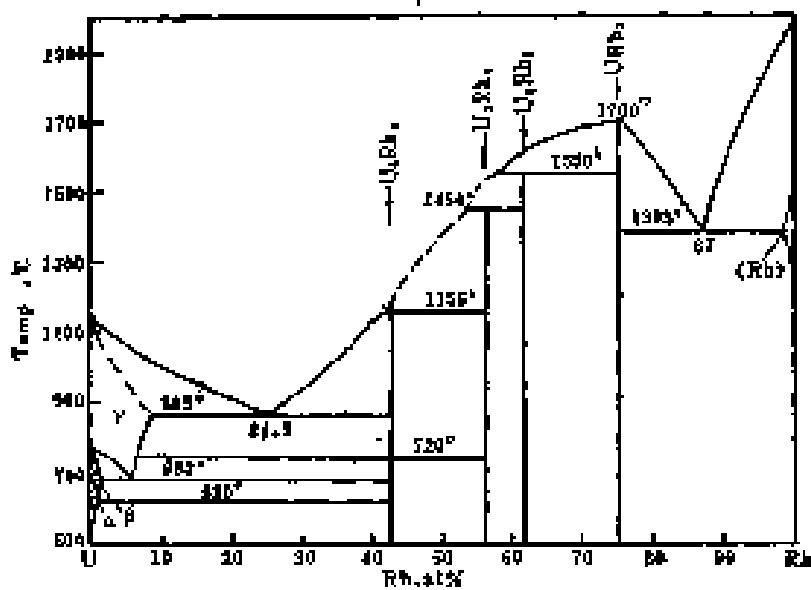


Fig.357 Rh-U 铑-铀 Rhodium-Uranium(208)

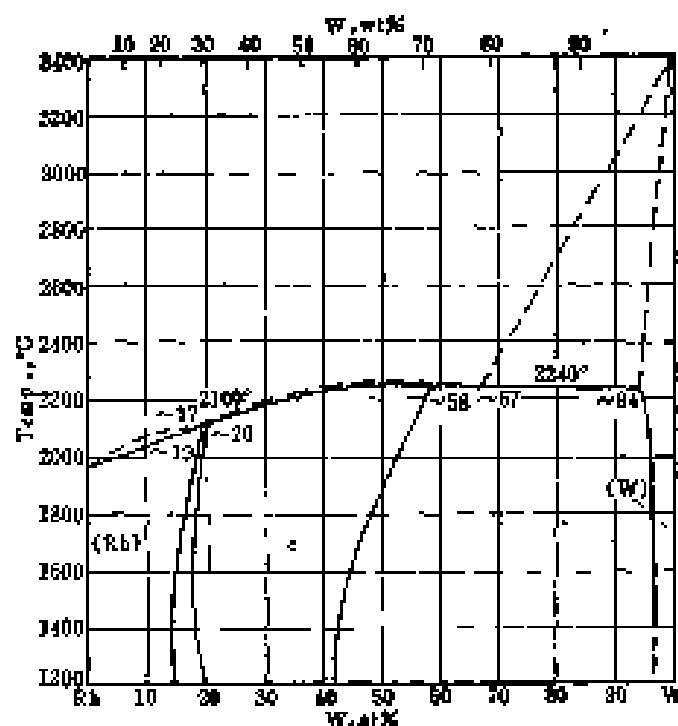


Fig.358 Rh-W 铑-钨 Rhodium-Tungsten(209)

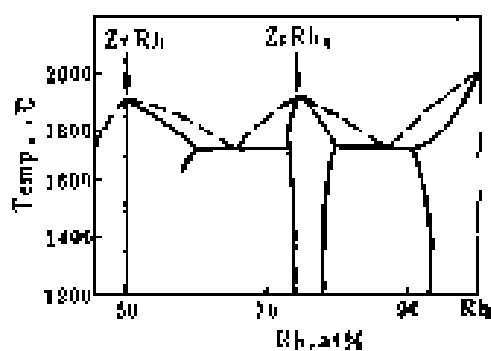


Fig.359 Rh-Zr 铑-锆  
Rhodium-Zirconium(137)

部分相图 Partial phase diagram

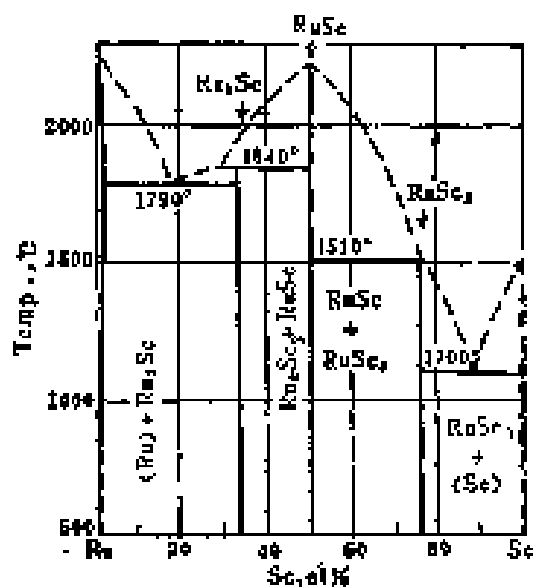


Fig.360 Ru-Se 钌-硒  
Ruthenium-Scandium(210)

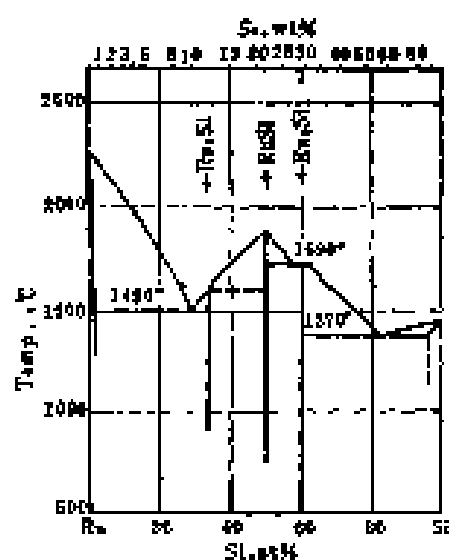


Fig.361 Ru-Si 鈣-鈦  
Ruthenium-Silicon(211)

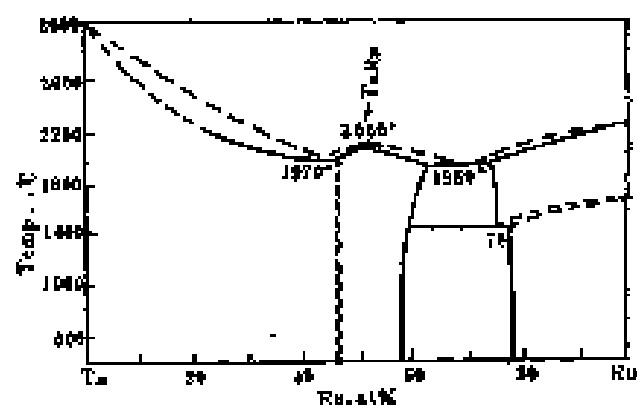


Fig.362 Ru-Ta 鈣-鈦  
Ruthenium-Tantalum(212)

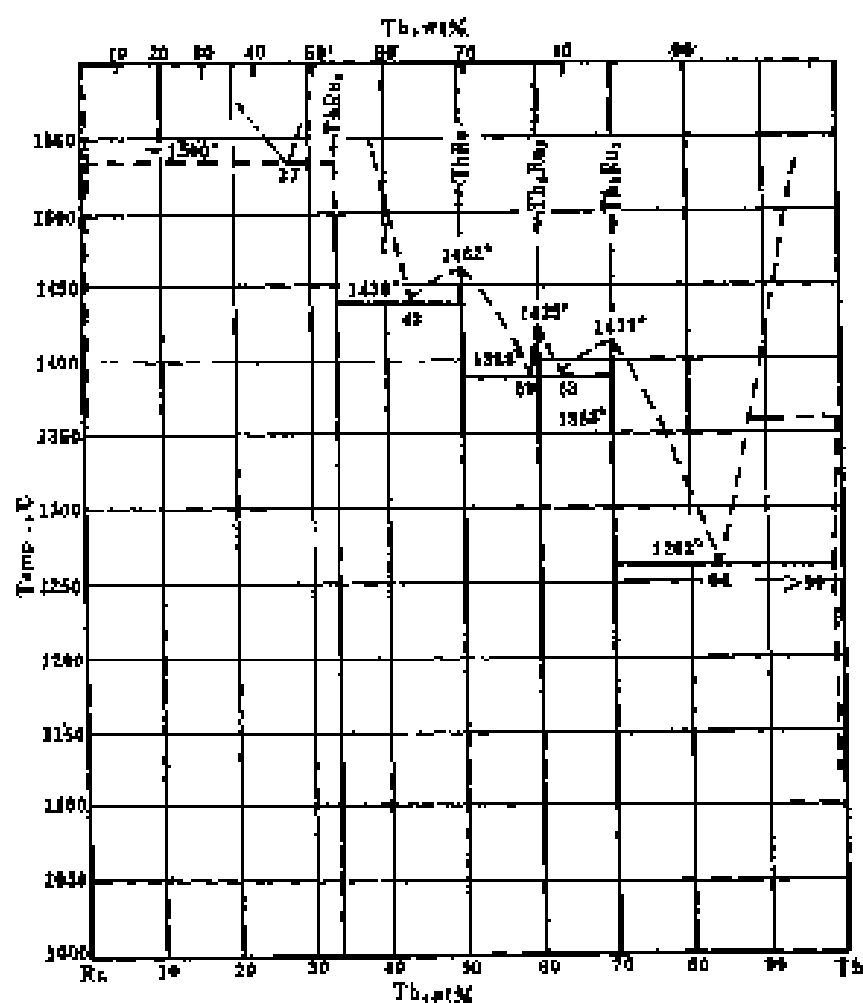


Fig.363 Ru-Th 鈣-鈦 Ruthenium-Thorium(207)

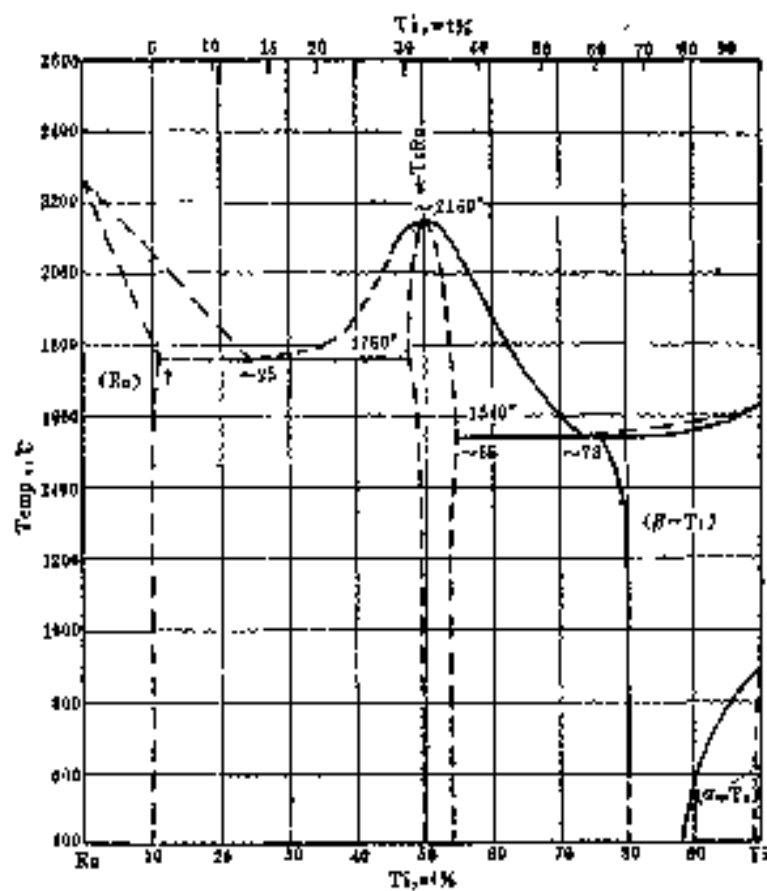


Fig.364 Ru-Ti 鈳-鈦 Ruthenium-Titanium(213)

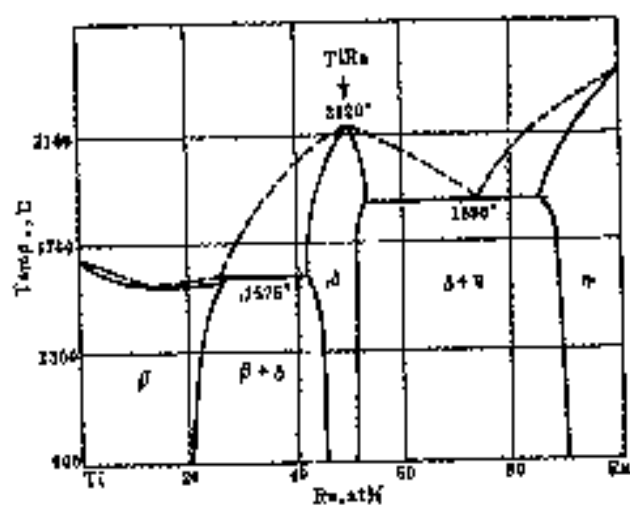


Fig.365 Ru-Ti 鈳-鈦 Ruthenium-Titanium(214)

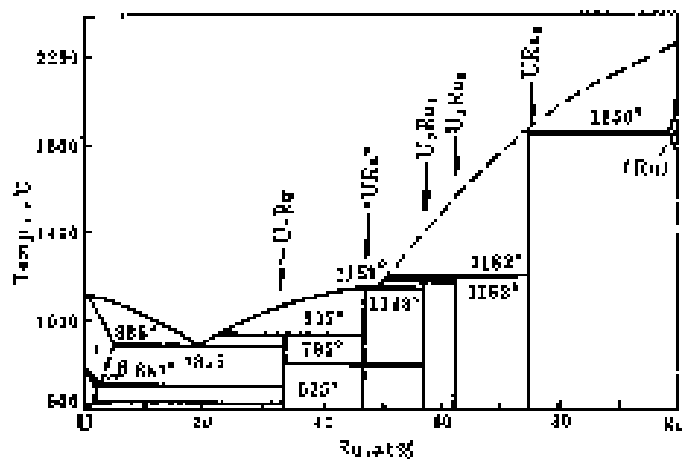


Fig. 366 Ru-U 钌-铀  
Ruthenium-Uranium (216)

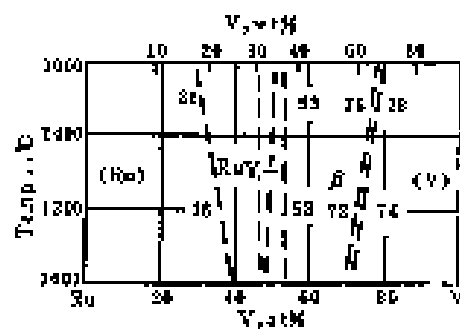


Fig. 367 Ru-V 钌-钒  
Ruthenium-Vanadium (3)

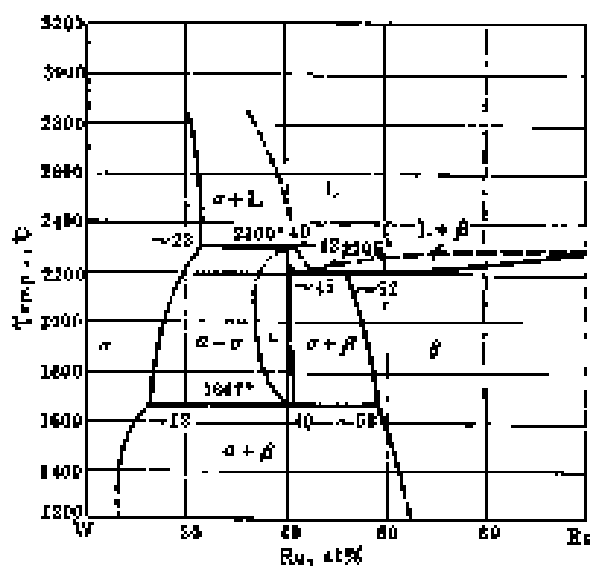


Fig. 368 Ru-W 钌-钨  
Ruthenium-Tungsten (218)

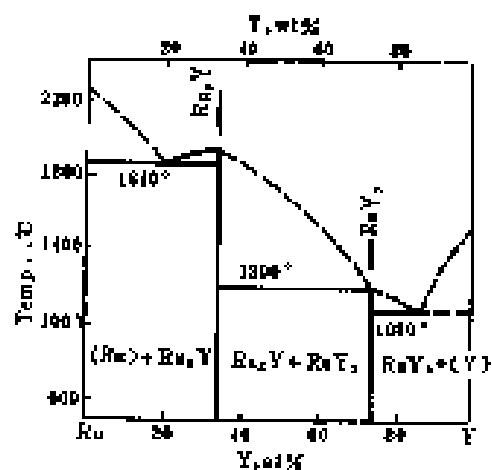


Fig. 369 Ru-Y 钌-钇  
Ruthenium-Yttrium (217)

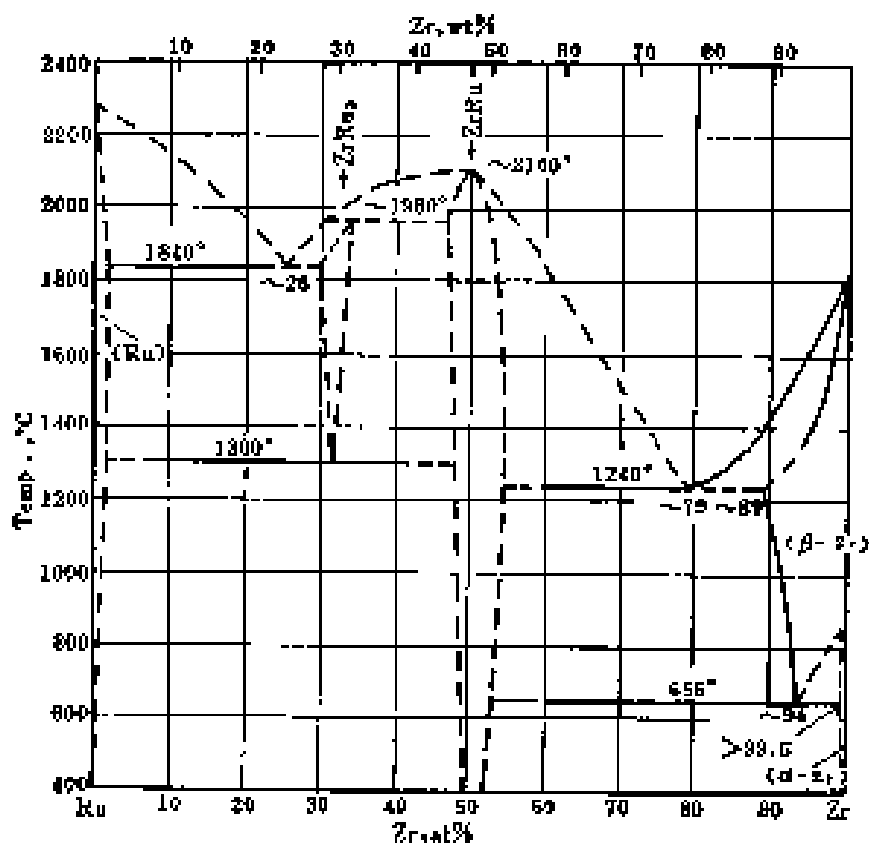


Fig.370 Ru-Zr 相-图 Ruthenium-Zirconium(213)

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**第 二 部 分 · 三 元 系**  
**Part Two · Ternary Systems**

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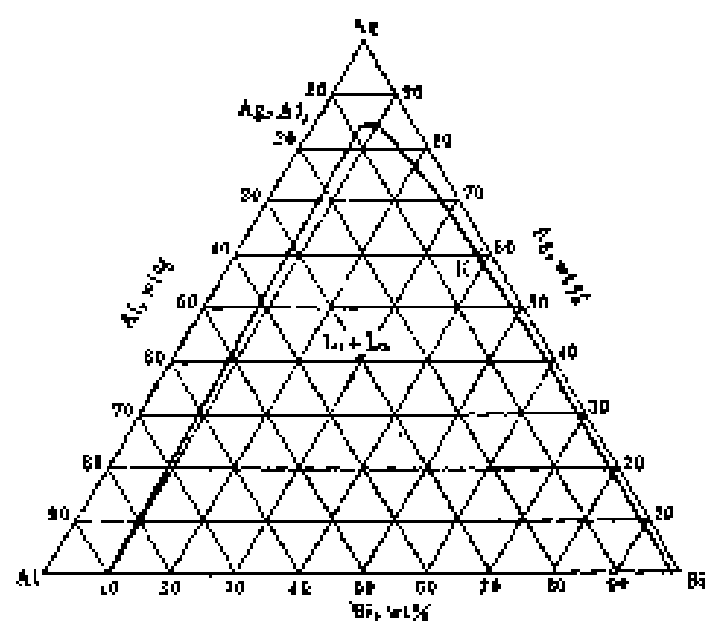


Fig. 371 Ag-Al-Bi 銀-鋁-鉍 Silver-Aluminum-Bismuth (1)

800°C 等溫截面 Isotherm at 800°C

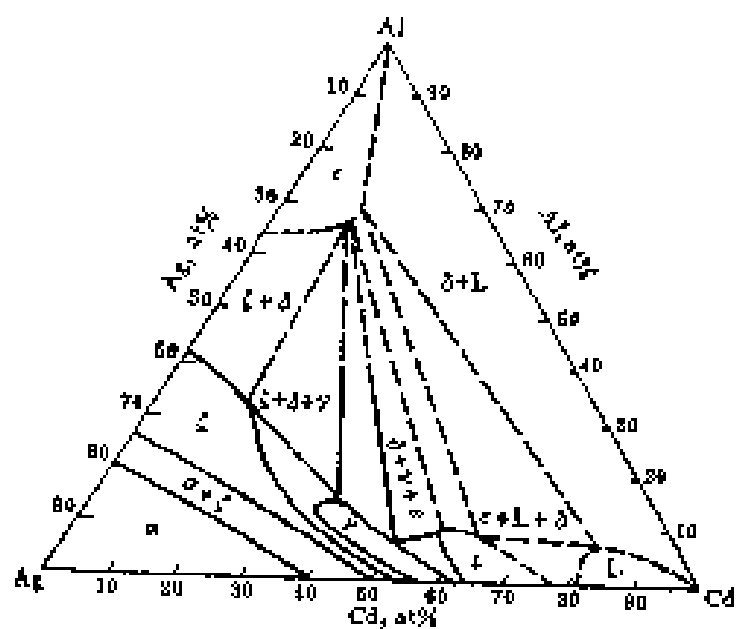


Fig. 372 Ag-Al-Cd 銀-鋁-鎘 Silver-Aluminum-Cadmium (2)

500°C 等溫截面 Isotherm at 500°C

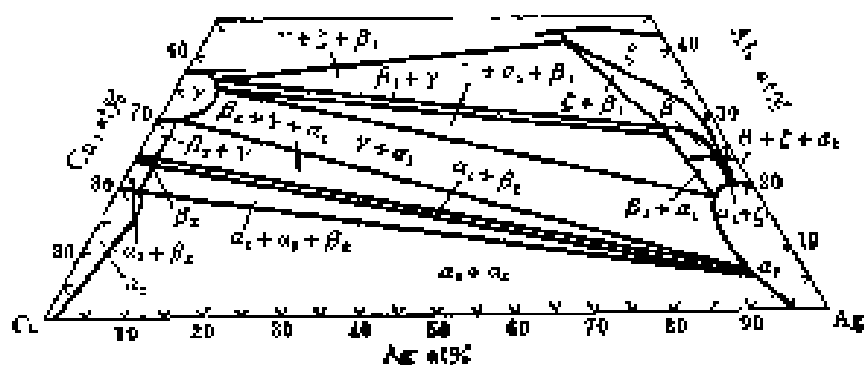


Fig. 373 Ag-Al-Cu 銀-鋁-銅 Silver-Aluminum-Copper(3)

571°C等温断面 Isotherm at 571°C

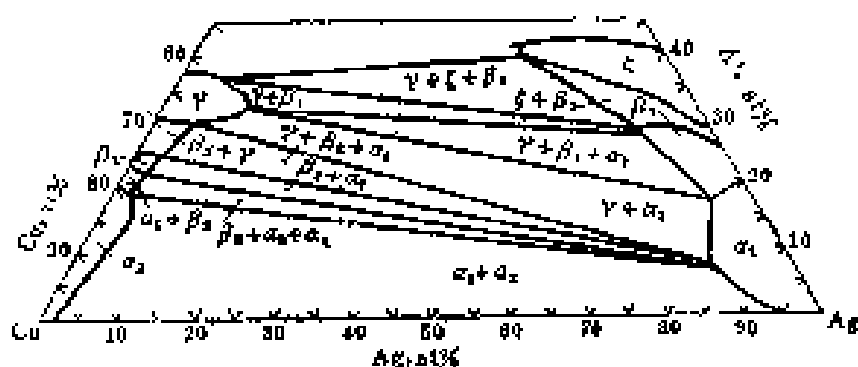


Fig. 374 Ag-Al-Cu 銀-鋁-銅 Silver-Aluminum-Copper(3)

623°C等温断面 Isotherm at 623°C

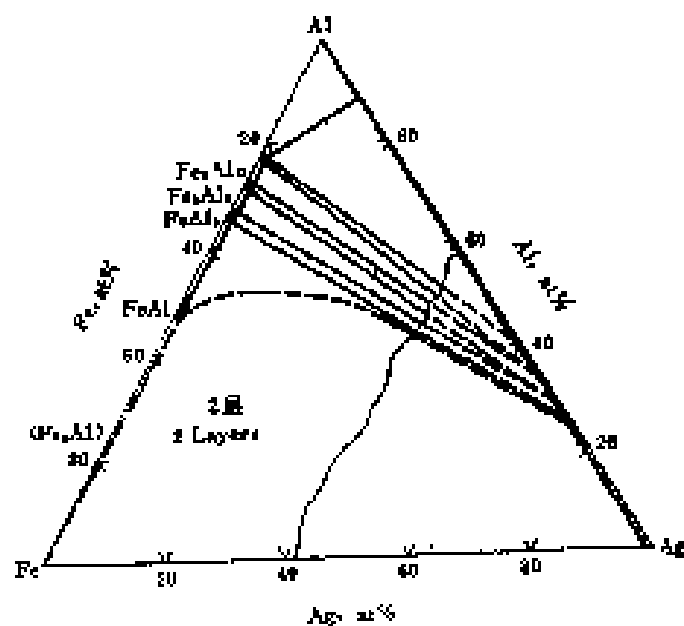


Fig. 375 Ag-Al-Fe 銀-鋁-鉄 Silver-Aluminum-Iron(4)

600°C等温断面 Isotherm at 600°C



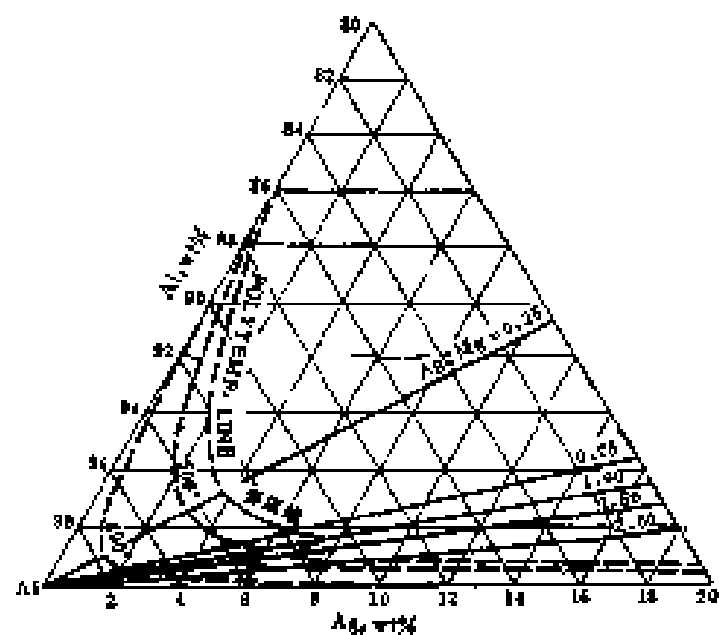


Fig.376 Ag-Al-Mg 銀-鋁-鎂 Silver-Aluminum-Magnesium (5)  
等溫溶解度 Isothermal Solubilities

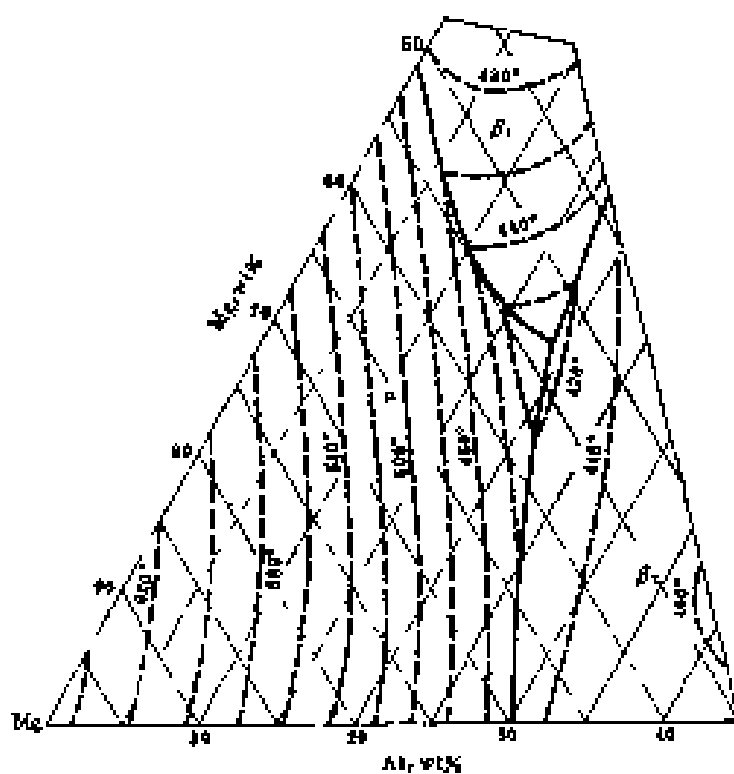


Fig.377 Ag-Al-Mg 銀-鋁-鎂 Silver-Aluminum-Magnesium (6)  
液相面 Liquidus

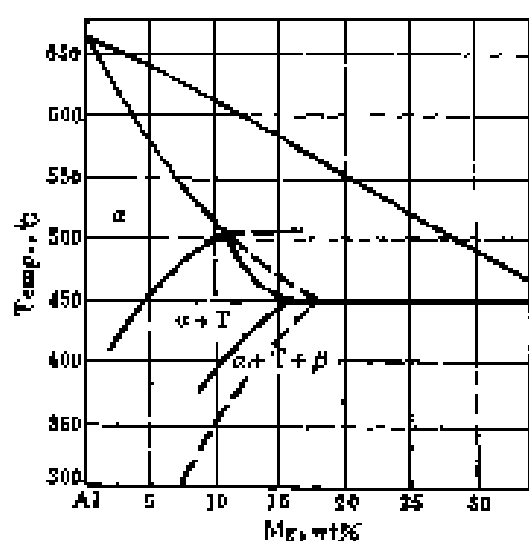


Fig. 378 Ag-Al-Mg 銀-鋁-鎂  
Silver-Aluminum-Magnesium (7)

Ag 4.5% 的截面 Section at Ag 4.5%

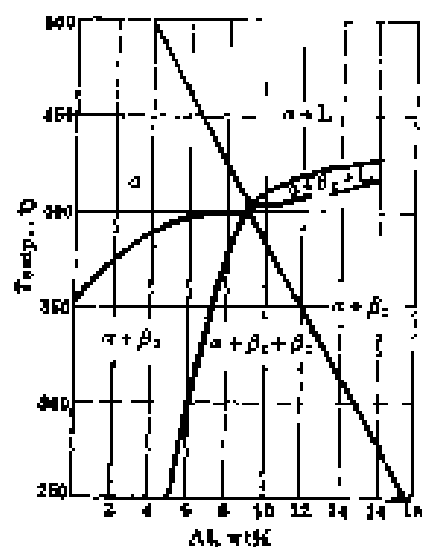


Fig. 379 Ag-Al-Mg 銀-鋁-鎂  
Silver-Aluminum-Magnesium (7)

Ag 5.1% 的截面 Section at Ag 5.1%

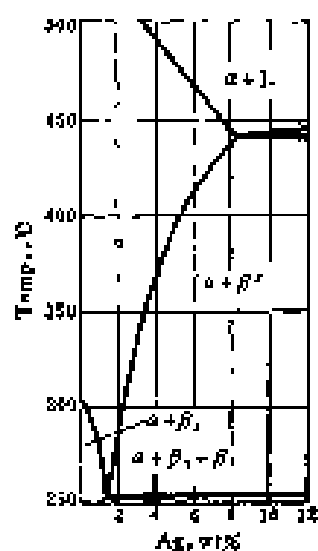


Fig. 380 Ag-Al-Mg 銀-鋁-鎂  
Silver-Aluminum-Magnesium (8)

Ag 5.1% 的截面 Section at Ag 5.1%

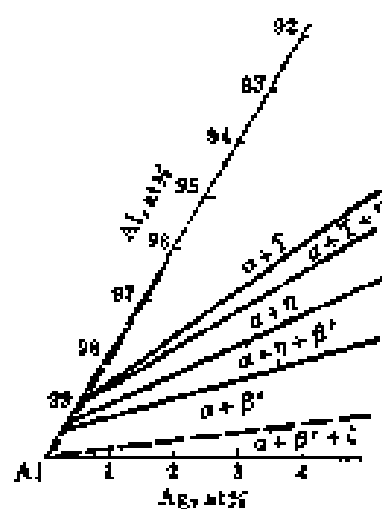


Fig. 381 Ag-Al-Mg 銀-鋁-鎂  
Silver-Aluminum-Magnesium (8)

200°C 部分截面 Partial Section at 200°C

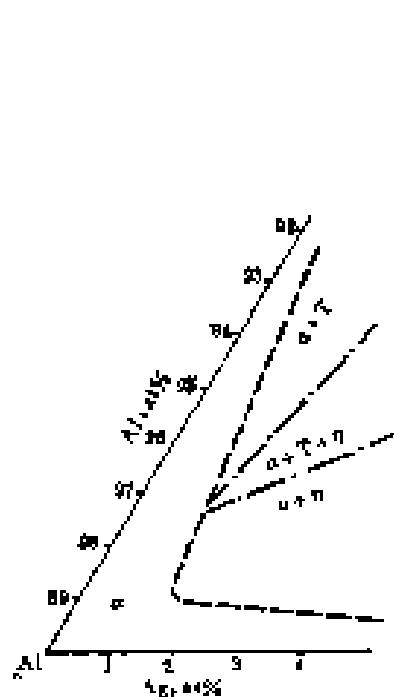


Fig. 382 Ag-Al-Mg 銀-鋁-鎂  
Silver-Aluminum-Magnesium (g)

500°C部分截面 Partial Section at 500°C

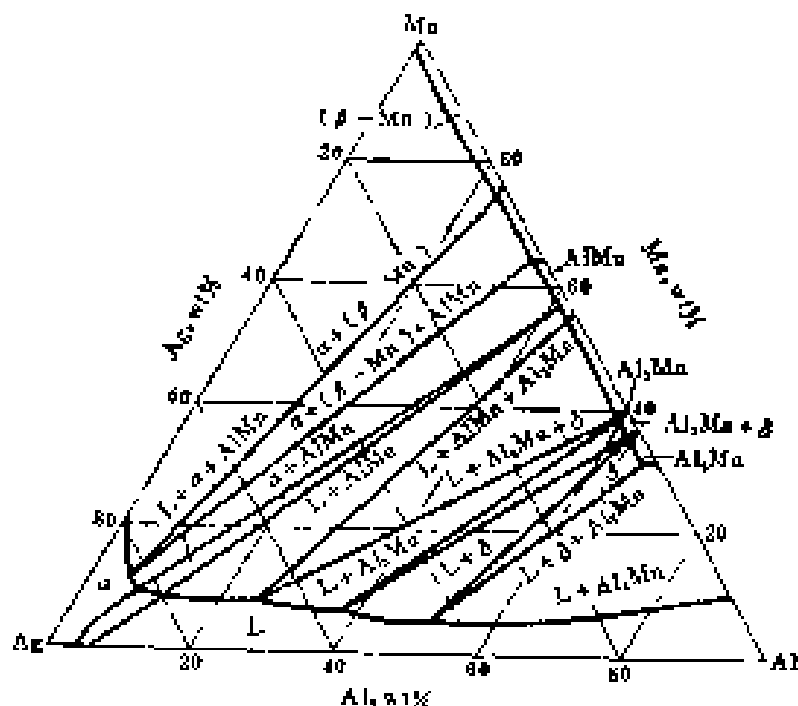


Fig. 384 Ag-Al-Mn 銀-鋁-錳  
Silver-Aluminum-Manganese (g)

400°C等溫截面 Isotherm at 400°C

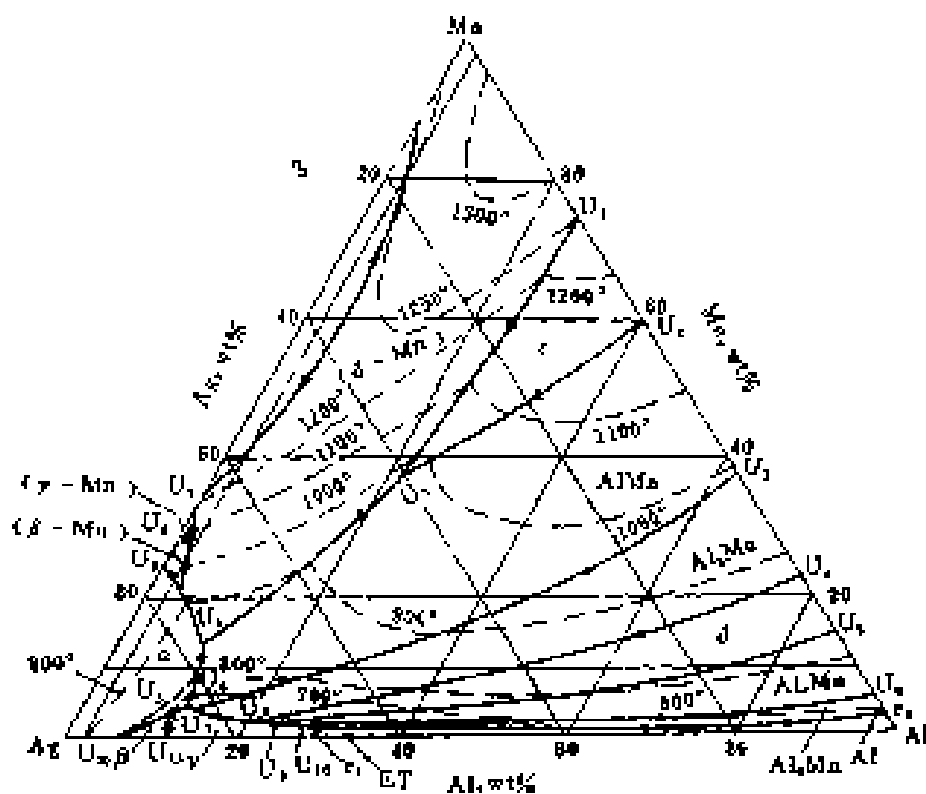


Fig. 383 Ag-Al-Mn 銀-鋁-錳 Silver-Aluminum-Manganese (g)

液相面 Liquidus

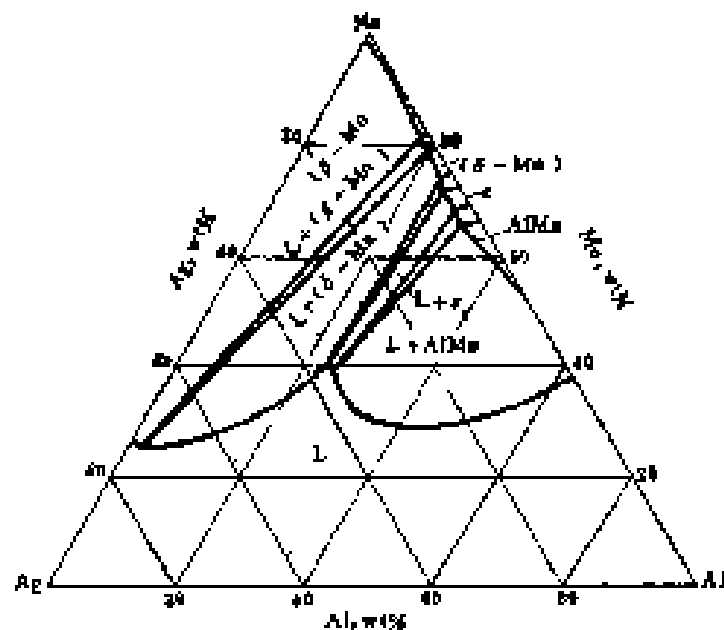


Fig. 385 Ag-Al-Mn 銀-鋁-錳 Silver-Aluminum-Manganese(9)  
1000°C等溫截面 Isotherm at 1000°C

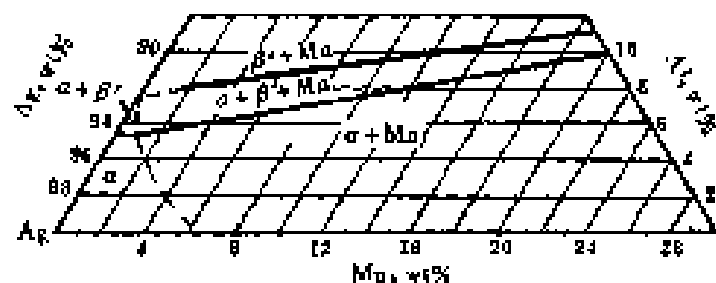


Fig. 386 Ag-Al-Mn 銀-鋁-錳 Silver-Aluminum-Manganese(10)  
20°C等溫截面 Isotherm at 20°C

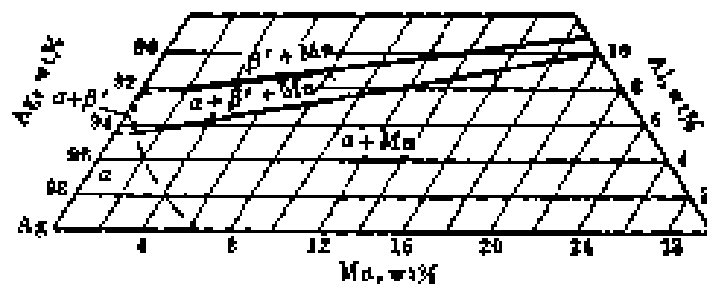


Fig. 387 Ag-Al-Mn 銀-鋁-錳 Silver-Aluminum-Manganese(10)  
200°C等溫截面 Isotherm at 200°C

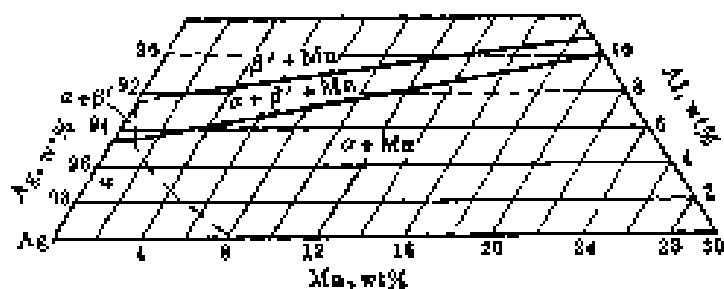


Fig. 388 Ag-Al-Mn 銀-鋁-錳 Silver-Aluminum-Manganese (10)

400°C等溫截面 Isotherm at 400°C

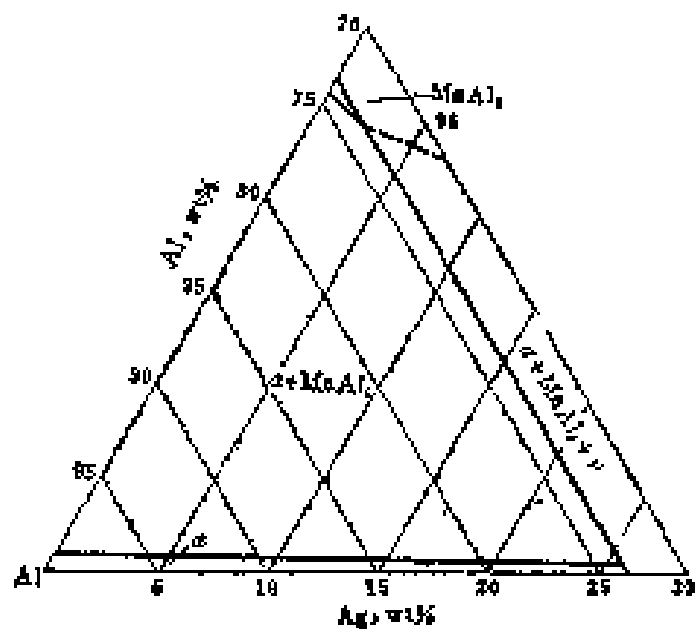


Fig. 389 Ag-Al-Mn 銀-鋁-錳 Silver-Aluminum-Manganese (11)

495°C等溫截面 Isotherm at 495°C

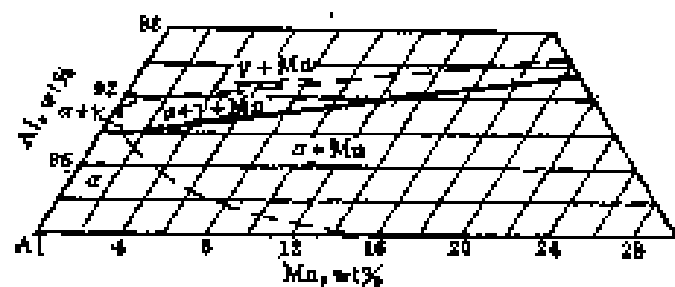
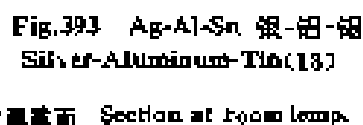
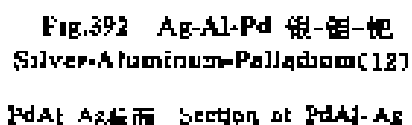
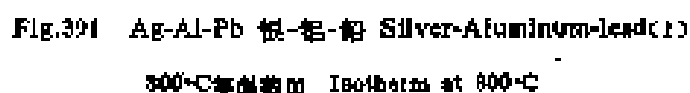
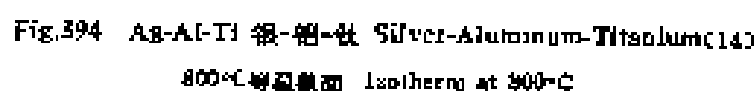


Fig. 390 Ag-Al-Mn 銀-鋁-錳 Silver-Aluminum-Manganese (12)

600°C等溫截面 Isotherm at 600°C





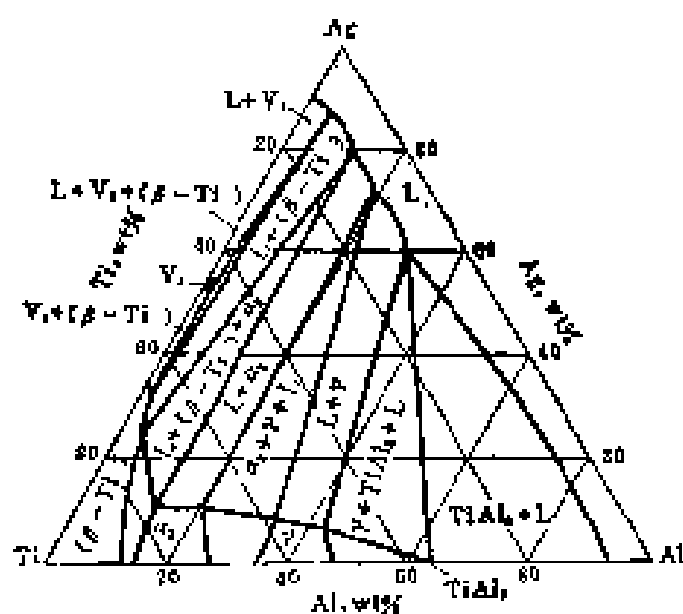


Fig. 396 Ag-Al-Ti 銀-鋁-鈦  
Silver-Aluminum-Titanium(14)

1100°C 等溫線圖 Isotherm at 1100°C

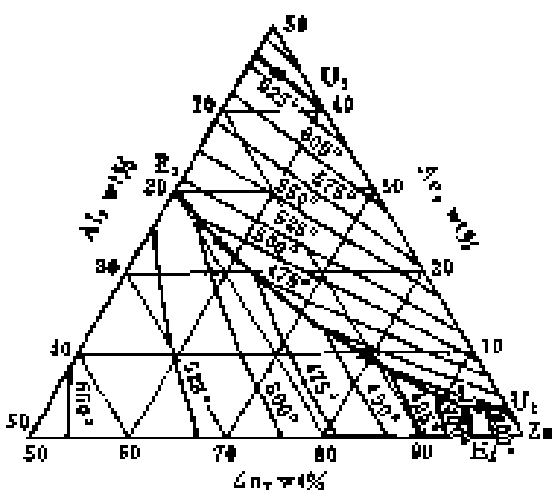


Fig. 398 Ag-Al-Zn 銀-鋁-鋅  
Silver-Aluminum-Zinc(16)

液相面 Liquidus

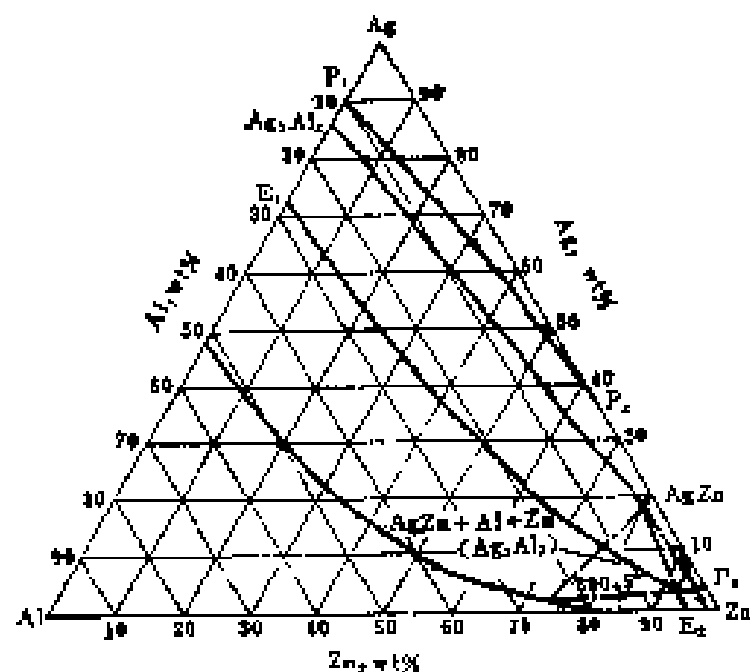


Fig. 397 Ag-Al-Zn 銀-鋁-鋅 Silver-Aluminum-Zinc(15)

投影圖 Projection



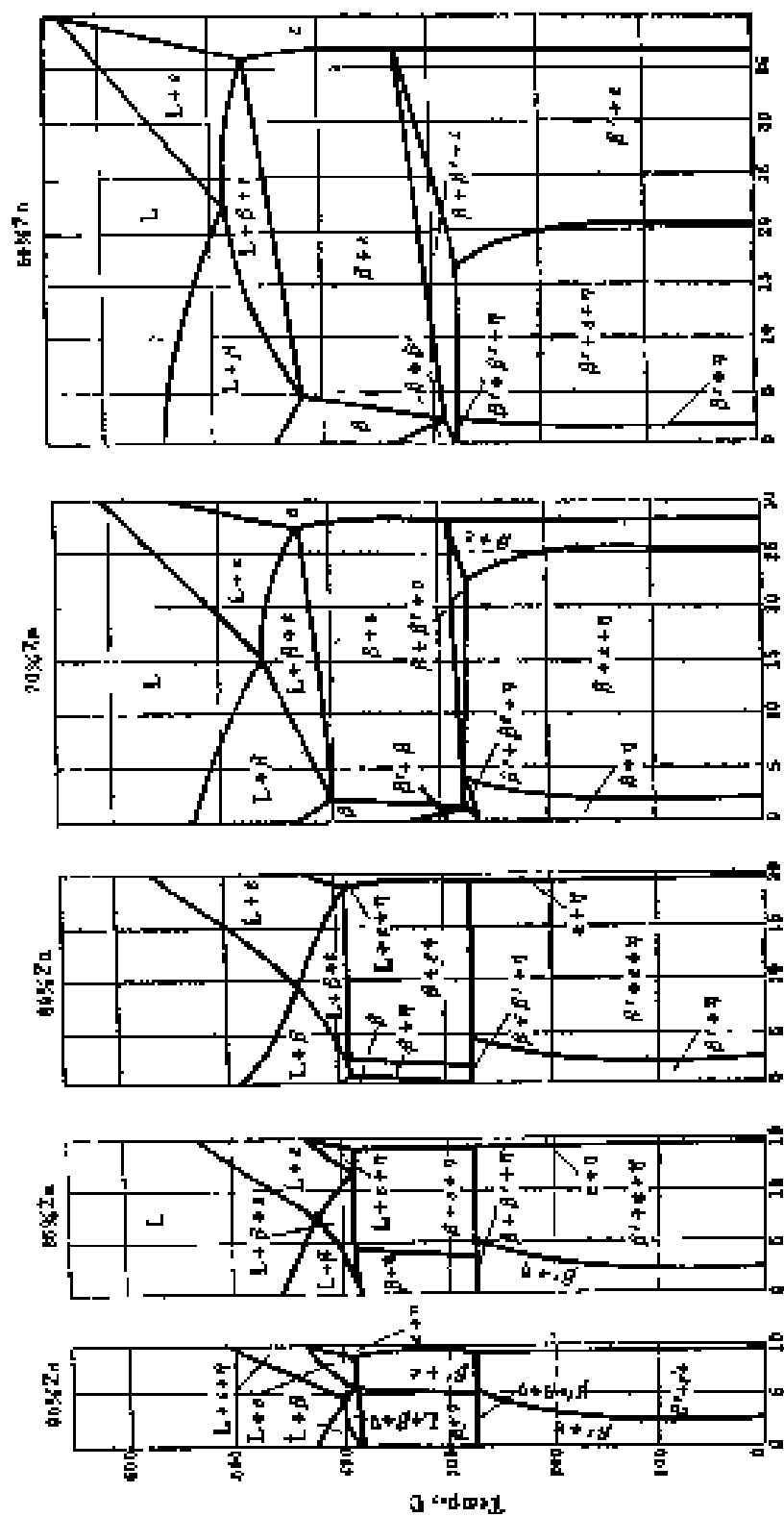


Fig. 309 Ag-Al-Zn 銀-鋁-鋅 Silver-Aluminum-Zinc (80)  
相図断面 Section of phase diagram

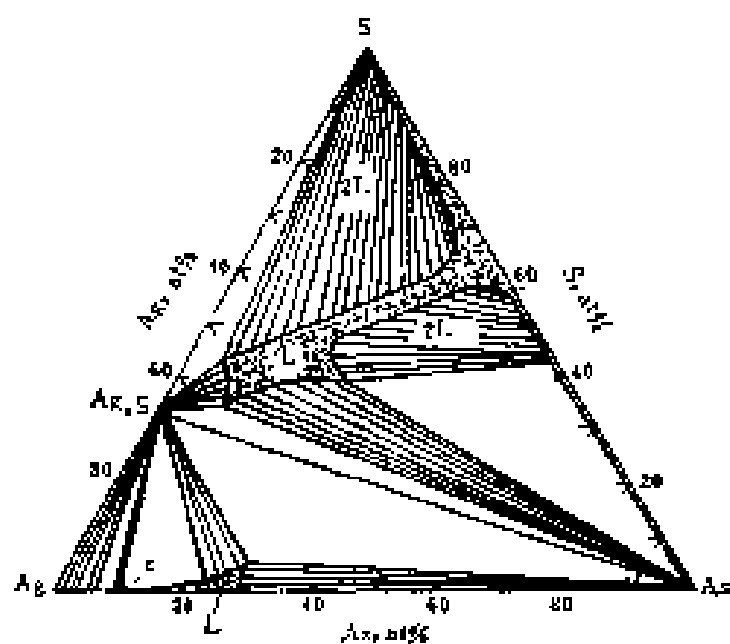


Fig.400 Ag-As-S 銀-砷-硫 Silver-Arsenic-Sulphur(17)

173°C等溫截面 Isotherm at 173°C

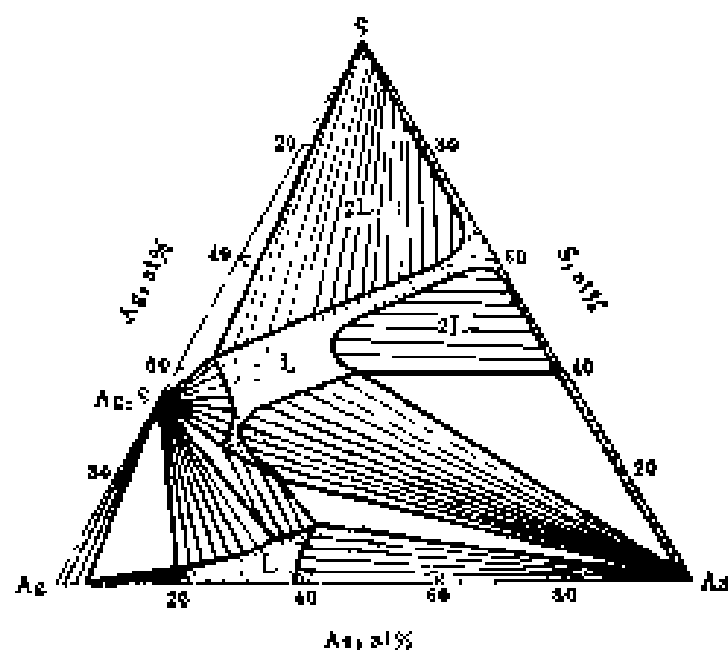


Fig.401 Ag-As-S 銀-砷-硫 Silver-Arsenic-Sulfur(17)

626°C等溫截面 Isotherm at 626°C

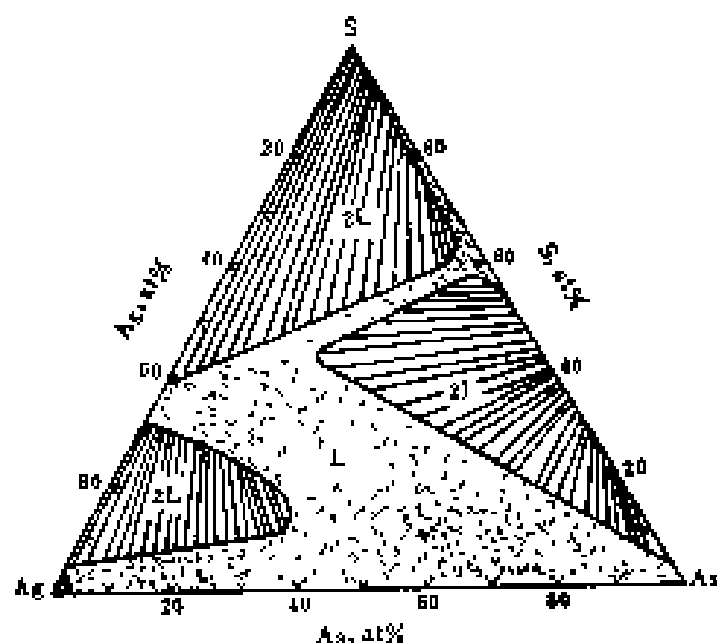


Fig. 402 Ag-As-S 銀-砷-硫  
Silver-Arsenic-Sulfur (17)

820°C等溫線面 Isotherm at 820°C

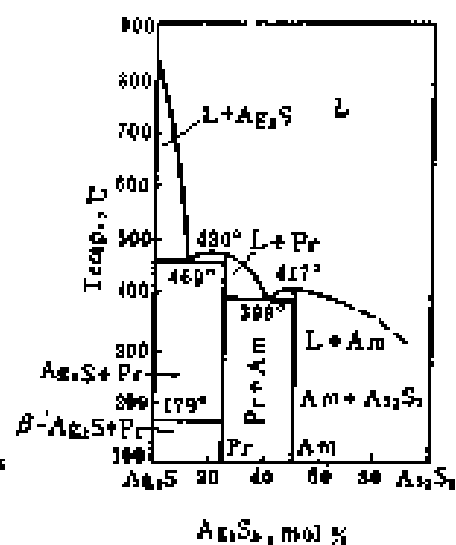


Fig. 403 Ag-As-S 銀-砷-硫  
Silver-Arsenic-Sulfur (18)

$Ag_2S-As_2S_3$  截面 Section at  $Ag_2S-As_2S_3$

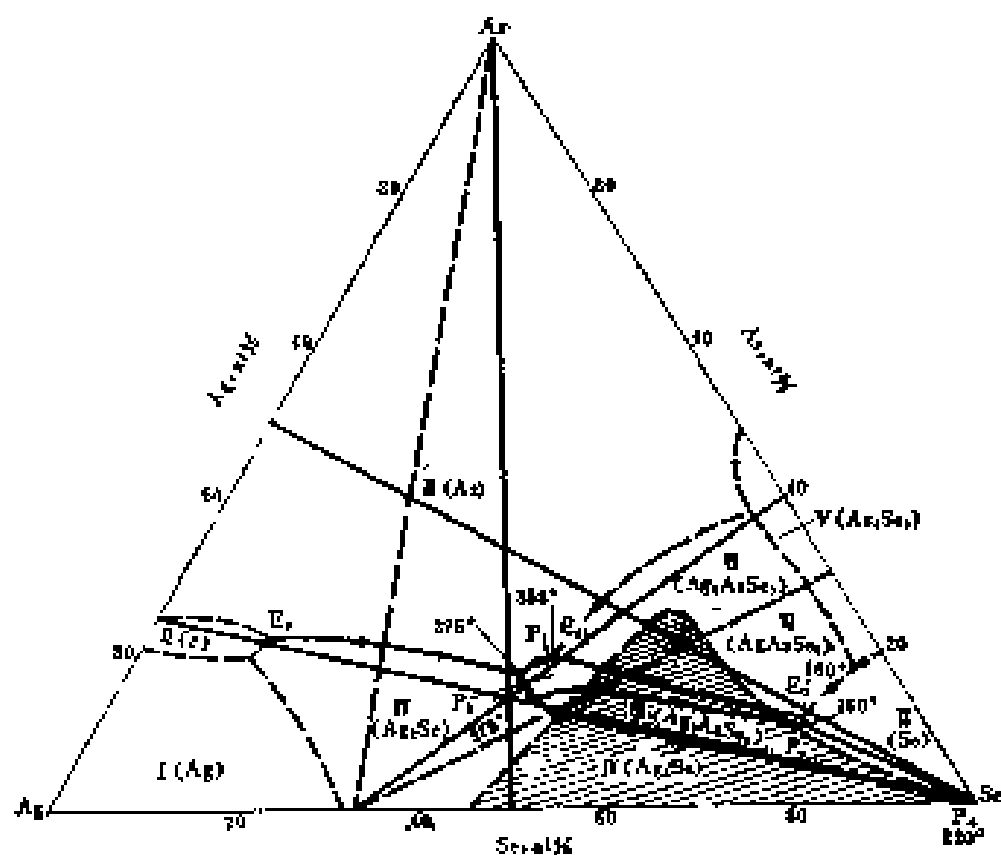


Fig. 404 Ag-As-Se 銀-砷-碲 Silver-Arsenic-Selenium (19)

液相面 Liquidus

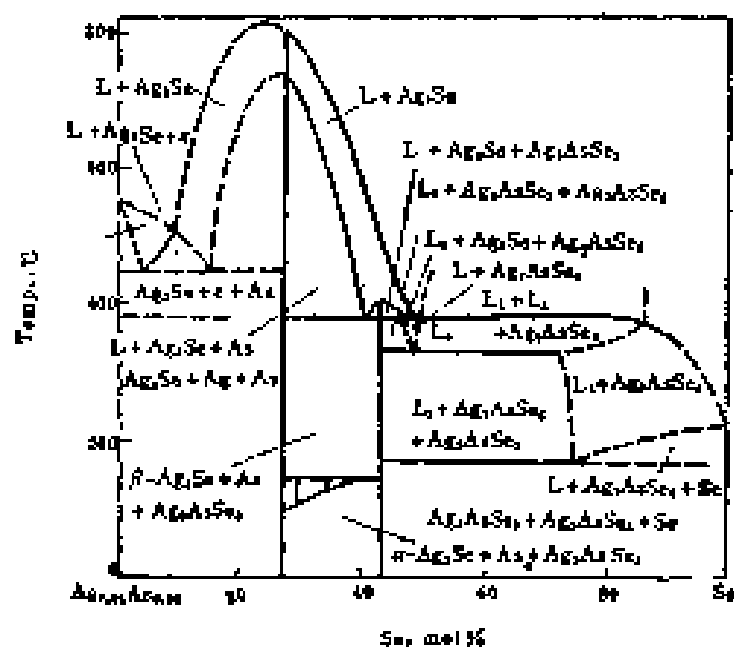


Fig.405 Ag-As-Se 銀-砷-碲 Silver-Arsenic-Selenium (18)

$Ag_{10}As_{10}Se_{10}$ —Se 截面 Section at  $Ag_{10}As_{10}Se_{10}$ —Se

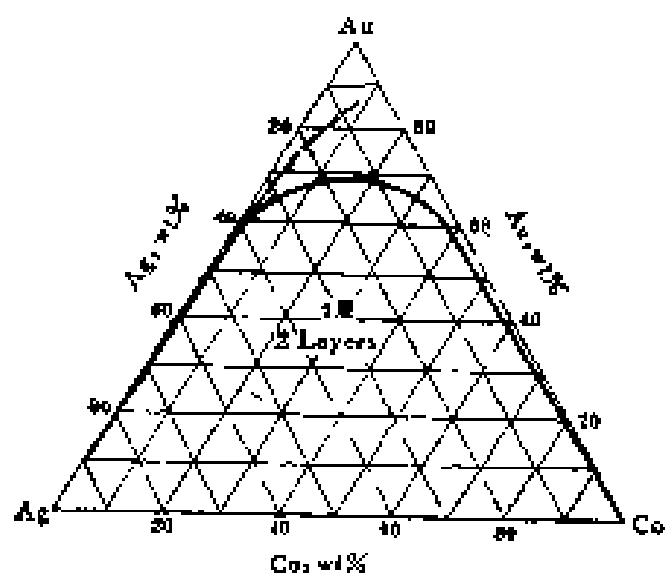


Fig.406 Ag-Au-Co 銀-金-鈷 Silver-Gold-Cobalt (20)

富金截面 Section at room temperature

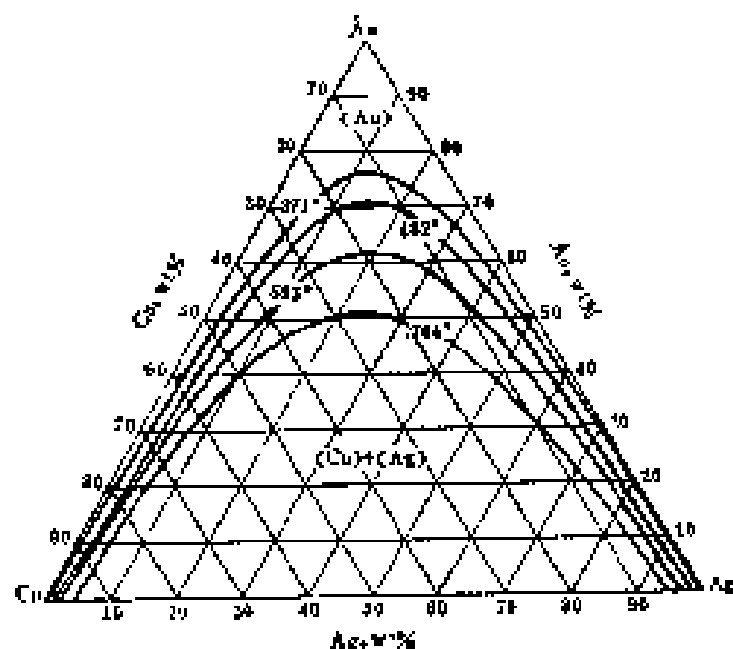


Fig.407 Ag-Au-Cu 银-金-铜 Silver-Gold-Copper(21)  
固相面 Solidus

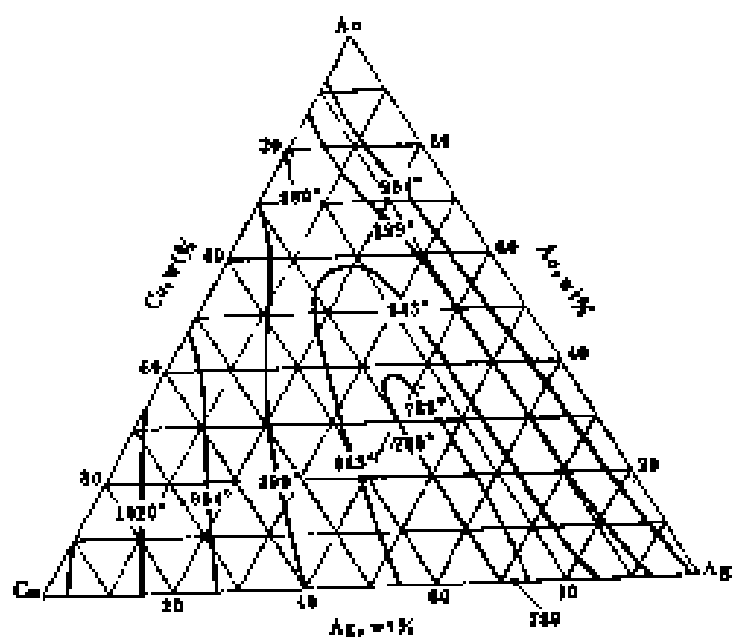


Fig.408 Ag-Au-Cu 银-金-铜 Silver-Gold-Copper(21)  
液相面 Liquidus

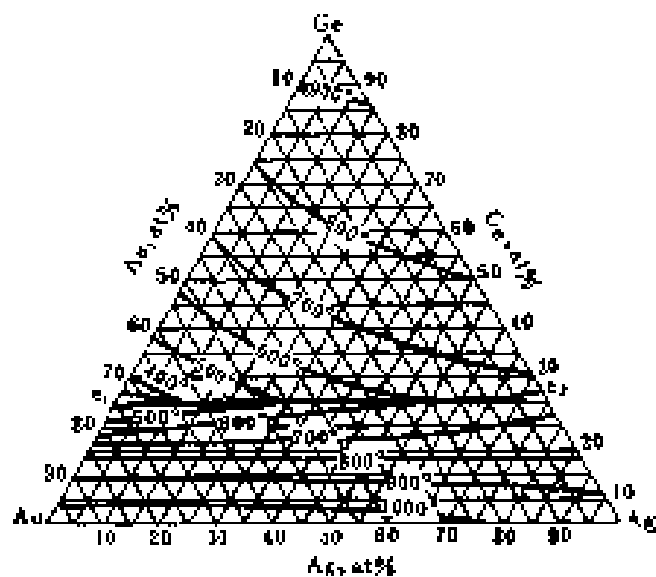


Fig. 409 Ag-Au-Ge 銀-金-鎢  
Silver-Gold-Germanium (22)

液相面 Liquidus

Fig. 410 Ag-Au-Ni 銀-金-鎳  
Silver-Gold-Nickel (23)

液相面 Liquidus

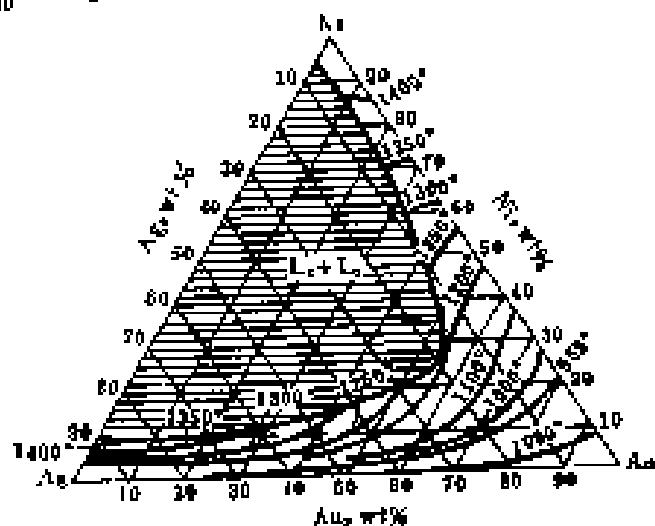
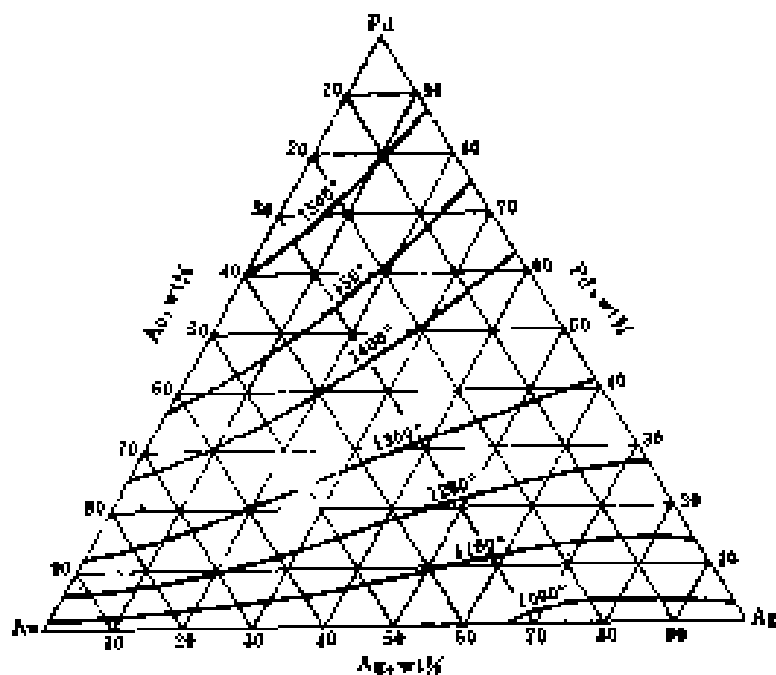


Fig. 411 Ag-Au-Pd 銀-金-鈀  
Silver-Gold-Palladium (24)

液相面 Liquidus



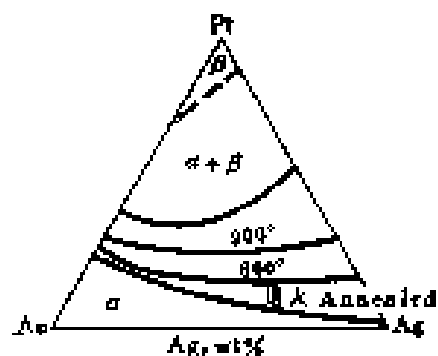


Fig.412 Ag-Au-Pt 银-金-铂  
Silver-Gold-Platinum(25)

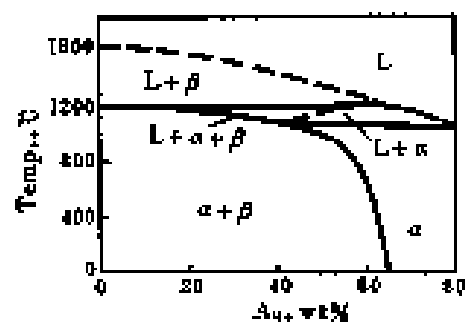


Fig.413 Ag-Au-Pt 银-金-铂  
Silver-Gold-Platinum(26)

Ag20%截面 Section at Ag 20%

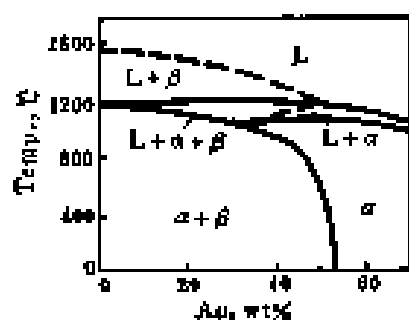


Fig.414 Ag-Au-Pt 银-金-铂  
Silver-Gold-Platinum(27)

Ag30%截面 Section at Ag 30%

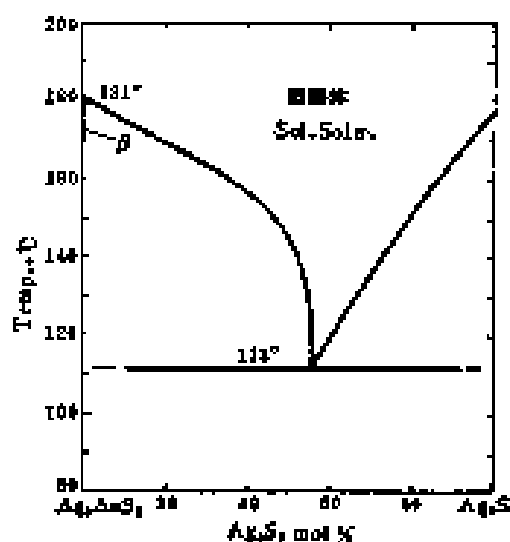
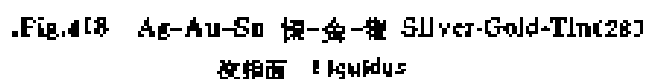
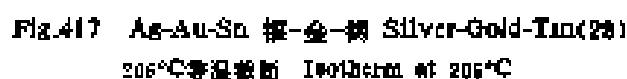


Fig.415 Ag-Au-S 银-金-硫  
Silver-Gold-Sulphur(28)

Ag, AuS<sub>1</sub>—Ag<sub>2</sub>S截面 Section at Ag, AuS<sub>1</sub>—Ag<sub>2</sub>S







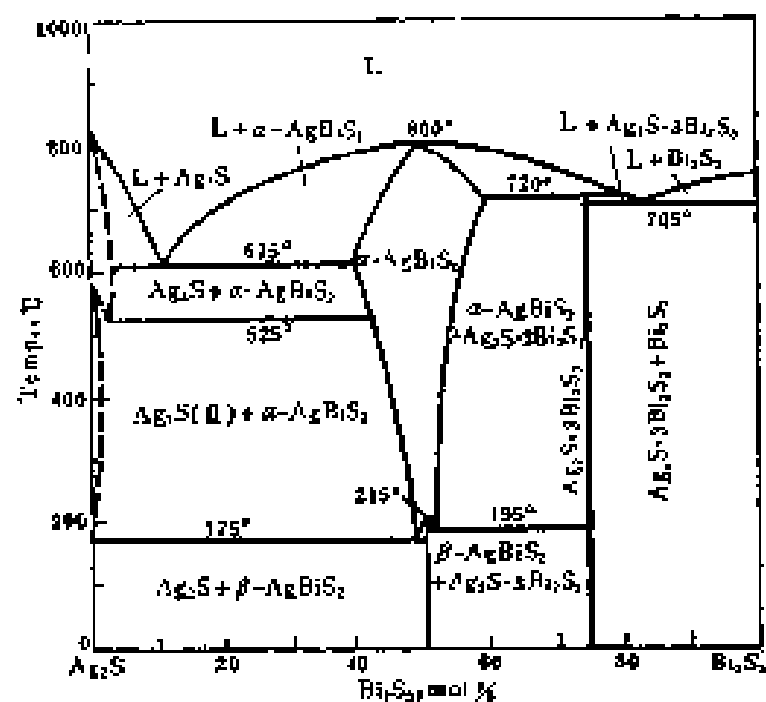


Fig. 421 Ag-Bi-S 銀-鉍-硫 Silver-Bismuth-Sulfur (29)

$\text{Ag}_2\text{S}-\text{Bi}_2\text{S}_3$  截面 Section at  $\text{Ag}_2\text{S}-\text{Bi}_2\text{S}_3$

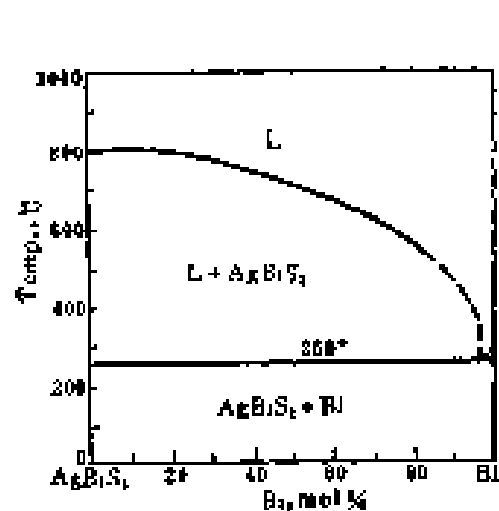


Fig. 422 Ag-Bi-S 銀-鉍-硫  
Silver-Bismuth-Sulfur (29)

$\text{AgBiS}_2$ -Bi 截面 Section at  $\text{AgBiS}_2$ -Bi

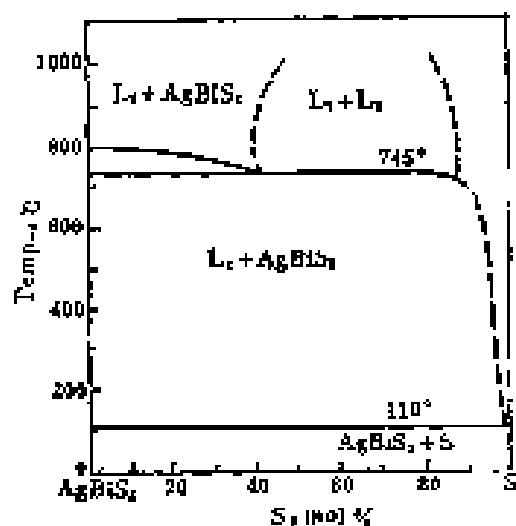


Fig. 423 Ag-Bi-S 銀-鉍-硫  
Silver-Bismuth-Sulfur (29)

$\text{AgBiS}_2$ -S 截面 Section at  $\text{AgBiS}_2$ -S

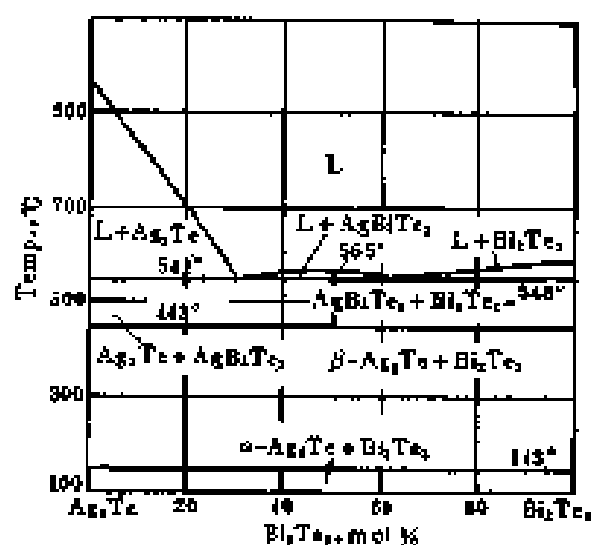


Fig.424 Ag-Bi-Te 銀-鉍-碲 Silver-Bismuth-Tellurium(30)

Ag<sub>2</sub>Te-Bi<sub>2</sub>Te<sub>3</sub> 截面 Section at Ag<sub>2</sub>Te-Bi<sub>2</sub>Te<sub>3</sub>

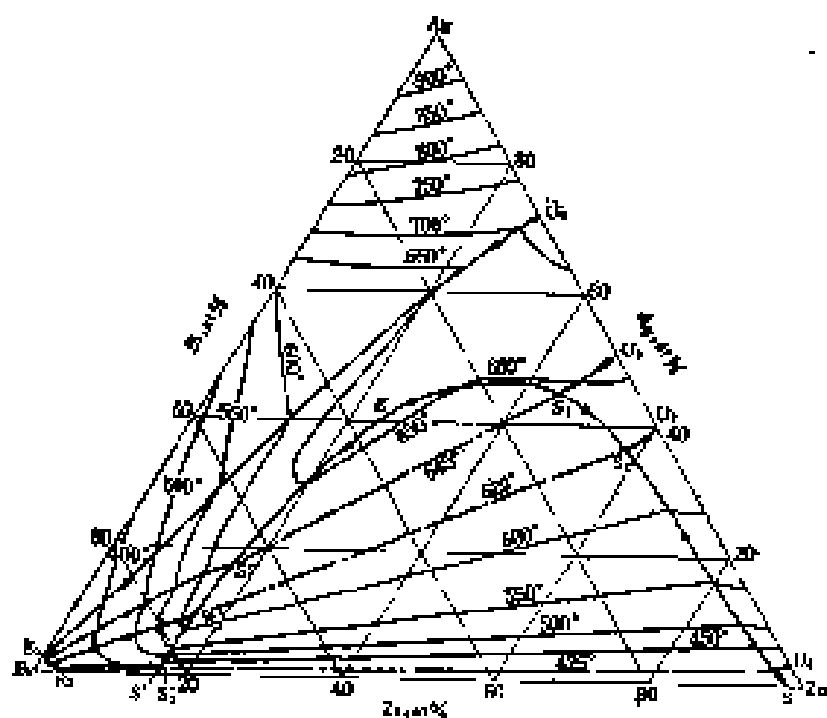


Fig.425 Ag-Bi-Zn 銀-鉍-鋅 Silver-Bismuth-Zinc(31)

液相面 Liquidus

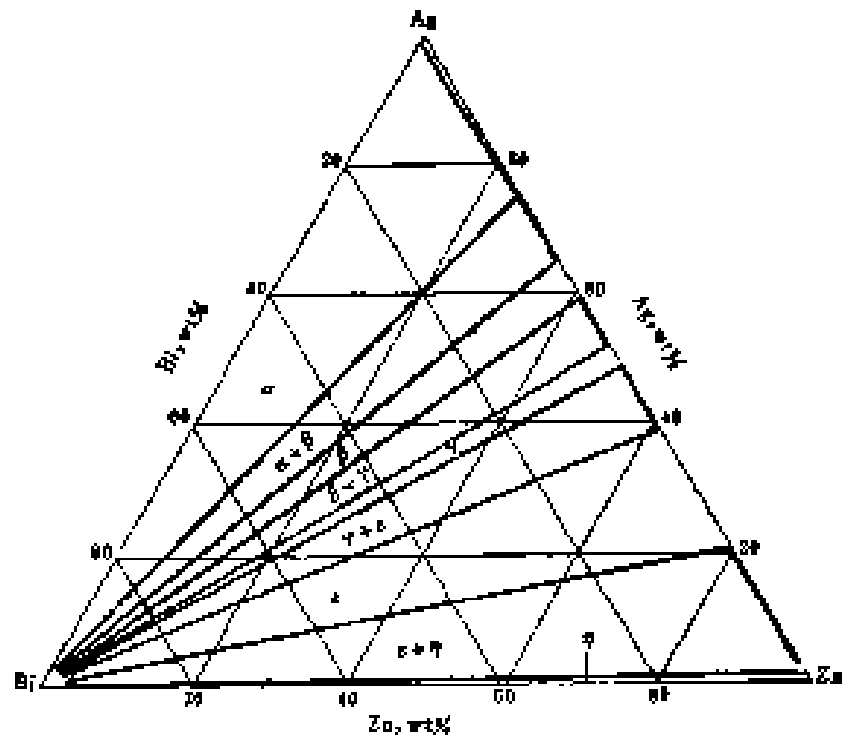


Fig. 426 Ag-Bi-Zn 銀-銻-鋅 Silver-Bismuth-Zinc(31)

室溫斷面 Section at room temperature

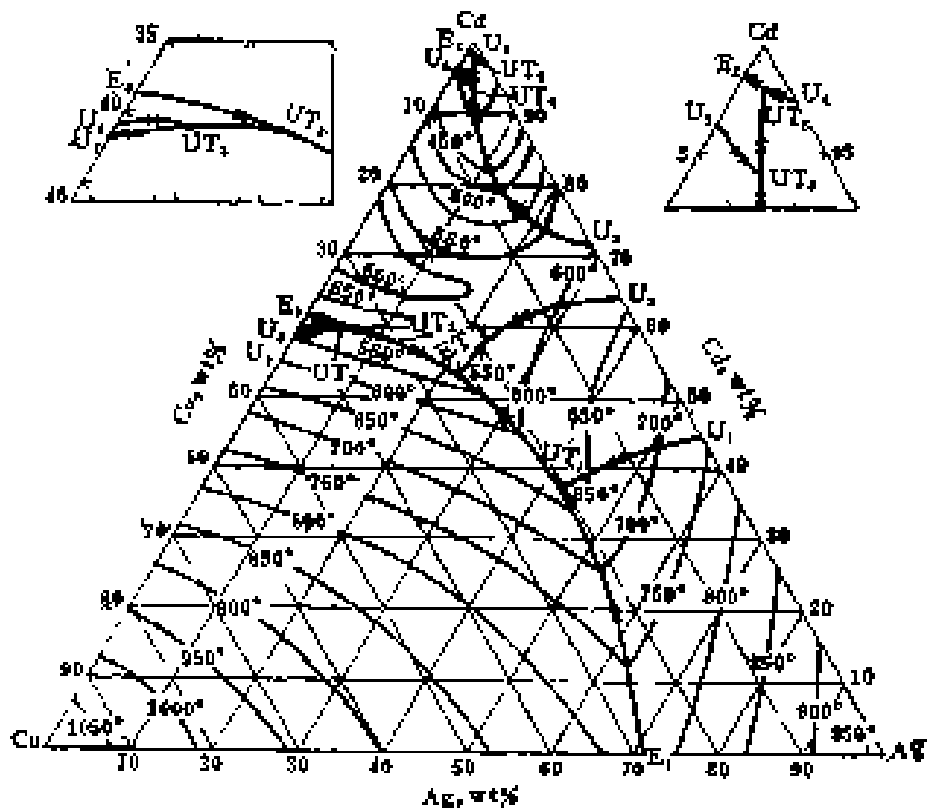


Fig. 427 Ag-Cd-Cu 銀-鈹-銅 Silver-Cadmium-Copper(32)

液相面 Liquidus

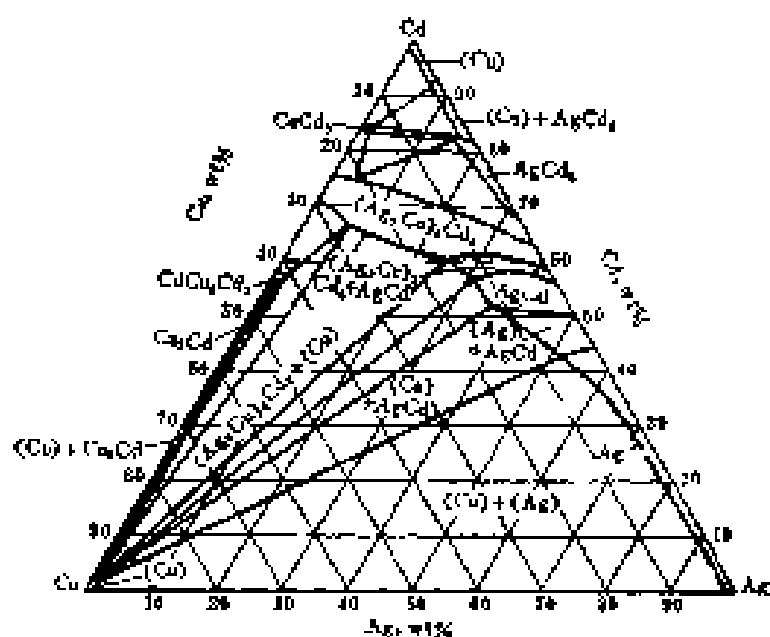


Fig. 428 Ag-Cd-Cu 銀-鎘-銅 Silver-Cadmium-Copper(33)

300°C 等溫線圖 Isotherm at 300°C

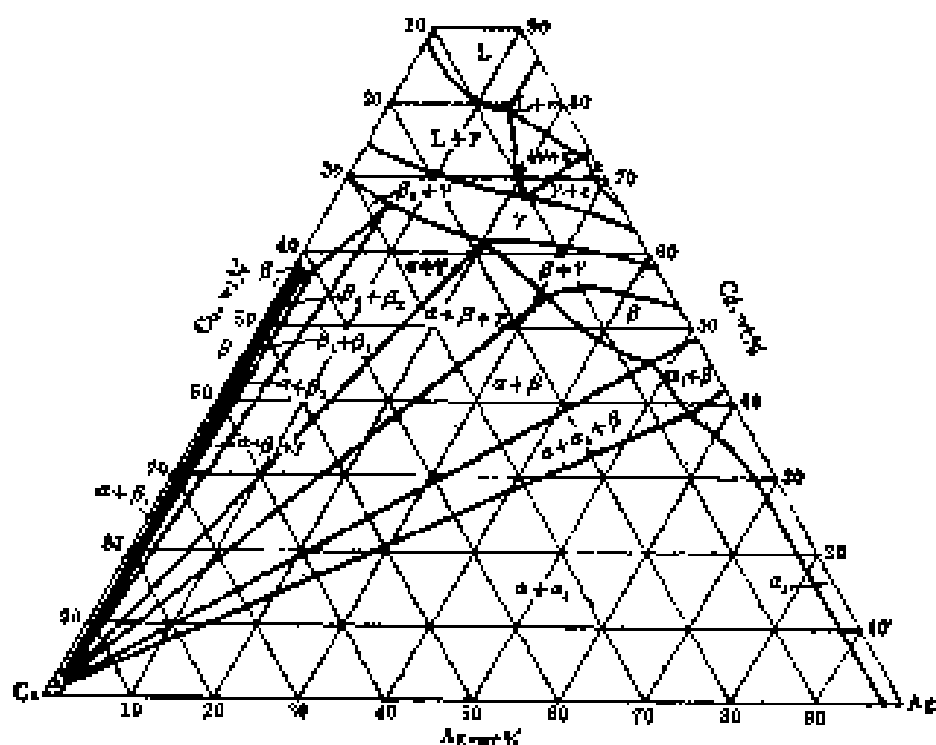


Fig. 429 Ag-Cd-Cu 銀-鎘-銅 Silver-Cadmium-Copper(33)

500°C 等溫線圖 Isotherm at 500°C

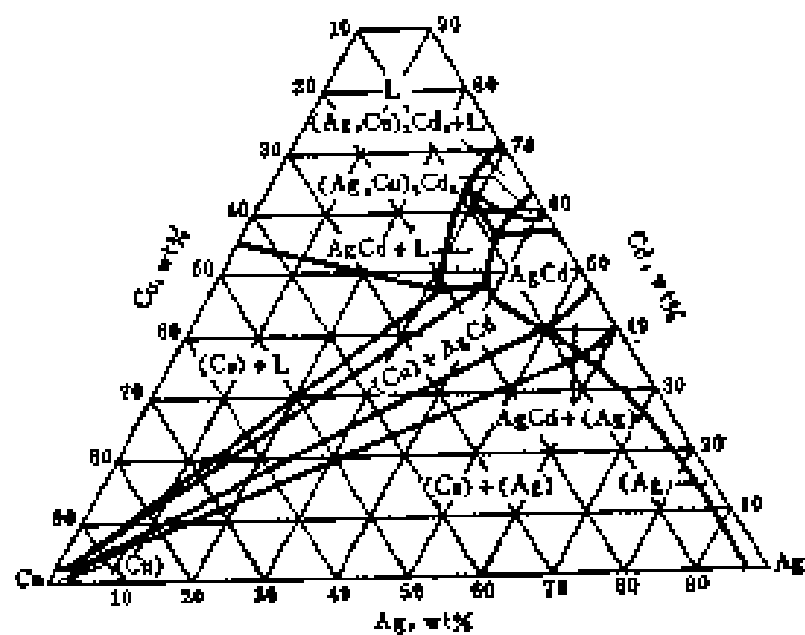


Fig.430 Ag-Cd-Cu 銀-鎘-銅 Silver-Cadmium-Copper(33)

500°C 等溫線圖 Isotherm at 500°C

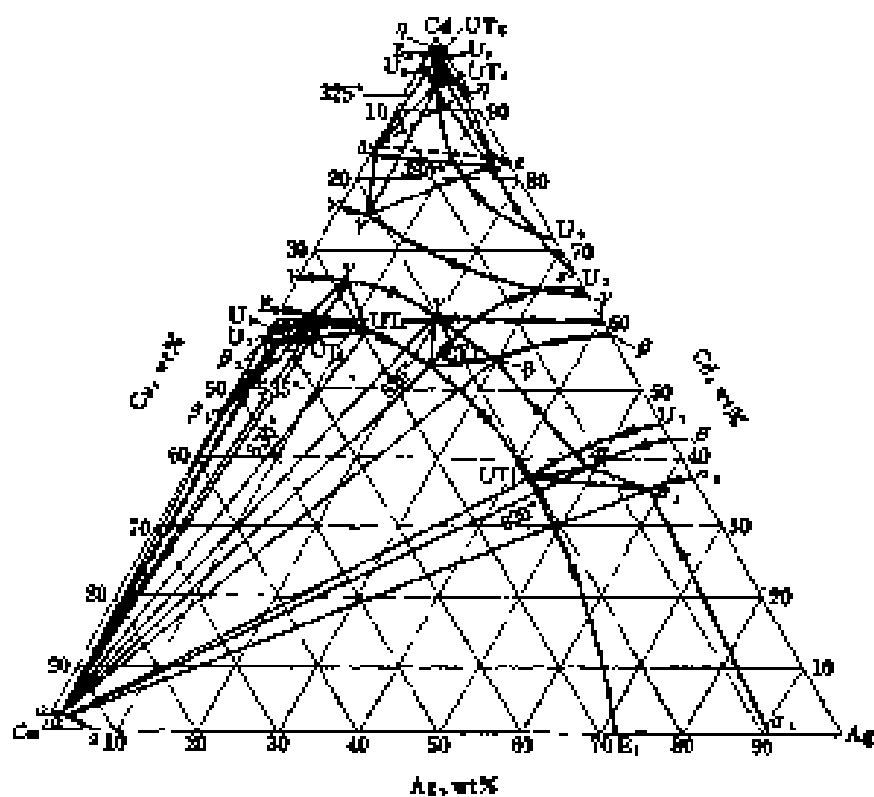


Fig.431 Ag-Cd-Cu 銀-鎘-銅 Silver-Cadmium-Copper(33)

熔融平衡圖 Melting equilibria

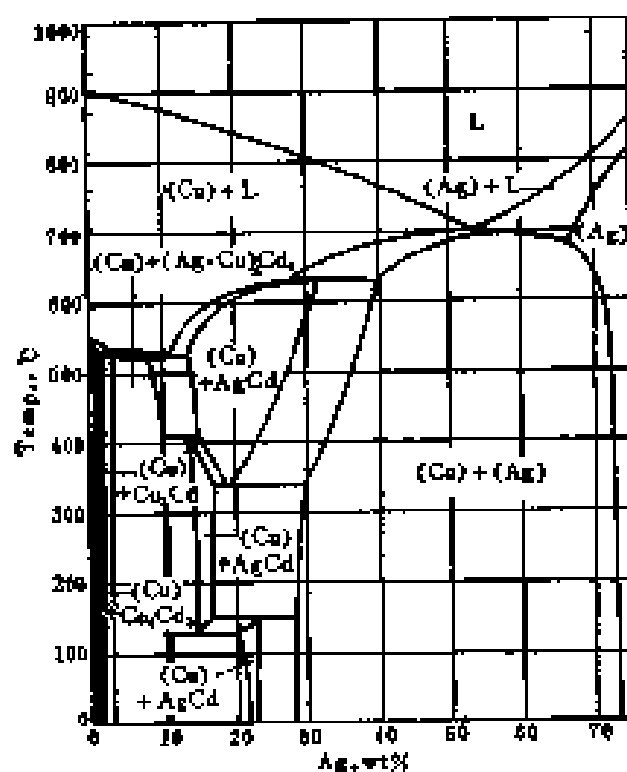


Fig. 432 Ag-Cd-Cu 银-镉-铜 Silver-Cadmium-Copper (33)

Cd25%截面 Section at Cd 25%

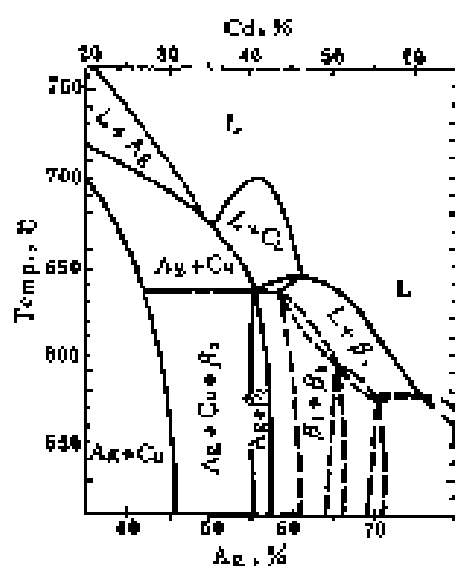


Fig. 433 Ag-Cd-Cu 银-镉-铜  
Silver-Cadmium-Copper (45)

Cu15%截面 Section at Cu 15%

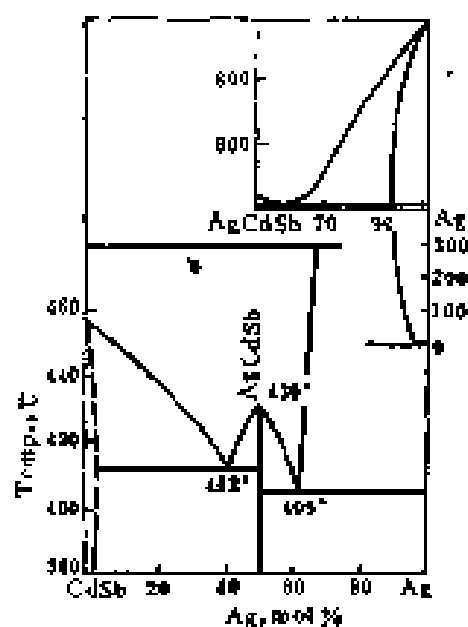


Fig. 434 Ag-Cd-Sb 银-镉-锑  
Silver-Cadmium-Antimony (34)

CdSb—Ag截面 Section at CdSb—Ag

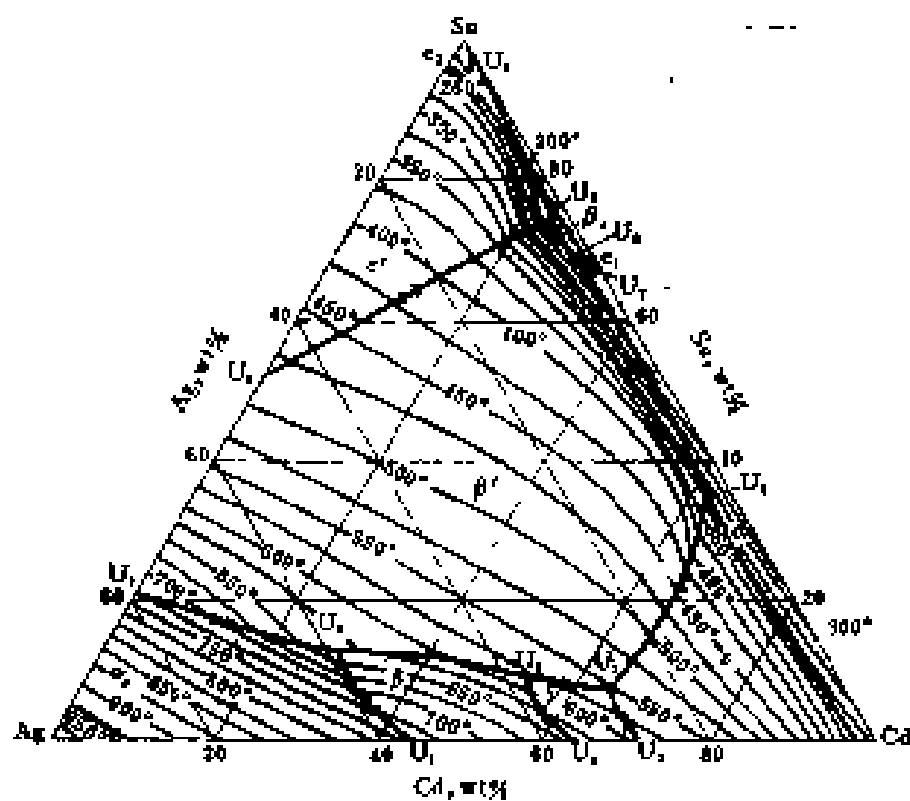


Fig. 435 Ag-Cd-Sn 銀-鎘-錫 Silver-Cadmium-Tin (35)

液相面 Liquidus

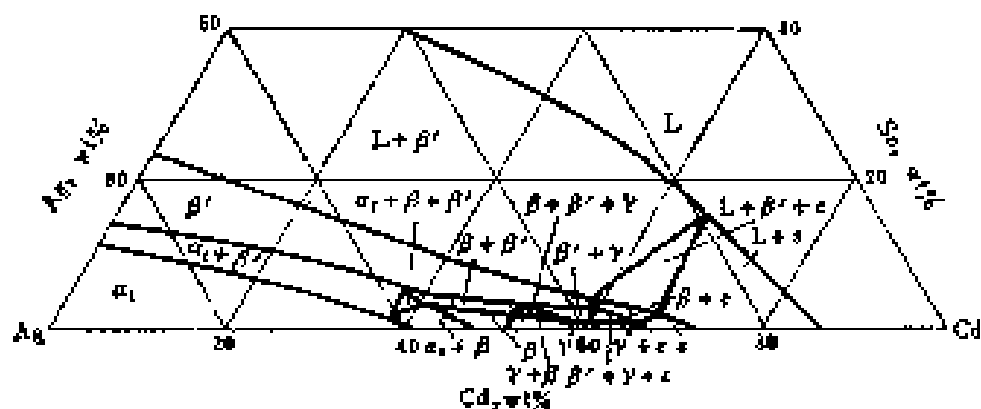


Fig. 436 Ag-Cd-Sn 銀-鎘-錫 Silver-Cadmium-Tin (36)

500°C 等溫截面 Isotherm at 500°C



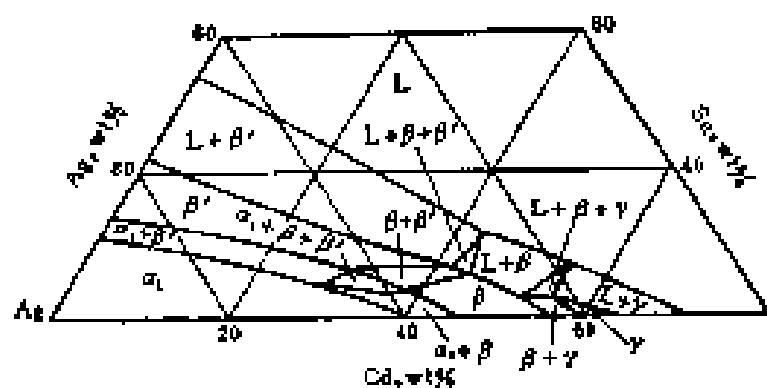


Fig. 437 Ag-Cd-Sn 銀-鋅-錫  
Silver-Cadmium-Tin (35)

800°C 等溫線面 Isotherm at 800°C

Fig. 438 Ag-Cd-Te 銀-鋅-碲  
Silver-Cadmium-Tellurium (37)  
CdTe — 1% 線面 Section at CdTe-Ag

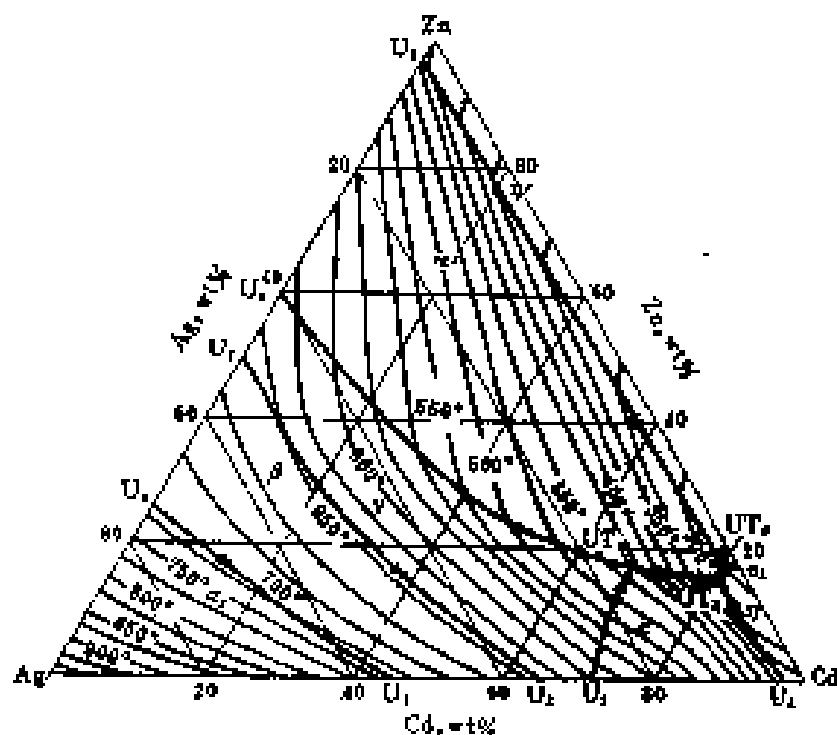
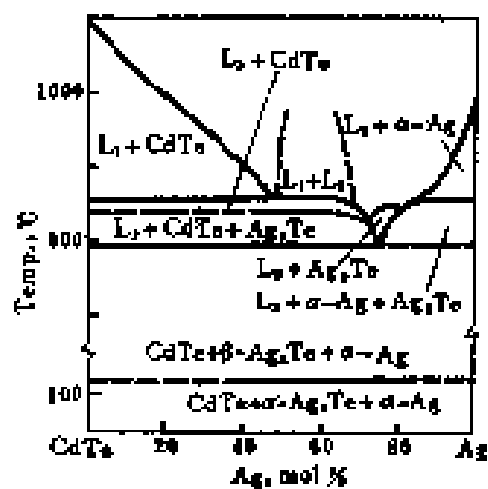


Fig. 439 Ag-Cd-Zn 銀-鋅-鋅  
Silver-Cadmium-Zinc (38)

液相面 Liquidus

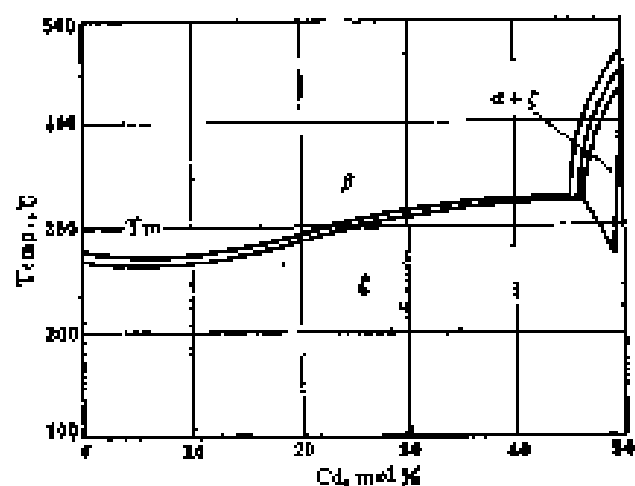


Fig. 440 Ag-Cd-Zn 銀-鎘-鋅 Silver-Cadmium-Zinc (39)

$Ag_{50}Zn_{50-x}Cd_x$  合金相圖 Phase diagram of  $Ag_{50}Zn_{50-x}Cd_x$  Alloys

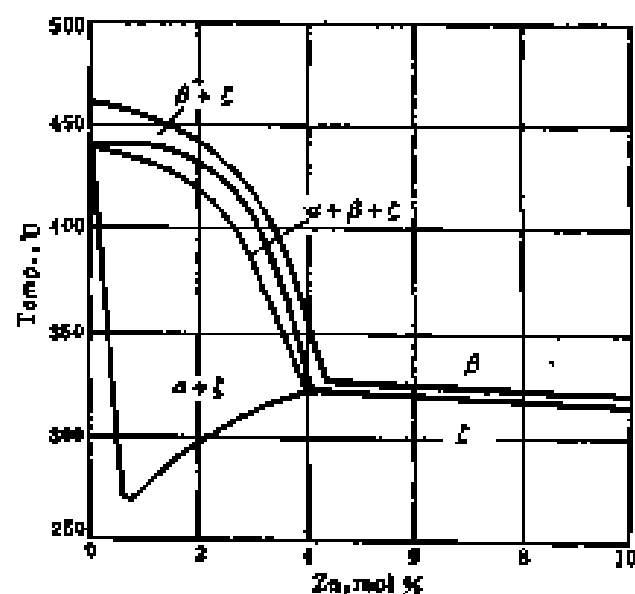


Fig. 441 Ag-Cd-Zn 銀-鎘-鋅 Silver-Cadmium-Zinc (39)

$Ag_{50}Cd_{50-x}Zn_x$  合金相圖 Phase diagram of  $Ag_{50}Cd_{50-x}Zn_x$  Alloys

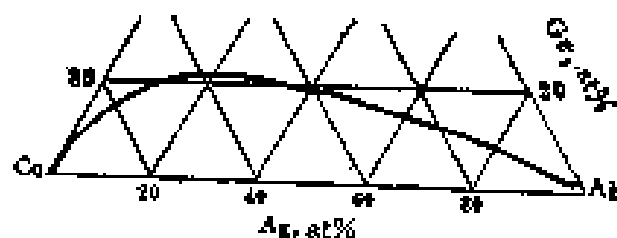


Fig. 442 Ag-Co-Ge 銀-鈷-鎢 Silver-Cobalt-Germanium (40)

1450°C 部分等溫線圖 Partial isotherm at 1450°C

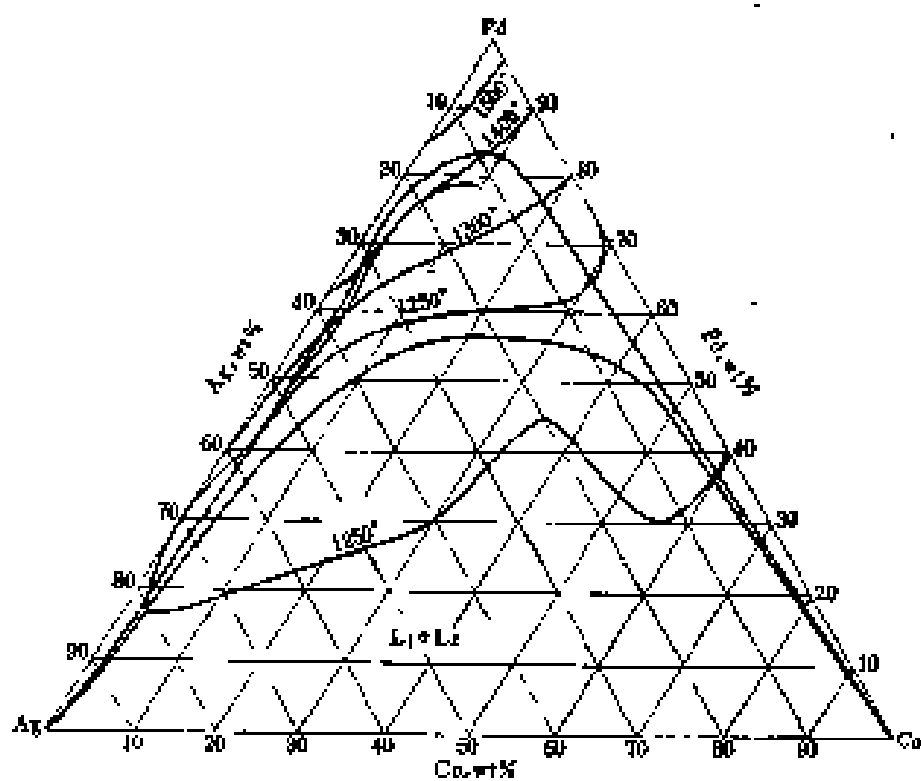


Fig. 443 Ag-Co-Pd 銀-鈷-鈳 Silver-Cobalt-Palladium(41)

出現固溶體的等溫截面 Isotherms with appearance of solid solutions

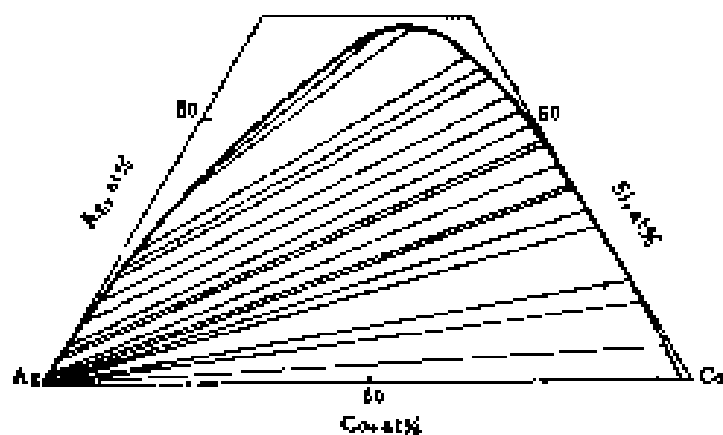


Fig. 444 Ag-Co-Si 銀-鈷-矽 Silver-Cobalt-Silicon(42)

1534°C 等溫截面 Isotherm at 1534°C

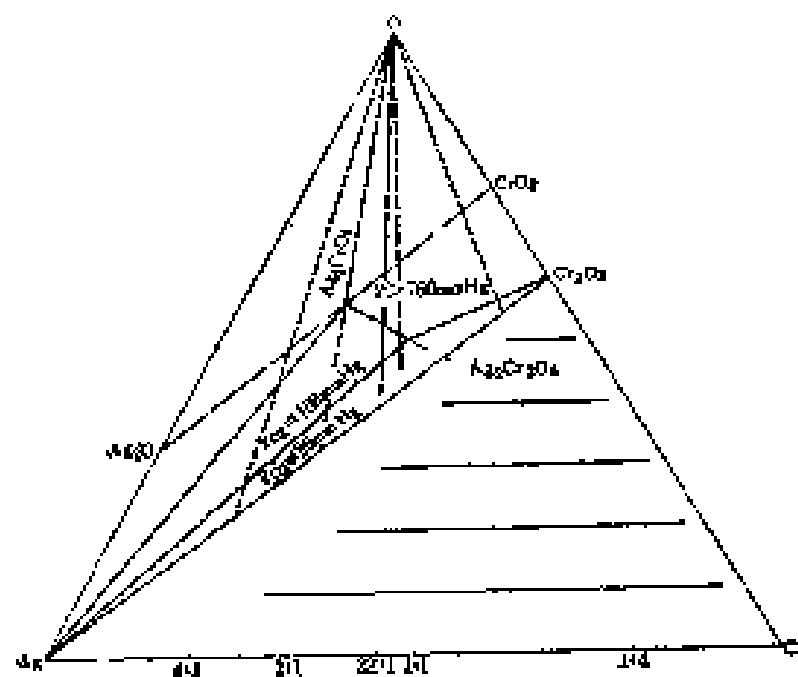


Fig. 445 Ag-Cr-O 銀-鉻-氧 Silver-Chromium-Oxygen(43)

500°C 等溫截面 Isotherm at 500°C

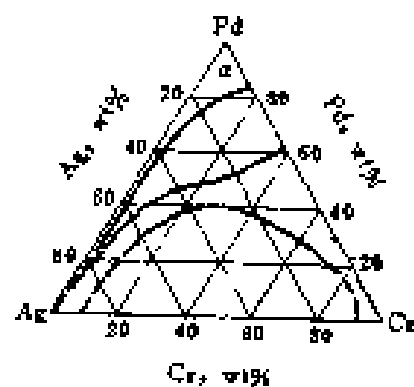


Fig. 446 Ag-Cr-Pd 銀-鉻-鈦 Silver-Chromium-Palladium(44)

相區圖 Phase region

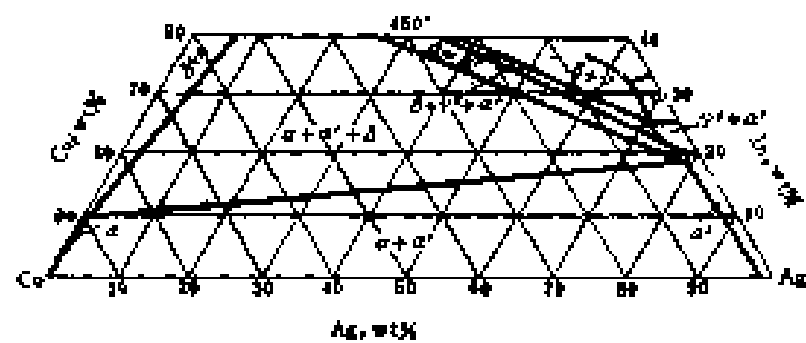


Fig. 447 Ag-Cu-In 銀-銅-銦 Silver-Copper-Indium(46)

450°C 等溫截面 Isotherm at 450°C

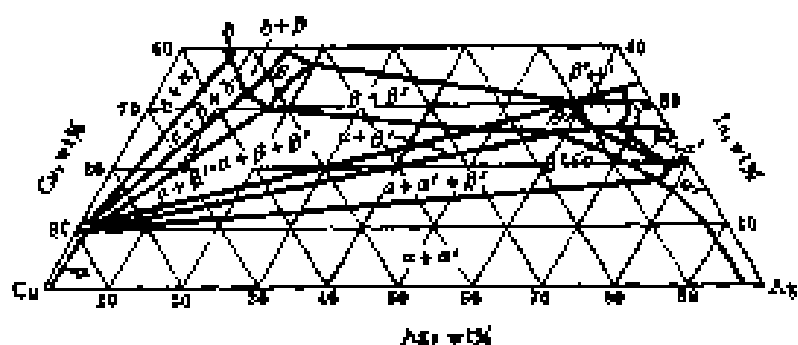


Fig.446 Ag-Cu-In 銀-銅-銦 Silver-Copper-Indium(46)

500℃等溫線圖 Isotherm at 500℃

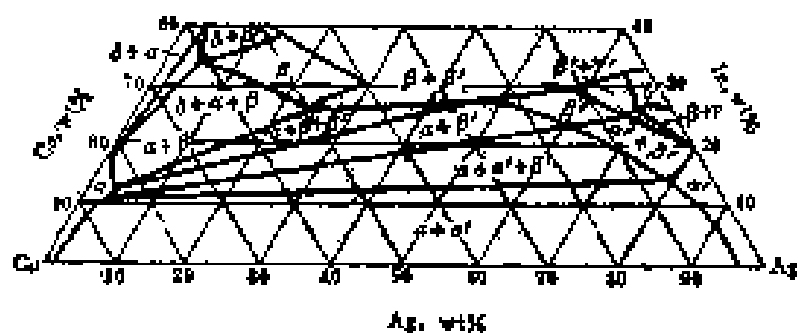


Fig.449 Ag-Cu-In 銀-銅-銦 Silver-Copper-Indium(46)

544℃等溫線圖 Isotherm at 544℃



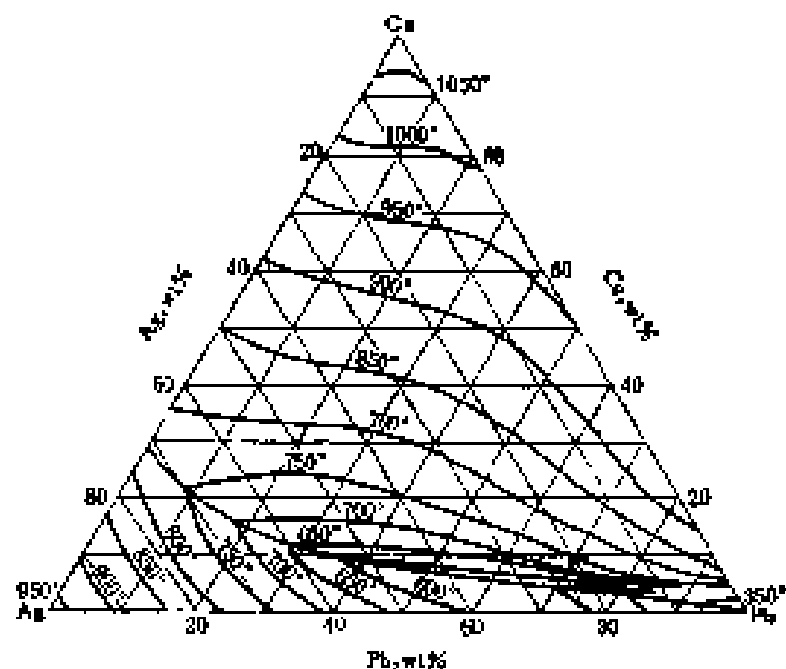


Fig. 452 Ag-Cu-Pb 銀-銅-鉛 Silver-Copper-Lead (49)

液相面 Liquidus

三共晶点 Ternary eutectic: 320°C, Ag2.4% (wt), Cu6.5% (wt), Pb97.5% (wt)

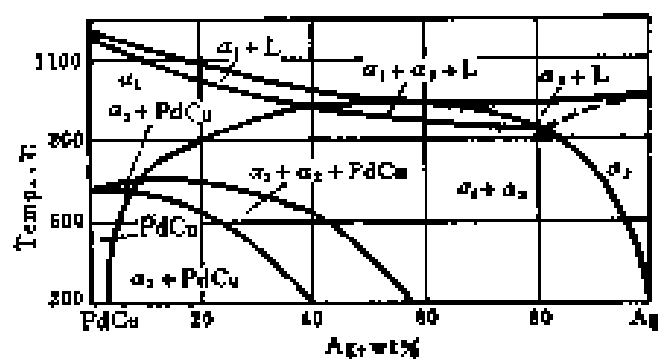


Fig. 453 Ag-Cu-Pd 銀-銅-鈀  
Silver-Copper-Palladium (50)

PdCu-Ag 截面 Section at PdCu-Ag

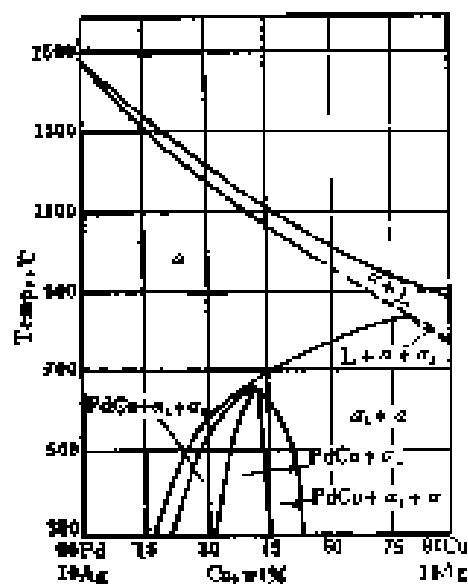


Fig. 454 Ag-Cu-Pd 銀-銅-鈀  
Silver-Copper-Palladium (50)

Ag10% 截面 Section at Ag10%

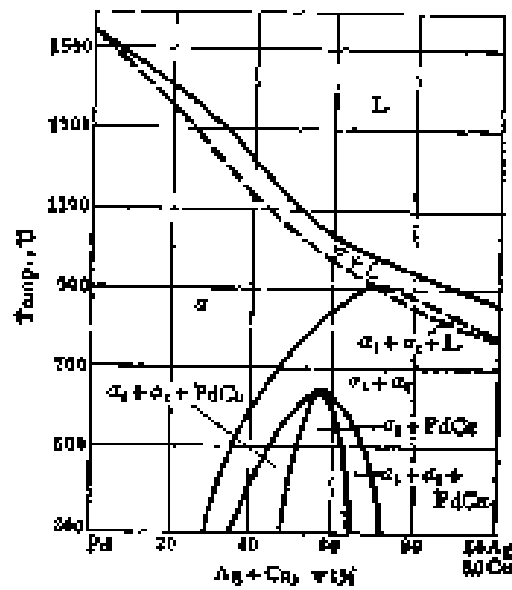


Fig. 455 Ag-Cu-Pd 銀-銅-鉑 Silver-Copper-Palladium(50)  
Pd-Ag<sub>10</sub>Cu<sub>10</sub> 断面 Section at Pd-Ag<sub>10</sub>Cu<sub>10</sub>

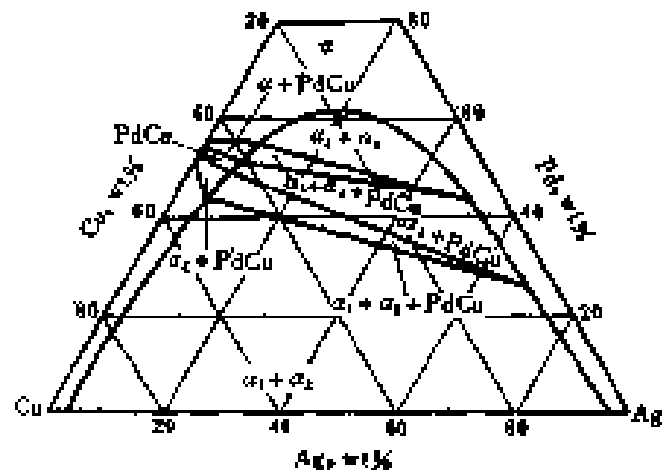


Fig. 456 Ag-Cu-Pd 銀-銅-鉑 Silver-Copper-Palladium(50)  
600°C 等温断面 Isotherm at 600°C

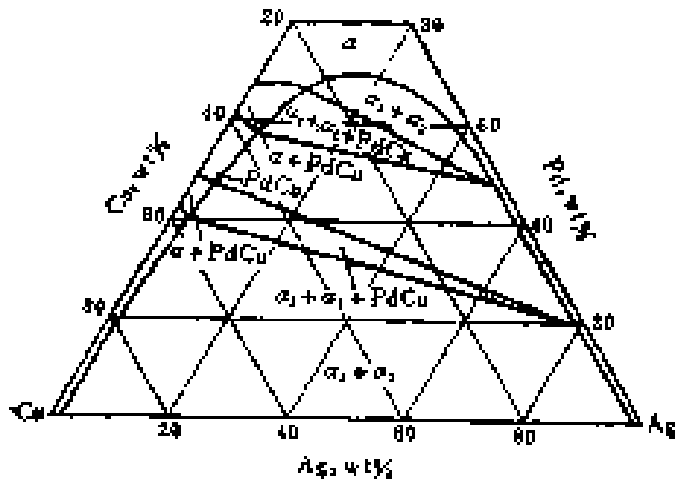


Fig. 457 Ag-Cu-Pd 銀-銅-鉑  
Silver-Copper-Palladium(50)  
400°C 等温断面 Isotherm at 400°C



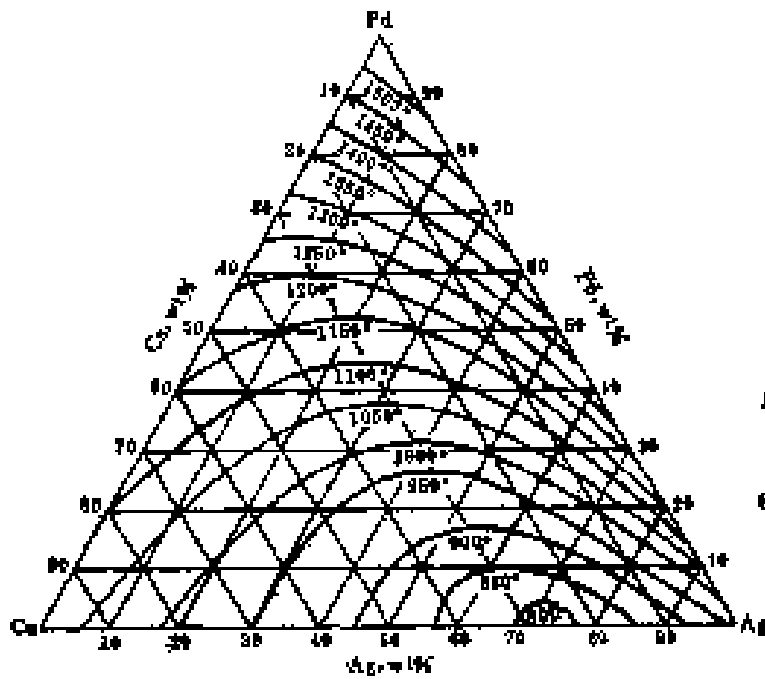


Fig. 458 Ag-Cu-Pd 銀-銅-鉑  
Silver-Copper-Palladium (51)  
液相面 Liquidus

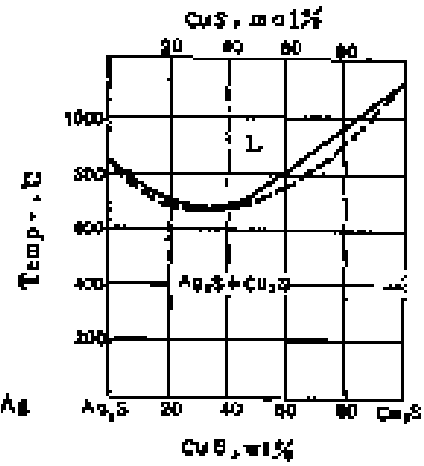


Fig. 459 Ag-Cu-S 銀-銅-硫  
Silver-Copper-Sulfur (205)

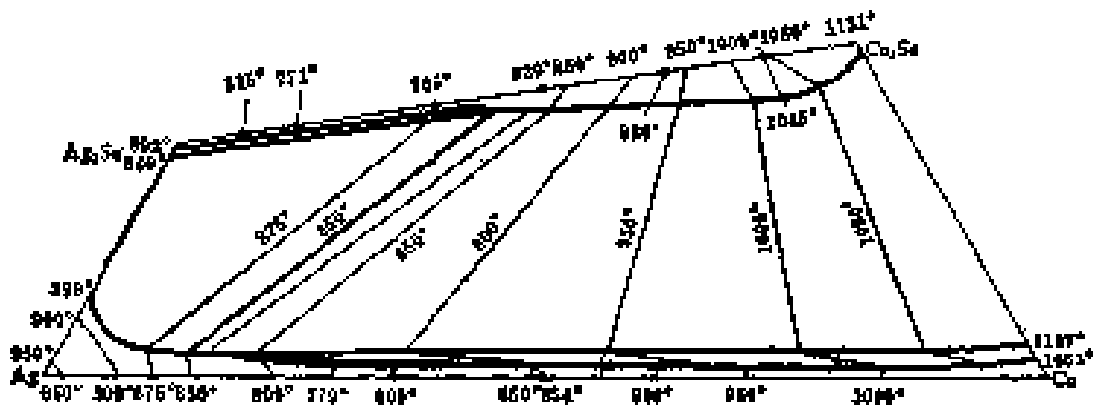


Fig. 460 Ag-Cu-Se 銀-銅-硒 Silver-Copper-Selenium (53)  
液相面 Liquidus

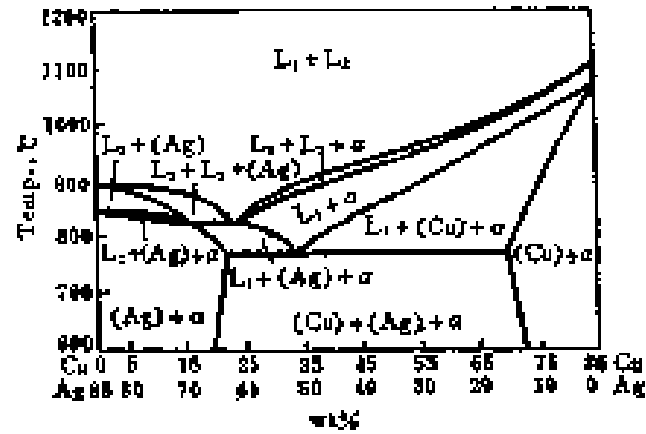


Fig 461 Ag-Cu-Se 銀-銅-硒 Silver-Copper-Selenium(52)

Se15% 縱面 Section at Se 10%

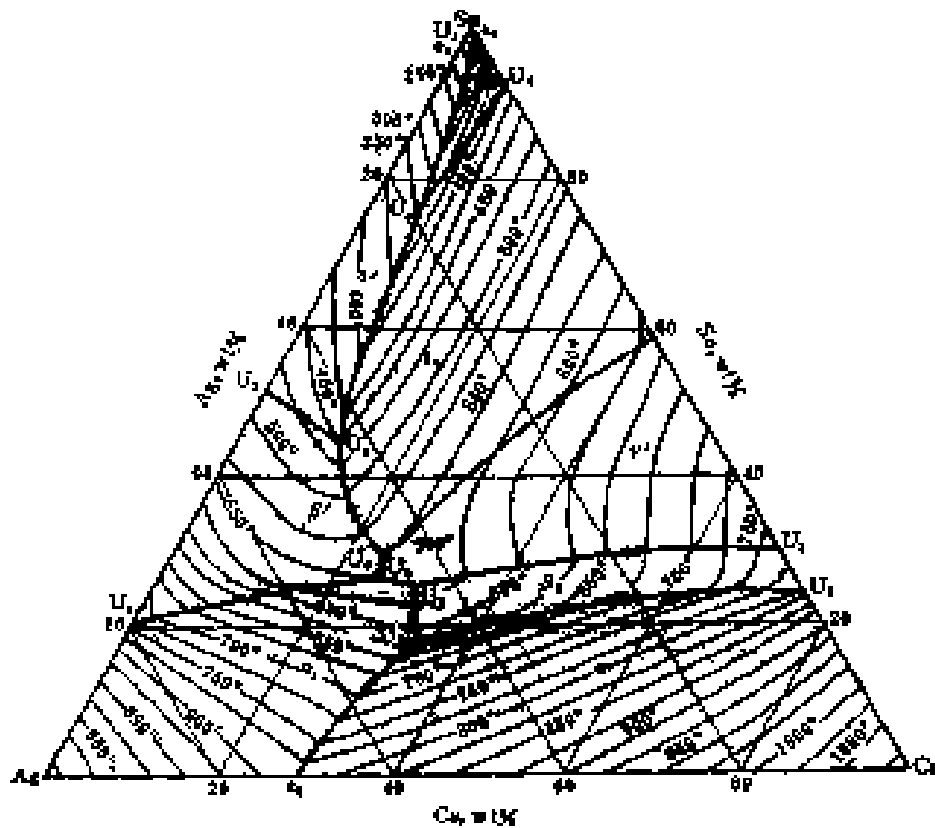


Fig 462 Ag-Cu-Sn 銀-銅-錫 Silver-Copper-Tin(36)

液相面 Liquidus



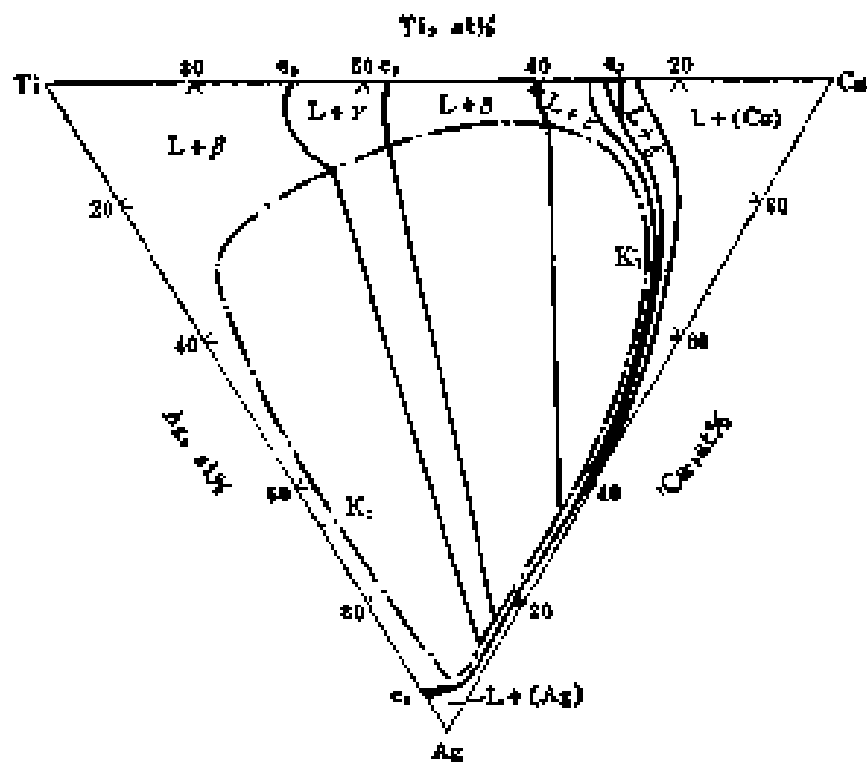


Fig. 465 Ag-Cu-Ti 銀-銅-鈦 Silver-Copper-Titanium(53)

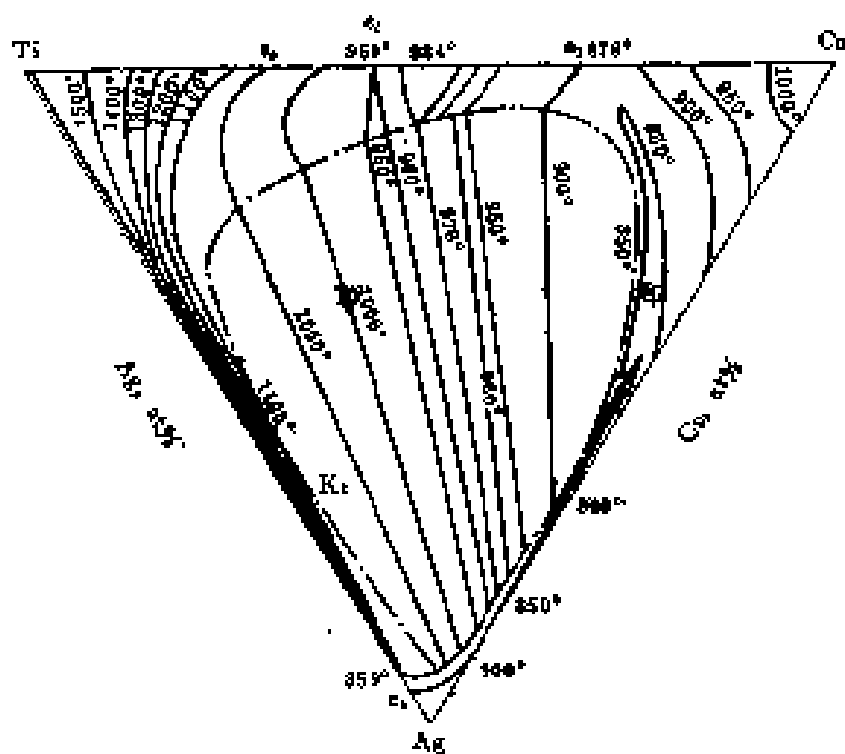


Fig. 466 Ag-Cu-Ti 銀-銅-鈦 Silver-Copper-Titanium(53)

液相面 Liquidus

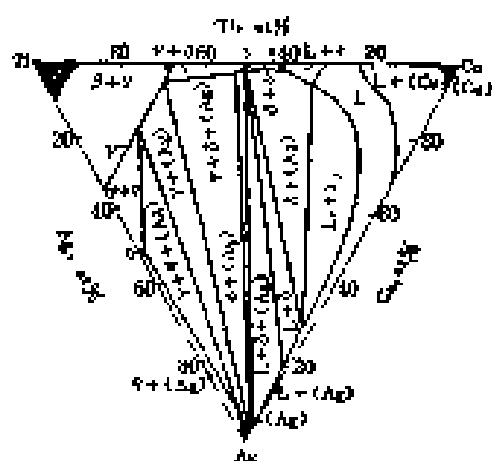


Fig.467 Ag-Cu-Ti 銀-銅-鈦  
Silver-Copper-Titanium(53)

800°C等溫線面 Isotherm at 800°C

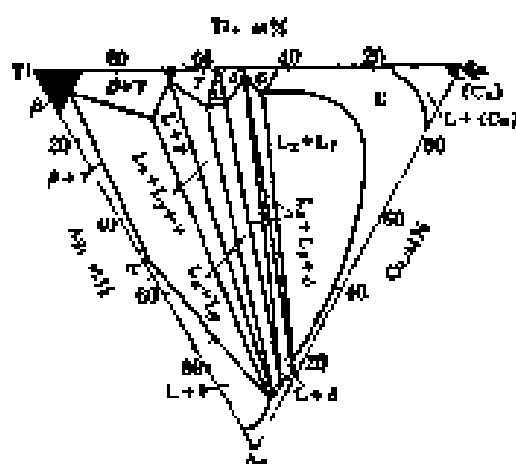


Fig.468 Ag-Cu-Ti 銀-銅-鈦  
Silver-Copper-Titanium(53)

850°C等溫線面 Isotherm at 850°C

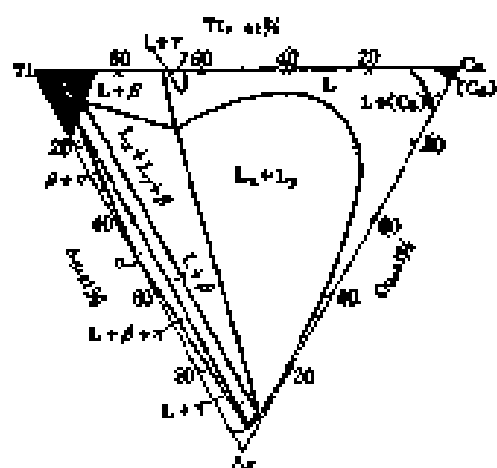


Fig.469 Ag-Cu-Ti 銀-銅-鈦  
Silver-Copper-Titanium(53)

1050°C等溫線面 Isotherm at 1050°C  
S.S.—Solid Solution

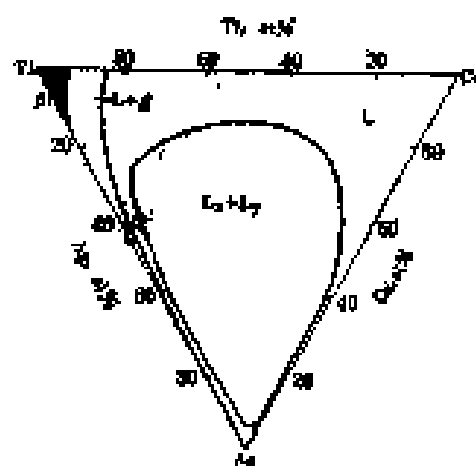


Fig.470 Ag-Cu-Ti 銀-銅-鈦  
Silver-Copper-Titanium(53)

1250°C等溫線面 Isotherm at 1250°C

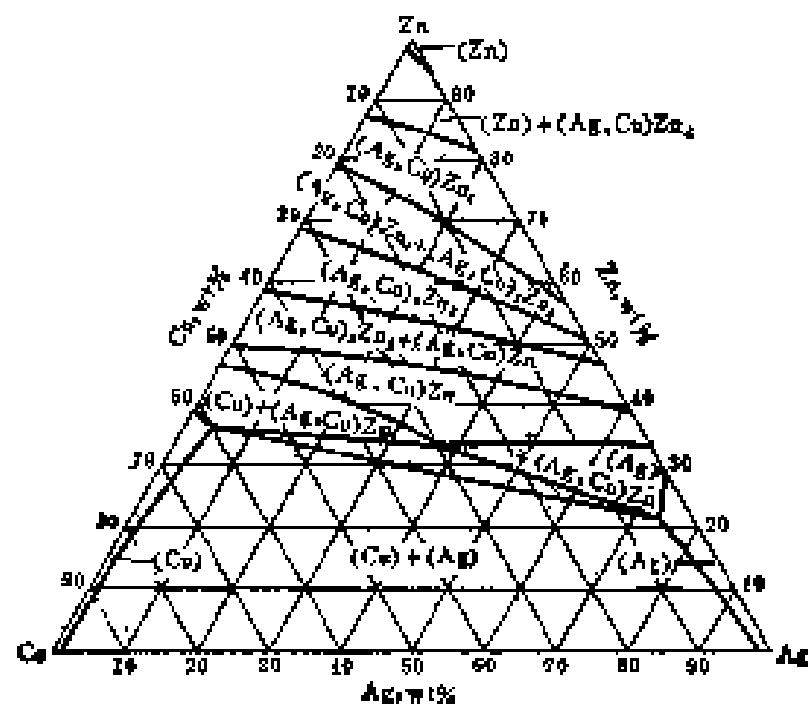


Fig. 471 Ag-Cu-Zn 銀-銅-鋅 Silver-Copper-Zinc (54)

35°C 等溫截面 Isotherm at 35°C

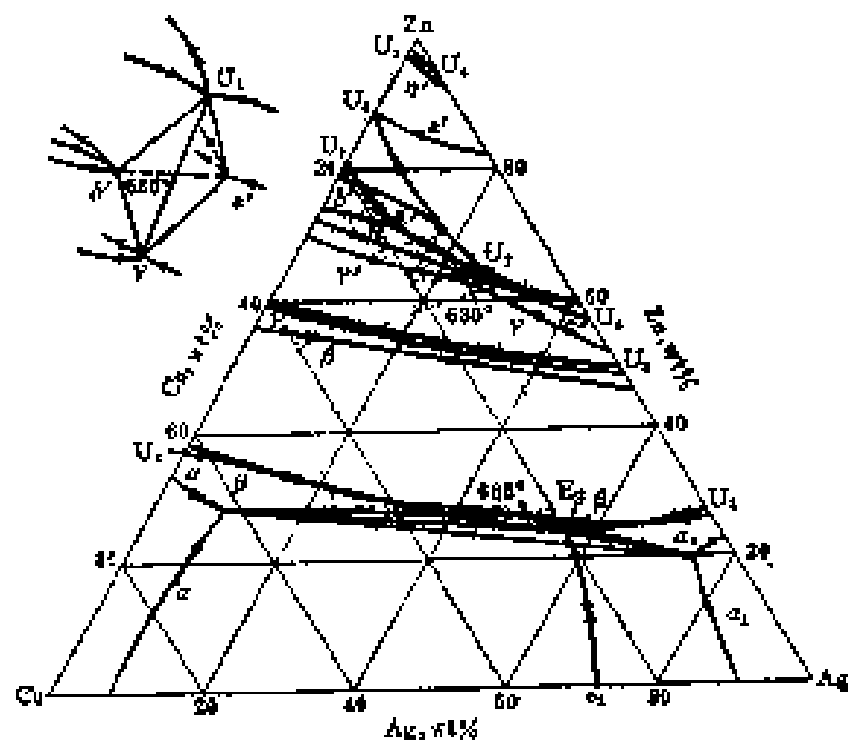


Fig. 472 Ag-Cu-Zn 銀-銅-鋅 Silver-Copper-Zinc (54)

熔點平衡圖 Melting equilibria



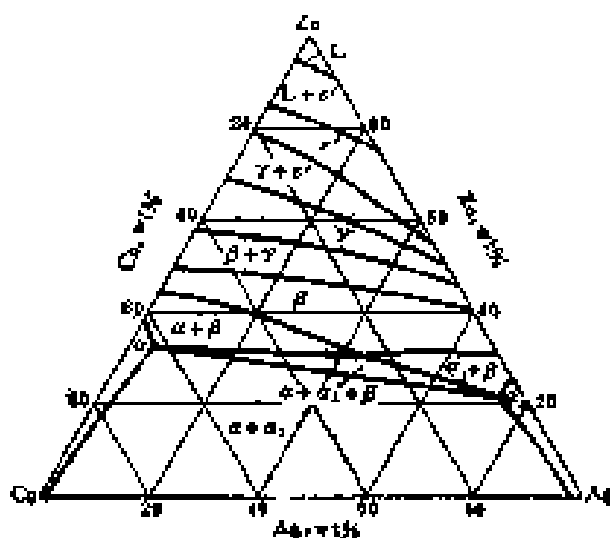


Fig. 475 Ag-Cu-Zn 银-铜-锌  
Silver-Copper-Zinc(54)

500°C等温断面 Isotherm at 500°C

Fig. 476 Ag-Cu-Zn 银-铜-锌  
Silver-Copper-Zinc(54)

350°C等温断面 Isotherm at 350°C

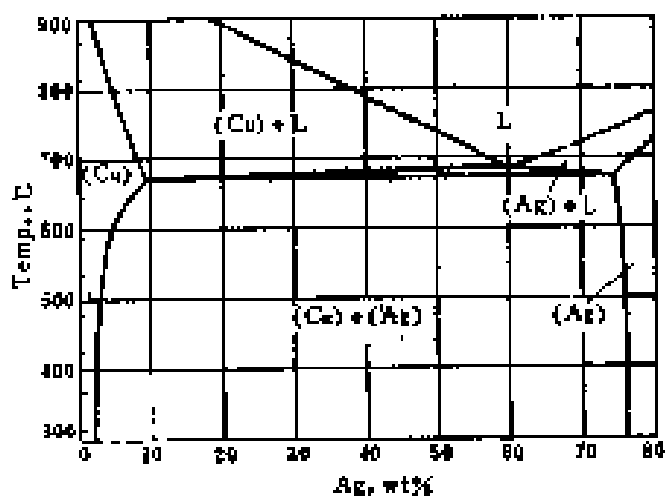
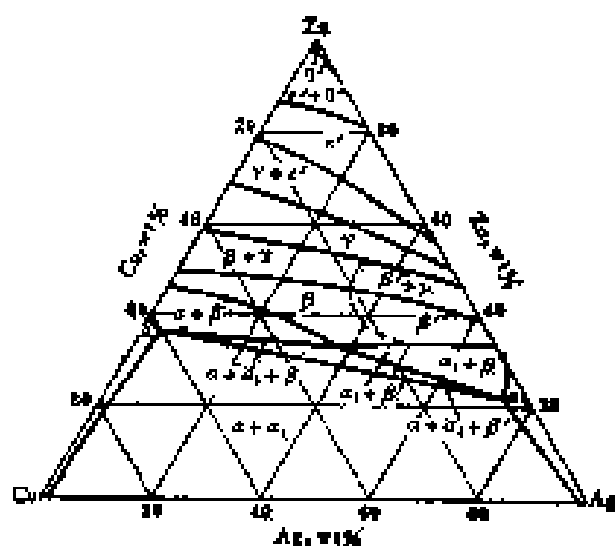


Fig. 477 Ag-Cu-Zn 银-铜-锌  
Silver-Copper-Zinc(54)

Zn 20%的断面  
Section at Zn 20%



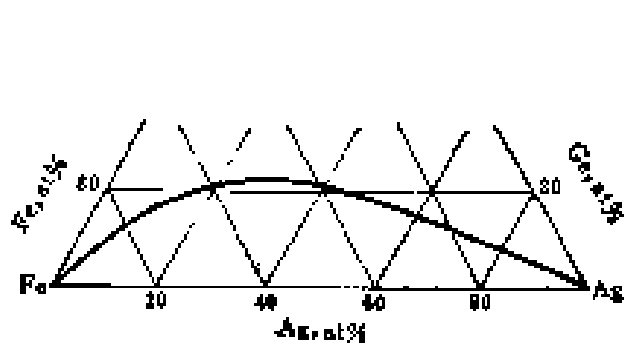


Fig. 478 Ag-Fe-Ge 银-铁-锗  
Silver-Iron-Germanium (40)

1550°C 等温截面 Isotherm at 1550°C

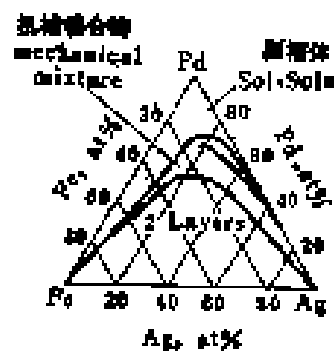


Fig. 479 Ag-Fe-Pd 银-铁-钯  
Silver-Iron-Palladium (55)

室温相图 Phase diagram at room temperature

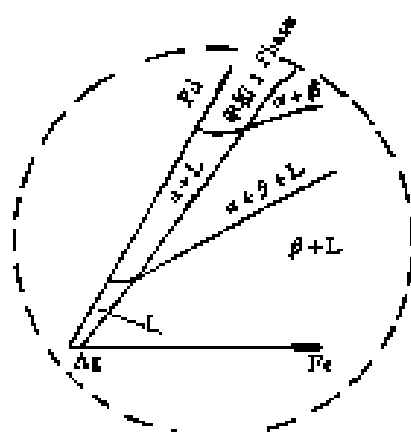


Fig. 480 Ag-Fe-Pd 银-铁-钯 Silver-Iron-Palladium (56)

1000°C 等温截面 Isotherm at 1000°C

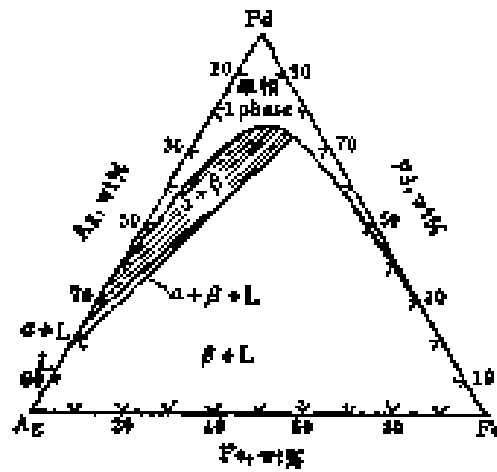


Fig. 481 Ag-Fe-Pd 銀-鐵-鈀 Silver-Iron-Palladium(84)

1100°C 等溫截面 Isotherm at 1100°C

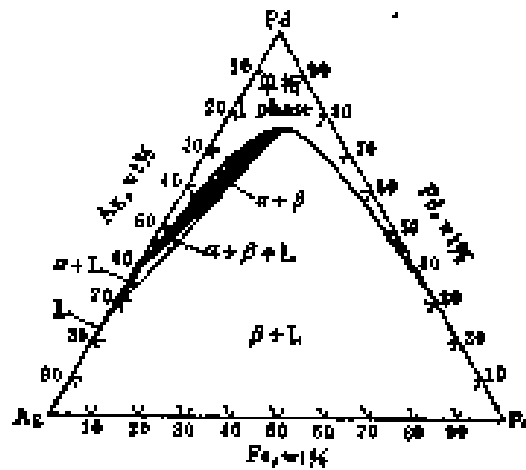


Fig. 482 Ag-Fe-Pd 銀-鐵-鈀 Silver-Iron-Palladium(86)

1200°C 等溫截面 Isotherm at 1200°C

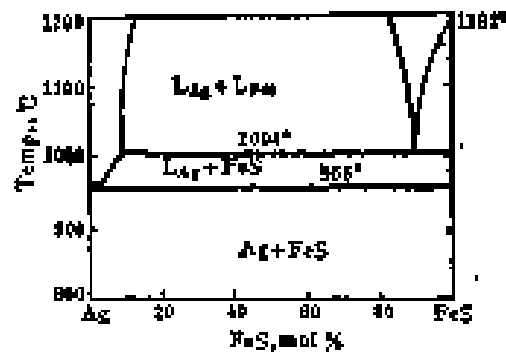


Fig. 483 Ag-Fe-S 銀-鐵-硫 Silver-Iron-Sulfur(57)

Ag-FeS 截面 Section at Ag-FeS

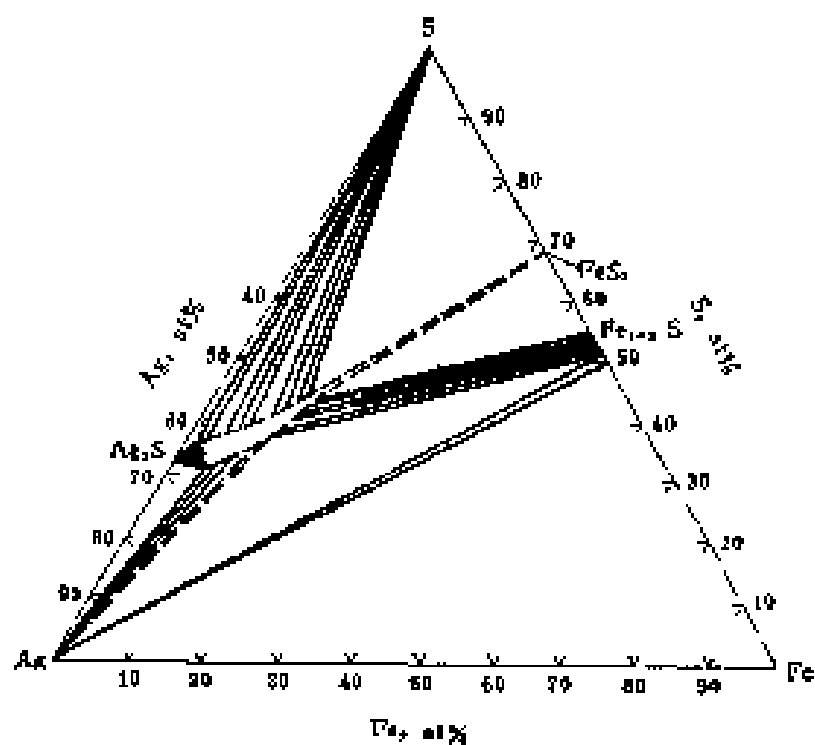


Fig. 484 Ag-Fe-S 銀-鉄-硫 Silver-Iron-Sulfur (57)  
700°C 等溫截面 Isotherm at 700°C

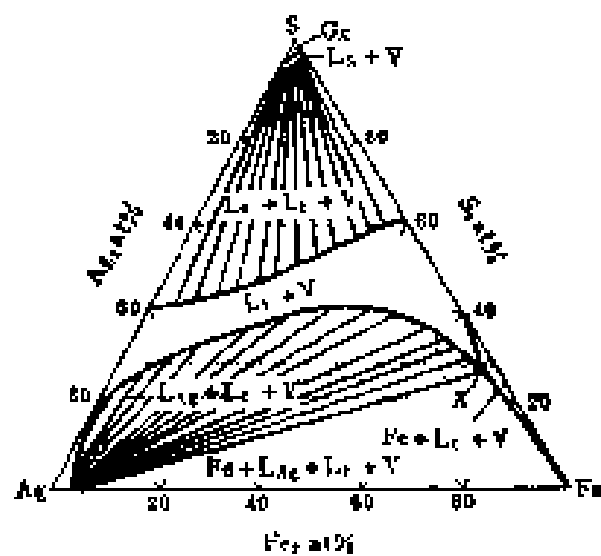


Fig. 485 Ag-Fe-S 銀-鉄-硫 Silver-Iron-Sulfur (57)  
1200°C 等溫截面 Isotherm at 1200°C



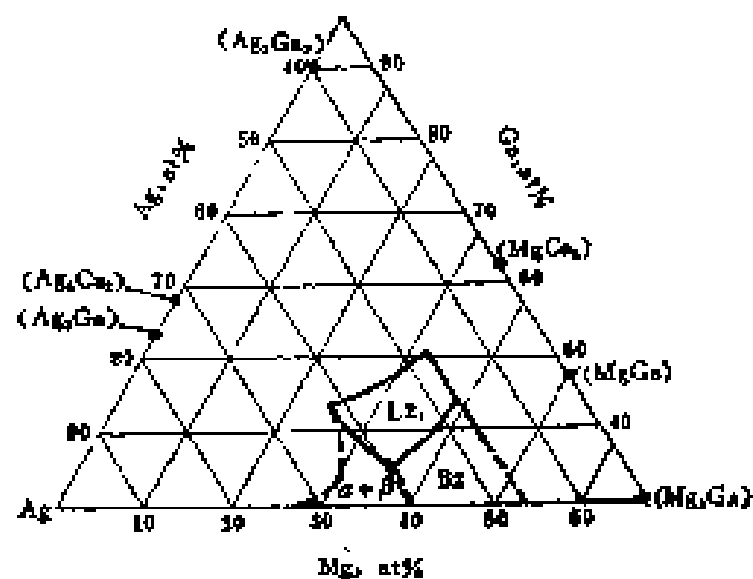


Fig. 488 Ag-Ga-Mg 銀-鎳-錫 Silver-Gallium-Magnesium(61)

100°C 等温断面 isotherm at 100°C

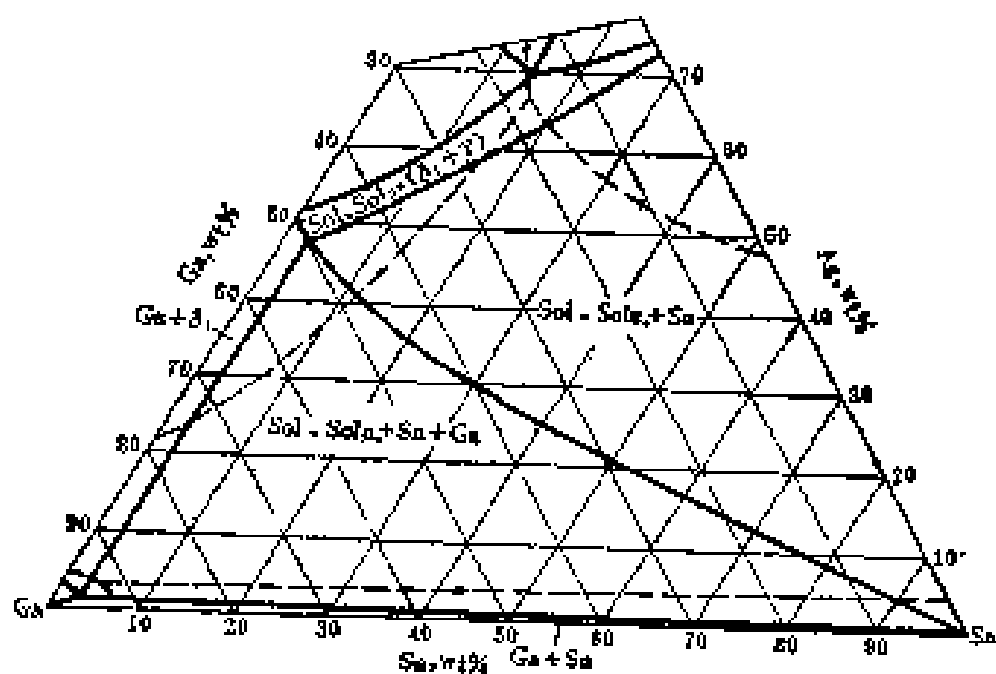


Fig. 489 Ag-Ga-Sn 銀-鎳-錫 Silver-Gallium-Tin(60)

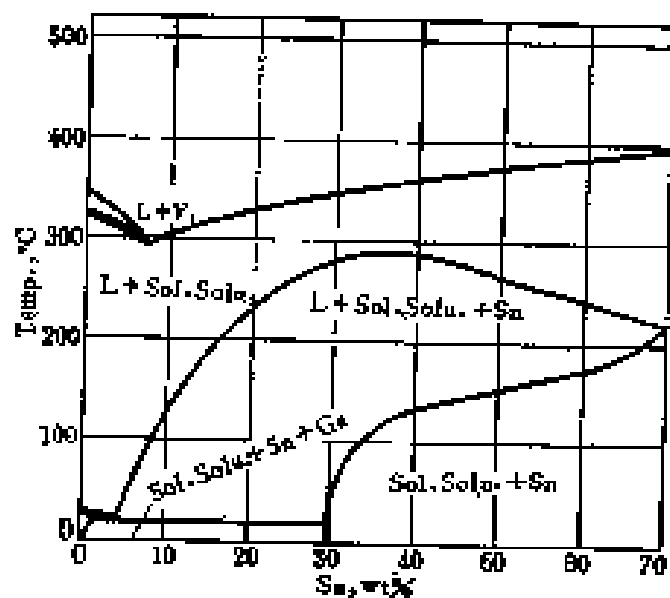


Fig.490 Ag-Ga-Sn 銀-鎔-錫 Silver-Gallium-Tin(80)

Ag34%截面 Section at Ag 34%

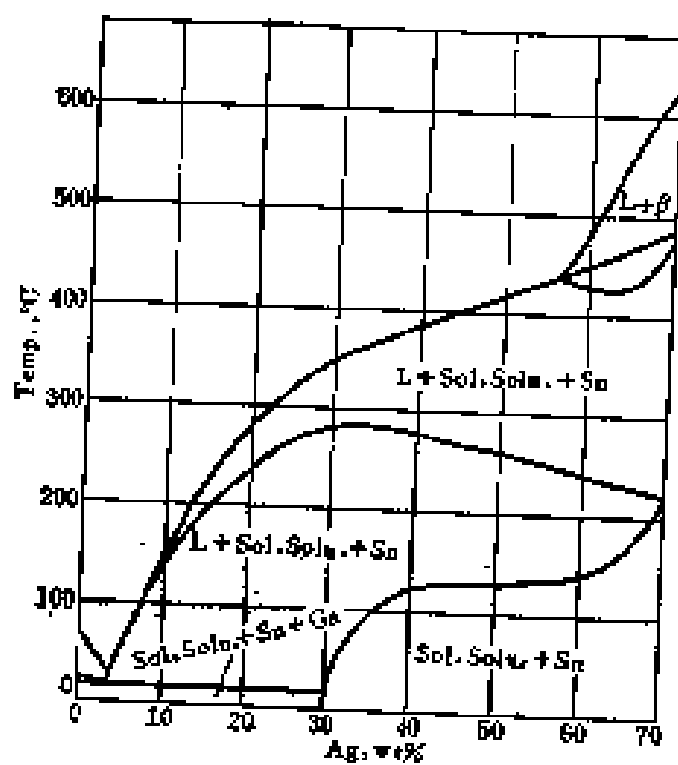
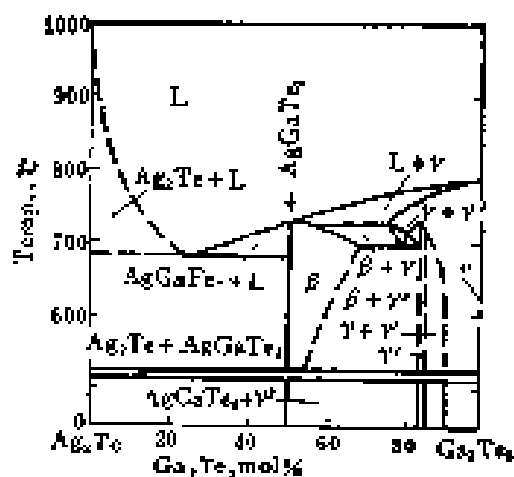


Fig.491 Ag-Ga-Sn 銀-鎔-錫 Silver-Gallium-Tin(60)

Sn30%截面 Section Sn30%(at)



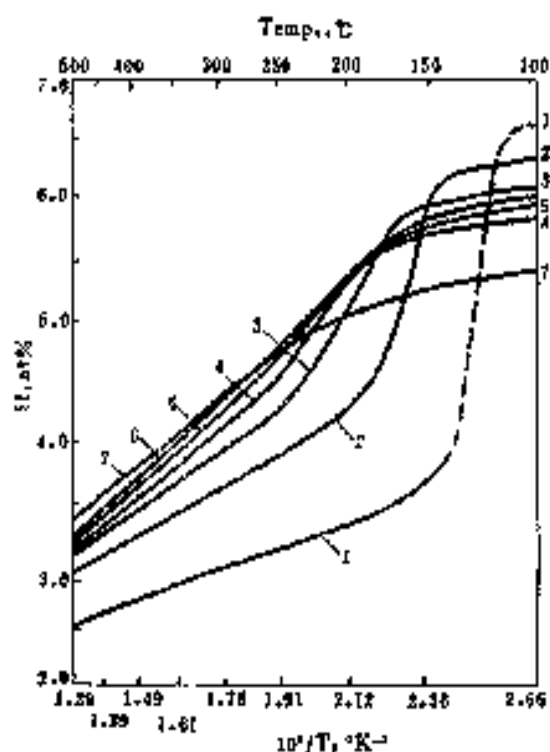


Fig 496 Ag-H-Pd 銀-氫-銲  
Silver-Hydrogen-Palladium (63)

H在Ag-Pd合金中的溶解度  
Solubility of  $H_2$  in Ag-Pd Alloy  
1-Pd 2-PdAg<sub>10</sub> 3-PdAg<sub>20</sub> 4-PdAg<sub>30</sub>  
5-PdAg<sub>40</sub> 6-PdAg<sub>50</sub> 7-PdAg<sub>60</sub>

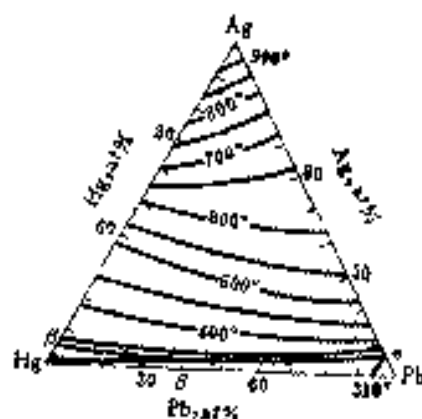


Fig 497 Ag-Hg-Pb 銀-汞-鉛  
Silver-Mercury-Lead (84)

液相面 Liquidus

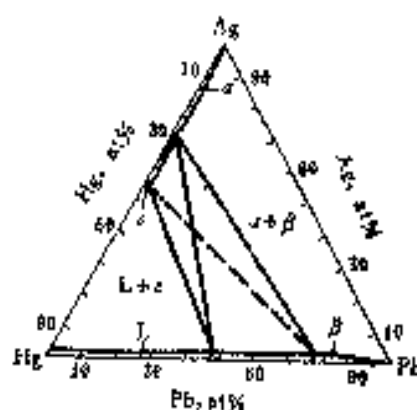


Fig 498 Ag-Hg-Pb 銀-汞-鉛  
Silver-Mercury-Lead (64)

162°C 等溫截面 Isotherm at 162°C

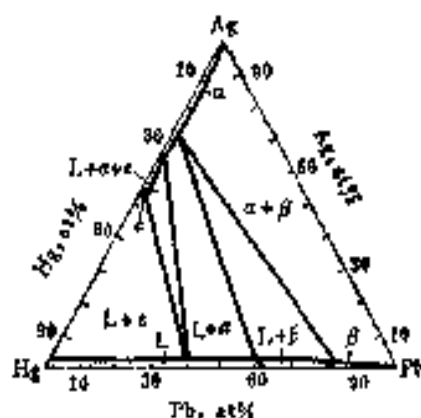


Fig 499 Ag-Hg-Pb 銀-汞-鉛  
Silver-Mercury-Lead (84)

200°C 等溫截面 Isotherm at 200°C



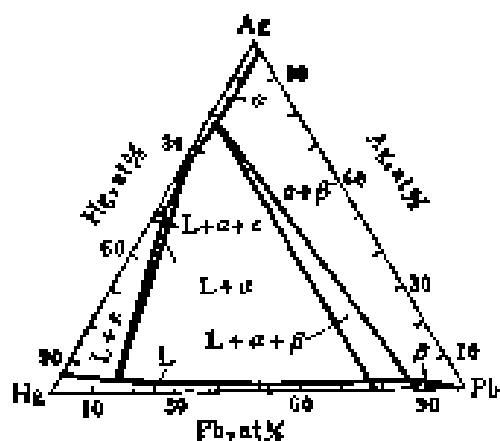


Fig. 500 Ag-Hg-Pb 銀-汞-鉛  
Silver-Mercury-Lead (64)

25°C 等溫截面 Isotherm at 25°C

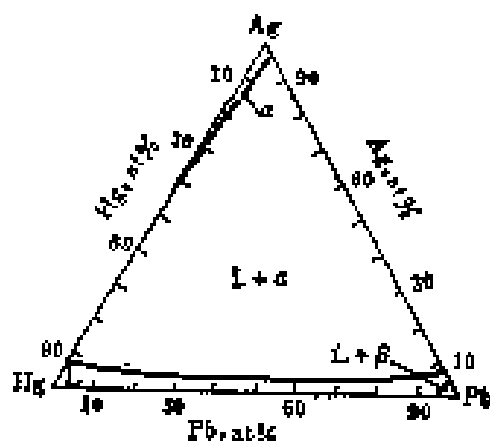


Fig. 501 Ag-Hg-Pb 銀-汞-鉛  
Silver-Mercury-Lead (64)

310°C 等溫截面 Isotherm at 310°C

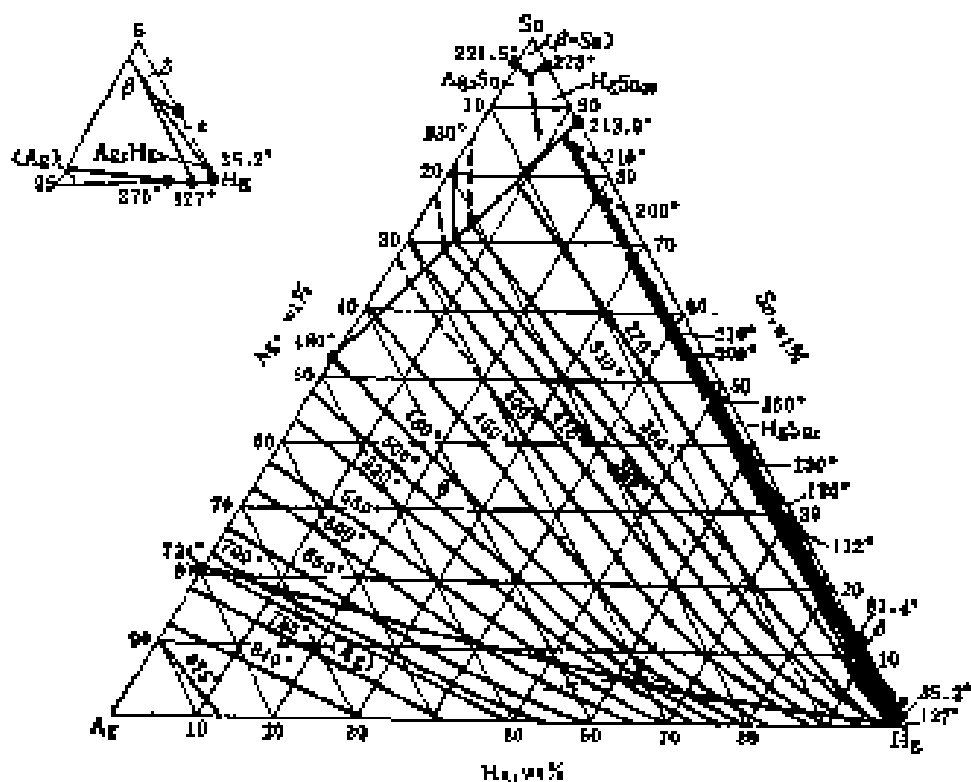
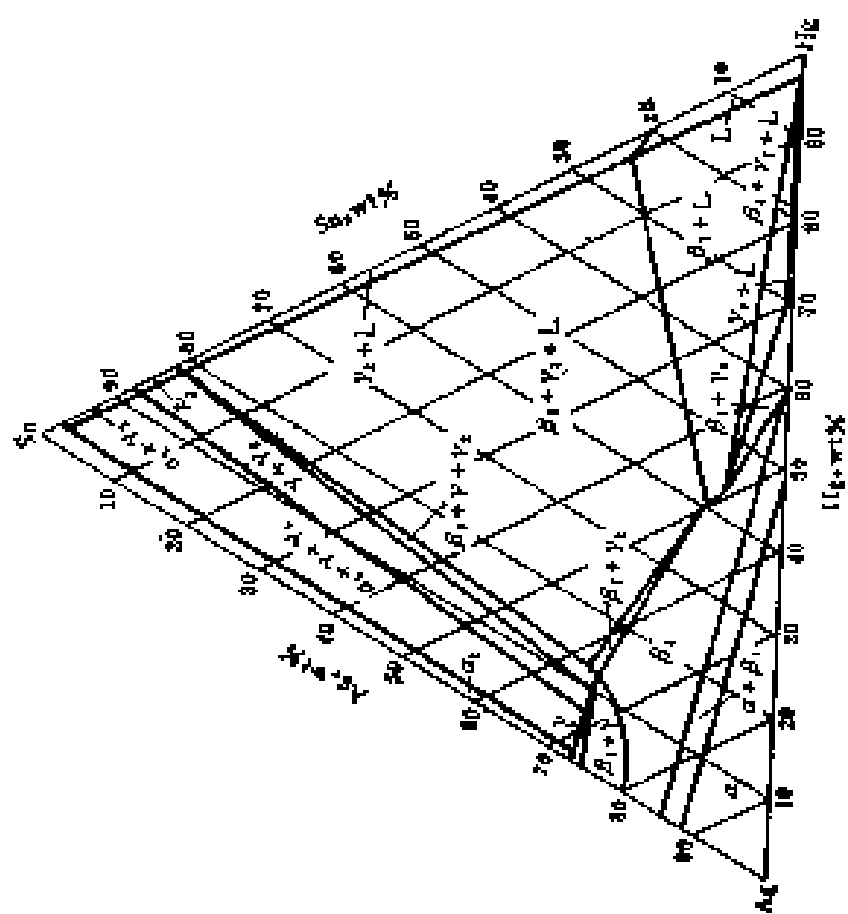
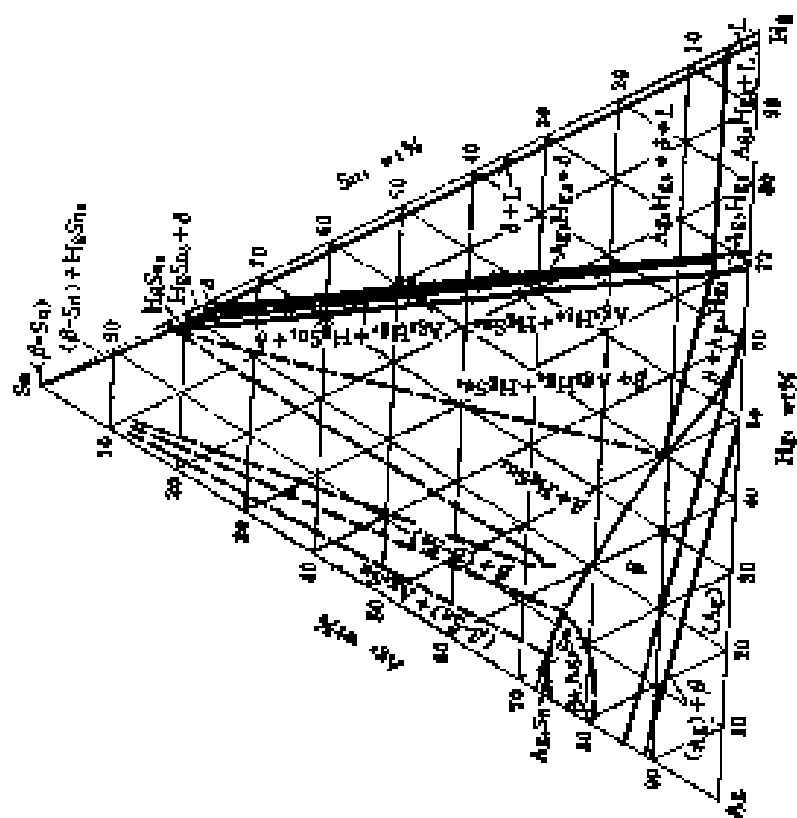


Fig. 502 Ag-Hg-Sn 銀-汞-錫 Silver-Mercury-Tin (85, 21)

液相面 Liquidus



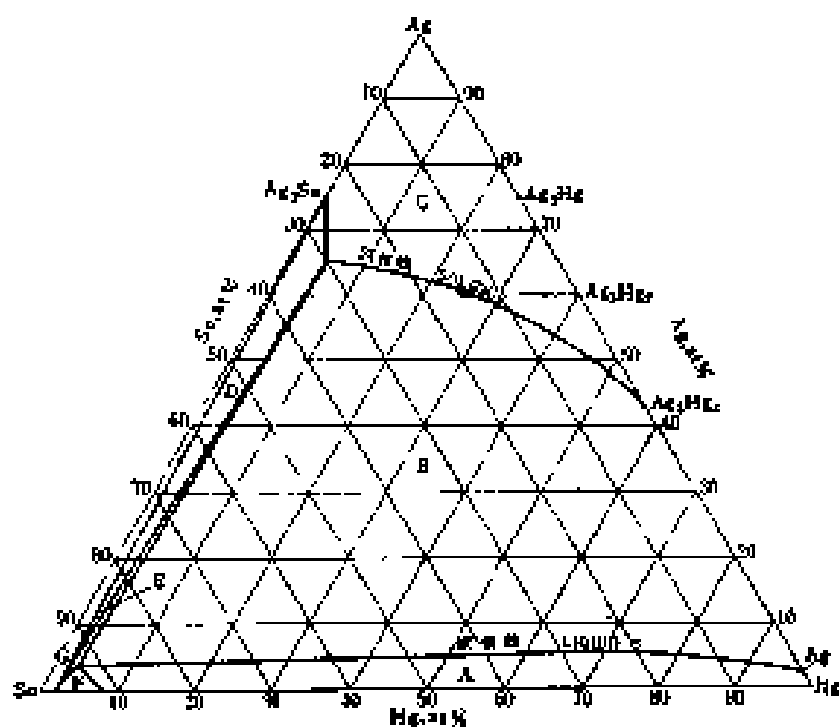


Fig.505 Ag-Hg-Sn 銀-汞-錫 Silver-Mercury-Tin(66)

214°C等温截面 Isotherm at 214°C

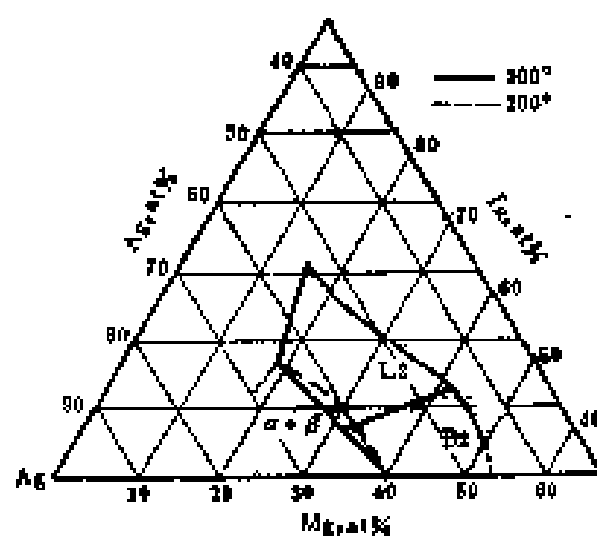


Fig.506 Ag-In-Mg 銀-銦-鎂 Silver-Indium-Magnesium(61)

200°C和260°C等温截面 Isotherm at 200°C and 260°C

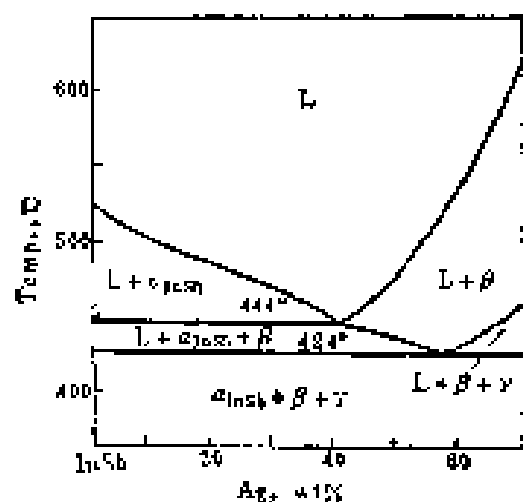


Fig. 507 Ag-In-Sb 銀-銦-銻  
Silver-Indium-Antimony(67)

InSb-Ag 假面 Section at InSb-Ag

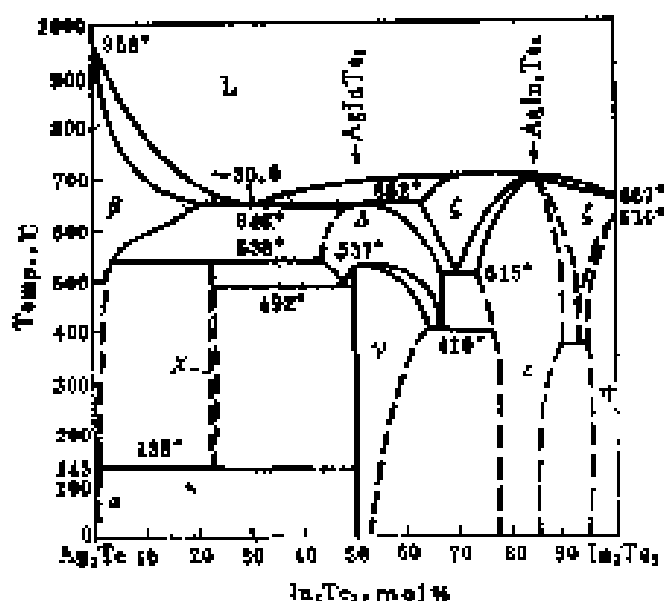


Fig. 509 Ag-In-Te 銀-銦-碲  
Silver-Indium-Tellurium(68)

Ag2Te-In2Te3 假面 Section at Ag2Te-In2Te3

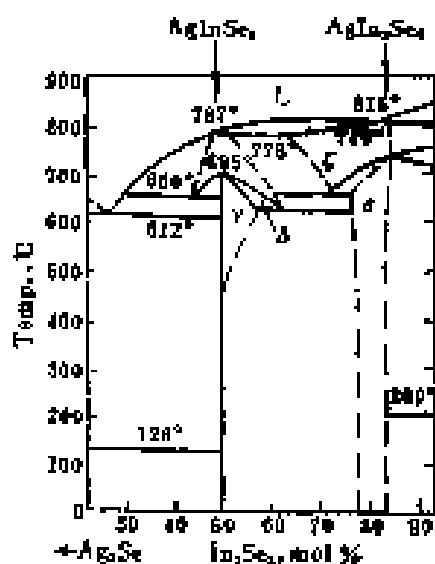


Fig. 508 Ag-In-Se 銀-銦-硒  
Silver-Indium-Selenium(68)

Ag2Se-In2Se3 假面 Section at Ag2Se-In2Se3

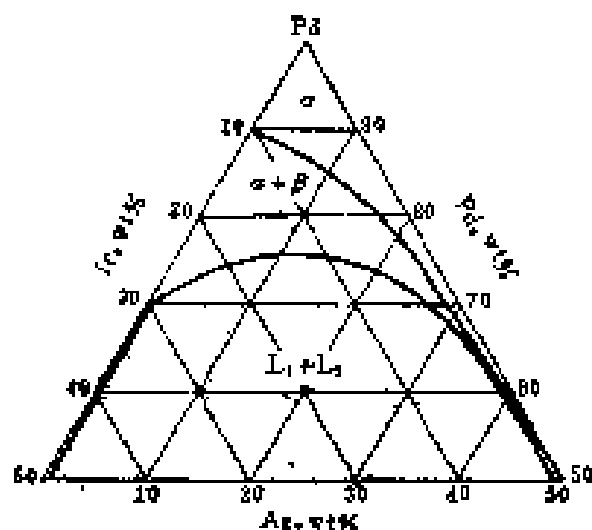


Fig. 510 Ag-In-Pd 銀-銦-鉑  
Silver-Indium-Palladium(69)

部分相圖 Partial phase diagram

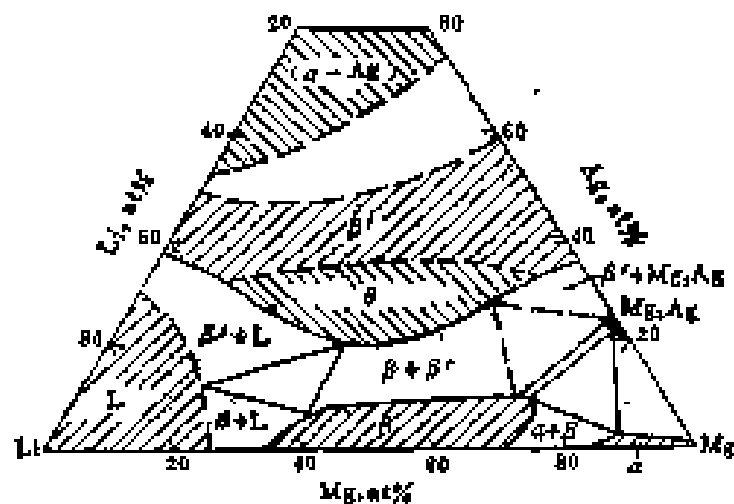


Fig. 511 Ag-Li-Mg 銀-鋰-鎂 Silver-Lithium-Magnesium (70)  
800°C 等溫截面 Isotherm at 800°C

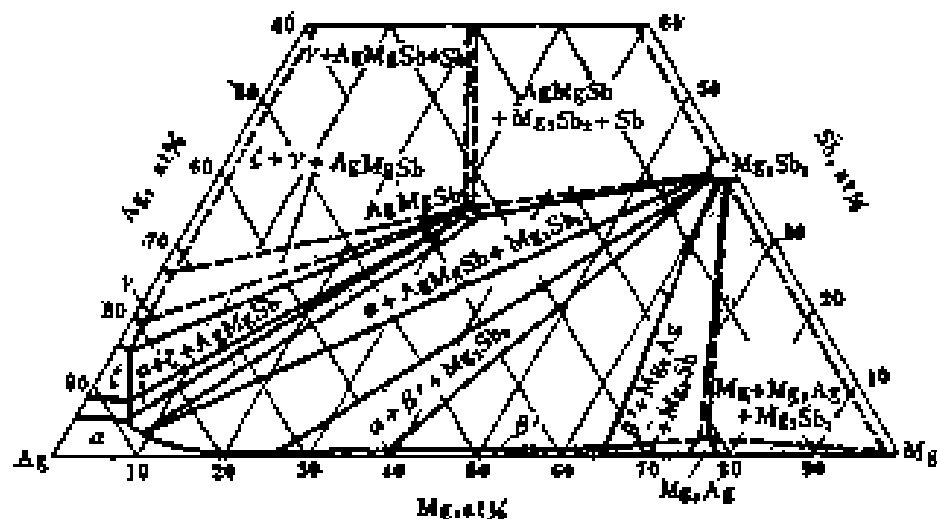


Fig. 512 Ag-Mg-Sb 銀-鎂-銻 Silver-Magnesium-Antimony (71)  
450°C 等溫截面 Isotherm at 450°C

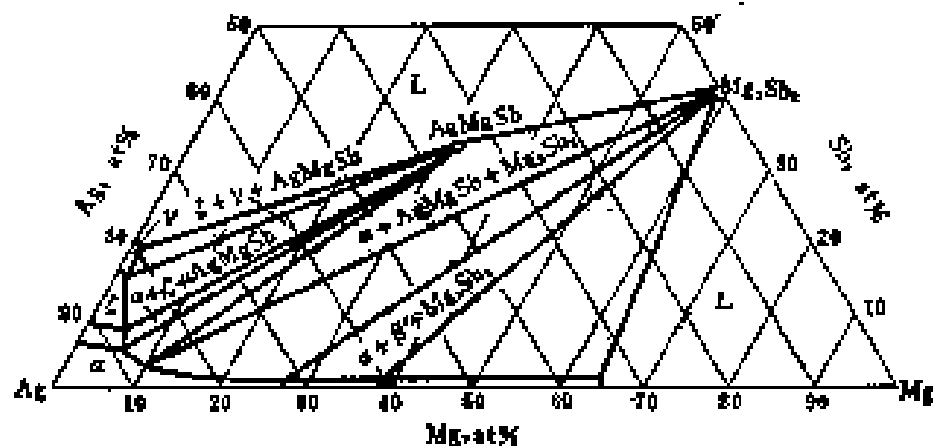


Fig. 513 Ag-Mg-Sb 銀-鎂-銻 Silver-Magnesium-Antimony (71)  
550°C 等溫截面 Isotherm at 550°C

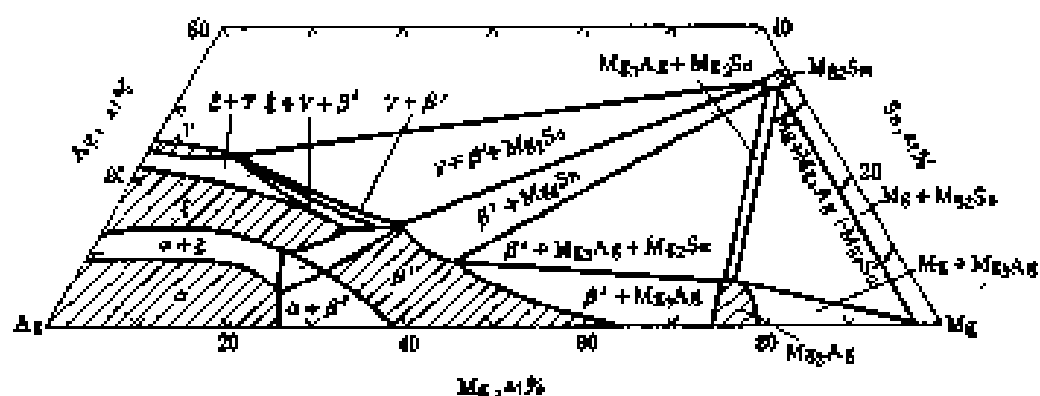


Fig. 514 Ag-Mg-Sn 銀-鎂-錫 Silver-Magnesium-Tin (73)

450°C 等溫截面 Isotherm at 450°C

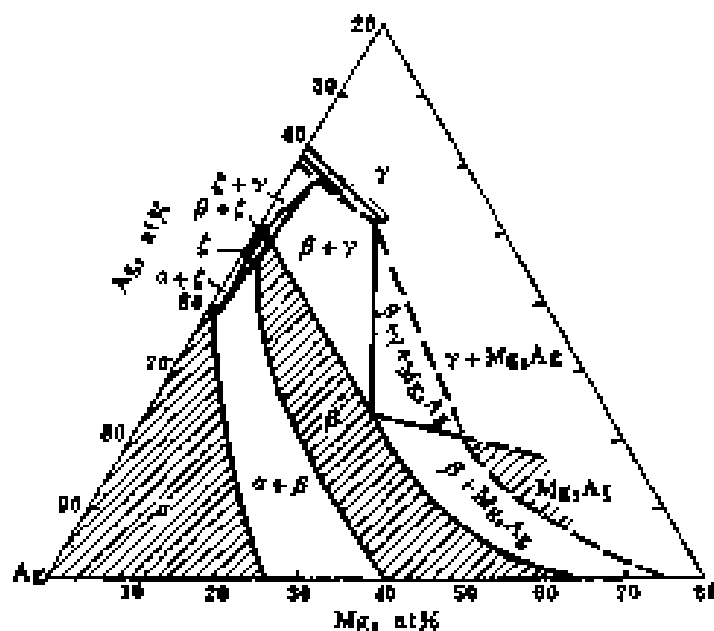


Fig. 515 Ag-Mg-Zn 銀-鎂-鋅 Silver-Magnesium-Zinc (73)

250°C 部分等溫截面 Partial isotherm at 250°C

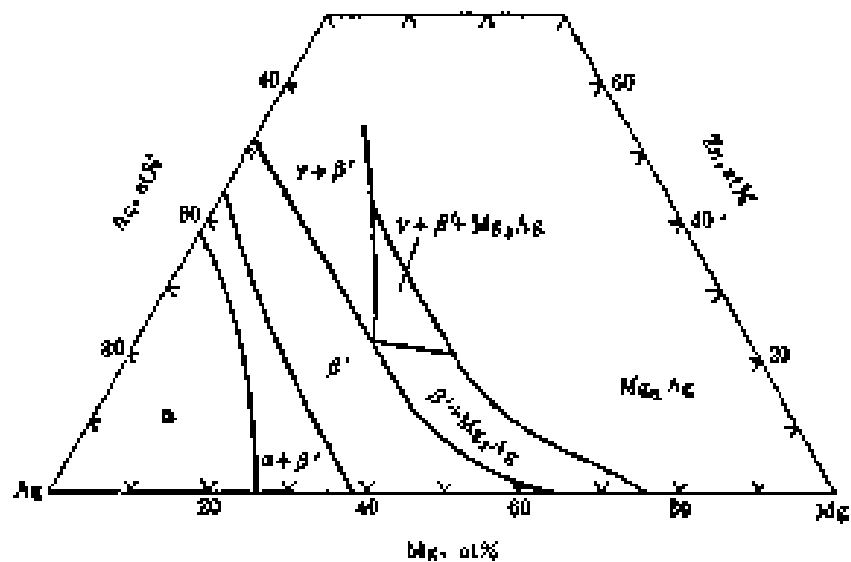


Fig. 516 Ag-Mg-Zn 銀-鎂-鋅 Silver-Magnesium-Zinc(73)

454°C等溫截面 Isotherm at 454°C

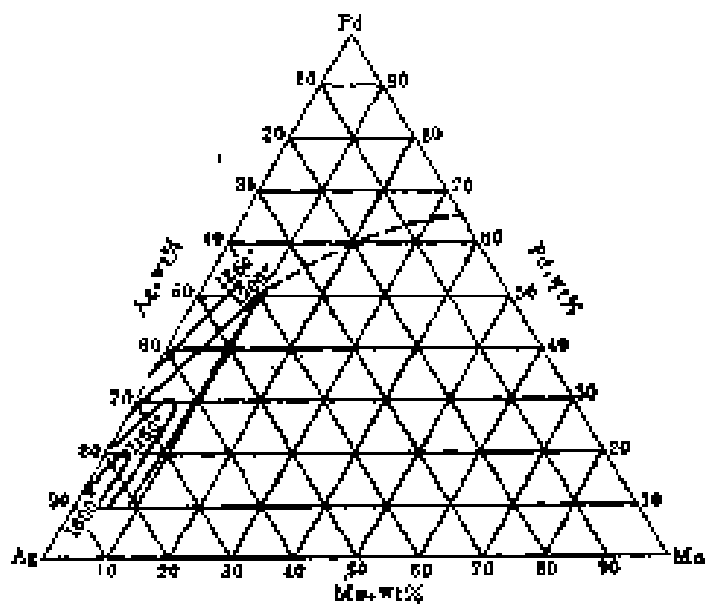


Fig. 517 Ag-Mn-Pd 銀-錳-鈀 Silver-Manganese-Palladium(74)

液相面 Liquidus

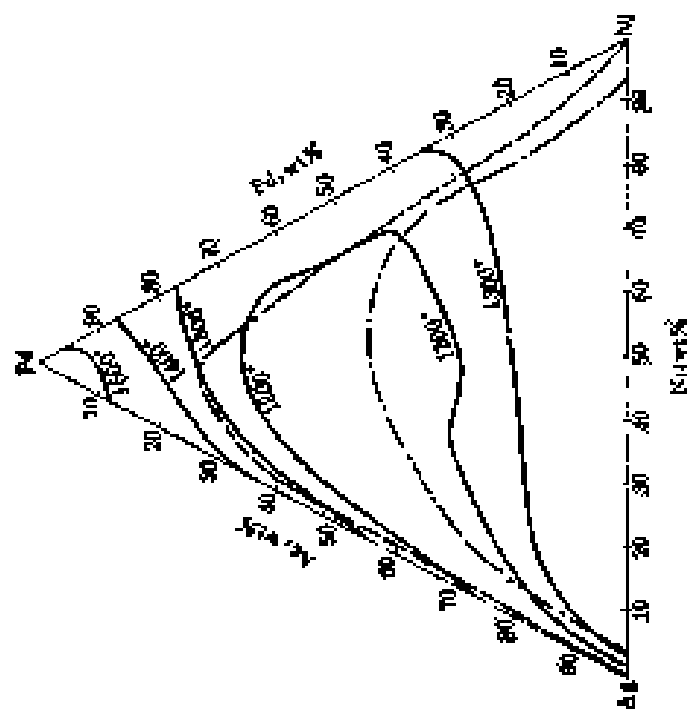


Fig 51B Ag-Ni-Pd 银-镍-钯  
Silver-Nickel-Palladium(75)

液相面 Liquidus  
--- 溶解区界限 The boundary of  
homogeneous region  
----- 分相区界限  
The boundary of layered region

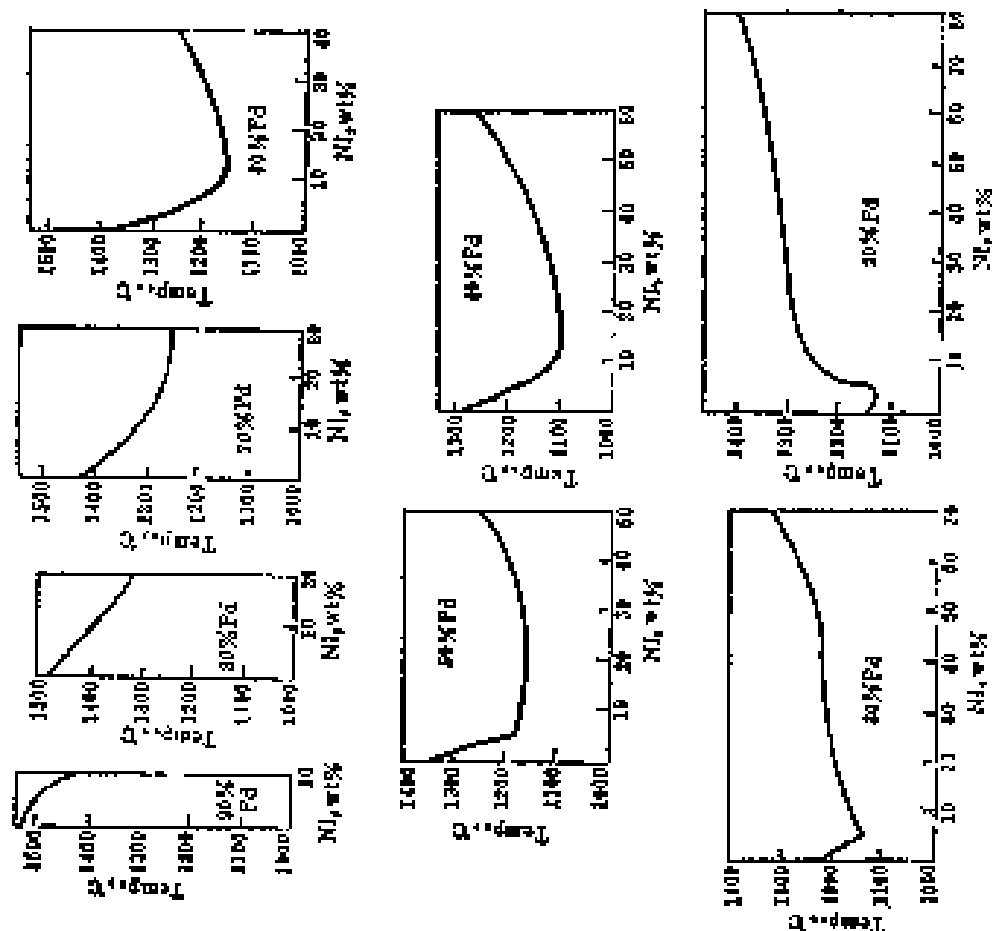


Fig.51D Ag-Ni-Pd 银-镍-钯 Silver-Nickel-Palladium(75)

液相面 Liquidus





Fig.S21 Ag-Ni-Si 银-镍-硅 Silver-Nickel-Silicon (42)

**Fig 522 Ag-Pb-S 銀-鉛-硫 Silver-Lead-Sulphur(202)**

Ag—PbS<sub>2</sub> in Section at Ag—PbS<sub>2</sub>

Pb-Ag, SSM Section of Pb-Ag, S

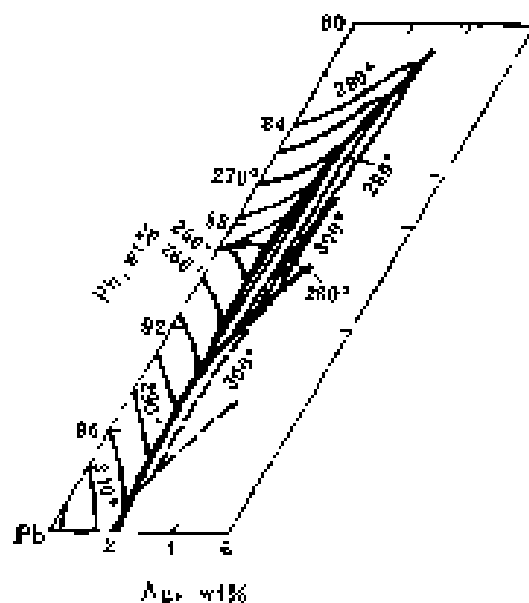


Fig. 523 Ag-Pb-Sb 銀-鉛-銻  
Silver-Lead-Antimony (203)

20°C 截面 - liquidus

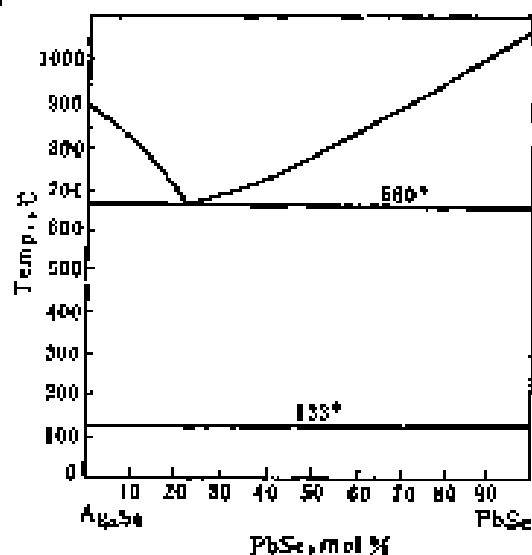


Fig. 524 Ag-Pb-Se 銀-鉛-硒  
Silver-Lead-Selenium (77)

Ag<sub>2</sub>Se-PbSe 截面 Section at Ag<sub>2</sub>Se-PbSe

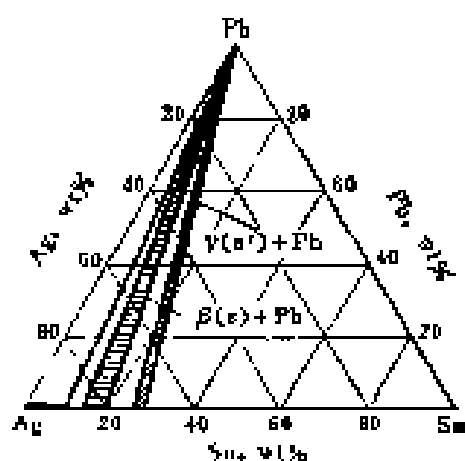


Fig. 525 Ag-Pb-Sn 銀-鉛-錫  
Silver-Lead-Tin (78)

20°C 截面 Section at 20°C

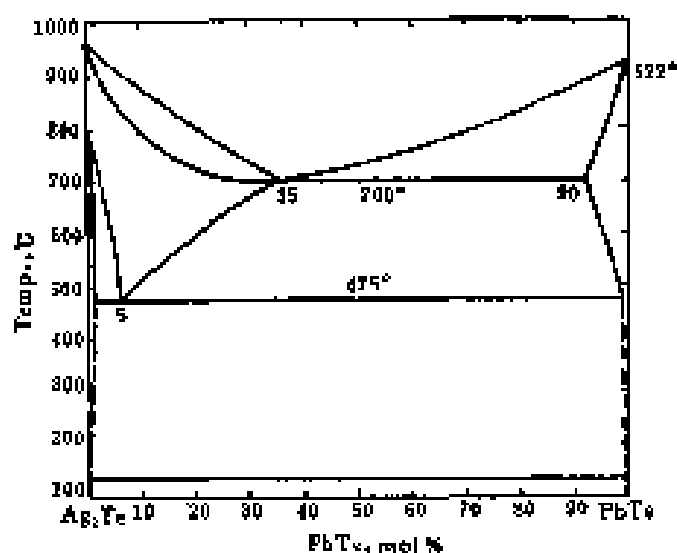


Fig. 526 Ag-Pb-Te 銀-鉛-碲  
Silver-Lead-Tellurium (79)

Ag<sub>2</sub>Te-PbTe 截面 Section at Ag<sub>2</sub>Te-PbTe

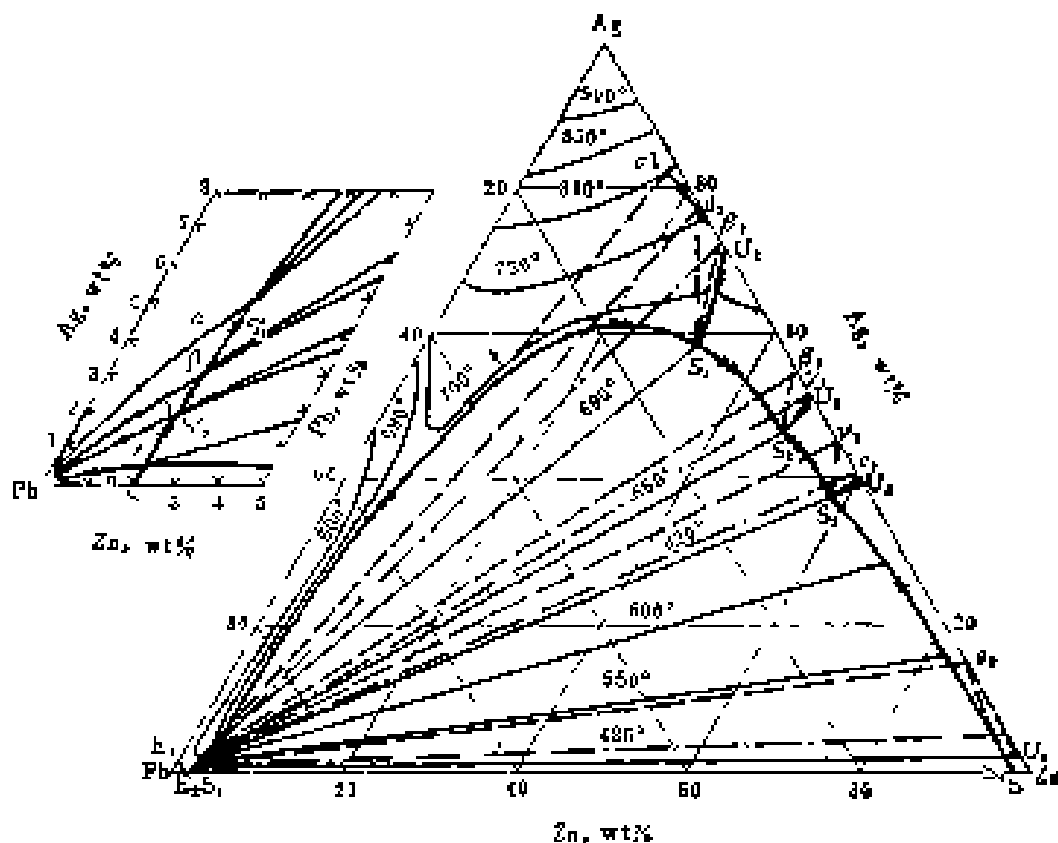


Fig. 527 Ag-Pb-Zn 银-铅-锌 Silver-Lead-Zinc (91)

液相面 Liquidus

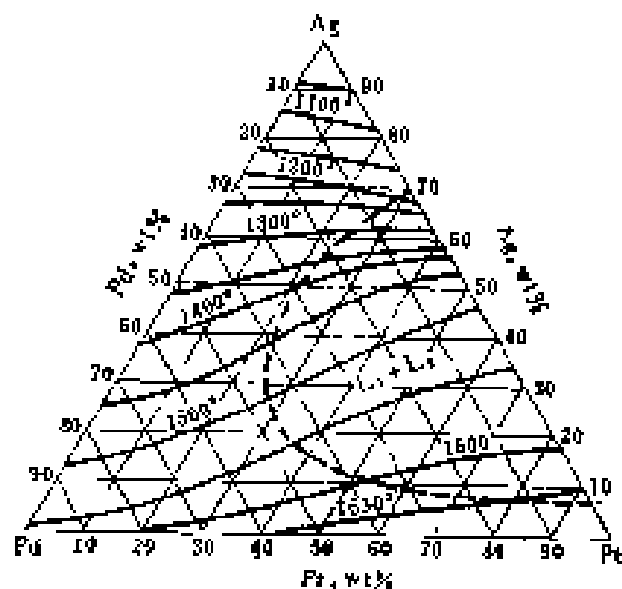


Fig. 528 Ag-Pd-Pt 银-钯-铂  
Silver-Palladium-Platinum (80)

液相面 Liquidus

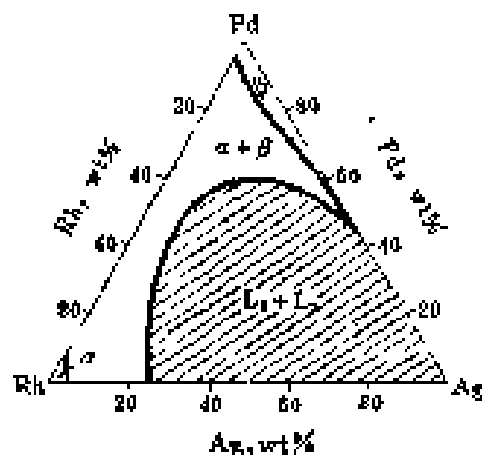


Fig. 529 Ag-Pd-Rh 银-钯-铑  
Silver-Palladium-Rhodium (81)

平衡图, 富Pd和富Rh合金在1200°C退火,  
富Ag合金在800°C退火  
Equilibrium diagram: Pd and Rh rich  
alloys (Samples annealed at 1200°C),  
Ag rich alloys (samples annealed at 800°C)

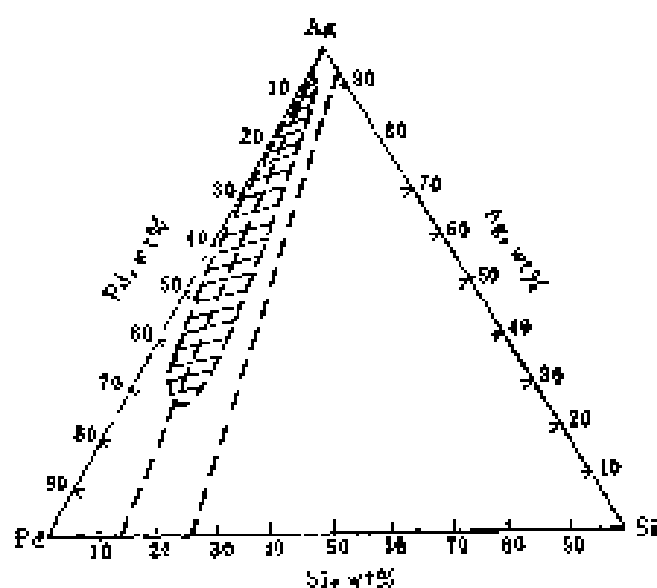


Fig. 530 Ag-Pd-Si 銀-鈀-硅  
Silver-Palladium-Silicon (82)

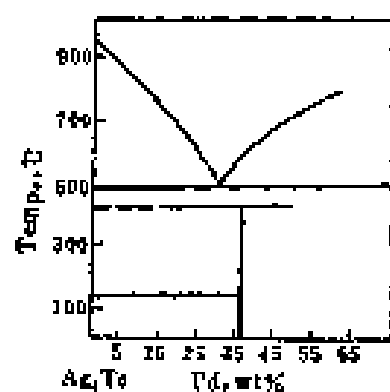


Fig. 531 Ag-Pd-Te 銀-鈀-碲  
Silver-Palladium-Tellurium (83)

$Ag_2Te$ -Pd 截面 Section at  $Ag_2Te$ -Pd

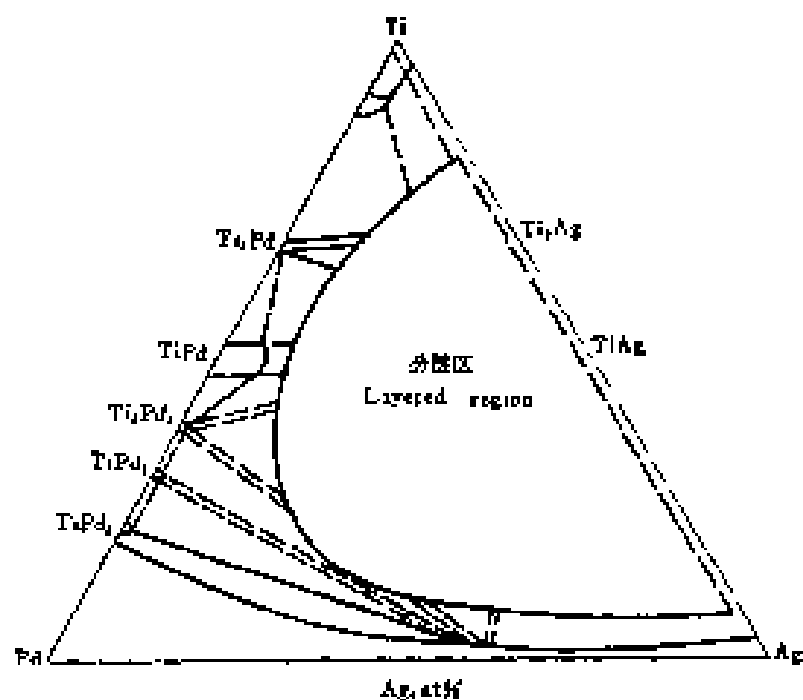


Fig. 532 Ag-Pd-Ti 銀-鈀-鈦 Silver-Palladium-Titanium (84)

700°C 等溫截面 Isotherm at 700°C



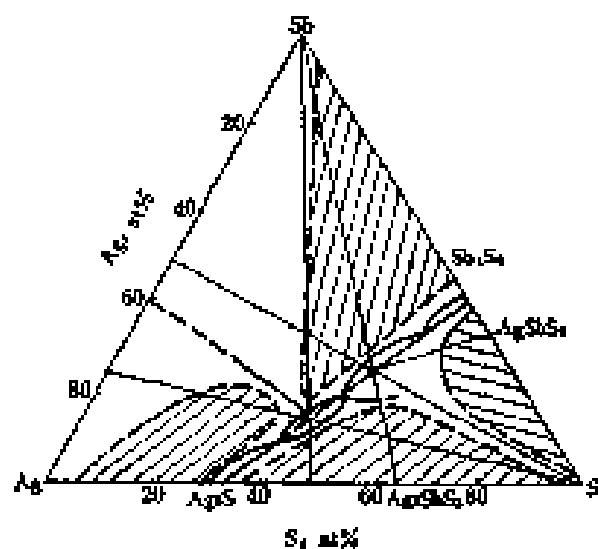


Fig. 535 Ag-S-Sb 銀-硫-銻 Silver-Sulfur-Antimony [182]

液相面 Liquidus

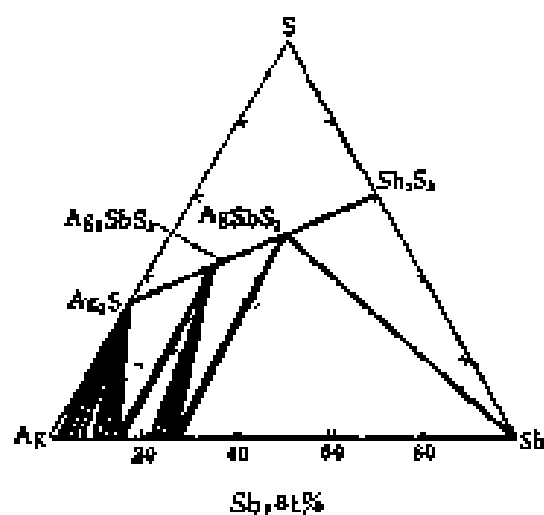


Fig. 536 Ag-S-Sb 銀-硫-銻 Silver-Sulfur-Antimony [88]

400°C Ag<sub>2</sub>S-Sb<sub>2</sub>S<sub>3</sub>-Ag-Sb 截面 Section from Ag<sub>2</sub>S-Sb<sub>2</sub>S<sub>3</sub>-Ag-Sb at 400°C

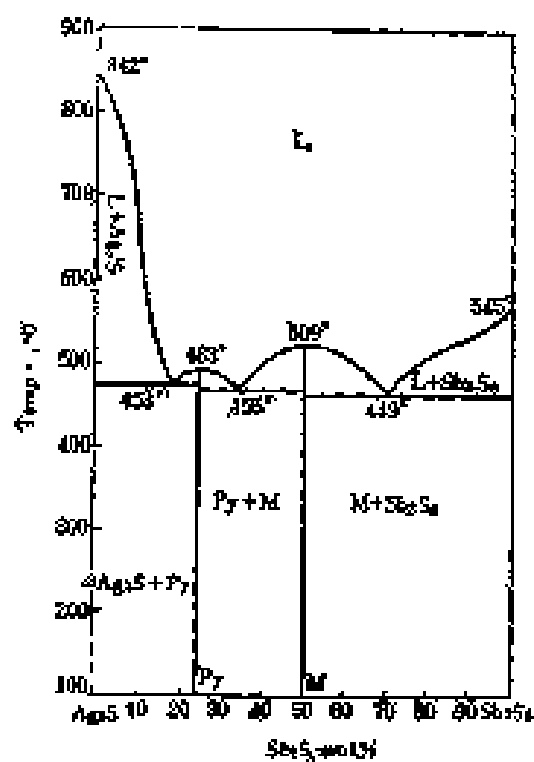


Fig. 537 Ag-S-Sb 银-硫-锑 Silver-Sulfur-Antimony (87)

Ag<sub>2</sub>S—Sb<sub>2</sub>S<sub>3</sub> 截面 Section at Ag<sub>2</sub>S—Sb<sub>2</sub>S<sub>3</sub>

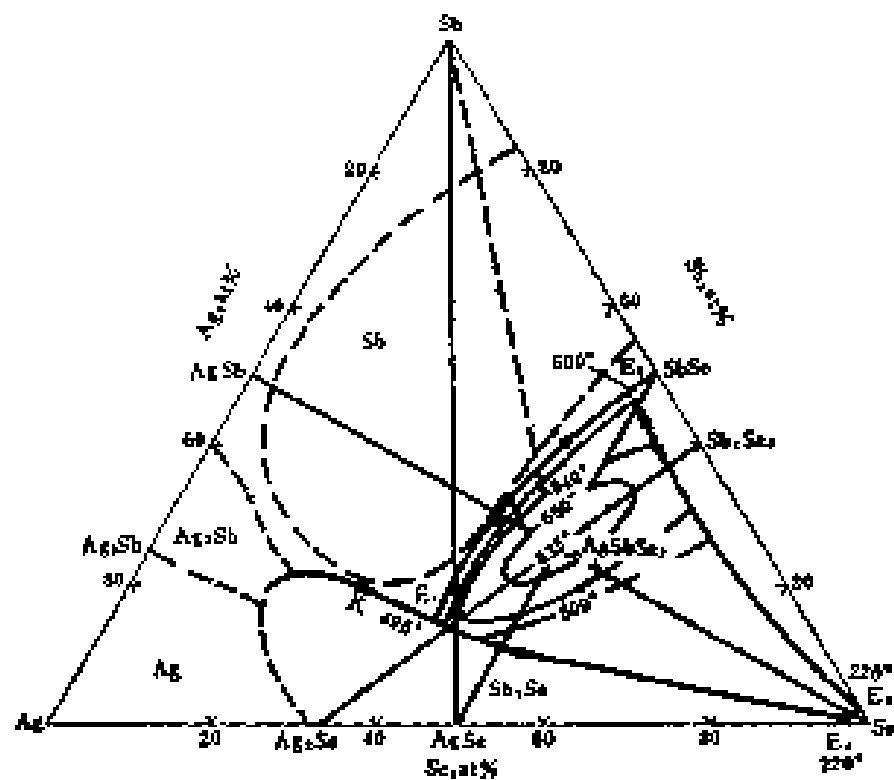
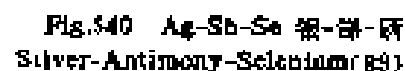


Fig. 538 Ag-Sb-Se 银-锑-硒 Silver-Antimony-Selenium (89)

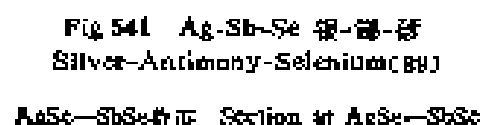
液相面 Liquidus



Ag5e—3248 面 Section at Ag5e—3248



Ag5b—Section at Ag5b—S





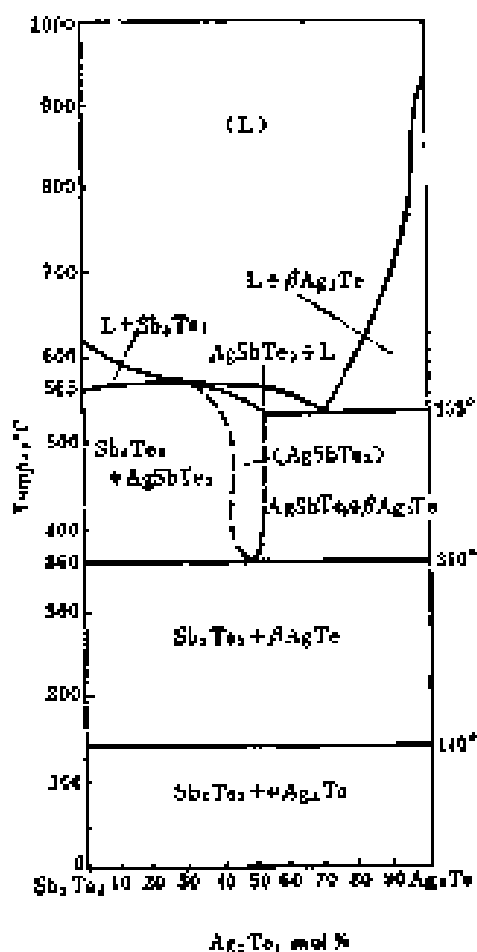


Fig. 543 Ag-Sb-Te 銀-銻-碲  
Silver-Antimony-Tellurium (91)

Ag₂Te—Sb₂Te₃ 截面  
Section at Ag₂Te—Sb₂Te₃

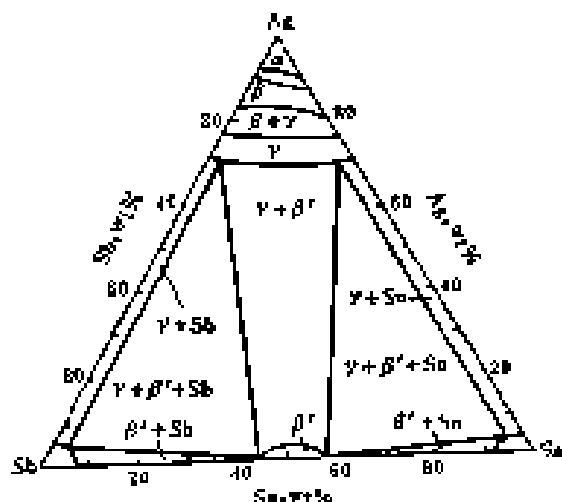
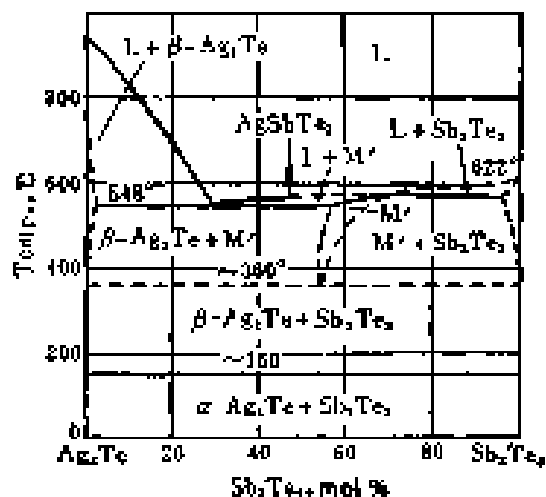


Fig. 542 Ag-Sb-Sn 銀-銻-錫  
Silver-Antimony-Tin (90)

室温相图 Phase diagram at room temperature

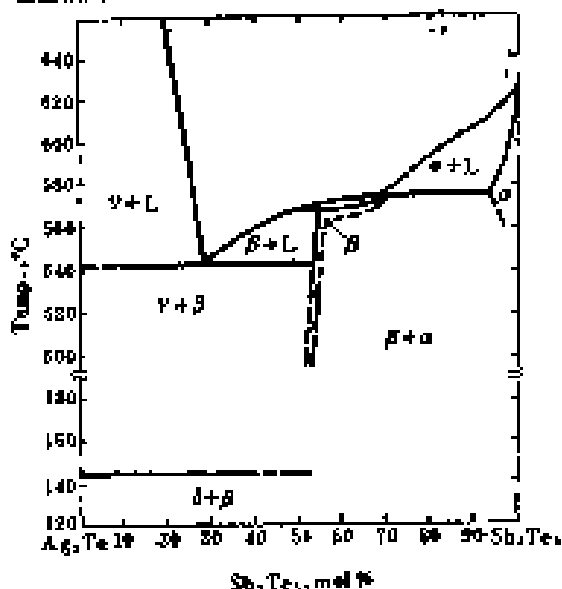


Fig. 544 Ag-Sb-Te 銀-銻-碲  
Silver-Antimony-Tellurium (92)

Ag₂Te—Sb₂Te₃ 截面 Section at Ag₂Te—Sb₂Te₃

Fig. 545 Ag-Sb-Te 銀-銻-碲  
Silver-Antimony-Tellurium (93)

Ag₂Te—Sb₂Te₃ 截面 Section at Ag₂Te—Sb₂Te₃

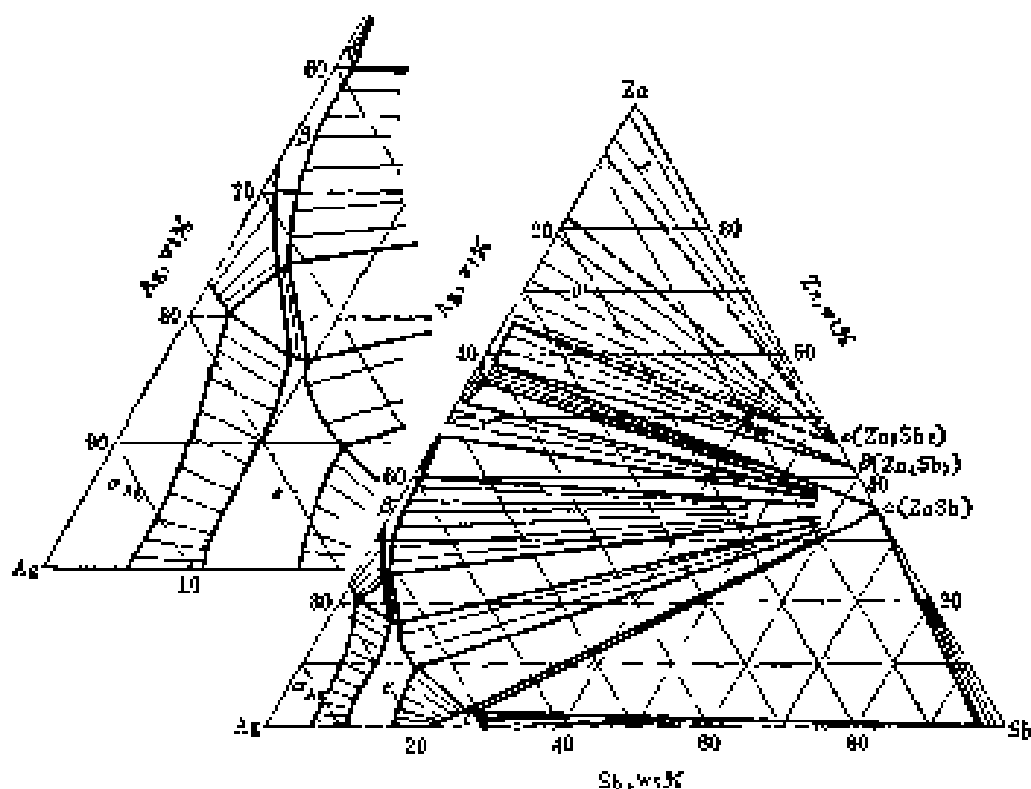


Fig.546 A<sub>3</sub>-Sb-Zn 银-锑-锌 Silver-Antimony-Zinc(204)

(400℃ 等温截面 Isotherm at 400℃)

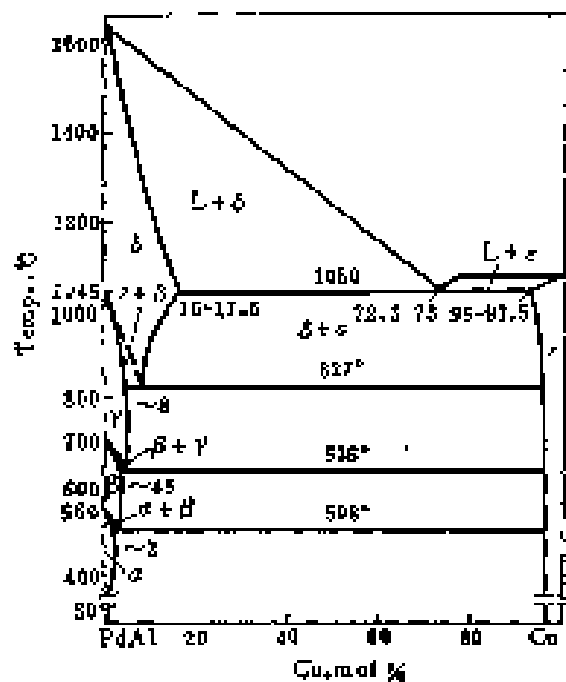


Fig.547 Al-Cu-Pd 铝-铜-钯  
Aluminum-Copper-Palladium(94)

Pd-Al-Cu 截面 Section at Pd-Al-Cu

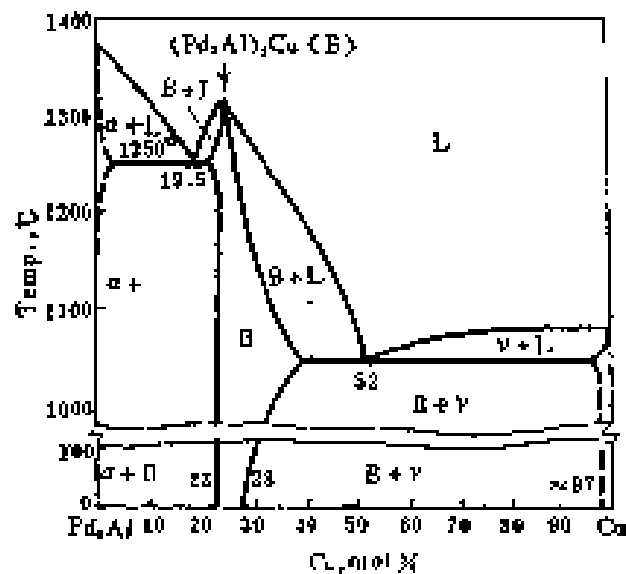


Fig.548 Al-Cu-Pd 铝-铜-钯  
Aluminum-Copper-Palladium(95)

Pd-Al-Cu 截面 Section at Pd-Al-Cu

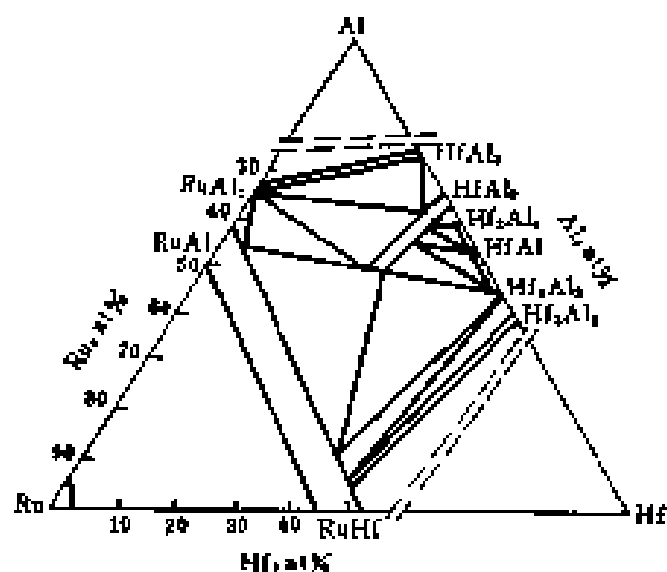


Fig 549 Al-Hf-Ru 铝-铪-钌  
Aluminum-Hafnium-Ruthenium (98)

400℃ 等温脱出 1304bcrad at 800℃

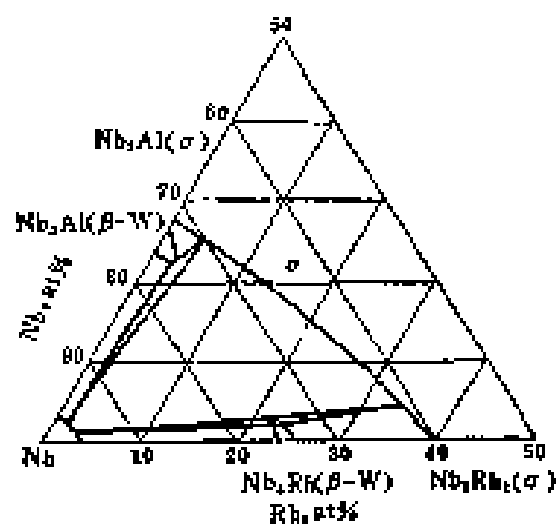


Fig.550 Al-Nb-Rh 铝-铌-铑  
Aluminum-Niobium-Rhodium(87)

925℃ 等温处理 Isothermal at 925℃

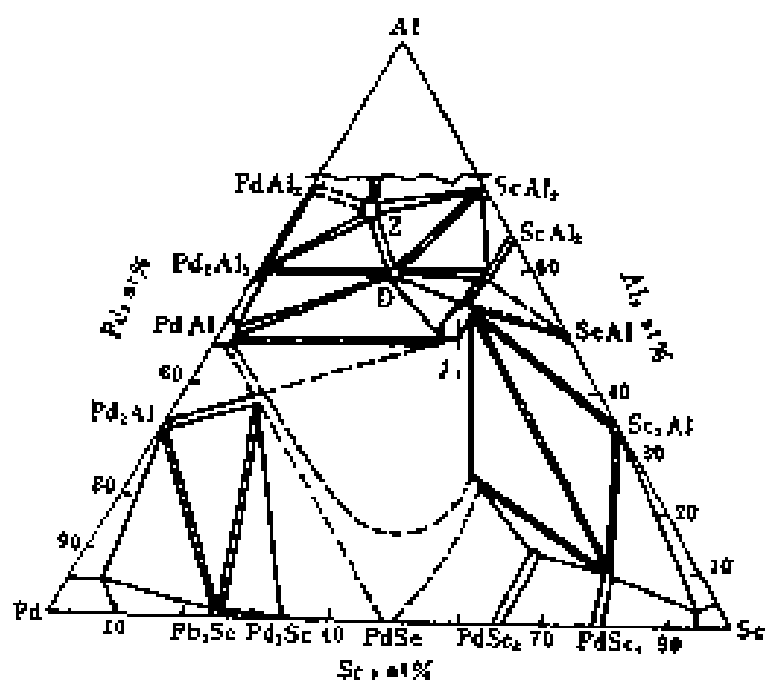


Fig.551 Al-Pd-Sc 铝-钯-钪  
Aluminum-Palladium-  
Scandium (88)

800 °C 等温截面 Isothermal at 800 °C

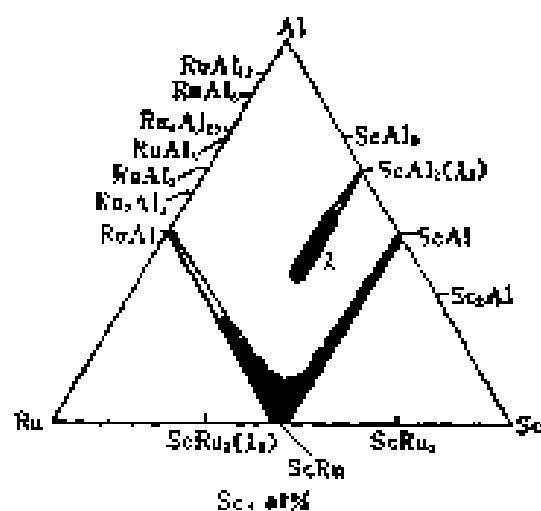


Fig. 552 Al-Ru-Sc 铝-钌-钪  
Aluminum-Ruthenium-Scandium (997)

600°C  $ScRu_2 - ScAl_2$  等温截面 Isotherm  
from  $ScRu_2 - ScAl_2$  at 600°C

Fig. 553 Al-Ru-Sc 铝-钌-钪  
Aluminum-Ruthenium-  
Scandium (98)

600°C 等温截面 Isotherm  
at 600°C

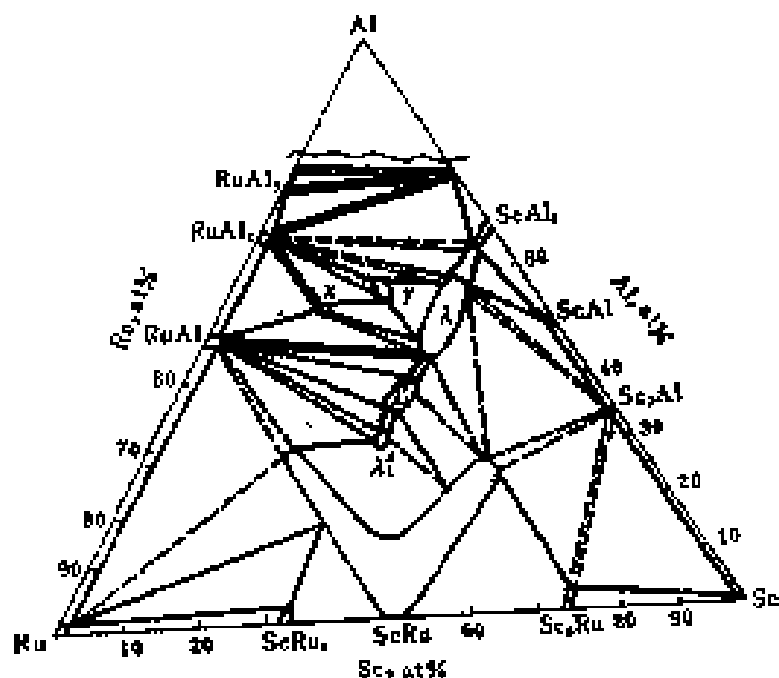


Fig. 554 Al-Ru-Y 铝-钌-钇  
Aluminum-Ruthenium-Yttrium (99)

800°C  $YRu_2 - YAl_2$  等温截面  
Isotherm of  $YRu_2 - YAl_2$  at 800°C  
(A, B, C---化合物 A, B, C---Compounds).

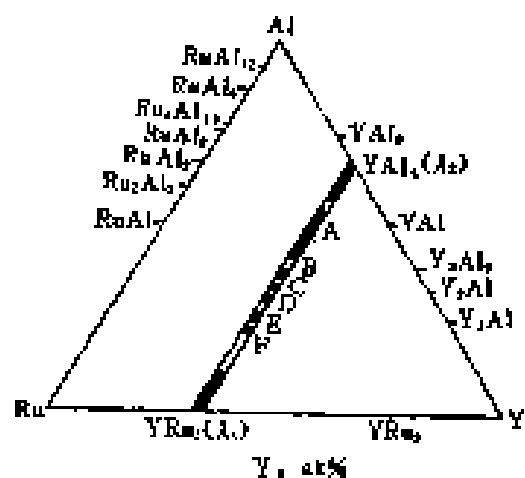


Fig. 555 Al-Ru-Zr 铝-钌-锆  
Aluminum-Ruthenium-Zirconium (1047)  
800°C 等温截面 Isotherm at 800°C

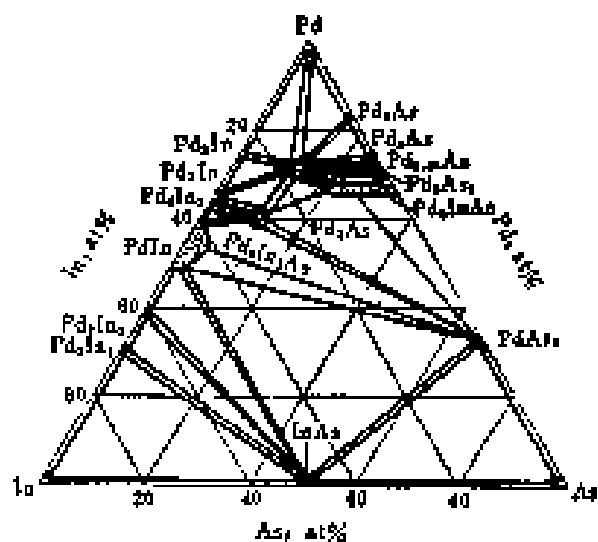
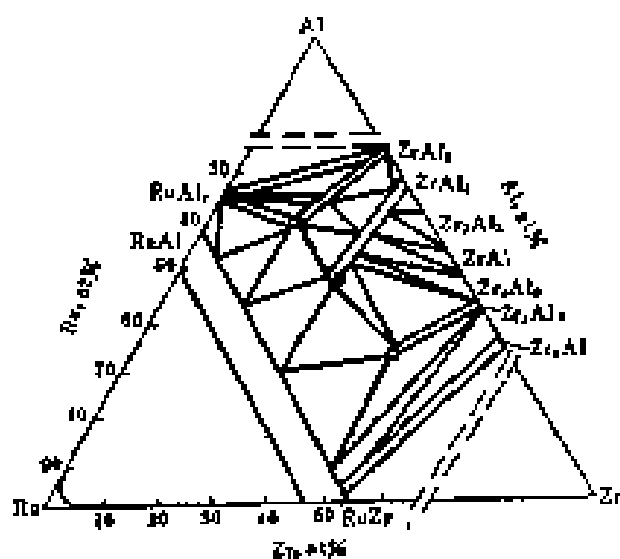
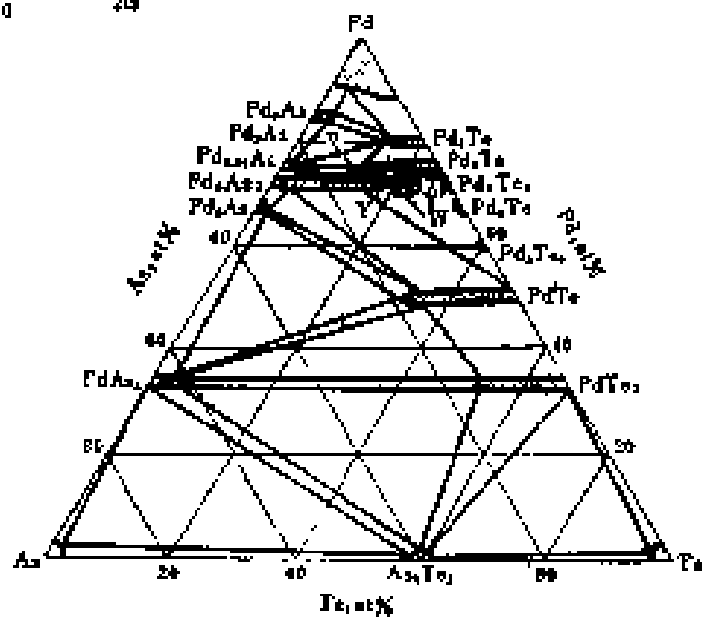


Fig. 556 As-In-Pd 砷-铟-钯  
Arsenic-Indium-Palladium (101)  
600°C 等温截面 Isotherm at 600°C

Fig. 557 As-Pd-Te 砷-钯-碲  
Arsenic-Palladium-Tellurium (1021)  
400°C 等温截面 Isotherm at 400°C



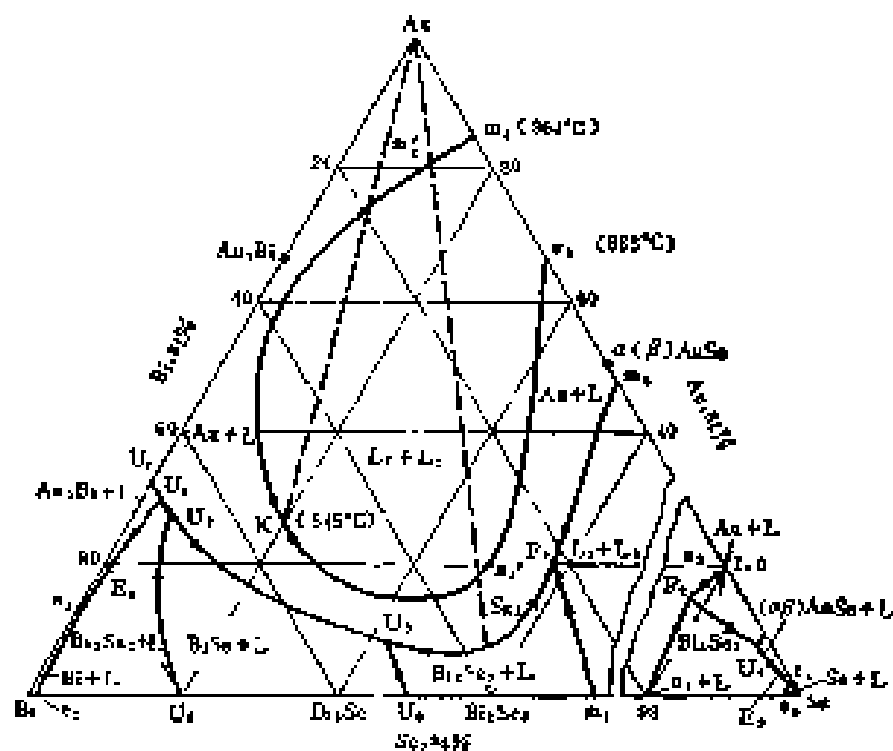


Fig. 558 Au-Bi-Se 金-铋-硒 Gold-Bismuth-Selenium (199)

液相面 Liquidus

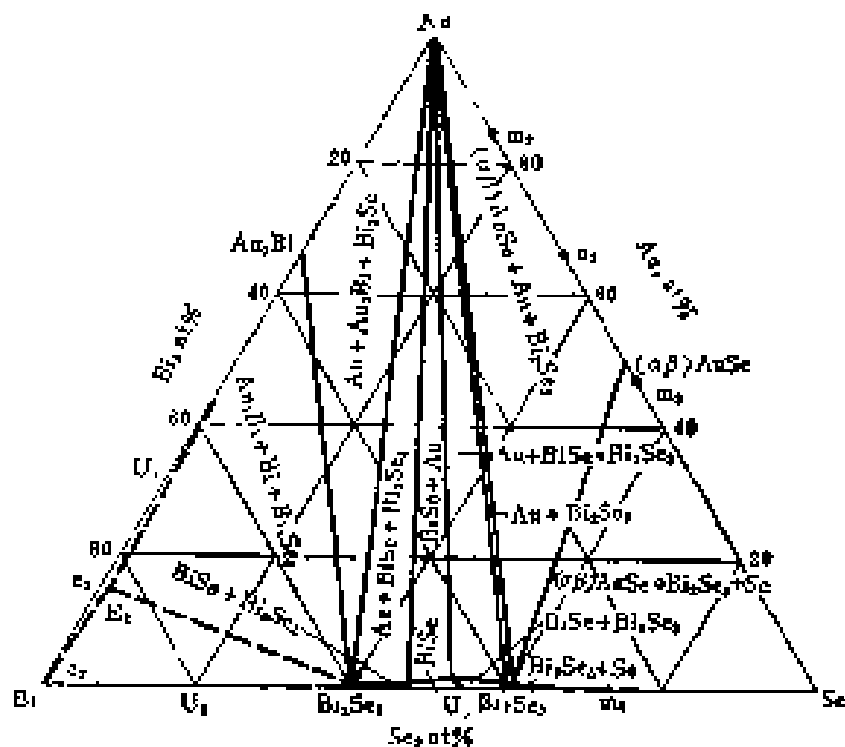


Fig. 559 Au-Bi-Se 金-铋-硒 Gold-Bismuth-Selenium (199)

210°C 等温线面 Isotherm at 210°C

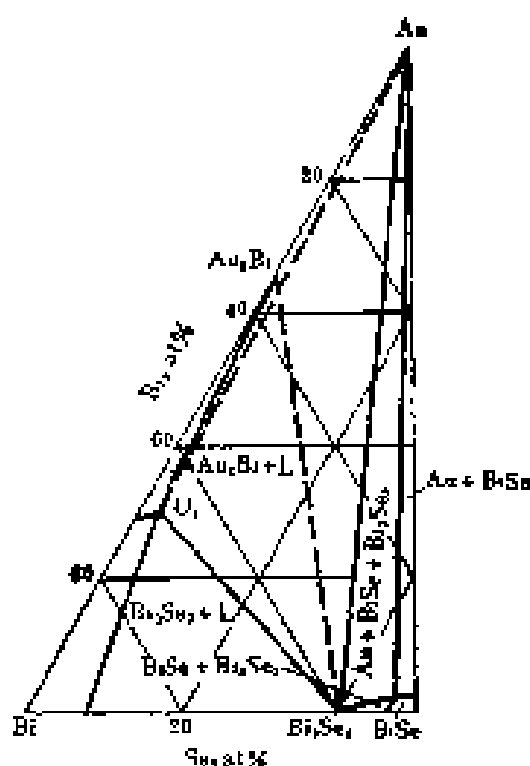


Fig. 560 Au-Bi-Se 金-铋-硒  
Gold-Bismuth-Selenium (108)

347°C 等温截面 Isotherm at 347°C

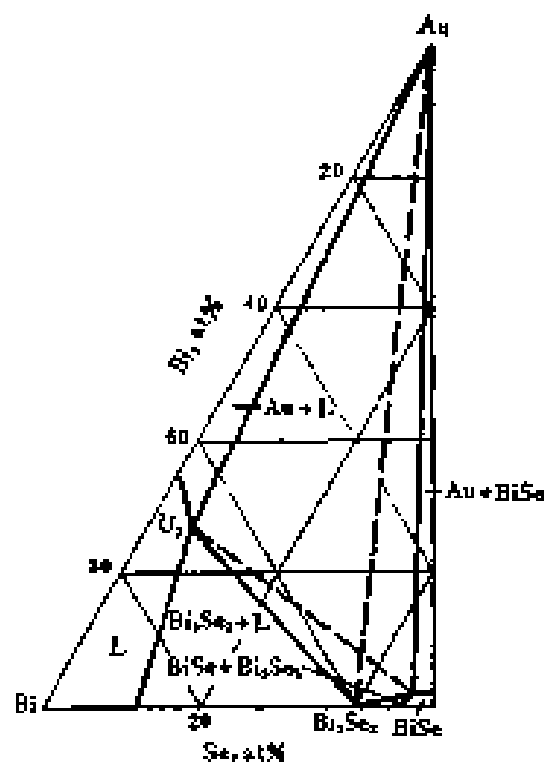


Fig. 561 Au-Bi-Se 金-铋-硒  
Gold-Bismuth-Selenium (109)

412°C 等温截面 Isotherm at 412°C

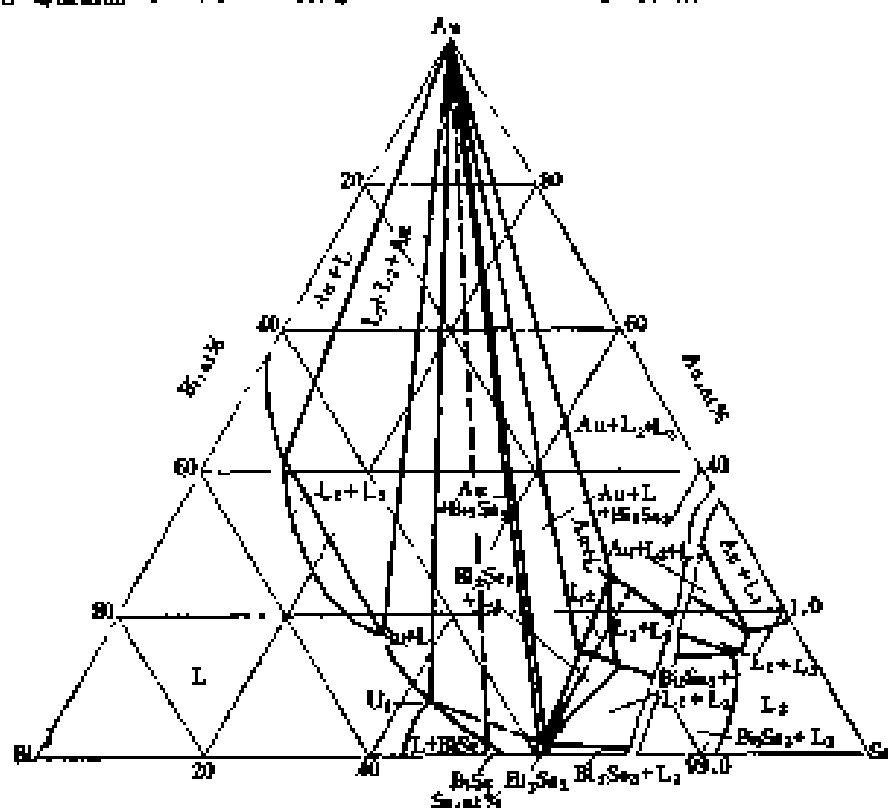


Fig. 562 Au-Bi-Se 金-铋-硒 Gold-Bismuth-Selenium (108)

543°C 等温截面 Isotherm at 543°C

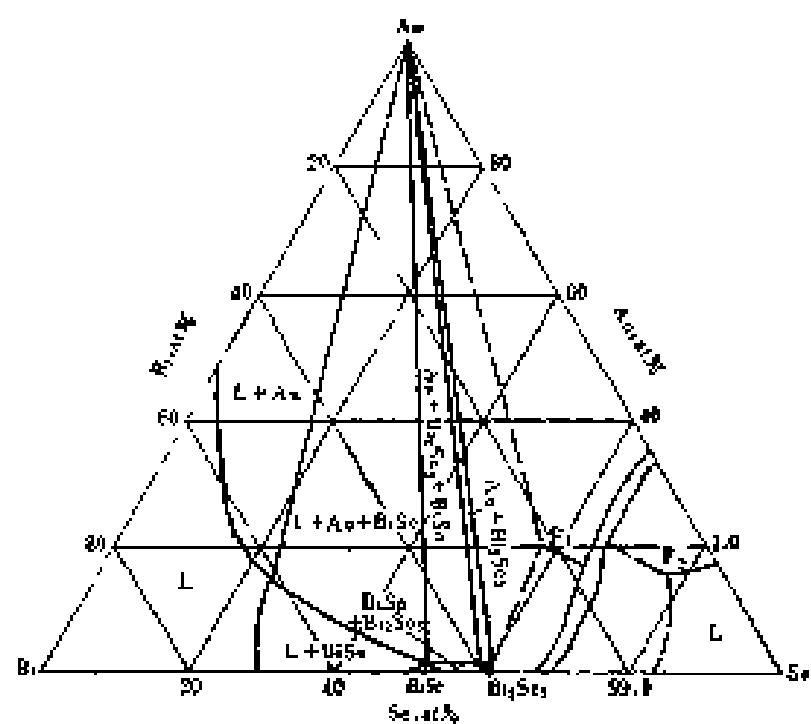


Fig. 563 Au-Bi-Se 金-铋-硒 Gold-Bismuth-Selenium (103)

510°C 等温截面 Isotherm at 510°C

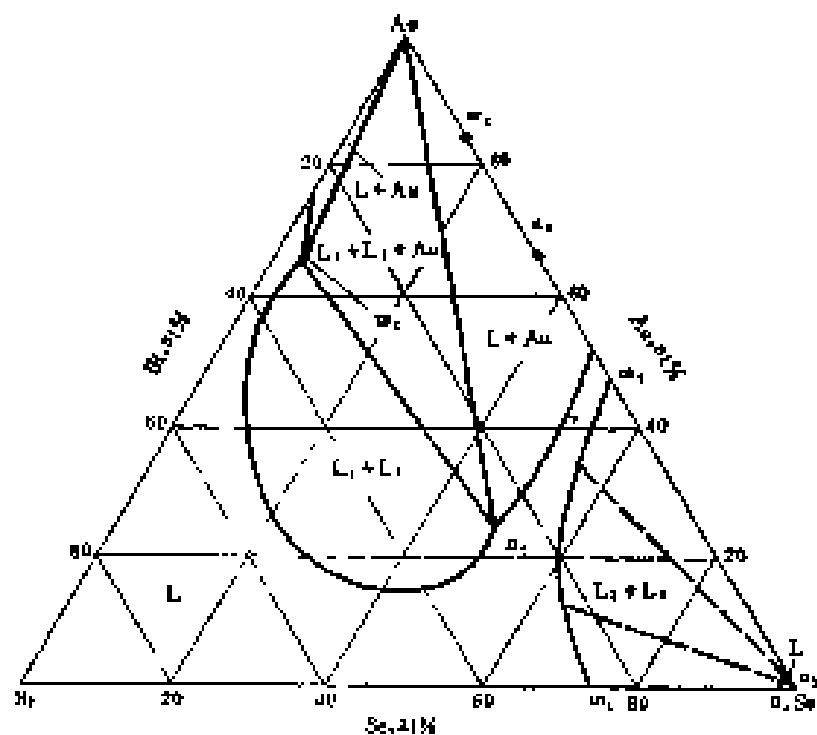


Fig. 564 Au-Bi-Se 金-铋-硒 Gold-Bismuth-Selenium (103)

800°C 等温截面 Isotherm at 800°C





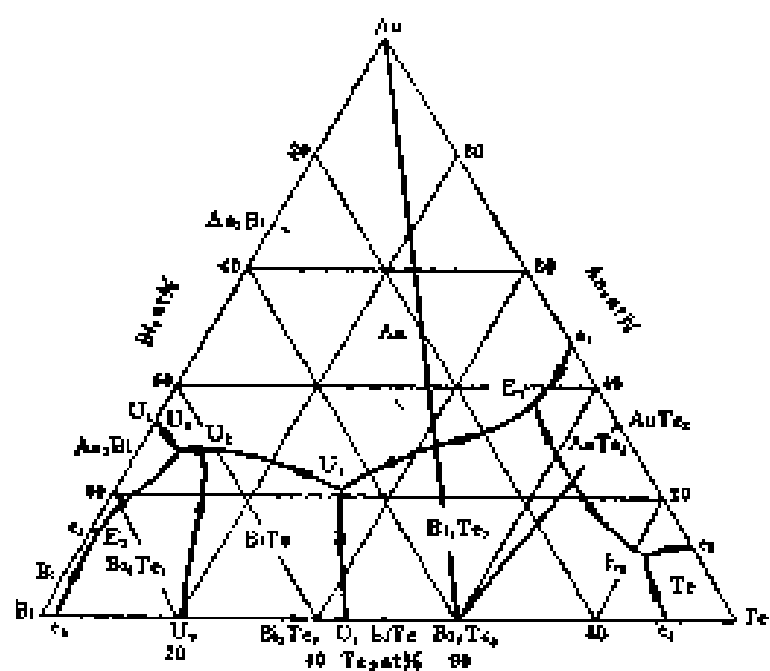


Fig. 567 Au-Bi-Te 金-铋-碲 Gold-Bismuth-Tellurium (104)

投影图 Projection E—共晶 Eutectic U—包晶 Peritectic

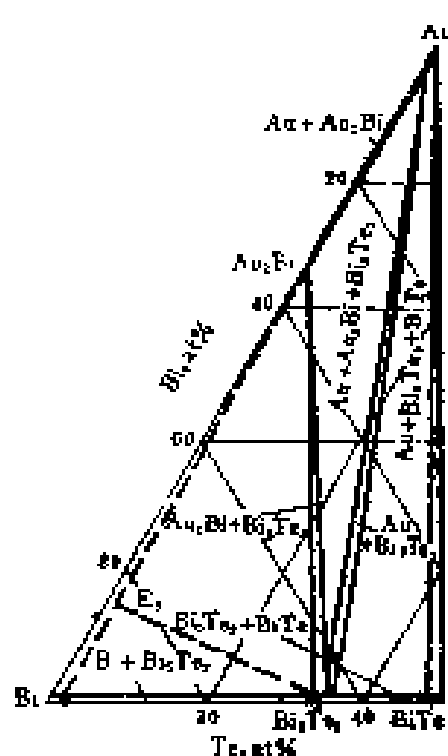


Fig. 568 Au-Bi-Te 金-铋-碲  
Gold-Bismuth-Tellurium (104)

235°C 等温截面 (E<sub>1</sub>) Isotherm 235°C (E<sub>1</sub>)

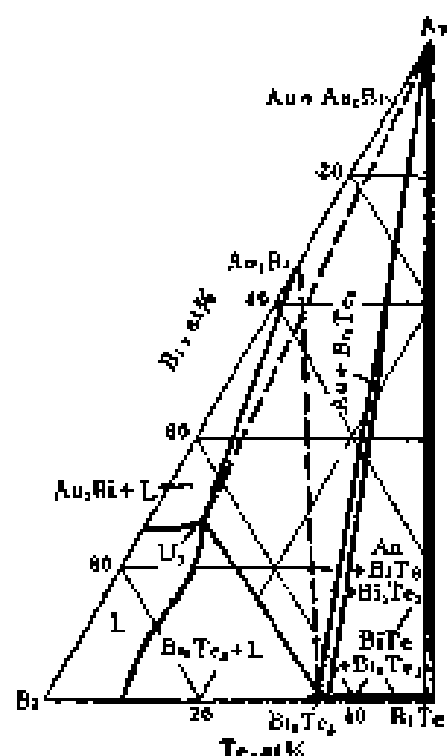


Fig. 569 Au-Bi-Te 金-铋-碲  
Gold-Bismuth-Tellurium (104)

245°C 等温截面 (U<sub>1</sub>) Isotherm at 245°C (U<sub>1</sub>)



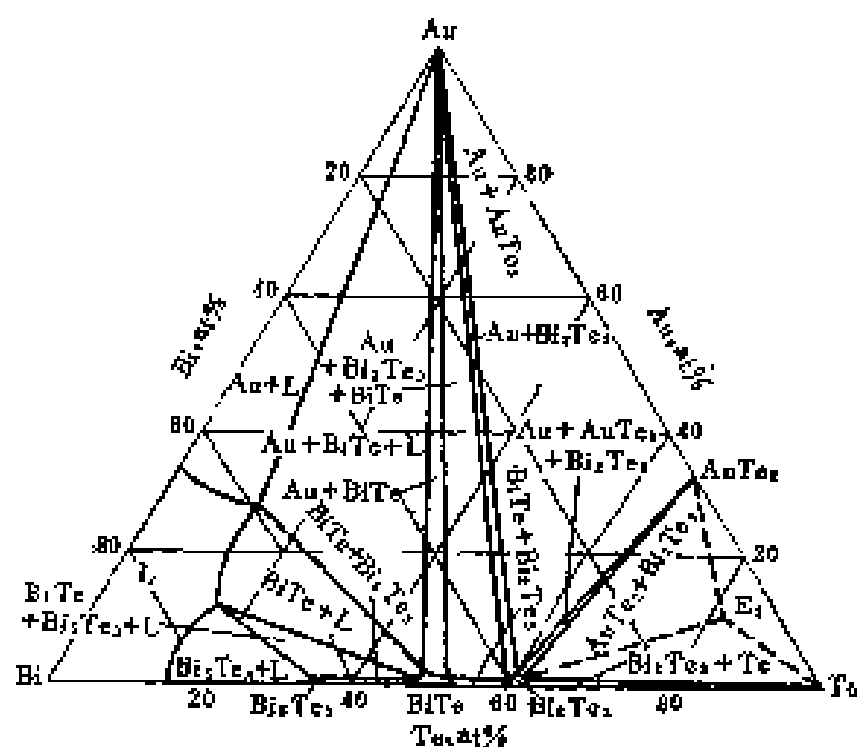


Fig. 572 Au-Bi-Te 金-铋-碲 Gold-Bismuth-Tellurium(104)

402°C 等温截面 Isotherm at 402°C (E)

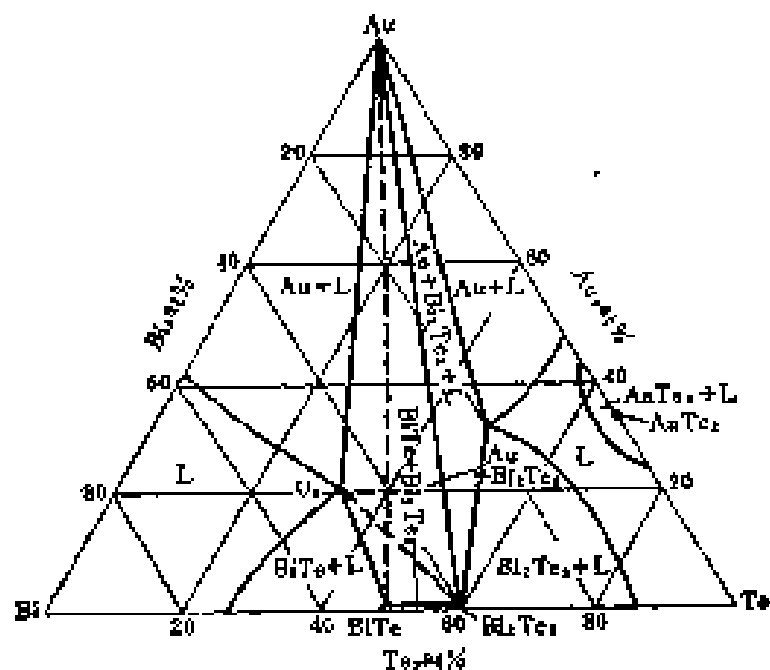


Fig. 573 Au-Bi-Te 金-铋-碲 Gold-Bismuth-Tellurium(104)

455°C 等温截面(U1) Isotherm at 455°C (U1)

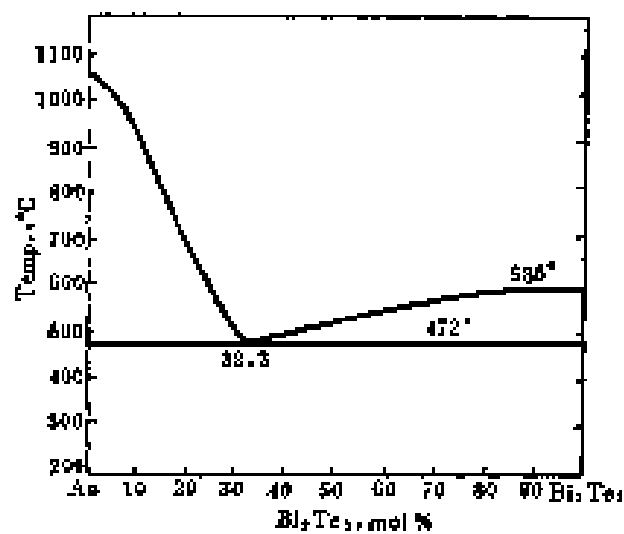


Fig. 574 Au-Bi-Te 金-铋-碲 Gold-Bismuth-Tellurium(1053)

Au-Bi₂Te₃ 断面 Section at Au-Bi₂Te₃

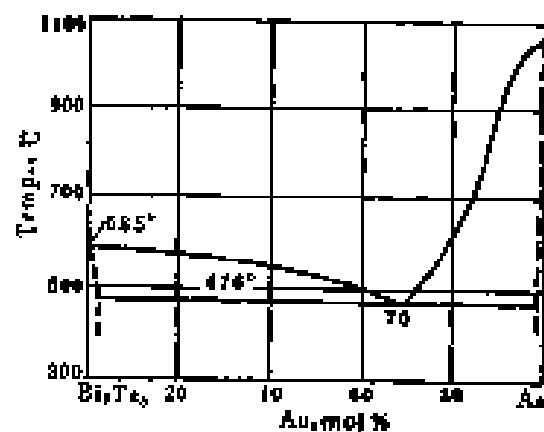


Fig. 575 Au-Bi-Te 金-铋-碲 Gold-Bismuth-Tellurium(1043)

Au-Bi₂Te₃ 断面 Section at Au-Bi₂Te₃

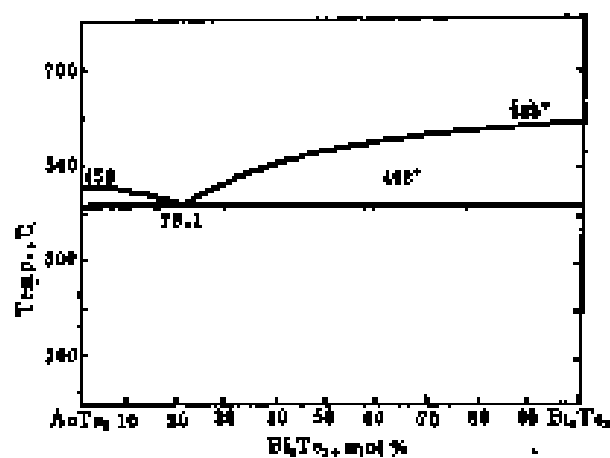


Fig. 576 Au-Te-Bi 金-碲-铋 Gold-Bismuth-Tellurium(1063)

AuTe₂-Bi₂Te₃ 断面 Section at AuTe₂-Bi₂Te₃

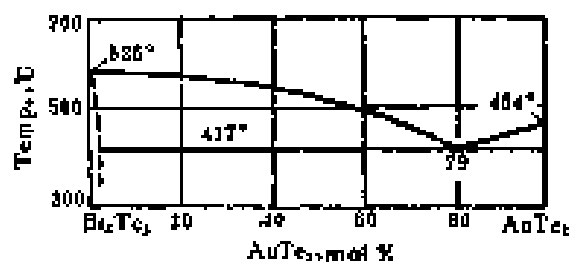


Fig. 577 Au-Bi-Te 金-铋-碲  
Gold-Bismuth-Tellurium (104)

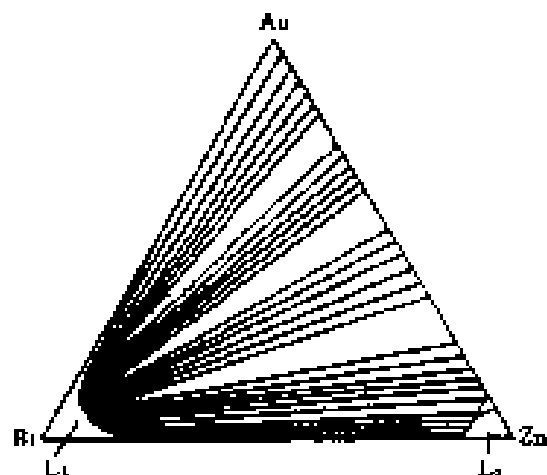


Fig. 578 Au-Bi-Zn 金-铋-锌  
Gold-Bismuth-Zinc (108)

$\text{AuTe}_2\text{-Bi}_2\text{Te}_3$  断面 Section at  $\text{AuTe}_2\text{-Bi}_2\text{Te}_3$  450-650°C 示意图 Illustrative diagram at 450-650°C

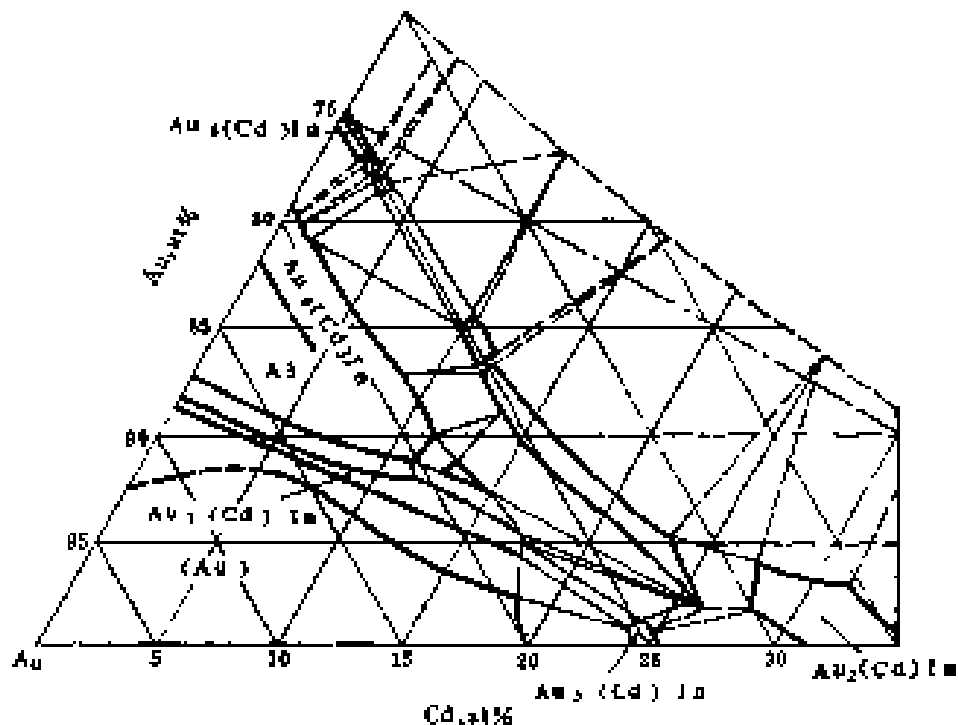


Fig. 579 Au-Cd-In 金-镉-铟 Gold-Cadmium-Indium (107)

350°C Au 角本值断面 Isotherm Ag corner at 350°C

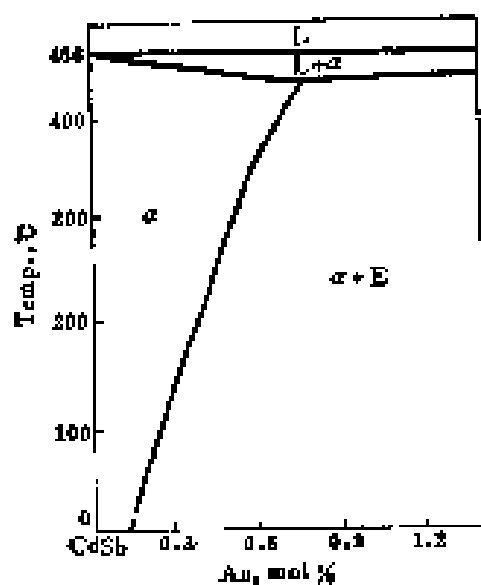


Fig. 580 Au-Cd-Sb 金-镉-锑  
Gold-Cadmium-Antimony (108)

CdSb—Au 截面 Section at CdSb—Au E—共晶Eutectic

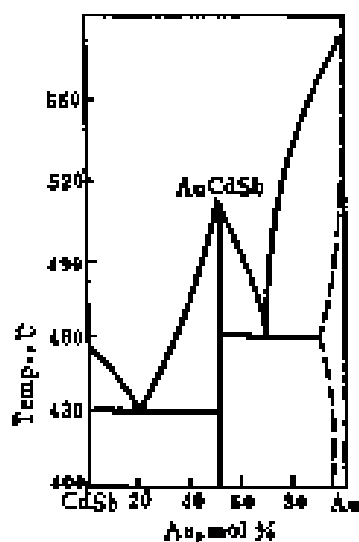


Fig. 581 Au-Cd-Sb 金-镉-锑  
Gold-Cadmium-Antimony (109)

CdSb—Au 截面 Section at CdSb—Au

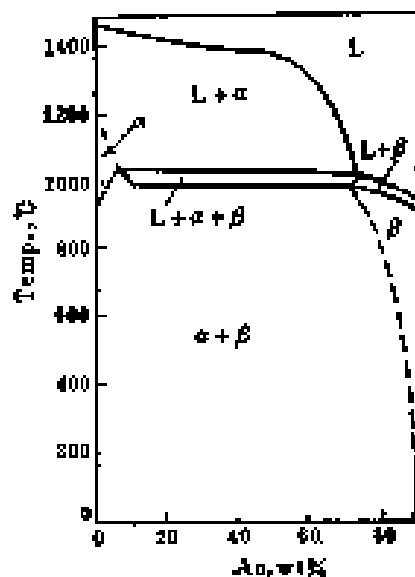


Fig. 582 Au-Co-Cu 金-钴-铜  
Gold-Cobalt-Copper (110)

含 Cu 19% 的截面 Section at Cu 19%

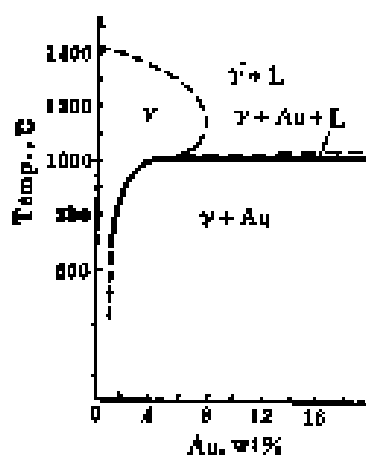


Fig. 583 Au-Co-Fe 金-钴-铁  
Gold-Cobalt-Iron (111)

Co:Fe = 7:10 的截面 Section at Co:Fe = 7:10

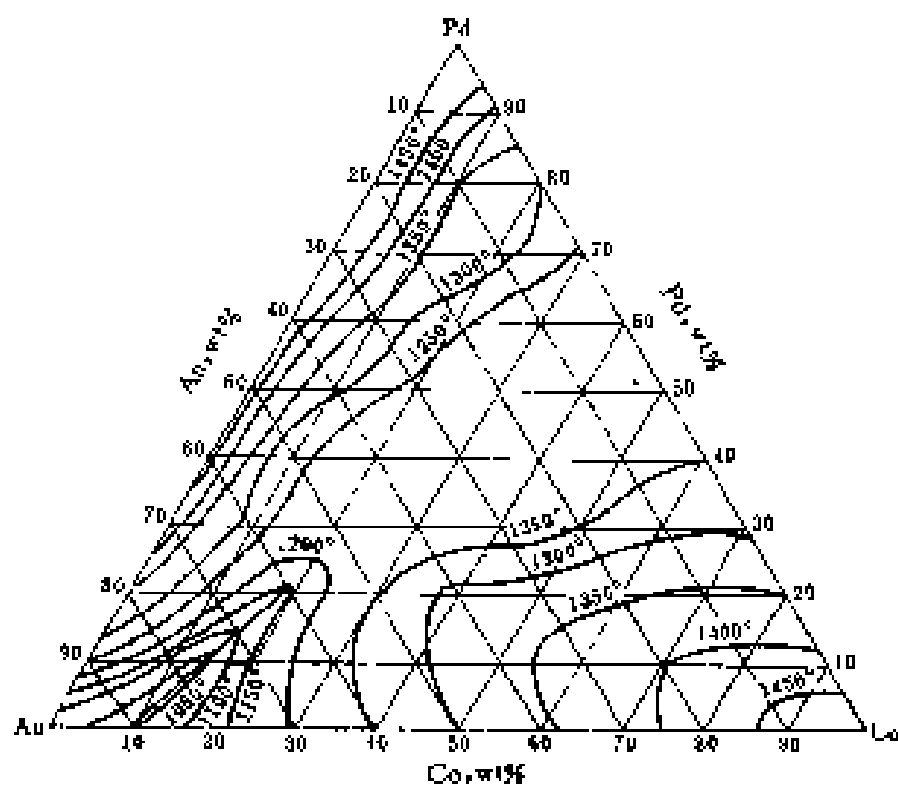


Fig. 584 Au-Co-Pd 金-钴-钯 Gold-Cobalt-Palladium(112)

液相面 Liquidus

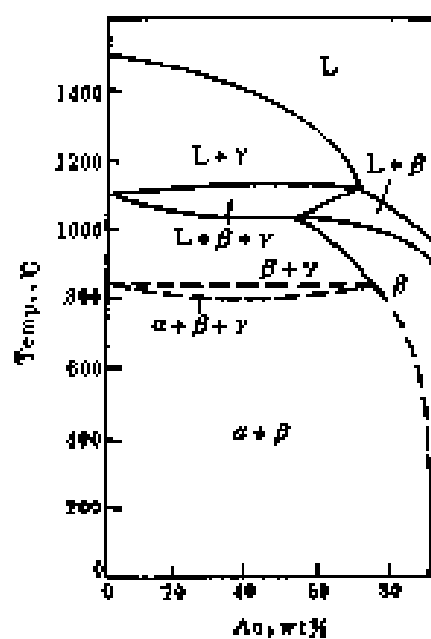


Fig. 585 Au-Cu-Fe 金-铜-铁 Gold-Copper-Iron(113)

含 Cu 10% 处的截面 Section at Cu 10%



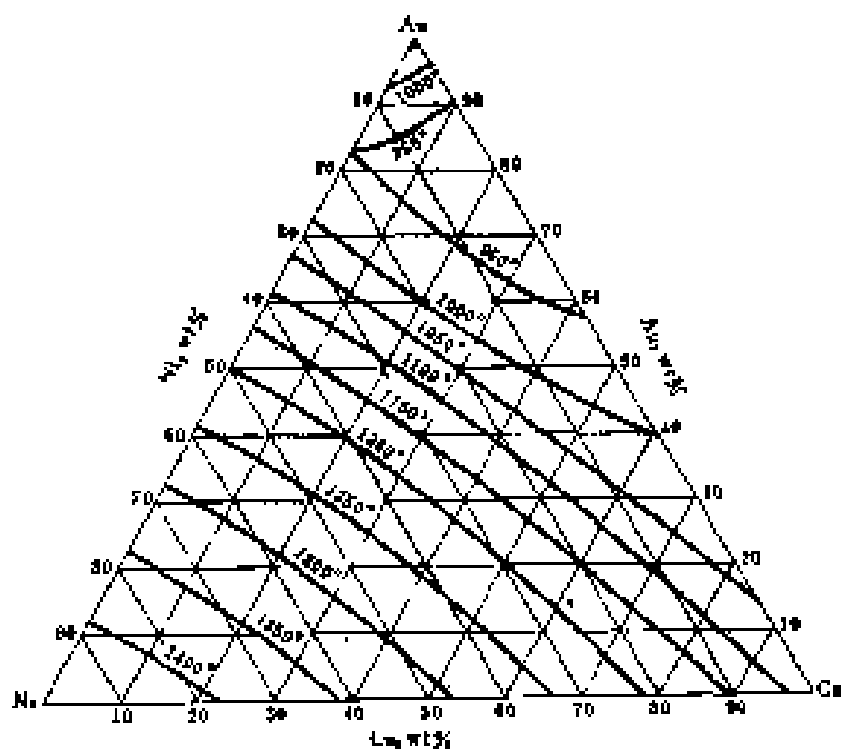


Fig. 586 Au-Cu-Ni 金-銅-鎳 Gold-Copper-Nickel (114)

液相面和固相面 Liquidus and solidus

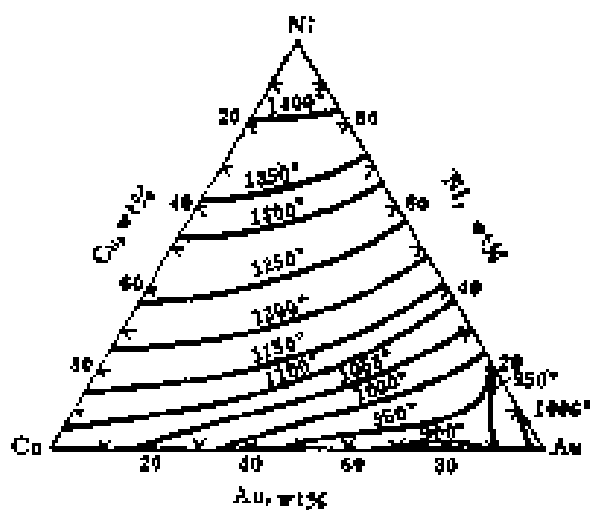


Fig. 587 Au-Cu-Ni 金-銅-鎳 Gold-Copper-Nickel (115)

液相面和固相面 Liquidus and solidus

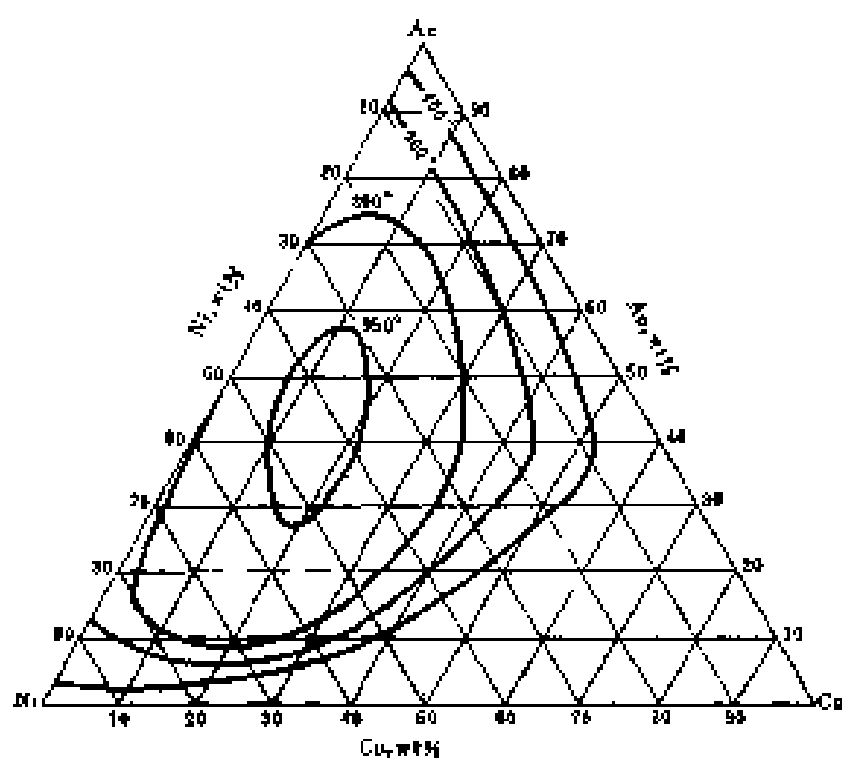


Fig. 588 Au-Cu-Ni 金-铜-镍 Gold-Copper-Nickel (116)

两相区 Duplex region

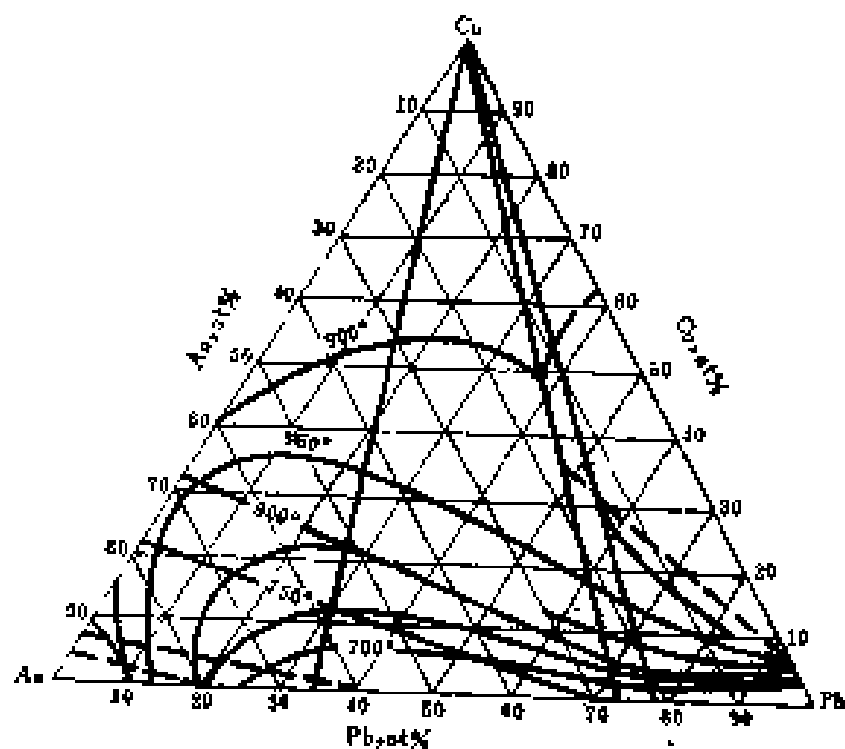


Fig. 589 Au-Cu-Pb 金-铜-铅 Gold-Copper-Lead (117)

液态分层区 Liquid layered region

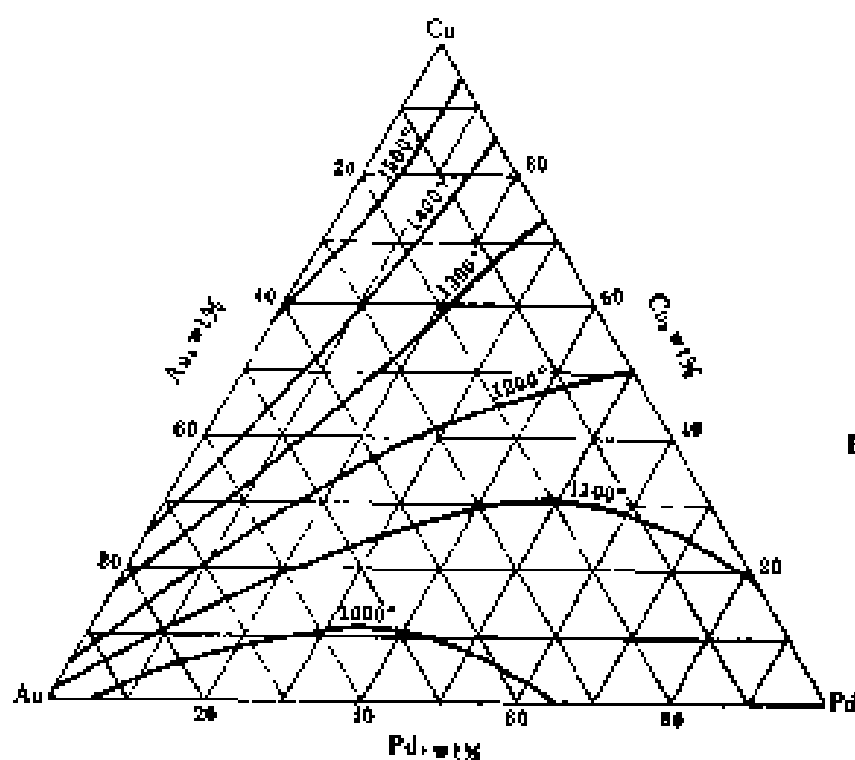


Fig. 590 Au-Cu-Pd 金-銅-鈀  
Gold-Copper-Palladium (118)

液相面 Liquidus

Fig. 591 Au-Cu-Pd 金-銅-鈀  
Gold-Copper-Palladium (119)

350°C 等溫截面 Isotherm at 350°C

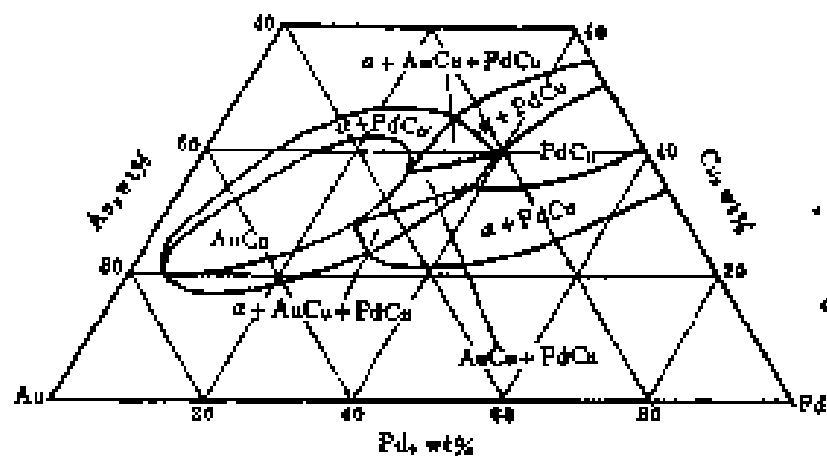
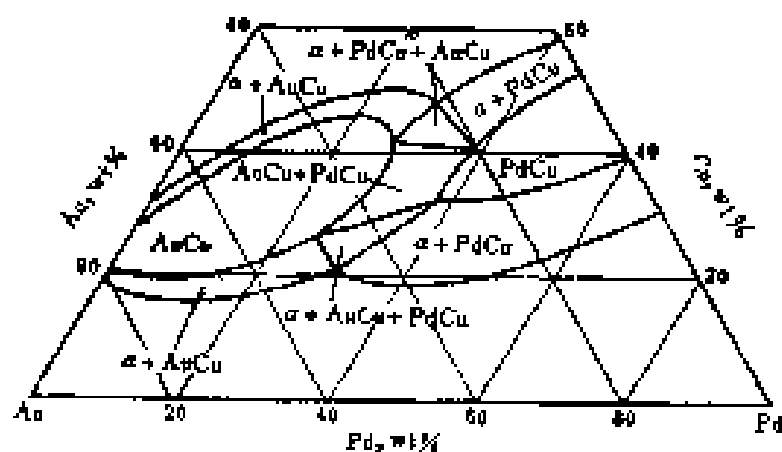


Fig. 592 Au-Cu-Pd 金-銅-鈀  
Gold-Copper-Palladium (119)

450°C 等溫截面 Isotherm at 450°C

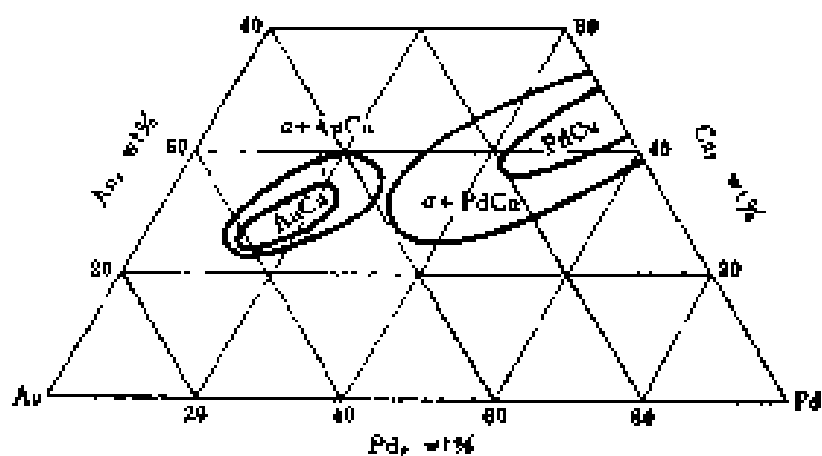


Fig. 593 Au-Cu-Pd 金-銅-鈀 Gold-Copper-Palladium (119)

550°C 等溫線面 Isotherm at 550°C

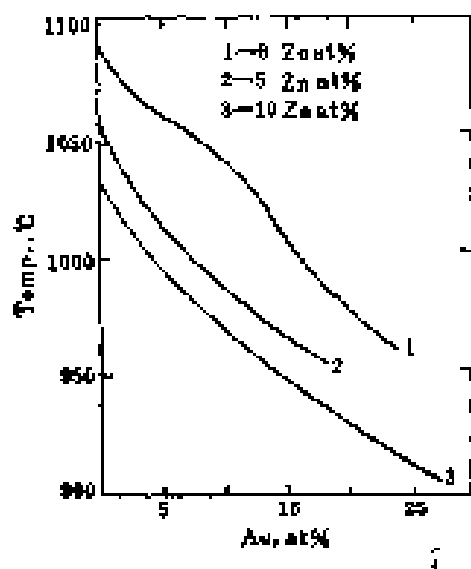


Fig. 594 Au-Cu-Zn 金-銅-鋅  
Gold-Copper-Zinc (20)

固相面 Solidus

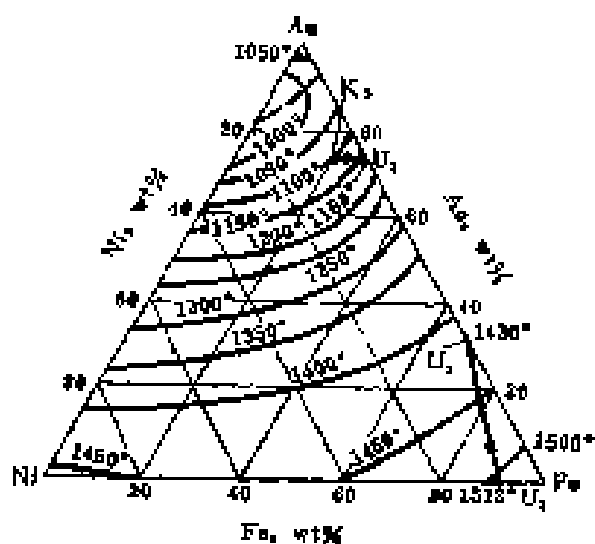


Fig. 595 Au-Fe-Ni 金-鐵-鎳  
Gold-Iron-Nickel (121)

液相面 Liquidus

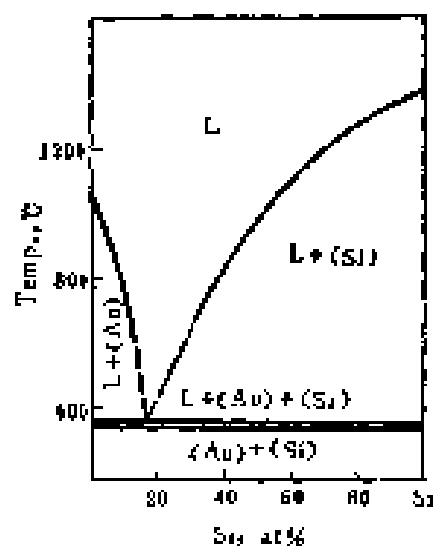


Fig. 596 Au-Ga-Si 金-镓-硅  
Gold-Gallium-Silicon (122)

含 Ga 2.78 原子% (= 1 重量%) 的截面  
Section at Ga 2.78 at% (= 1 wt%)

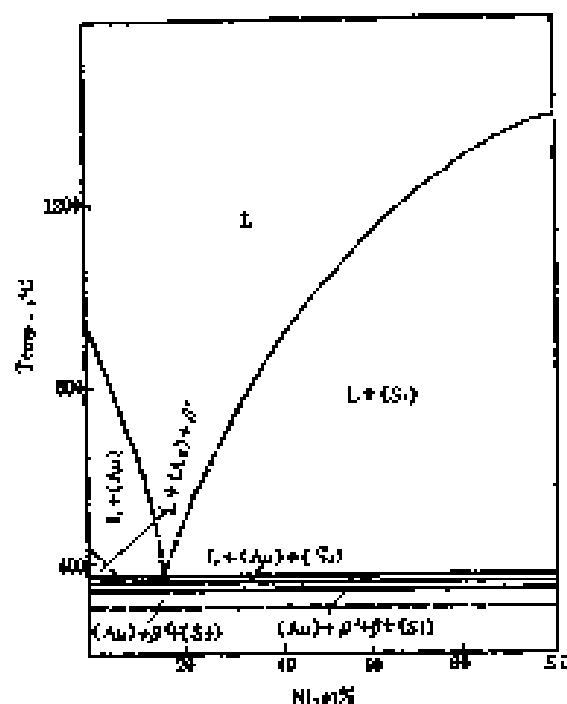


Fig. 597 Au-Ga-Si 金-镓-硅  
Gold-Gallium-Silicon (122)

含 Ga 2.5 wt% (= 2.98 at%) 的截面  
Section at Ga 2.5 wt% (= 2.98 at%)

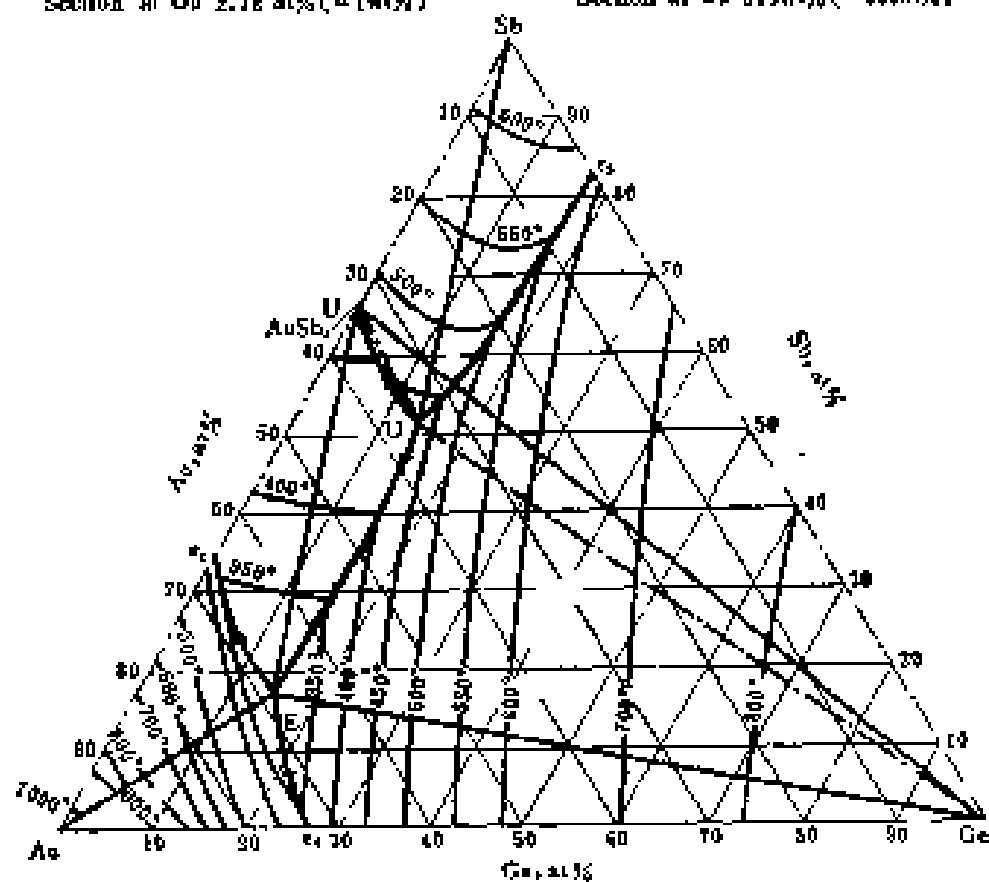


Fig. 598 Au-Ge-Sb 金-锗-铋 Gold-Germanium-Antimony (222)

液相面 Liquidus

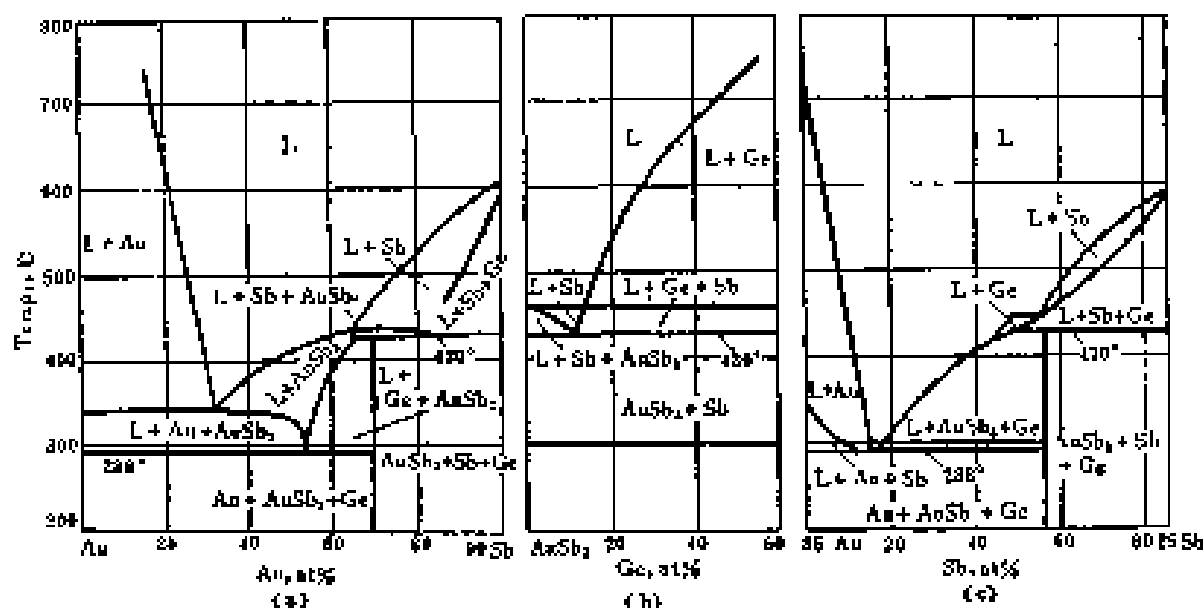


Fig.599 Au-Ge-Sb 金-锗-铟 Gold-Germanium-Antimony(22)

- (a) Ge 10% 的截面 Section at Ge 14%,  
 (b)  $\text{AuSb}_2$ -Ge 的截面 Section at  $\text{AuSb}_2$ -Ge,  
 (c) Ge 10% 的截面 Section at Ge 15%.

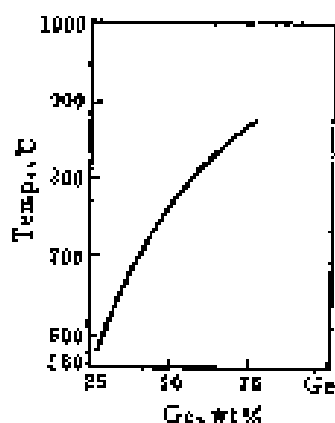


Fig.600 Au-Ge-Sb 金-锗-铟  
Gold-Germanium-Antimony(123)

Ge-(Au+Sb) 液相  
Liquidus at Ge-(Au+Sb)

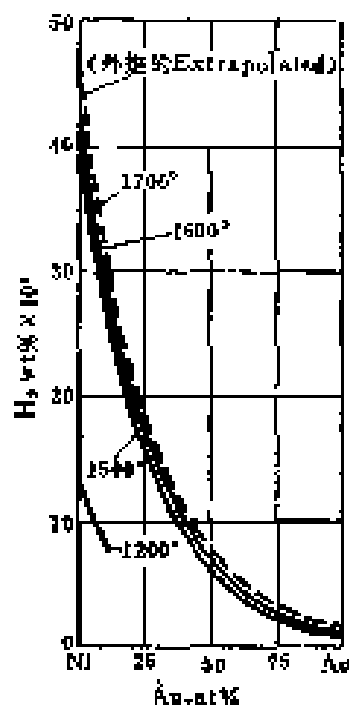


Fig.601 Au-H-Ni 金-氢-镍  
Gold-Hydrogen-Nickel(121)

H 在 Ni-Au 合金中的溶解度  
Solubility of H in Au-Ni alloys

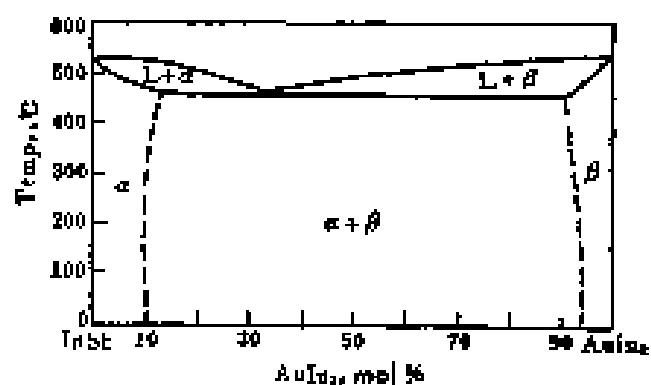


Fig. 602 Au-In-Sb 金-銦-銻 Gold-Indium-Antimony (125)

InSb—AuIn<sub>2</sub> 截面 Section at InSb—AuIn<sub>2</sub>

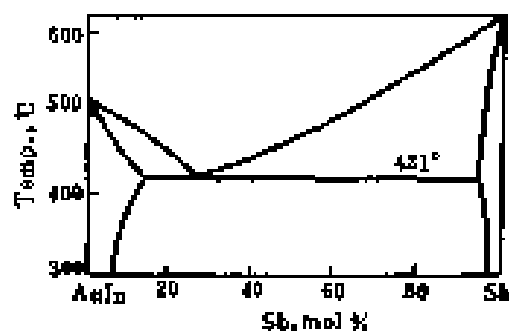


Fig. 603 Au-In-Sb 金-銦-銻 Gold-Indium-Antimony (126)

AuIn—Sb 截面 Section at AuIn—Sb

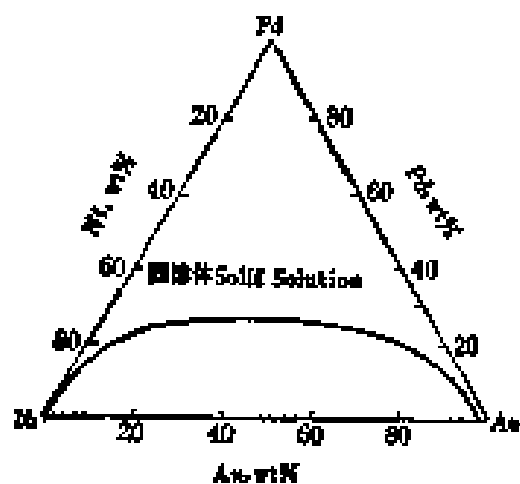


Fig. 604 Au-Ni-Pd 金-鎳-鈀 Gold-Nickel-Palladium (127)

室温相区 Phase regions at room temperature

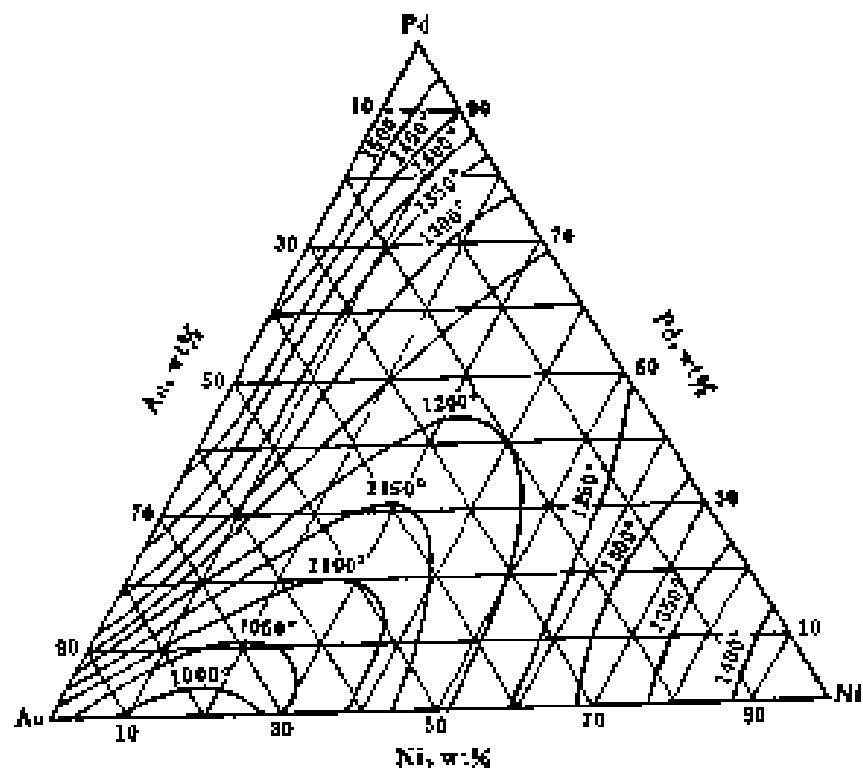


Fig. 605 Au-Ni-Pd 金-鎳-鈑 Gold-Nickel-Palladium(128)

液相面 Liquids

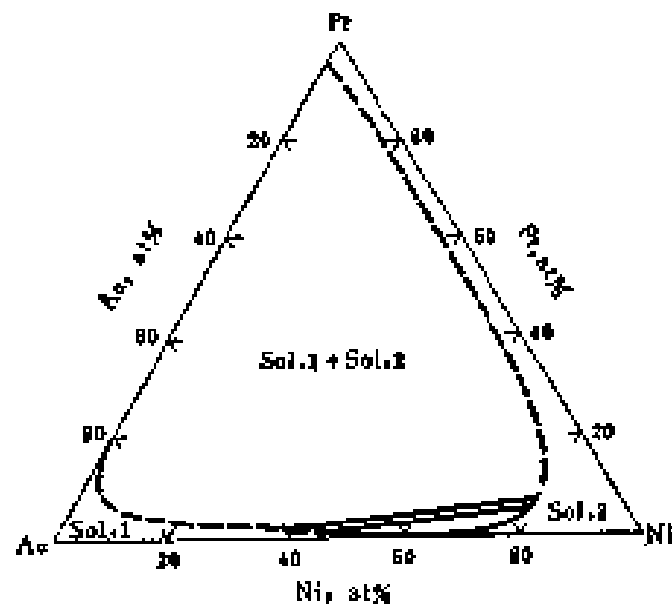


Fig. 606 Au-Ni-Pt 金-鎳-鉑 Gold-Nickel-Platinum(129)

812°C等温面 Isotherm at 812°C



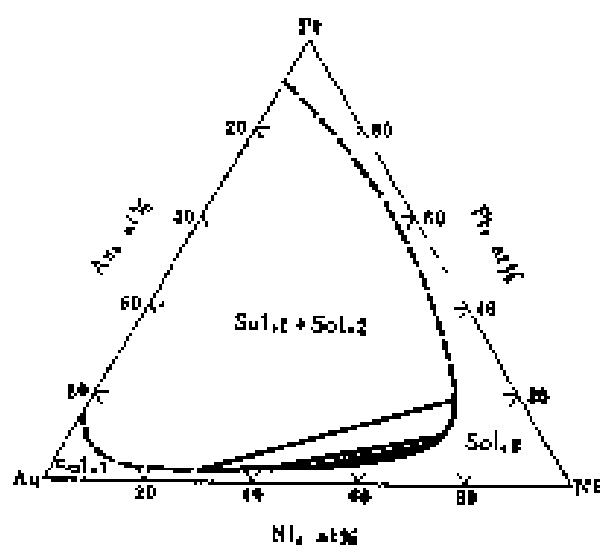


Fig. 607 Au-Ni-Pt 金-镍-铂  
Gold-Nickel-Platinum ([29])

860℃ 等温截面 Isotherm at 860℃

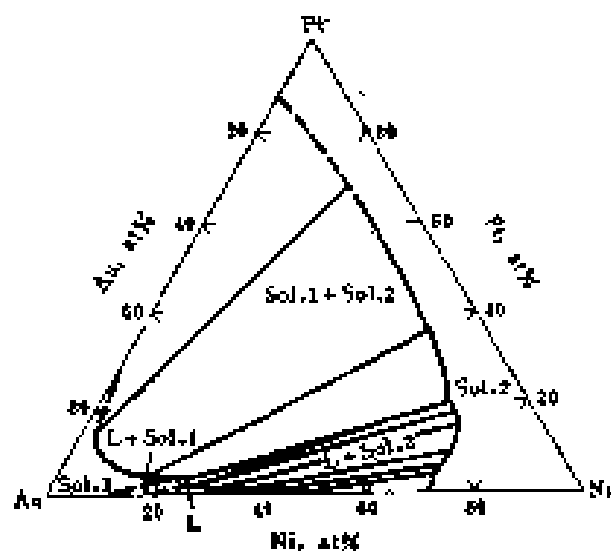


Fig. 608 Au-Ni-Pt 金-镍-铂  
Gold-Nickel-Platinum ([29])

1000℃ 等温截面 Isotherm at 1000℃

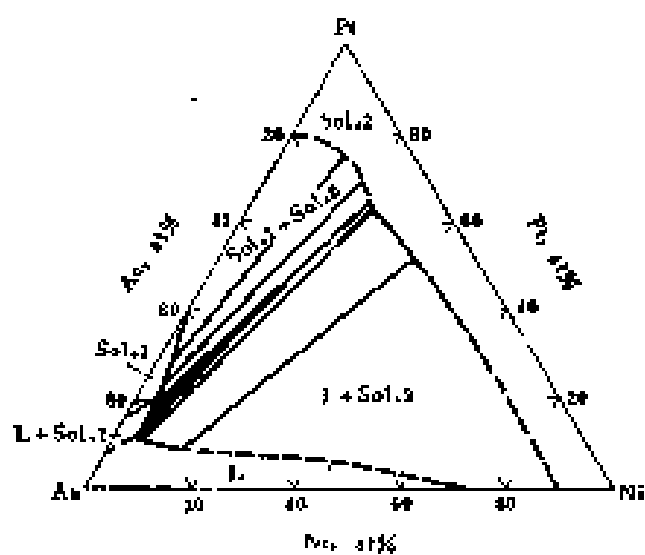


Fig. 609 Au-Ni-Pt 金-镍-铂  
Gold-Nickel-Platinum ([29])

1150℃ 等温截面 Isotherm at 1150℃

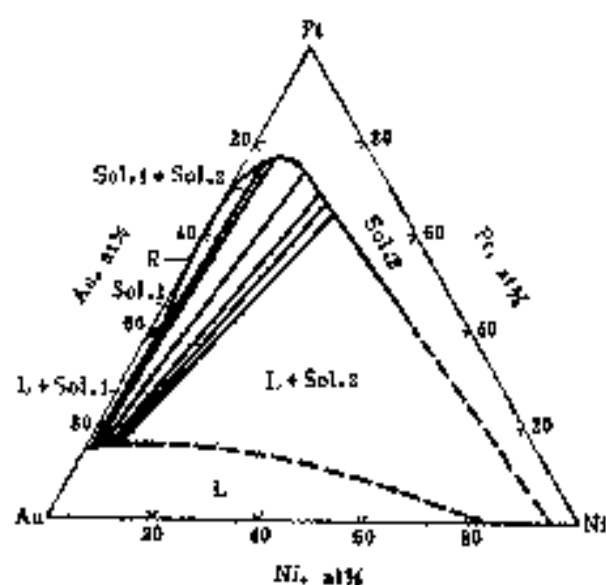


Fig. 610 Au-Ni-Pt 金-镍-铂 Gold-Nickel-Platinum(1200)

1200°C 等温线图 Isotherm at 1200°C

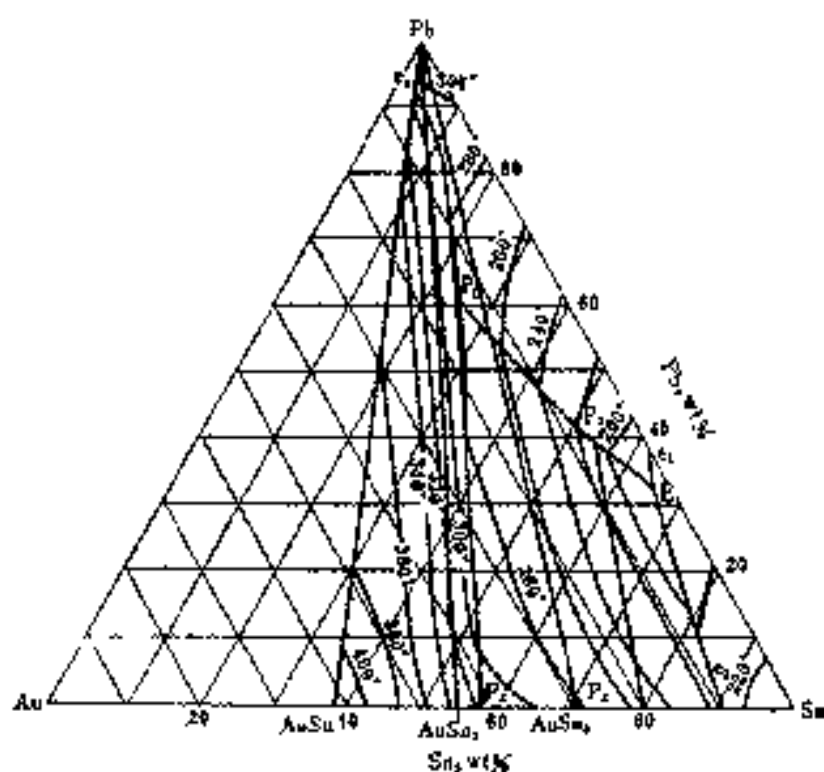


Fig. 611 Au-Pb-Sn 金-铅-锡 Gold-Lead-Tin(130)

液相面 Liquidus

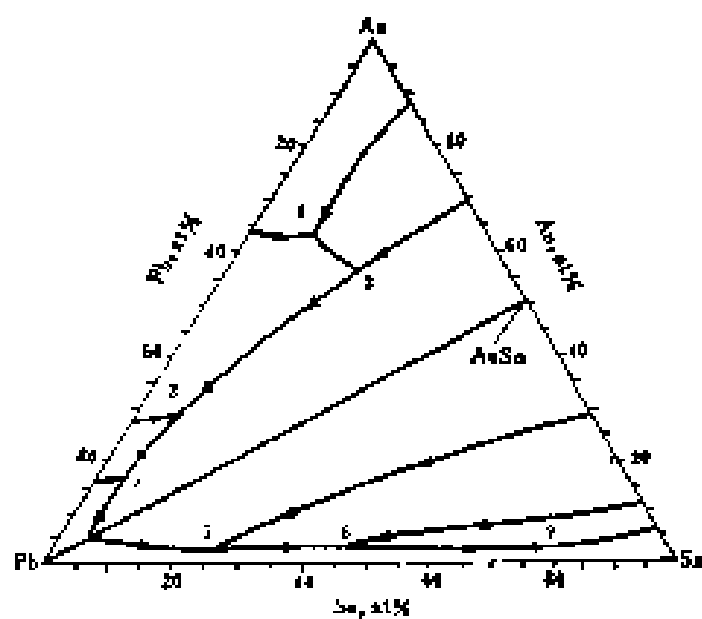


Fig.612 Au-Pb-Sn 金-鉛-錫 Gold-Lead-Tin(151)  
液相面 Liquidus

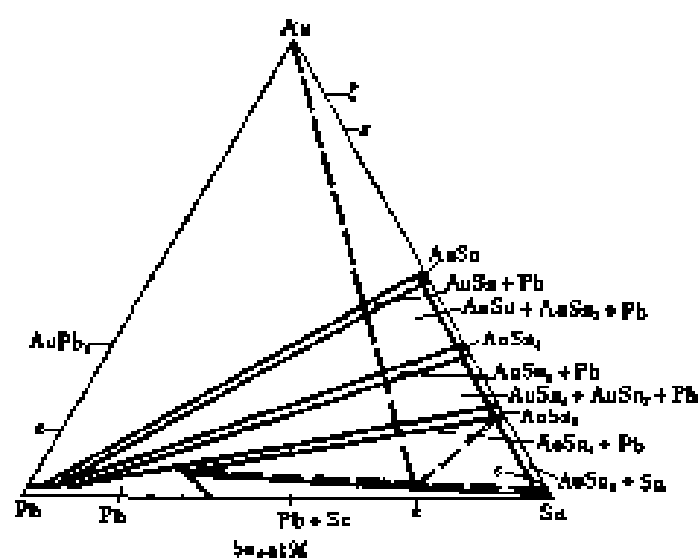


Fig.613 Au-Pb-Sn 金-鉛-錫 Gold-Lead-Tin(131)  
176°C 等溫截面 Isotherm at 176°C

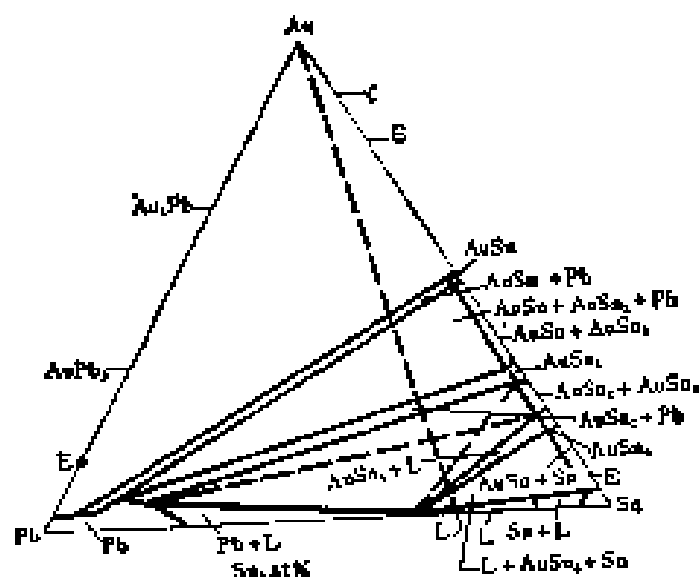


Fig. 614 Au-Pb-Sn 金-鉛-錫 Gold-Lead-Tin [191]

204°C 等溫線圖 Isotherm at 204°C

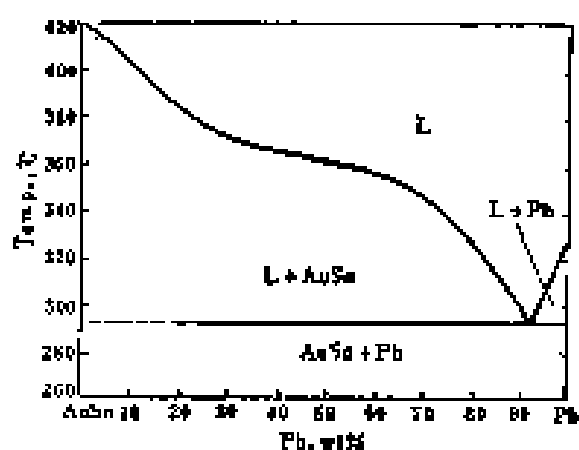


Fig. 615 Au-Pb-Sn 金-鉛-錫  
Gold-Lead-Tin [132]

AuSn-Pb 縱面 Section at AuSn-Pb

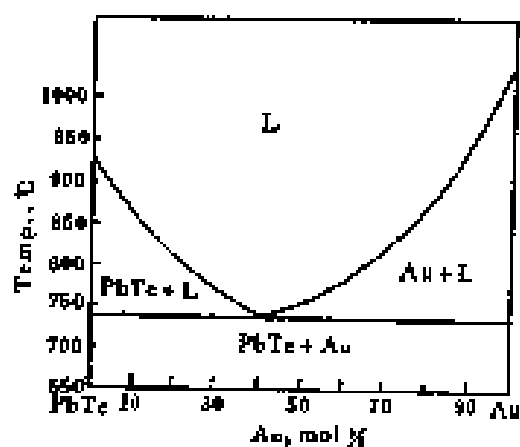


Fig. 616 Au-Pb-Te 金-鉛-碲  
Gold-Lead-Tellurium [153]

PbTe-Au 縱面 Section at PbTe-Au

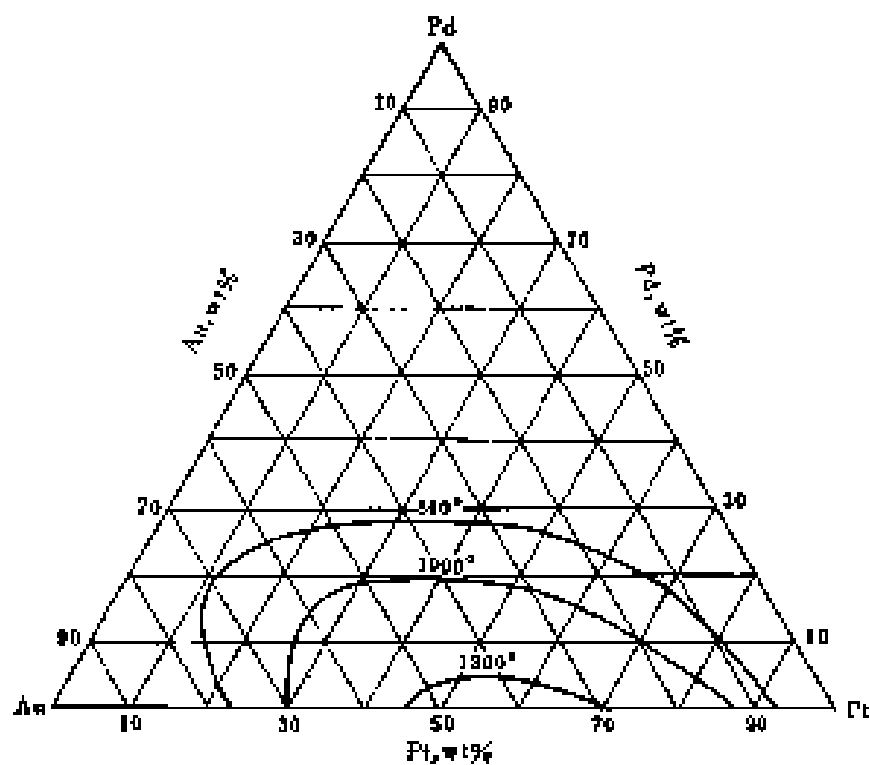


Fig.617 Au-Pd-Pt 金-钯-铂 Gold-Palladium-Platinum(134)  
 两相区 Duplex region

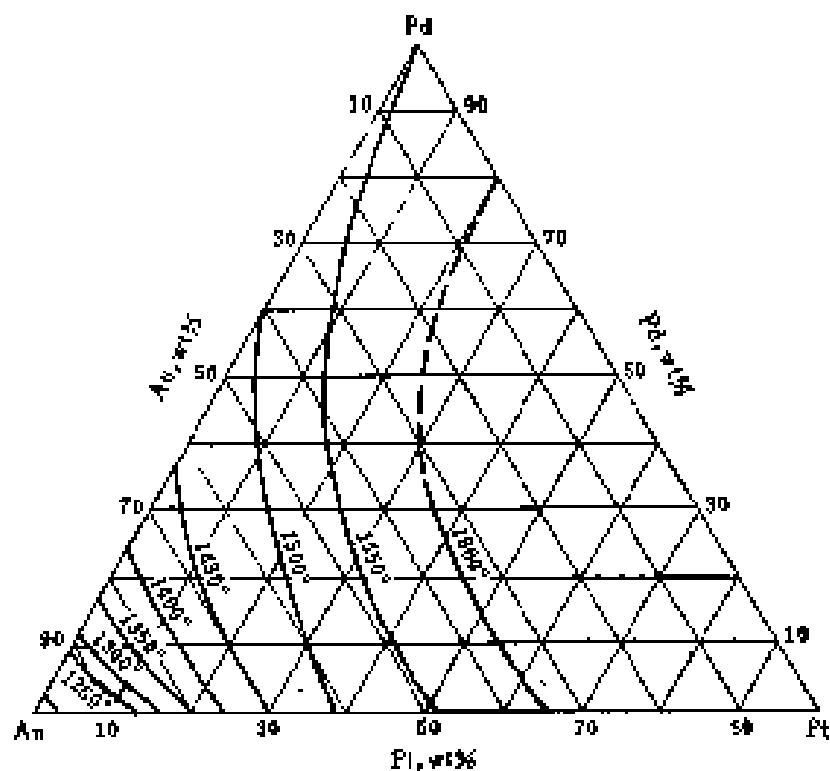


Fig.618 Au-Pd-Pt 金-钯-铂 Gold-Palladium-Platinum(114)  
 液相面 Liquidus

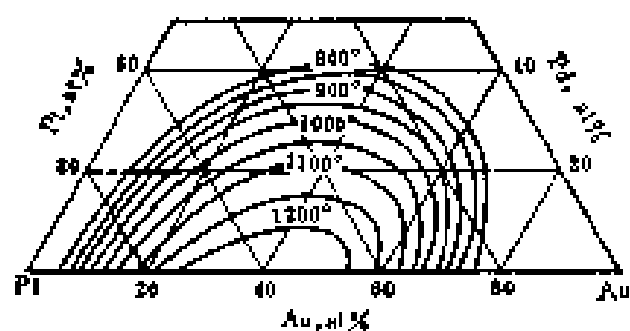


Fig. 619 Au-Pd-Pt 金-钯-铂 Gold-Palladium-Platinum(1343)

等温两相区 Isothermal duplex region

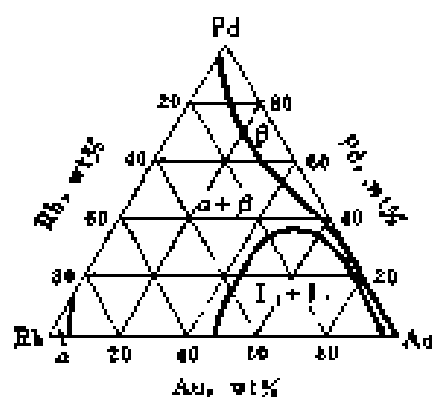


Fig. 620 Au-Pd-Rh 金-钯-铑 Gold-Palladium-Rhodium(1353)

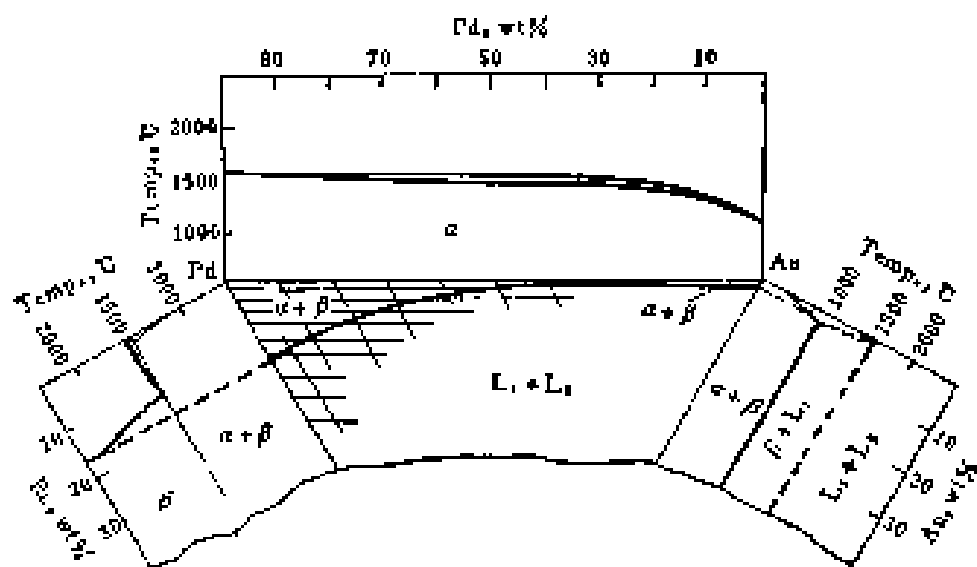


Fig. 621 Au-Pd-Ru 金-钯-钌 Gold-Palladium Ruthenium(1353)

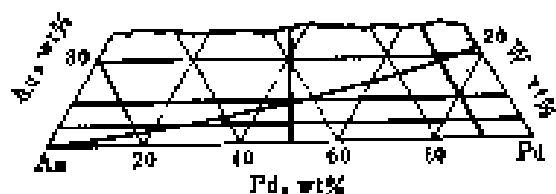


Fig. 622 Au-Pd-W 金-钯-钨  
Gold-Palladium-Tungsten (197)

20°C 等温截面 Isotherm at 20°C

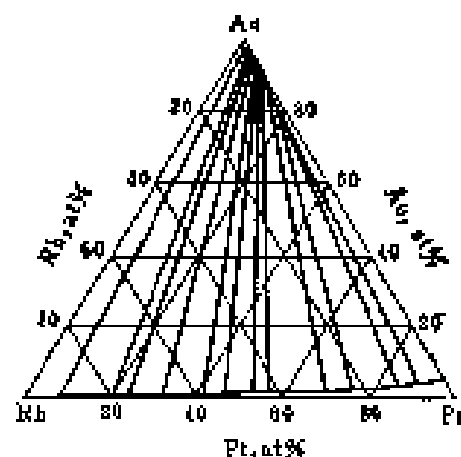


Fig. 623 Au-Pt-Rh 金-铂-铑  
Gold-Platinum-Rhodium (138)

200°C 等温截面 Isotherm at 200°C

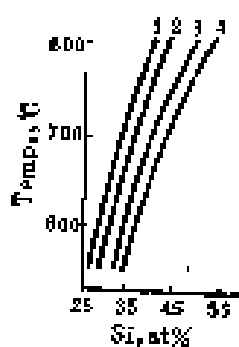


Fig. 624 Au-Sb-Si 金-锑-硅  
Gold-Antimony-Silicon (139)

液相面 Liquidus  
1—Au-Si; 2—(Au+50.1%)—Si  
3—(Au+50.7%)—Si 4—(Au+Sb1%)—Si

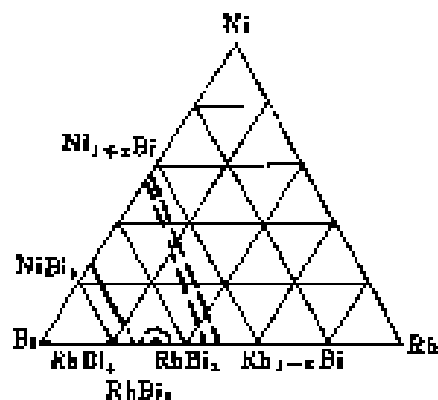


Fig. 625 Bi-Ni-Rh 铋-镍-铑  
Bismuth-Nickel-Rhodium (140)

200°C 等温截面 Isotherm at 200°C

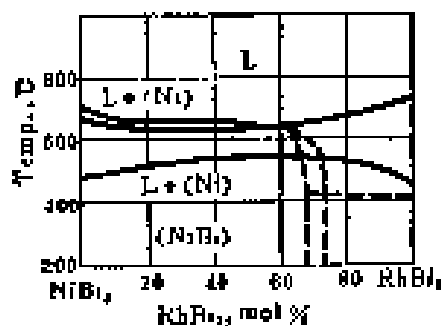


Fig. 626 Bi-Ni-Rh 铋-镍-铑 Bismuth-Nickel-Rhodium (140)

NiBi<sub>2</sub>—RhBi<sub>2</sub> 截面 Section at NiBi<sub>2</sub>—RhBi<sub>2</sub>





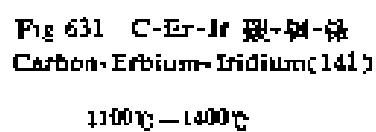
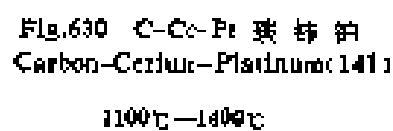
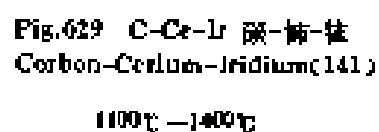


Fig.632 C-Er-Pt 碳-铈-铂  
Carbon-Erbium-Platinum(141)

1100℃—1400℃

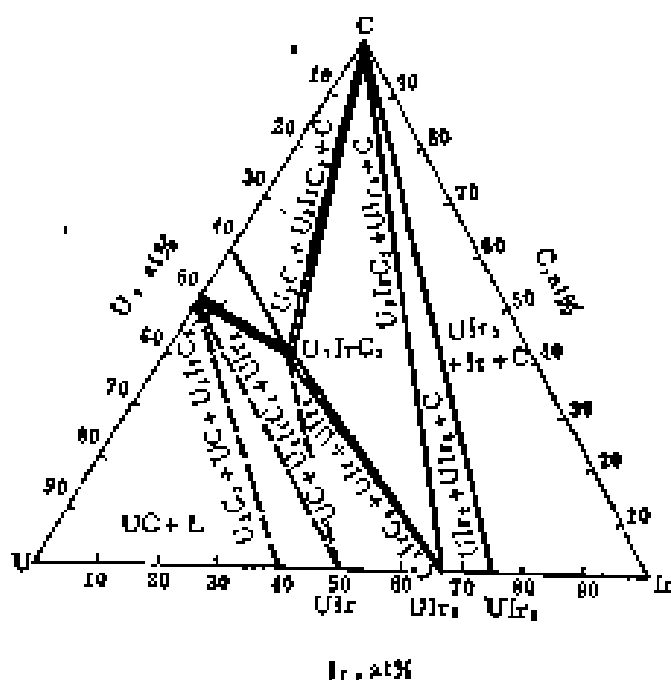
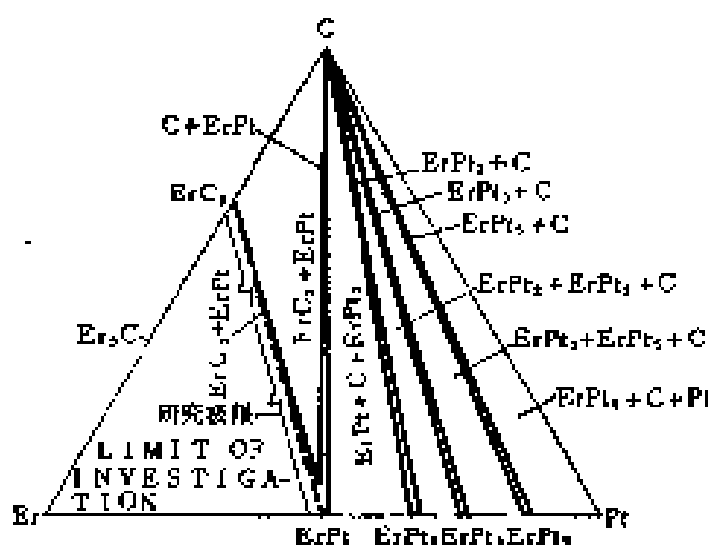
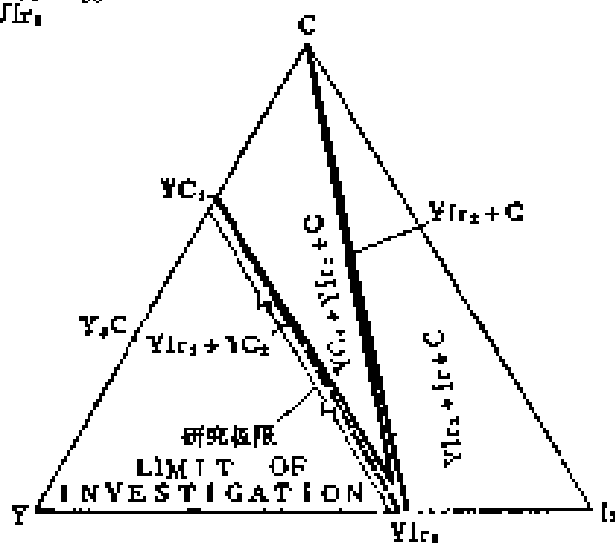


Fig.633 C-Ir-U 碳-铱-铀  
Carbon-Iridium-Uranium(142)

1300℃ 等温截面 Isotherm at 1300℃

Fig.634 C-Ir-Y 碳-铱-钇  
Carbon-Iridium-Yttrium(141)

1100℃—1300℃





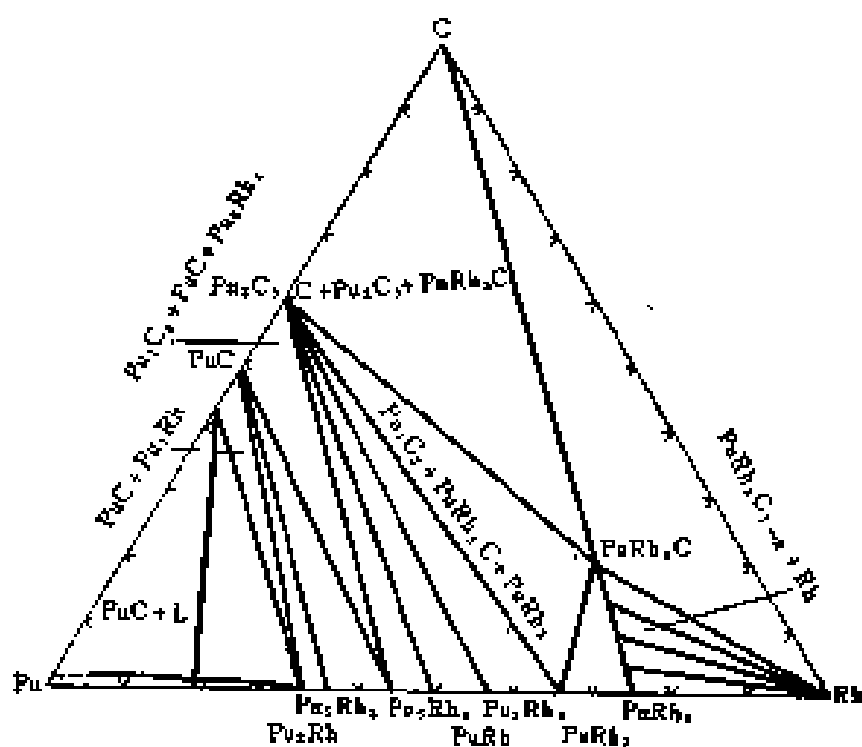


Fig. 638 C-Pu-Rh 碳-钚-铑 Carbon-Plutonium-Rhodium(144)

800℃ 推测截面 Conjectural section at 800℃

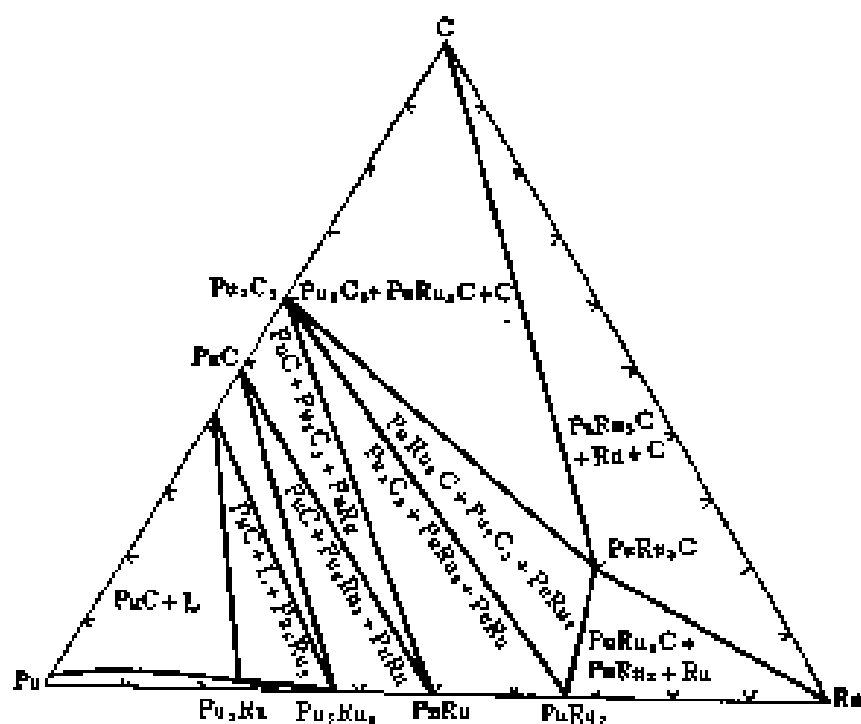


Fig. 639 C-Pu-Ru 碳-钚-钌 Carbon-Plutonium-Ruthenium(144)

800℃ 推测截面 Conjectural section at 800℃



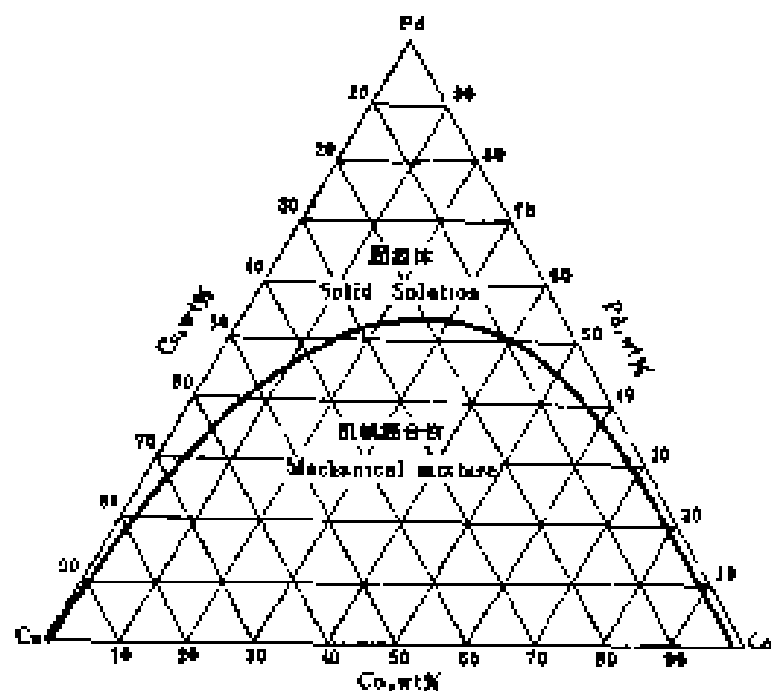


Fig. 642 Co-Cu-Pd 钴-铜-钯 Cobalt-Copper-Palladium (147)

室温截面 Section at room temperature

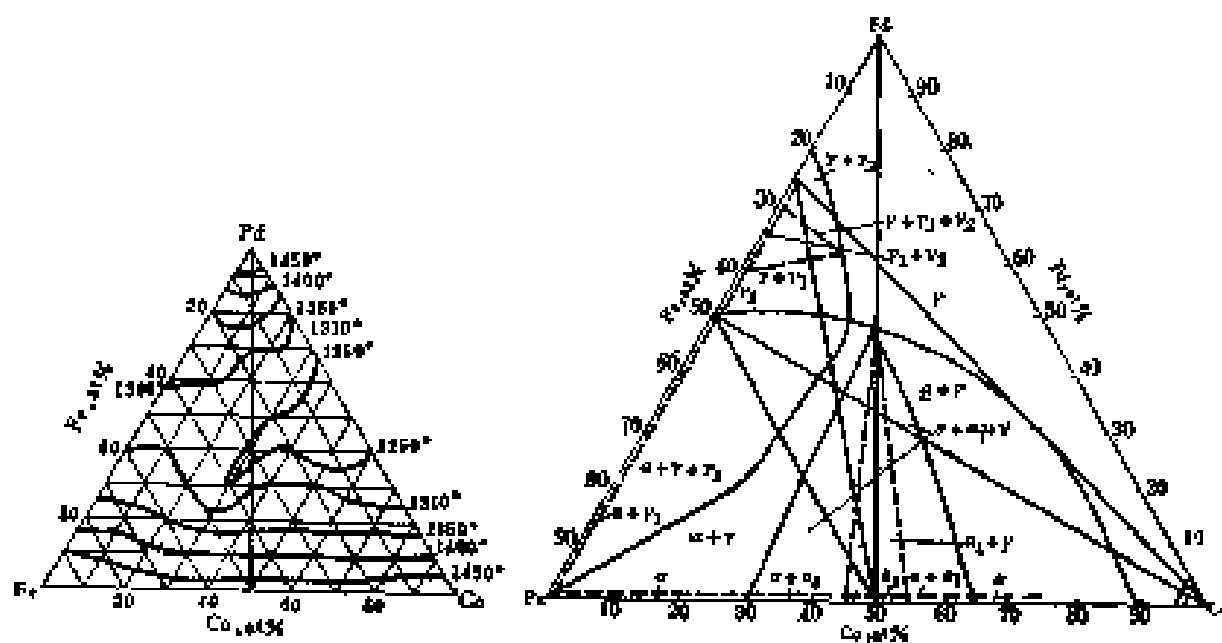


Fig. 643 Co-Fe-Pd 钴-铁-钯  
Cobalt-Iron-Palladium (148)

液相面 Liquidus

Fig. 644 Co-Fe-Pd 钴-铁-钯  
Cobalt-Iron-Palladium (149)

室温截面 Section at room temperature

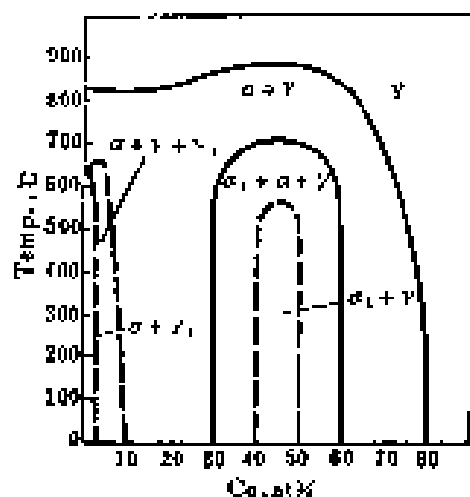


Fig. 645 Co-Fe-Pd 钴-铁-钯  
Cobalt-Iron-Palladium(150)

含Pd 10% 截面 Section at Pd 10%

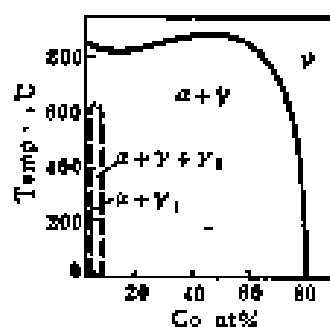


Fig. 646 Co-Fe-Pd 钴-铁-钯  
Cobalt-Iron-Palladium(151)

含Pd 10% 截面 Section at Pd 10%

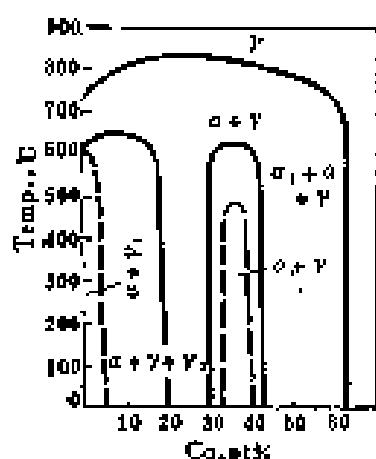


Fig. 647 Co-Fe-Pd 钴-铁-钯  
Cobalt-Iron-Palladium(150)

含Pd 30% 截面 Section at Pd 30%

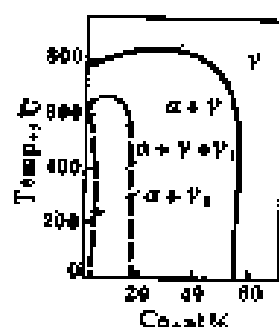


Fig. 648 Co-Fe-Pd 钴-铁-钯  
Cobalt-Iron-Palladium(151)

含Pd 30% 截面 Section at Pd 30%

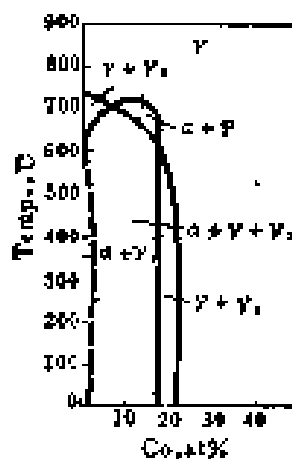


Fig. 649 Co-Fe-Pd 钴-铁-钯  
Cobalt-Iron-Palladium(150)

含Pd 50% 的截面 Section at Pd 50%

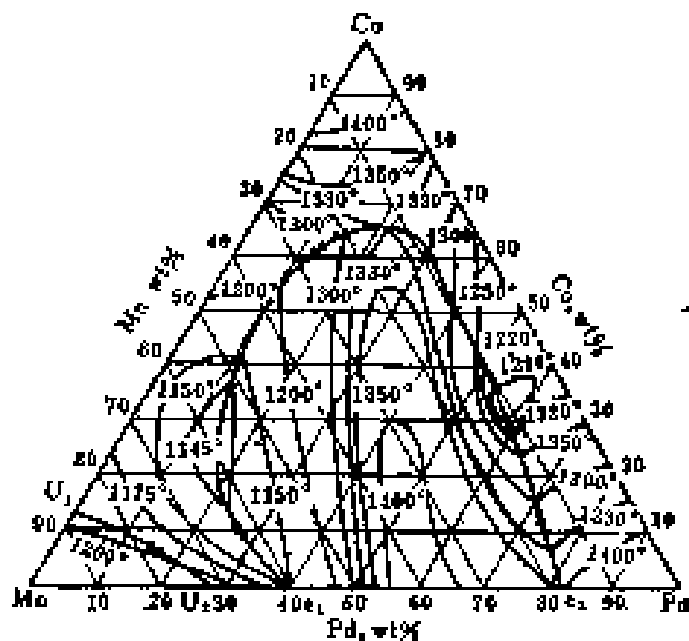


Fig. 650 Co-Mn-Pd 钴-锰-钯  
Cobalt-Manganese-Palladium (152)

液相由 Liquidus

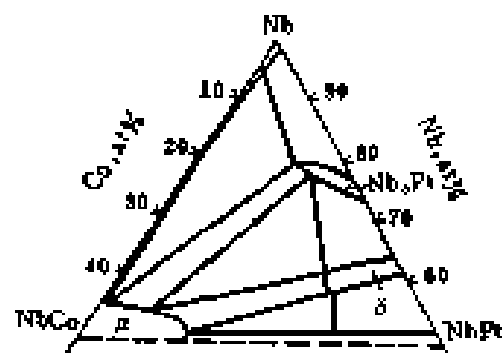


Fig. 651 Co-Nb-Pt 钴-铌-铂  
Cobalt-Niobium-Platinum (153)

1000°C 等温截面 Isotherm at 1000°C

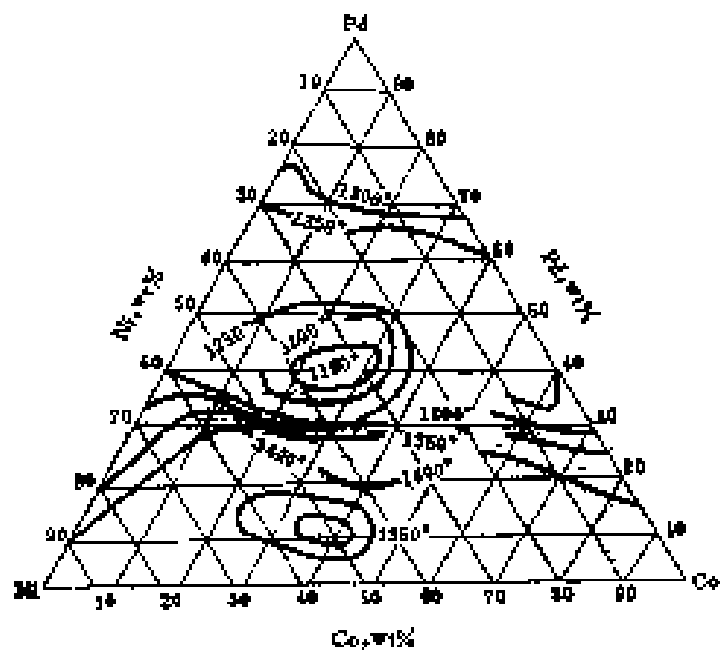


Fig. 652 Co-Ni-Pd 钴-镍-钯 Cobalt-Nickel-Palladium (154)

液相面 Liquidus



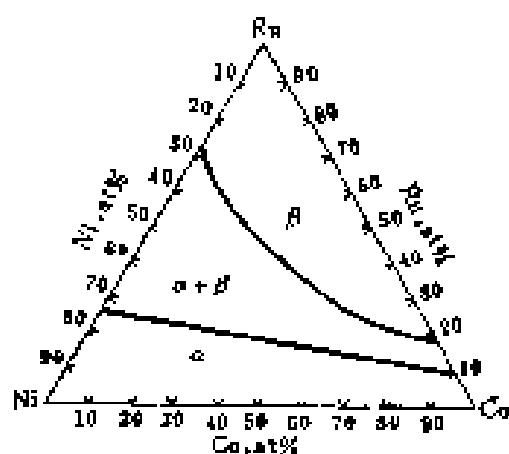


Fig. 653 Co-Ni-Ru 钴-镍-钌  
Cobalt-Nickel-Ruthenium (155)

1000°C 等温截面 Isotherm at 1000°C

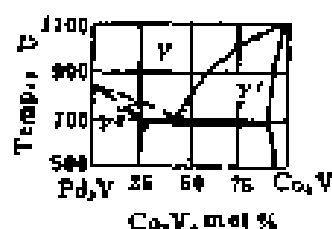


Fig. 654 Co-Pd-V 钴-钯-钒  
Cobalt-Palladium-Vanadium (156)

Pd,V-Co,V 截面 Section at Pd,V-Co,V

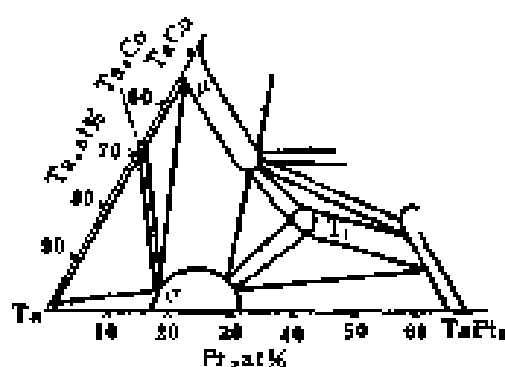


Fig. 655 Co-Pt-Ta 钴-铂-钽  
Cobalt-Platinum-Tantalum (157)

1000°C 时 Ta-TaCo-TaPt, 等温截面  
Isotherm of Ta-TaCo-TaPt, at 1000°C

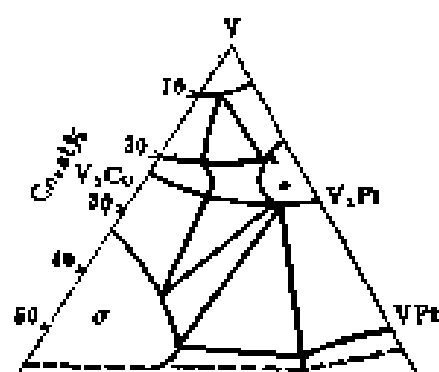


Fig. 656 Co-Pt-V 钴-铂-钒  
Cobalt-Platinum-Vanadium (158)

1000°C 等温截面 Isotherm at 1000°C

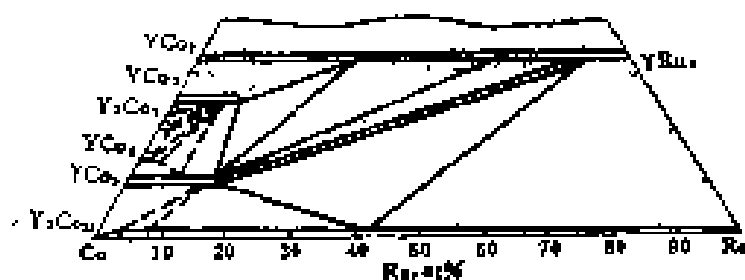


Fig. 657 Co-Ru-Y 钴-钌-钇 Cobalt-Ruthenium-Yttrium (159)

600°C 等温截面 Isotherm at 600°C

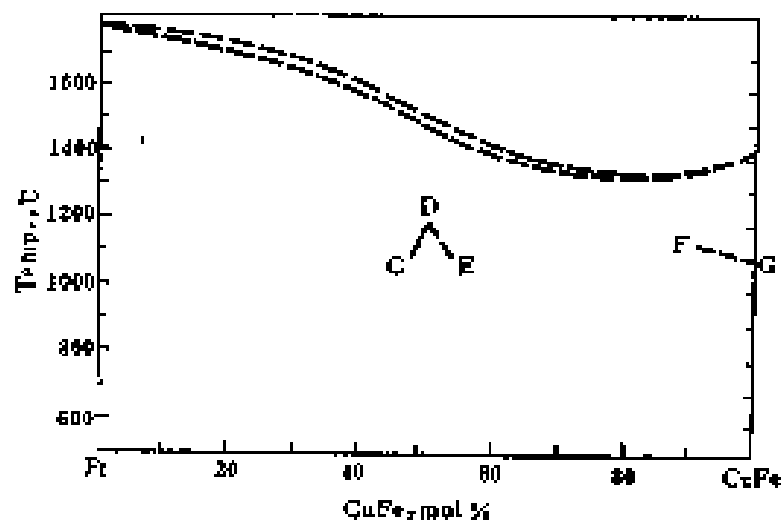


Fig. 662 Cu-Fe-Pt 铜-铁-铂  
Copper-Iron-Platinum (164)

Pt-CuFe 截面 Section at Pt-CuFe

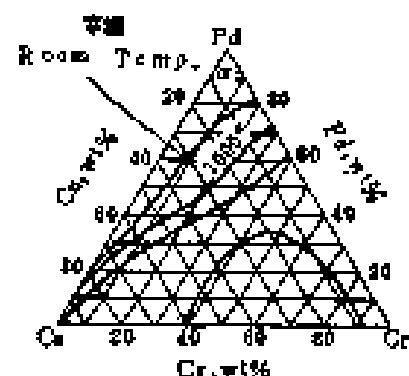


Fig. 659 Cr-Cu-Pd 铬-铜-钯  
Chromium-Copper-Palladium (161)

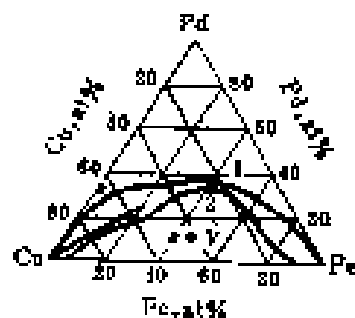


Fig. 661 Cu-Fe-Pd 铜-铁-钯  
Copper-Iron-Palladium (163)

- 1—高温下均匀相的界限 The boundary of homogeneous phase at room temp.
- 2—固相或固相下均匀相的界限 The boundary of homogeneous phase at solidus temp.

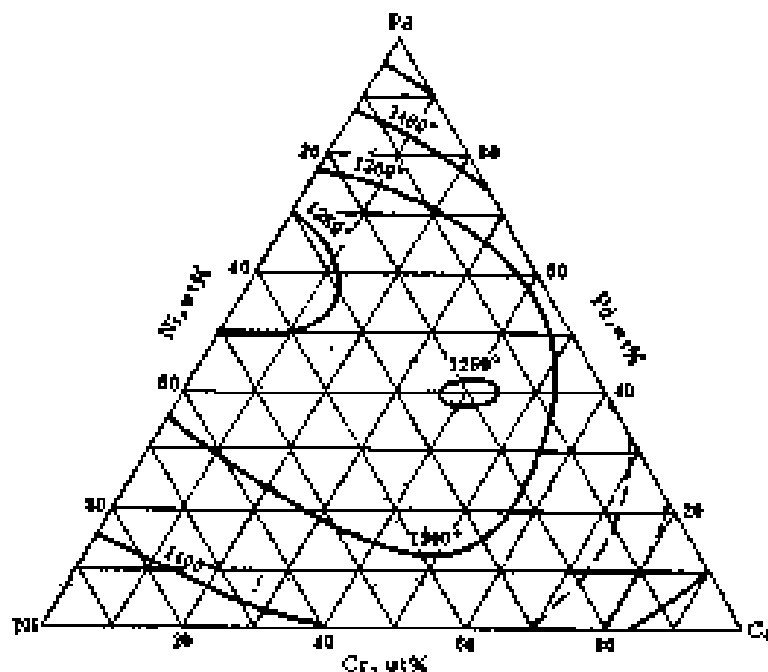


Fig. 660 Cr-Ni-Pd 铬-镍-钯  
Chromium-Nickel-Palladium (162)

液相面 Liquidus



Fig. 658 Co-Ru-Y 钴-钌-钇 Cobalt-Ruthenium-Yttrium (160)

600 °C YCo<sub>2</sub>-YRu<sub>2</sub> 等温截面 Isotherm of YCo<sub>2</sub>-YRu<sub>2</sub> at 600 °C

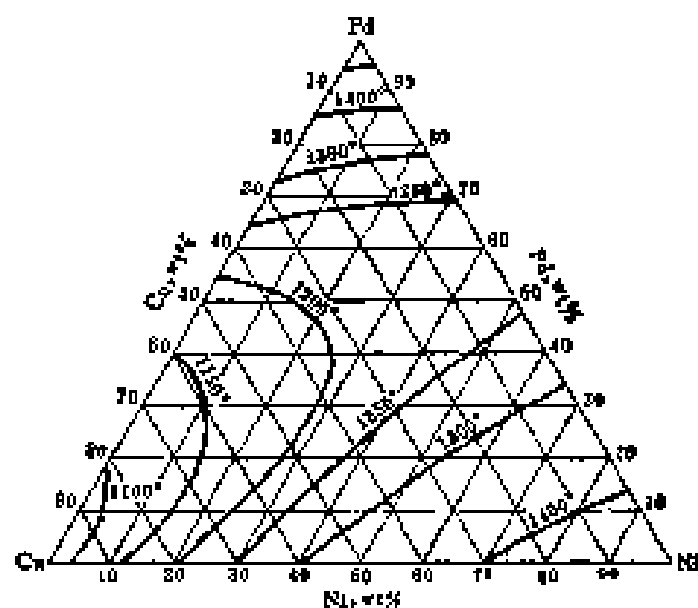


Fig. 663 Cu-Ni-Pd 銅-鎳-鈦 Copper-Nickel-Palladium(118)

液相面 Liquidus

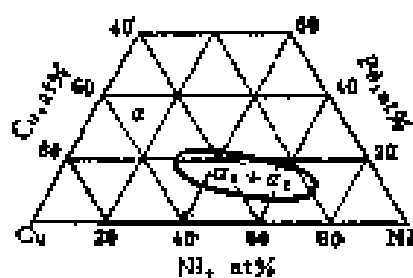


Fig. 664 Cu-Ni-Pd 銅-鎳-鈦  
Copper-Nickel-Palladium(165)

650℃ 等溫截面 Isotherm at 650℃

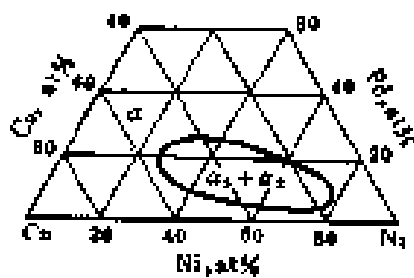


Fig. 665 Cu-Ni-Pd 銅-鎳-鈦  
Copper-Nickel-Palladium(165)

600℃ 等溫截面 Isotherm at 600℃

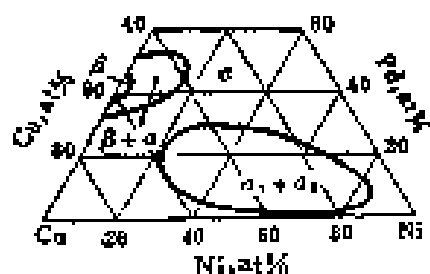


Fig. 666 Cu-Ni-Pd 銅-鎳-鈦  
Copper-Nickel-Palladium(165)

550℃ 等溫截面 Isotherm at 550℃

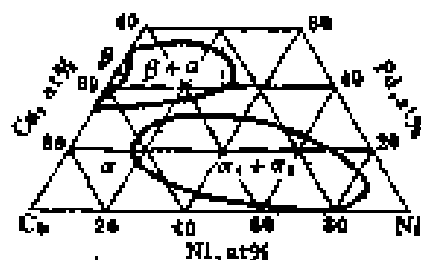


Fig. 667 Cu-Ni-Pd 銅-鎳-鈦  
Copper-Nickel-Palladium(165)

500℃ 等溫截面 Isotherm at 500℃

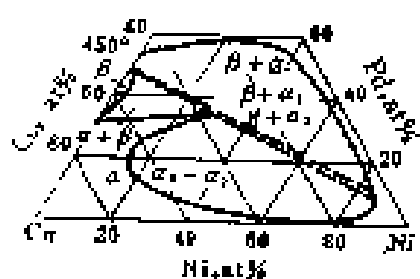


Fig. 668 Cu-Ni-Pd 銅-鎳-鉑  
Copper-Nickel-Palladium(165)

450°C 等温截面 Isotherm at 450°C

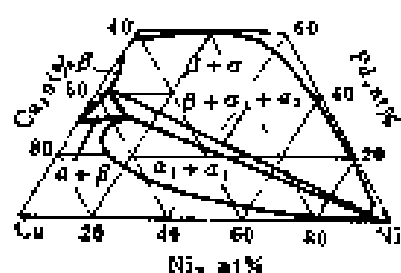


Fig. 669 Cu-Ni-Pd 銅-鎳-鉑  
Copper-Nickel-Palladium(165)

400°C 等温截面 Isotherm at 400°C

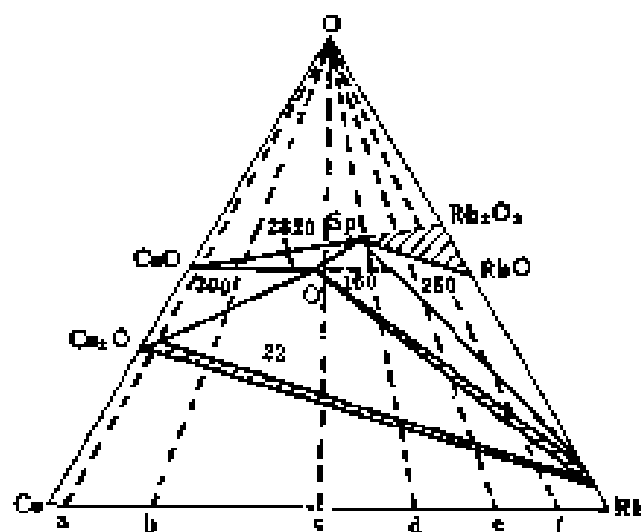


Fig. 670 Cu-O-Rh 銅-氧-鉑 Copper-Oxygen-Rhodium(166)

1050°C 截面 Section at 1050°C

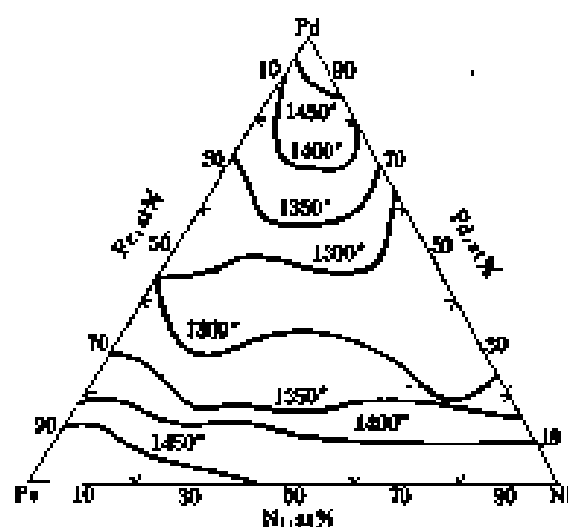


Fig. 671 Fe-Ni-Pd 鐵-鎳-鉑 Iron-Nickel-Palladium(167)

液相面 Liquidus

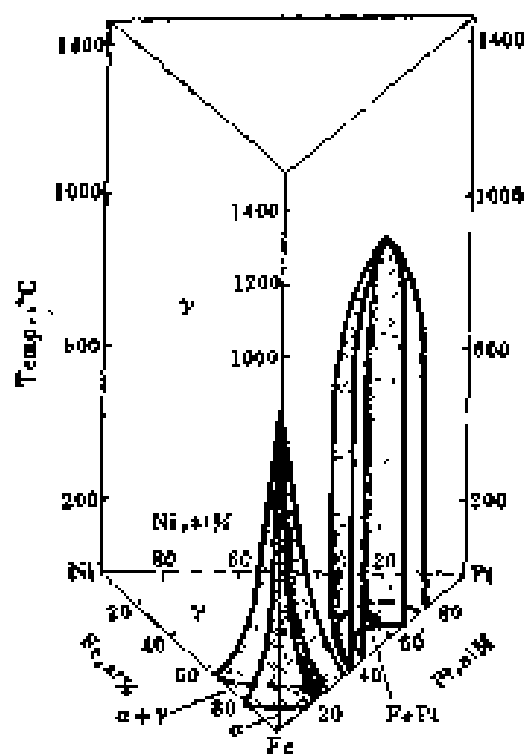


Fig. 672 Fe-Ni-Pi 铁-镍-铂  
Iron-Nickel-Platinum [168]

0-1400℃ 空间图 Space diagram at 0-1400℃

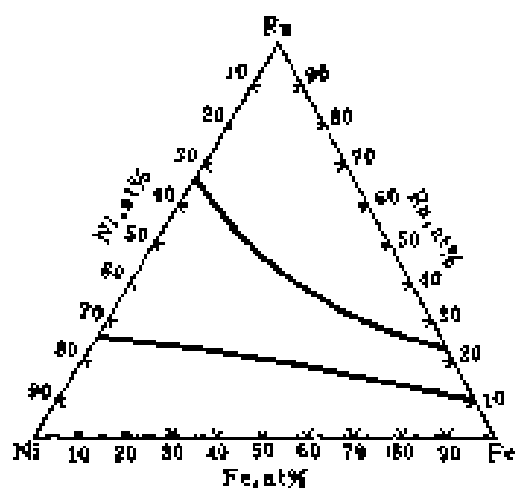


Fig. 673 Fe-Ni-Ru 铁-镍-钌  
Iron-Nickel-Ruthenium [169]

1000℃ 等温断面 Isotherm at 1000℃

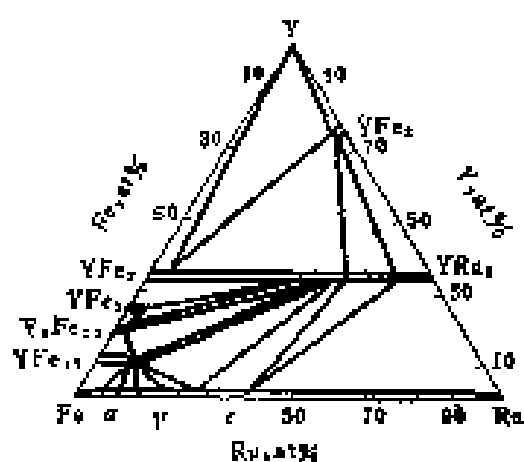


Fig. 674 Fe-Ru-Y 铁-钌-钇  
Iron-Ruthenium-Yttrium [170]

600℃ 等温断面 Isotherm at 600℃



Fig. 675 Fe-Ru-Y 铁-钌-钇  
Iron-Ruthenium-Yttrium [160]

600℃ 等温断面 Isotherm at 600℃





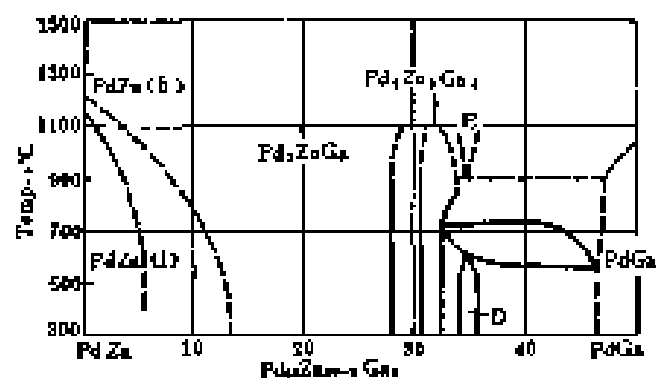


Fig. 680 Ga-Pd-Zn 铍-钯-镓 Gallium-Palladium-Zinc(175)

PdZn-PdGa 截面 Section at PdZn-PdGa

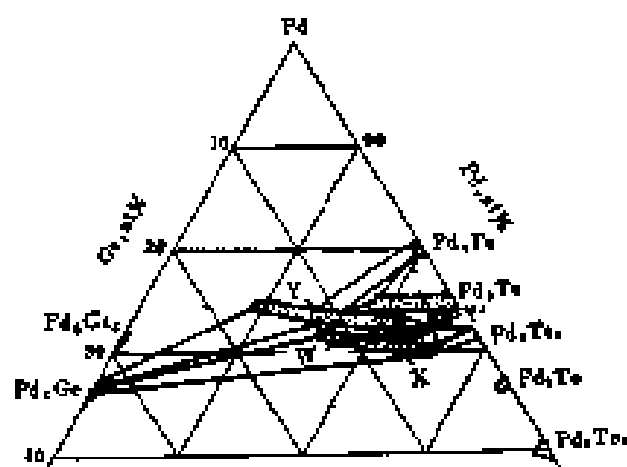


Fig. 681 Ge-Pd-Te 锗-钯-碲 Germanium-Palladium-Tellurium(102)

480°C 等温截面 Isotherm at 480°C

W—Pd<sub>7</sub>Ge<sub>11</sub>Te<sub>11</sub>—Pd<sub>7</sub>Ge<sub>11</sub>Te<sub>11</sub> X—Pd<sub>11</sub>Ge<sub>11</sub>Te<sub>11</sub>—Pd<sub>11</sub>Ge<sub>11</sub>Te<sub>11</sub>  
Y—Pd<sub>11</sub>Ge<sub>11</sub>Te<sub>11</sub>—Pd<sub>11</sub>Ge<sub>11</sub>Te<sub>11</sub>

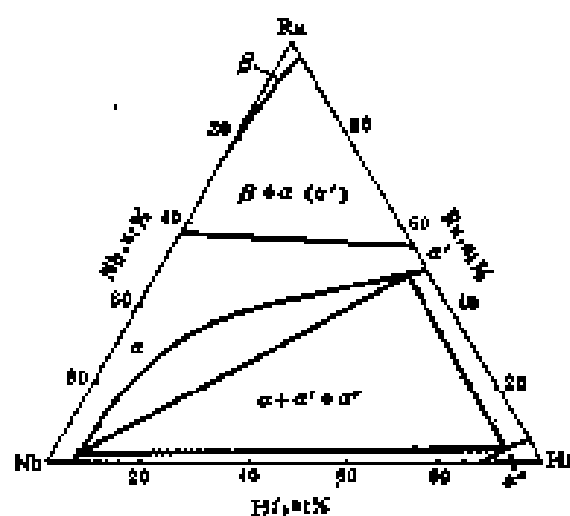


Fig. 682 Hf-Nb-Ru 铪-铌-钨 Hafnium-Niobium-Ruthenium(176)

1050°C 等温截面 Isotherm at 1050°C



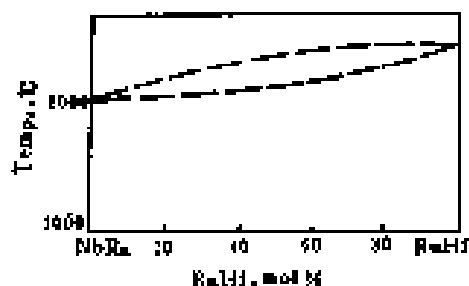
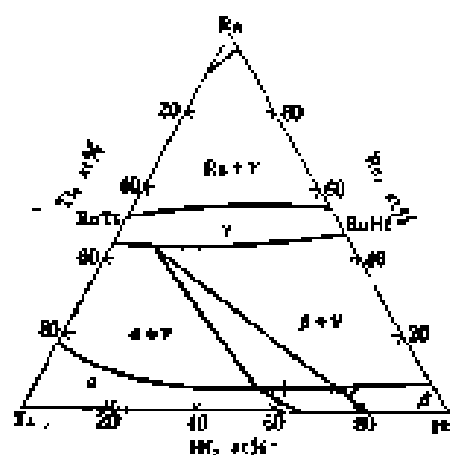


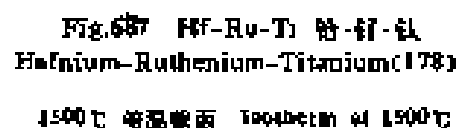
Fig.694 Hf-Nb Ru 铪·铌·钌  
Hafnium-Niobium-Ruthenium (176)

NbRu-RuHf #11 Section at NbRu-RuHf



**Fig.696 Hf-Ru-Ti 铪-铀-钛**  
**Hafnium-Ruthenium-Titanium(177)**

1000℃ 淬火物組織面  
Isotherm quenched at 1000℃



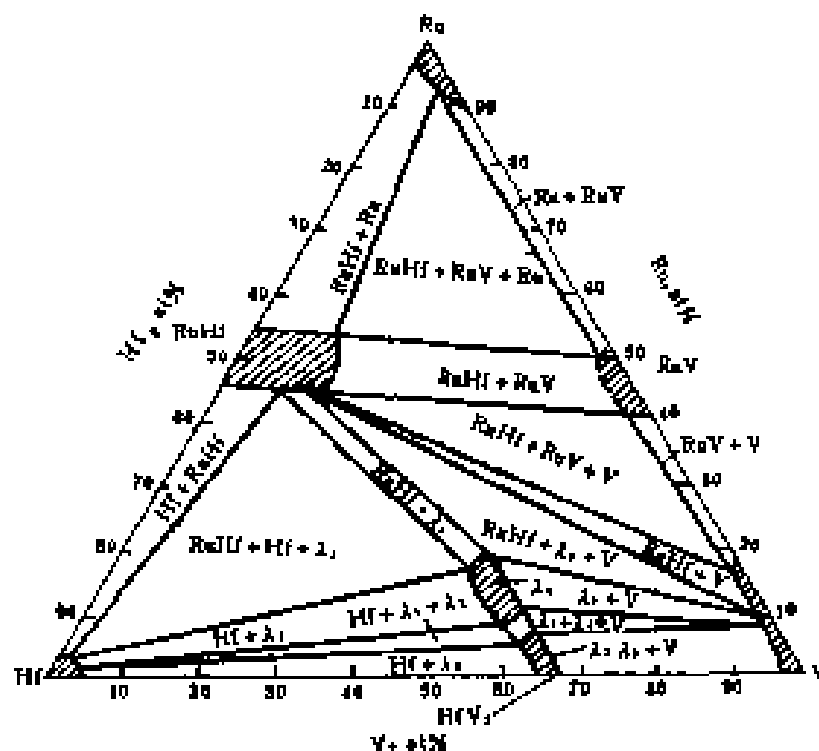


Fig. 688 Hf-Ru-V 铪-钌-钒 Hafnium-Ruthenium-Vanadium(179)

900°C 等温截面 Isotherm at 900°C

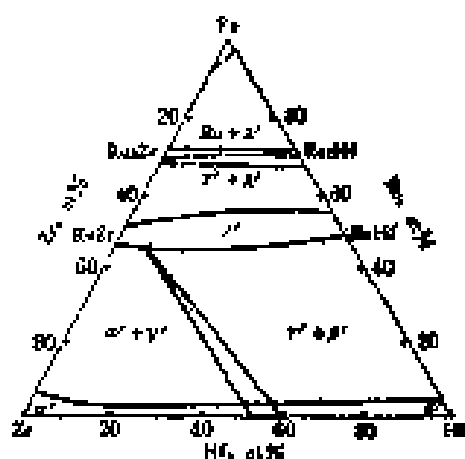


Fig. 689 Hf-Ru-Zr 铪-钌-锆  
Hafnium-Ruthenium-Zirconium(177)

1000°C 均匀化后等温截面  
Isotherm at 1000°C (homogenized samples)

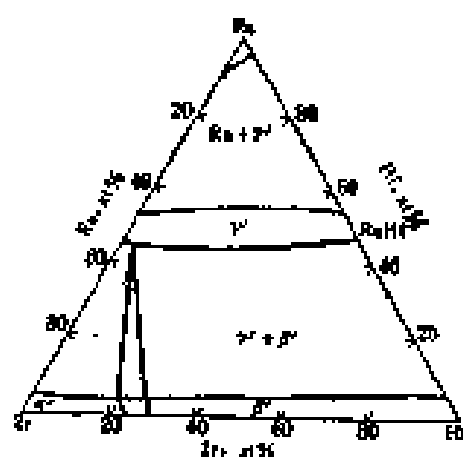


Fig. 690 Hf-Ru-Zr 铪-钌-锆  
Hafnium-Ruthenium-Zirconium(177)

1000°C 淬火后等温截面  
Isotherm at 1000°C (quenched samples)

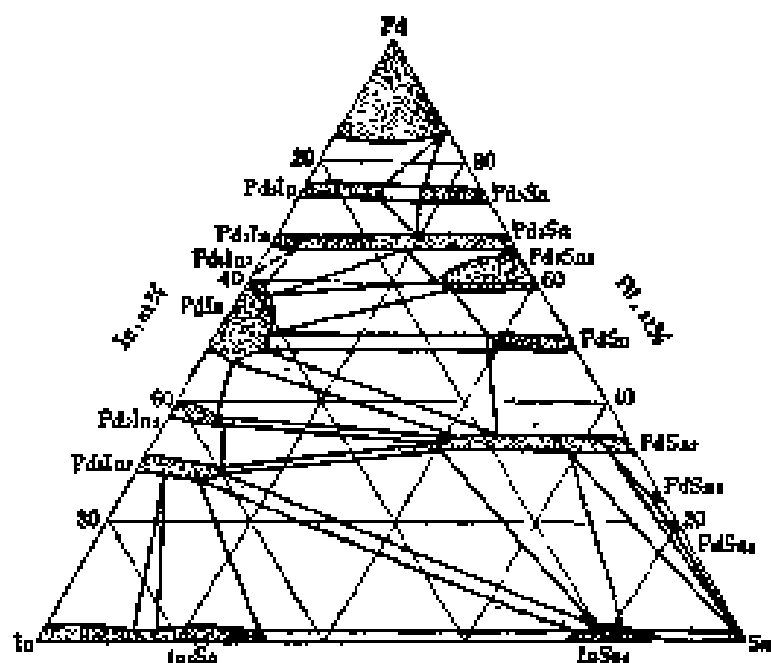


Fig.691 In-Pd-Sn 铟-钯-锡 Indium-Palladium-Tin(180)

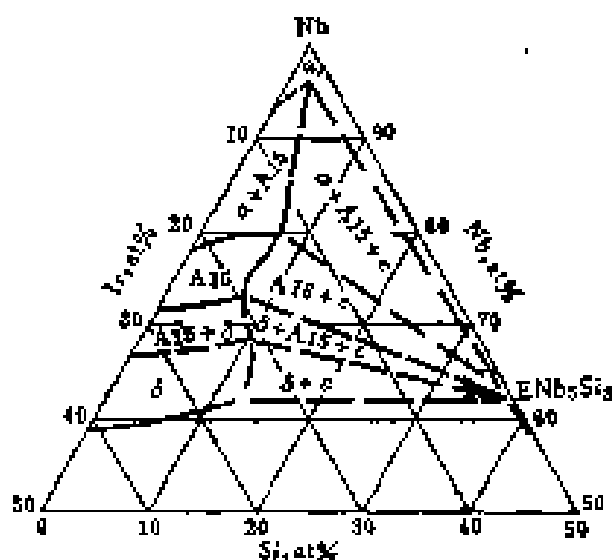


Fig.692 Ir-Nb-Si 铱-铌-硅  
Iridium-Niobium-Silicon(181)

1200℃ 等温截面 Isotherm at 1200℃

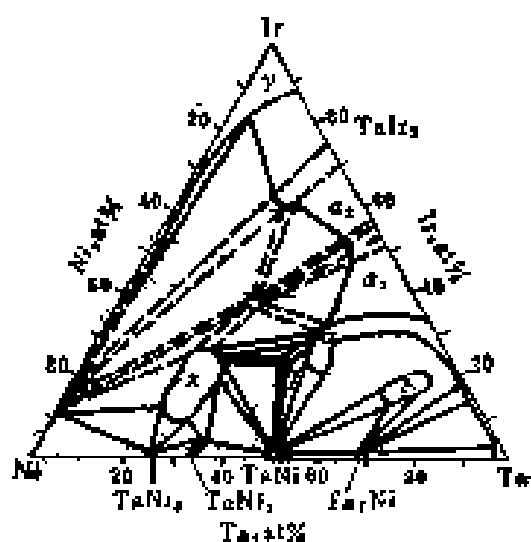


Fig.693 Ir-Ni-Ta 铱-镍-钽  
Iridium-Nickel-Tantalum(182)

950℃ 等温截面 Isotherm at 950℃

Fig. 694 Ir-O-Zr 铱-氧-铪  
Iridium-Oxygen-Zirconium (183)

1100℃ 等温截面 Isotherm at 1100℃

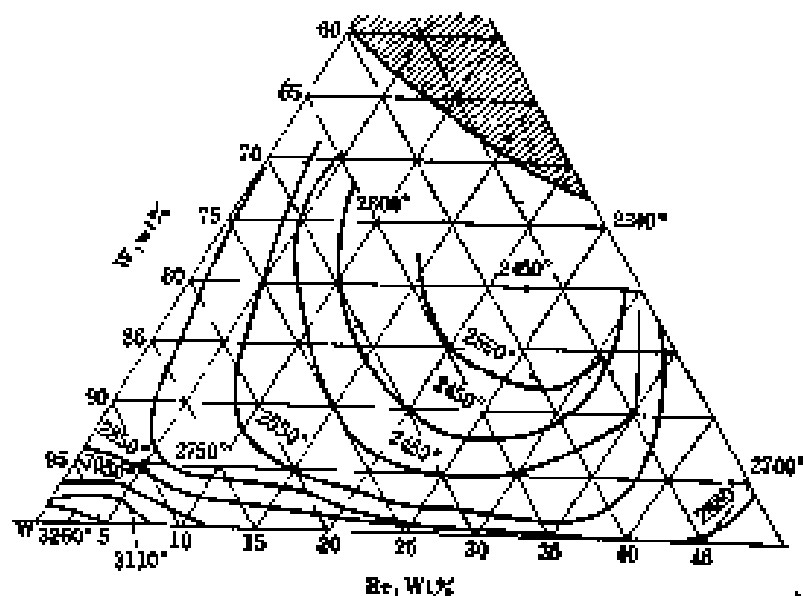
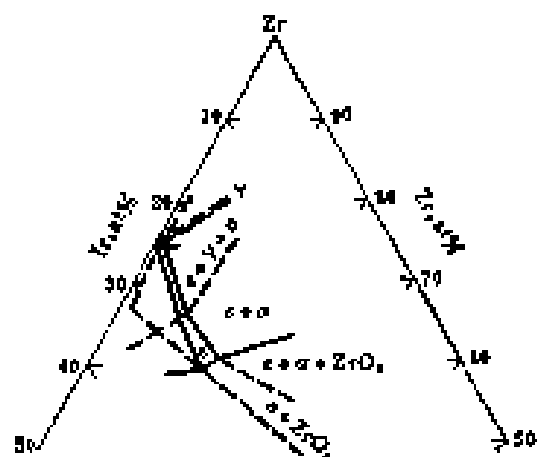
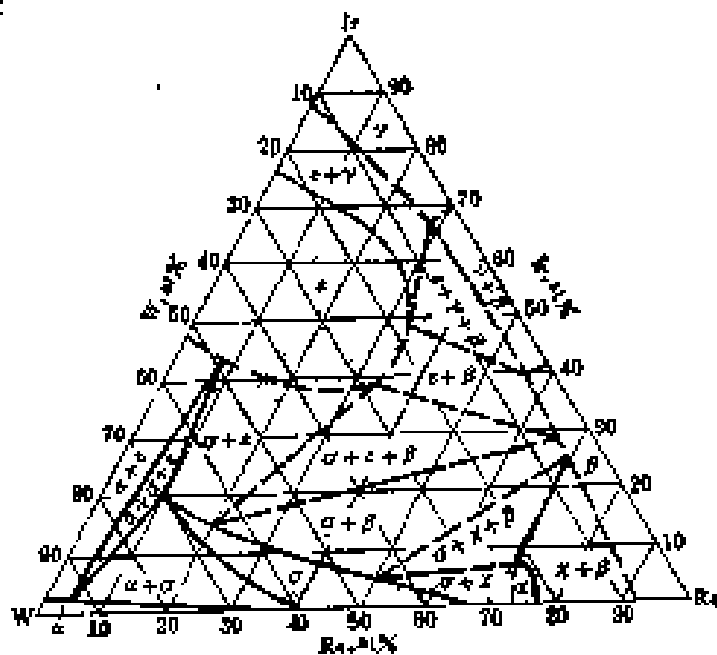


Fig. 695 Ir-Re-W 铱-铼-钨  
Iridium-Rhenium-Tungsten (184)

等温液相线 Isotherm liquidus

Fig. 696 Ir-Re-W 铱-铼-钨  
Iridium-Rhenium-Tungsten (185)

1500℃ 等温截面 Isotherm at 1500℃





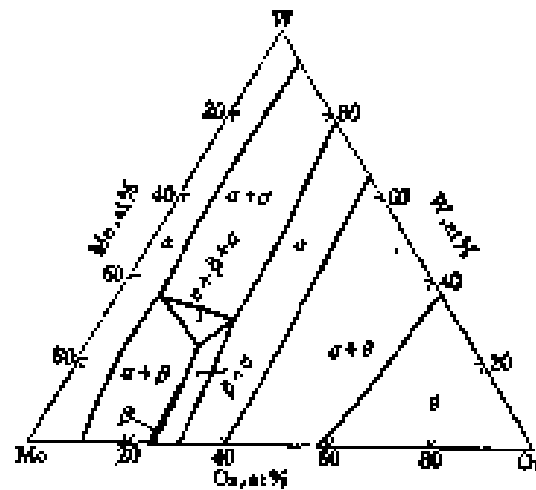


Fig. 700 Mo-Os-W 钼-锇-钨 Molybdenum-Osmium-Tungsten (198)

1600°C 等温截面 Isotherm at 1600°C

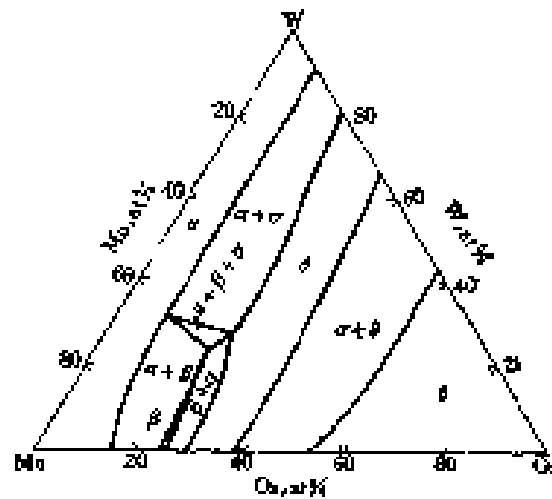


Fig. 701 Mo-Os-W 钼-锇-钨 Molybdenum-Osmium-Tungsten (198)

2000°C 等温截面 Isotherm at 2000°C

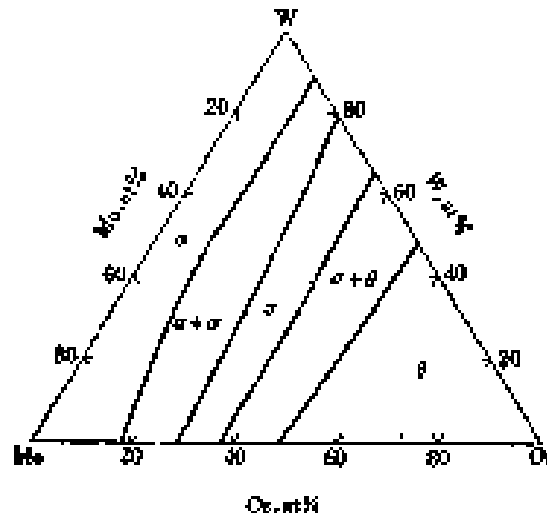


Fig. 702 Mo-Os-W 钼-锇-钨 Molybdenum-Osmium-Tungsten (198)

2375°C 等温截面 Isotherm at 2375°C

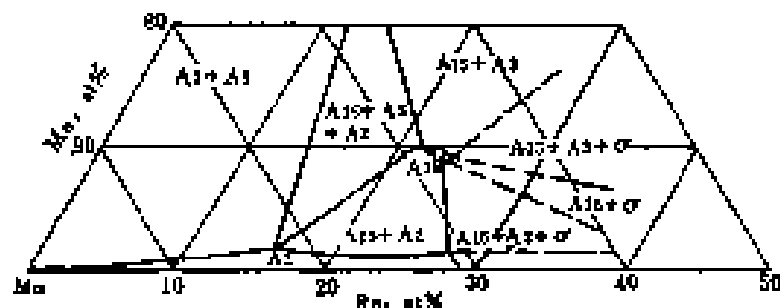


Fig. 703 Mo-Pt-Re 相-铂-铼 Molybdenum-Platinum-Rhenium(189)

1050℃ 部分等温截面 Partial isotherm at 1050°C

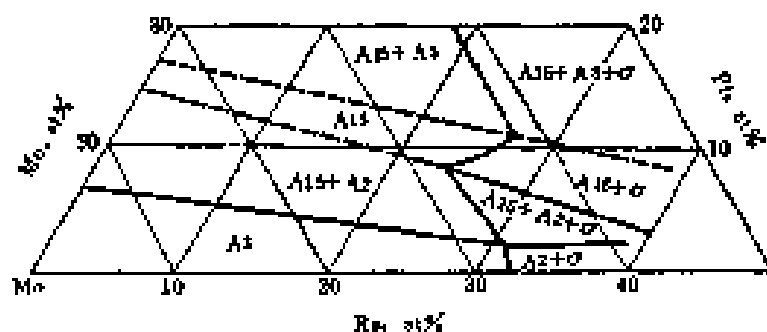


Fig. 704 Mo-Pt-Re 相-铂-铼 Molybdenum-Platinum-Rhenium(189)

1600℃ 部分等温截面 Partial isotherm at 1600°C

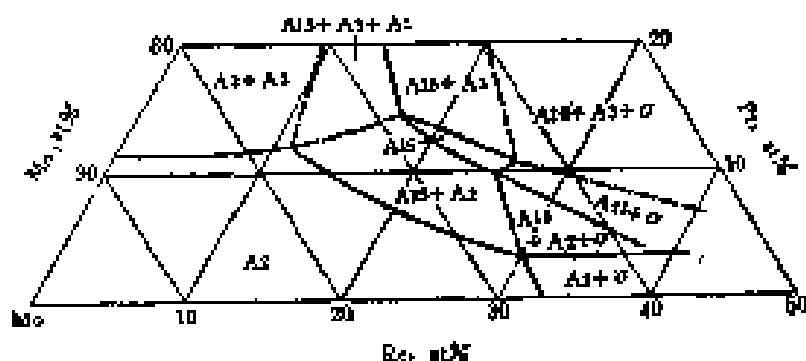
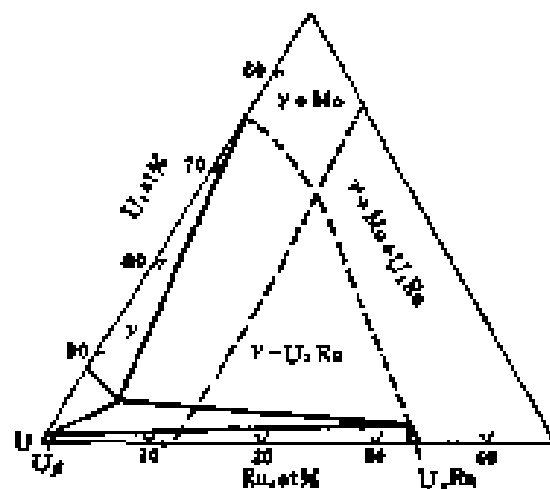


Fig. 705 Mo-Pt-Re 相-铂-铼 Molybdenum-Platinum-Rhenium(189)

1800℃ 部分等温截面 Partial isotherm at 1800°C

Fig. 706 Mo-Ru-U 相-钼-铀  
Molybdenum-Ruthenium-Uranium(190)

900°C 和 600°C 截面 Section at 900°C and 600°C  
--- 900°C — 600°C



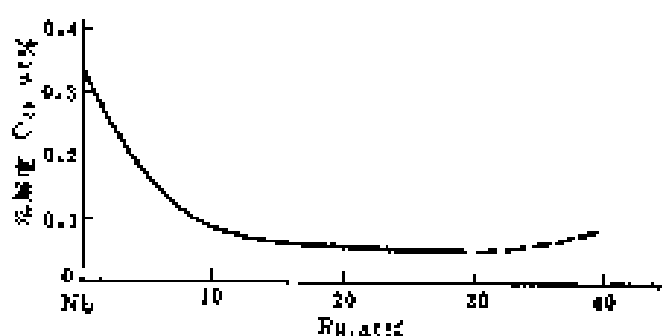


Fig. 707 Nb-O-Ru 铌-氧-钌  
Niobium-Oxygen-Ruthenium (191)

1000°C 下 Nb—Ru 合金中 O<sub>2</sub> 的溶解度  
Solubility of Oxygen in Nb—Ru alloys at 1000°C

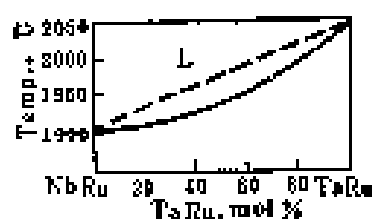


Fig. 708 Nb-Ru-Ta 铌-钌-钽  
Niobium-Ruthenium-Tantalum (192)

NbRu—TaRu 截面 Section at NbRu—TaRu

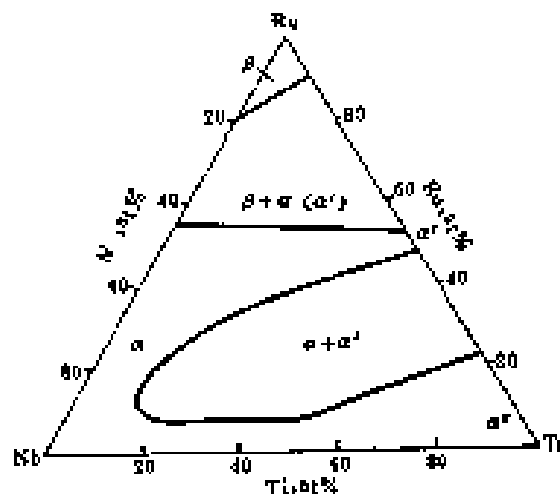


Fig. 709 Nb-Ru-Ti 铌-钌-钛 Niobium-Ruthenium-Titanium (176)

1050°C 等温截面 Isotherm at 1050°C

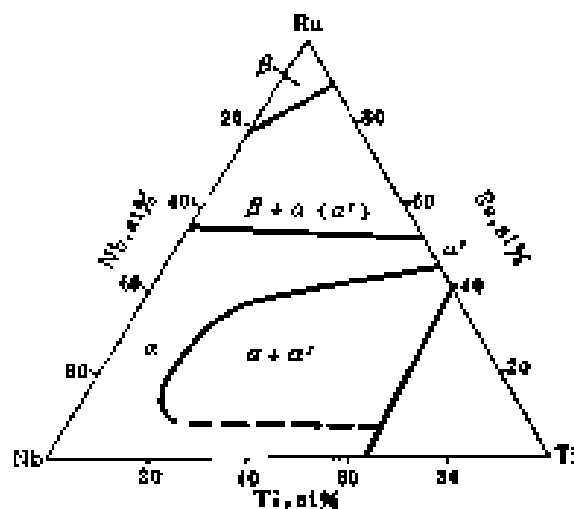


Fig. 710 Nb-Ru-Ti 铌-钌-钛 Niobium-Ruthenium-Titanium (176)

1600°C 等温截面 Isotherm at 1600°C



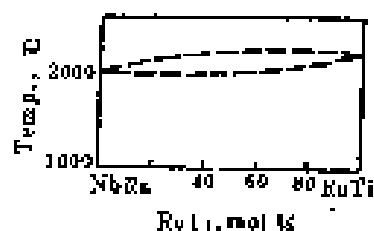


Fig. 711 Nb-Ru-Ti 铌-钌-钛  
Niobium-Ruthenium-Titanium(176)  
NbRu—RuTi 截面 Section at NbRu—RuTi

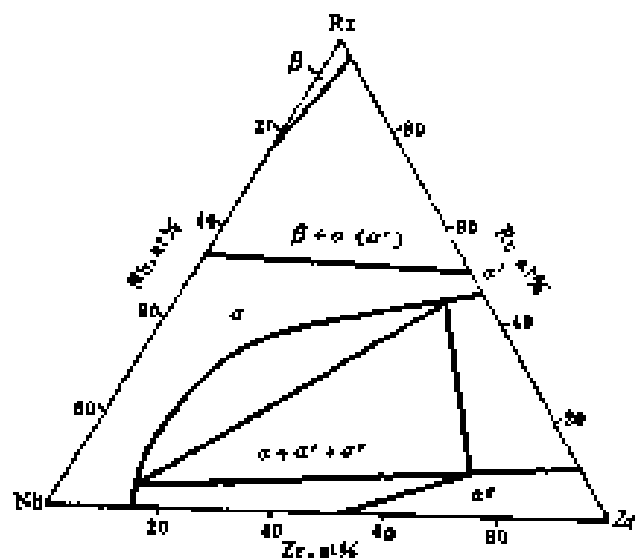


Fig. 712 Nb-Ru-Zr 铌-钌-锆  
Niobium-Ruthenium-Zirconium(193)  
1050 °C 等温截面 Isotherm at 1050 °C

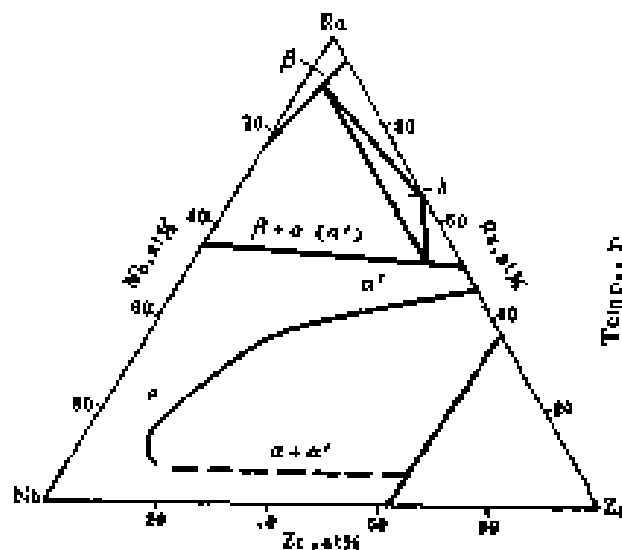


Fig. 713 Nb-Ru-Zr 铌-钌-锆  
Niobium-Ruthenium-Zirconium(193)  
1600 °C 等温截面 Isotherm at 1600 °C

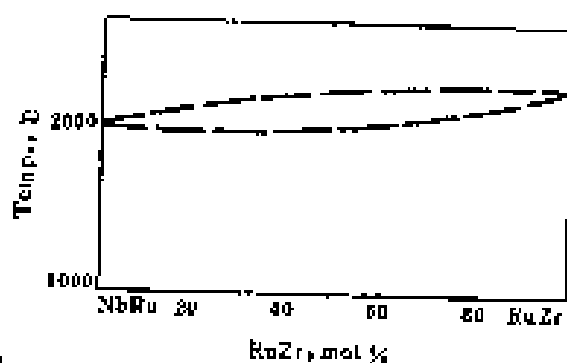


Fig. 714 Nb-Ru-Zr 铌-钌-锆  
Niobium-Ruthenium-Zirconium(193)  
NbRu—RuZr 截面 Section at NbRu—RuZr

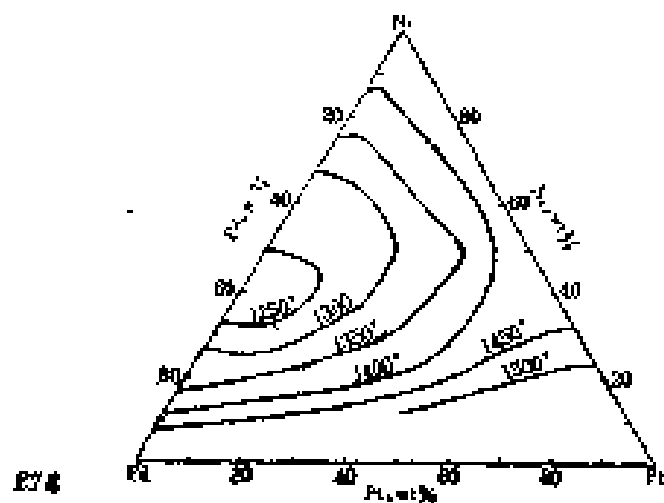


Fig. 715 Ni-Pd-Pt 镍-钯-铂  
Nickel-Palladium-Platinum(194)

液相面 Liquidus

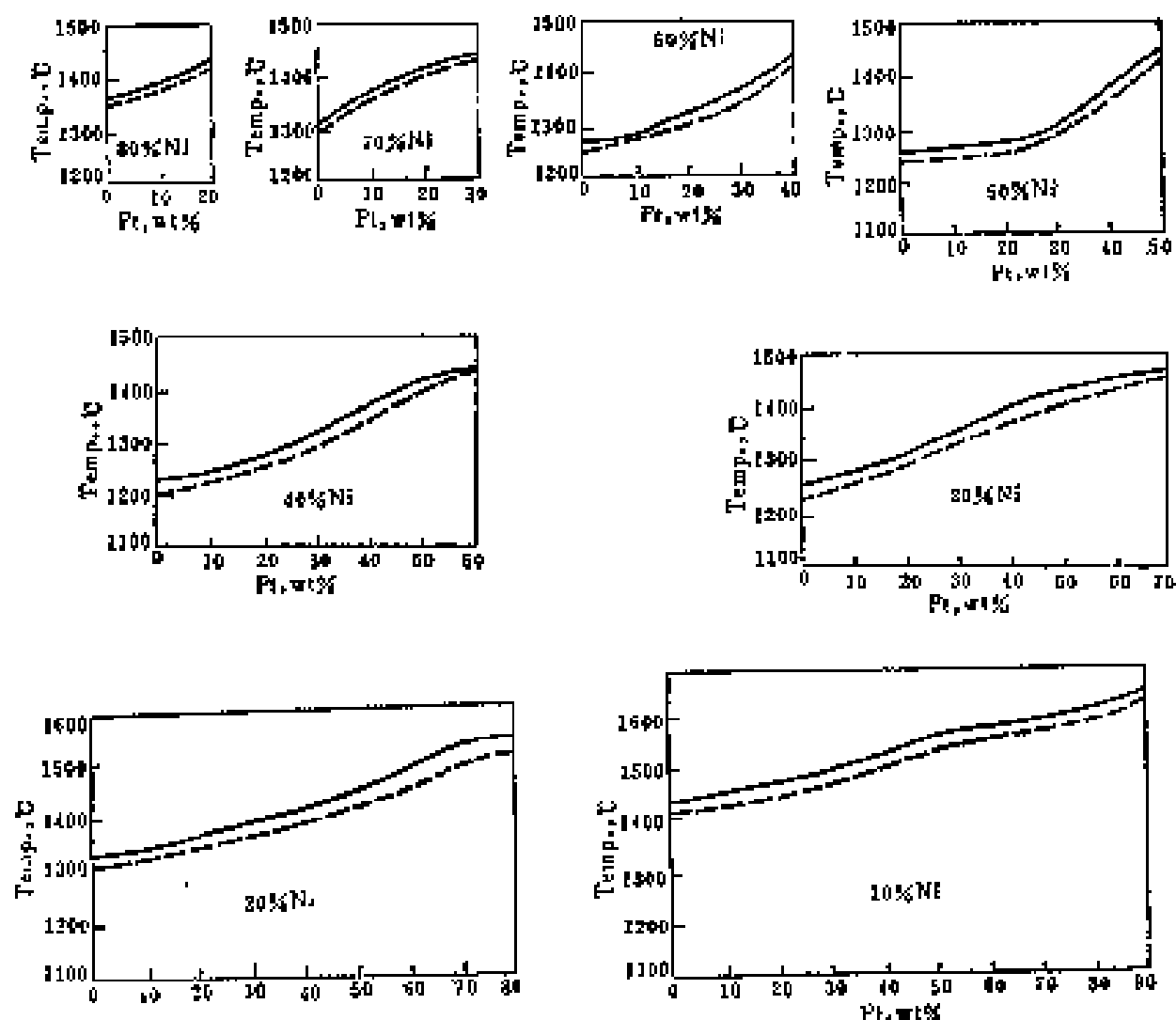


Fig.716 Ni-Pd-Pt 镍-钯-铂 Nickel-Palladium-Platinum(194)

液相线 Liquidus

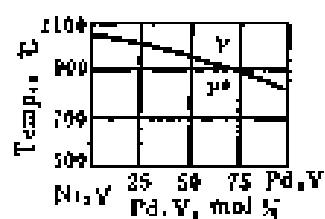


Fig.717 Ni-Pd-V 镍-钯-钒 Nickel-Palladium-Vanadium(156)

Ni,V-Pd,V 截面 Section at Ni,V-Pd,V

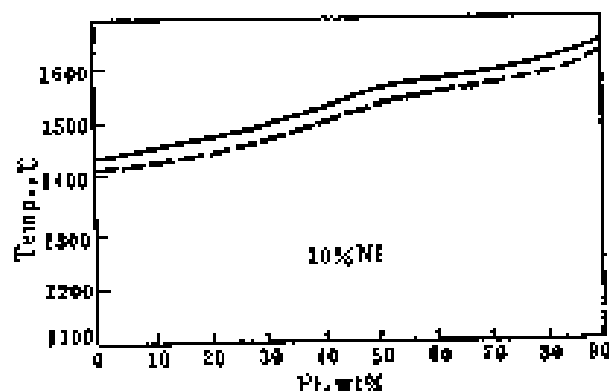


Fig.718 Ni-Ru-Y 镍-钌-钇 Nickel-Ruthenium-Yttrium(160)

600°C 等温截面 Isotherm at 600°C

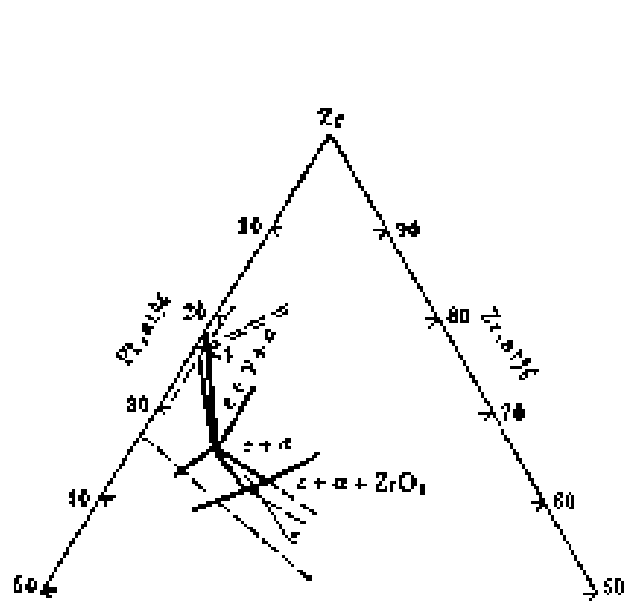


Fig. 719 O-Pt-Zr 氧-铂-锆  
Oxygen-Platinum-Zirconium (183)

600°C 等温截面 Isotherm at 600°C

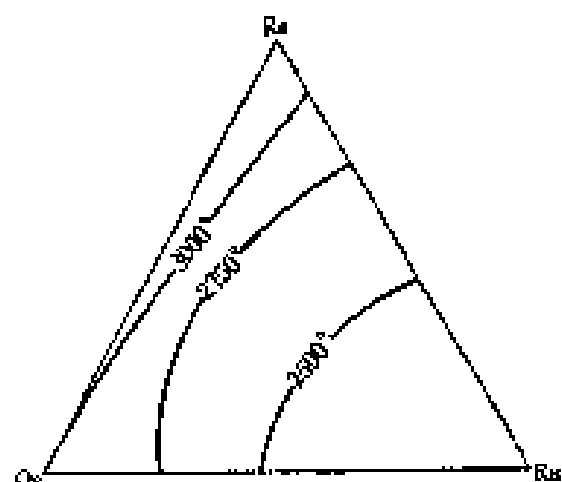


Fig. 721 Os-Re-Ru 锇-铼-钌  
Osmium-Rhenium-Ruthenium (195)

固相面 Solidus

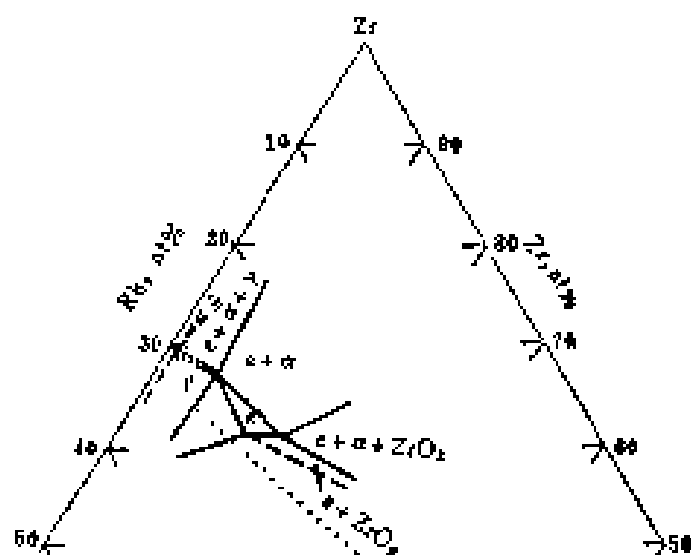


Fig. 720 O-Rh-Zr 氧-铑-铪 Oxygen-Rhodium-Zirconium (183)

950°C 等温截面 Isotherm at 950°C

Fig.722 Pb-Pd-Te 铅-钯-碲  
Lead-Palladium-Tellurium(102)

400℃ 等温截面 Isotherm at 400℃

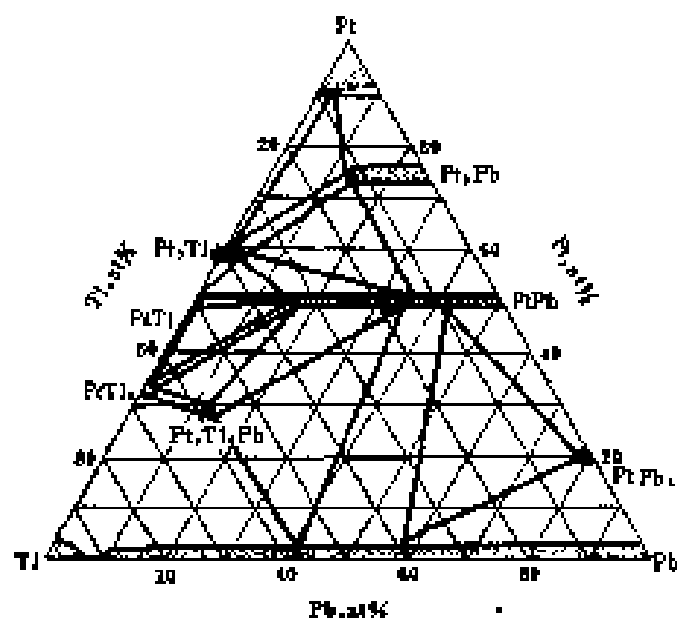
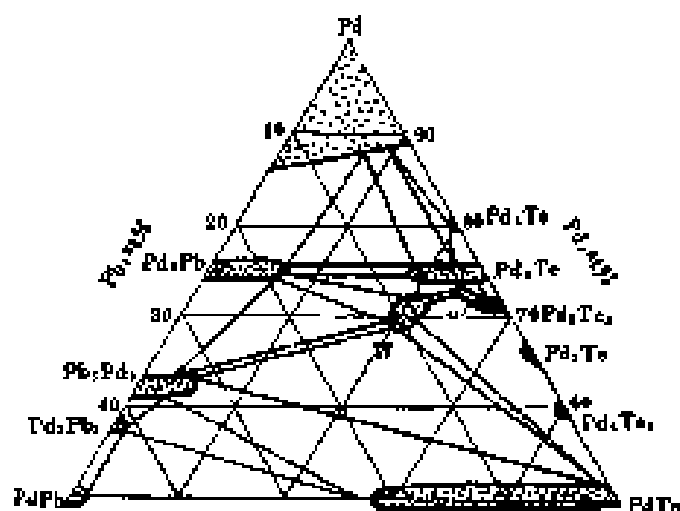


Fig.723 Pb-Pt-Tl 铅-铂-铊  
Lead-Platinum-Thallium(196)

相区投影 Projection of phase zones

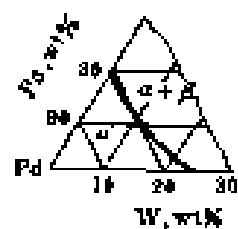


Fig.724 Pd-Re-W 钯-铼-钨  
Palladium-Rhenium-Tungsten(197)

固态中的相 Phases in solid

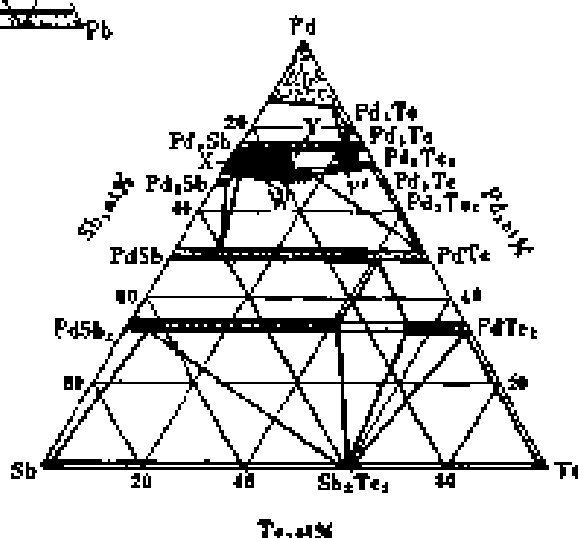


Fig.725 Pd-Sb-Te 钯-锑-碲  
Palladium-Antimony-Tellurium(103)

400℃ 等温截面 Isotherm at 400℃

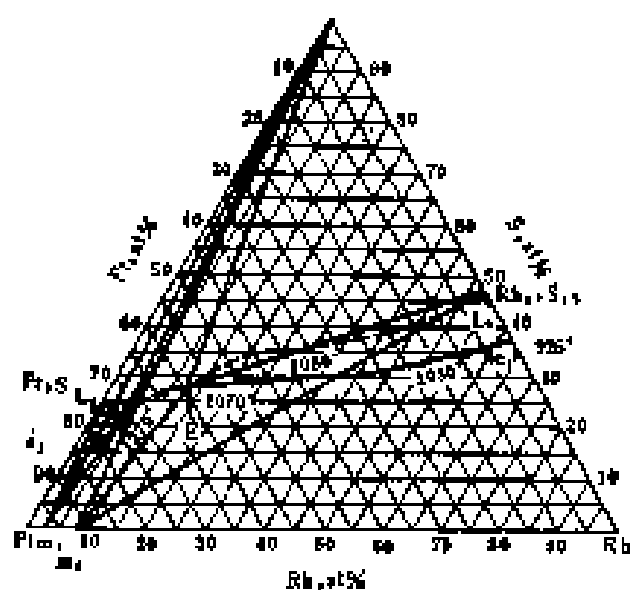


Fig. 726 Pt-Rh-S 铂-铑-硫  
Platinum-Rhodium-Sulfur(198)

理想化部分相图 Idealized partial  
diagram

Fig. 727 Pt-Sb-Sn 铂-锑-锡  
Platinum-Antimony-Tin(199)

相区投影 Projection of phase zones

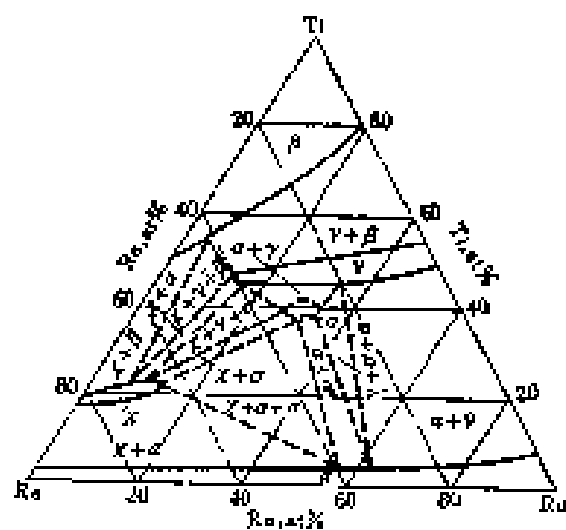
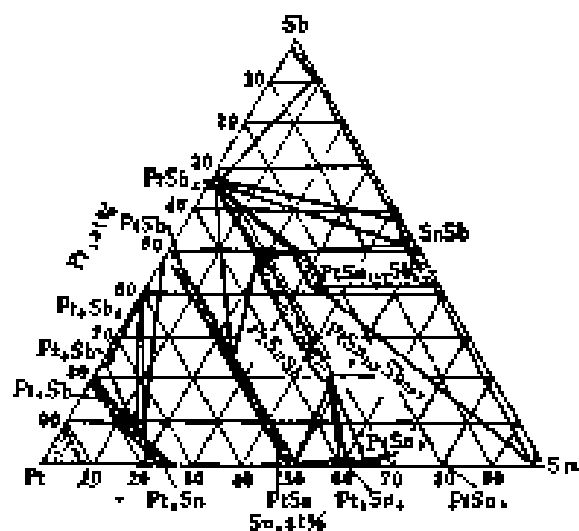


Fig. 728 Re-Ru-Ti 铼-钌-钛  
Rhenium-Ruthenium-Titanium(200)

1000℃ 等温截面 Isotherm at 1000℃

Fig.729 Re-Ru-V 铼-钌-钒  
Rhenium-Ruthenium Vanadium(200)  
1000℃ 等温截面 Isotherm at 1000℃

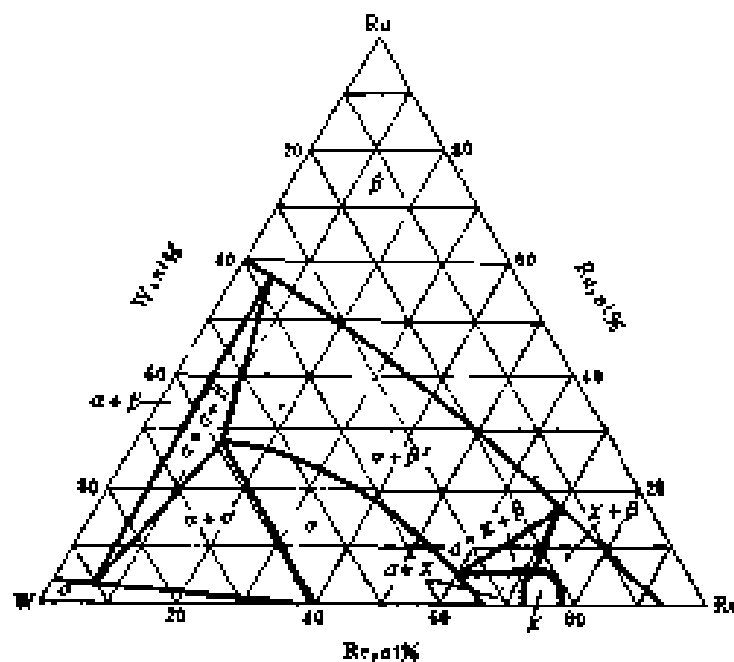
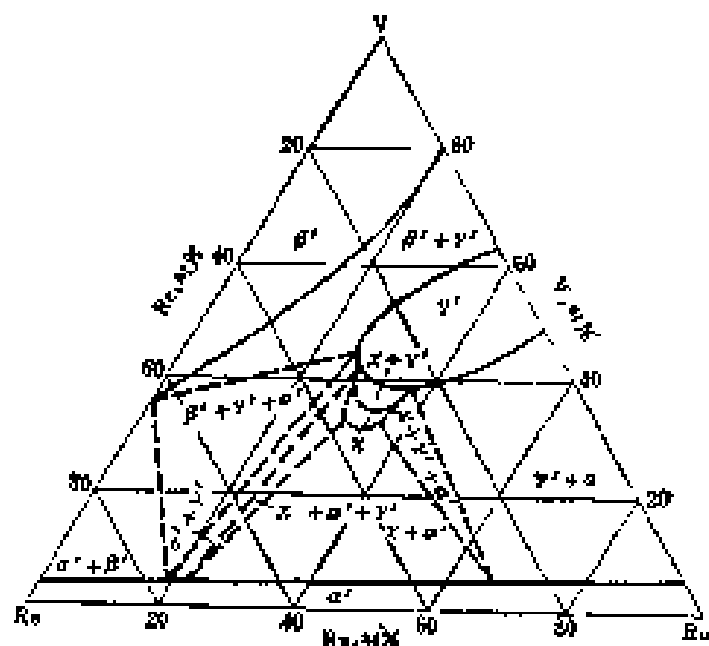
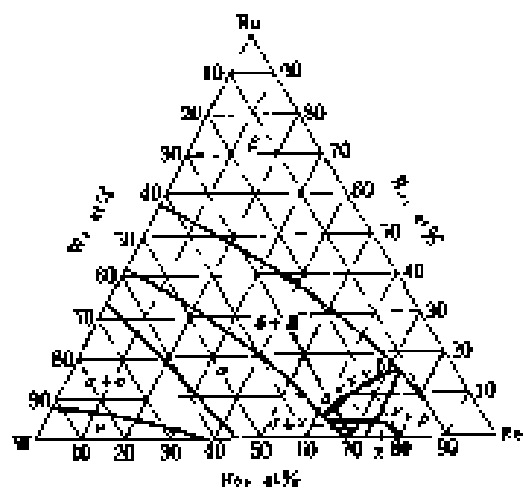


Fig.730 Re-Ru-W 铼-钌-钨  
Rhenium-Ruthenium-  
Tungsten(185)

1500℃ 等温截面 Isotherm at 1500℃

Fig.731 Re-Ru-W 铼-钌-钨  
Rhenium-Ruthenium-Tungsten(185)  
2000℃ 等温截面 Isotherm at 2000℃



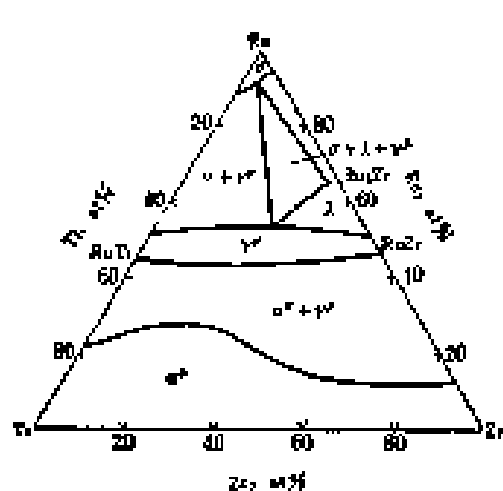


Fig. 732 Ru-Ti-Zr 钌-钛-锆  
Ruthenium-Titanium-Zirconium (177)

1000°C 退火后的等温截面  
Isotherm at 1000°C (annealed samples)

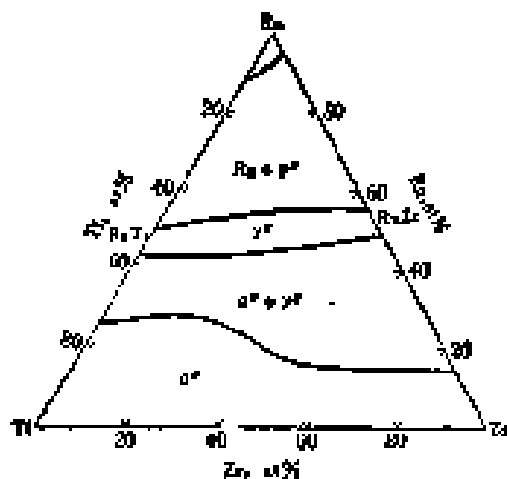


Fig. 733 Ru-Ti-Zr 钌-钛-锆  
Ruthenium-Titanium-Zirconium (177)

1000°C 淬火后的等温截面  
Isotherm at 1000°C (quenched samples)

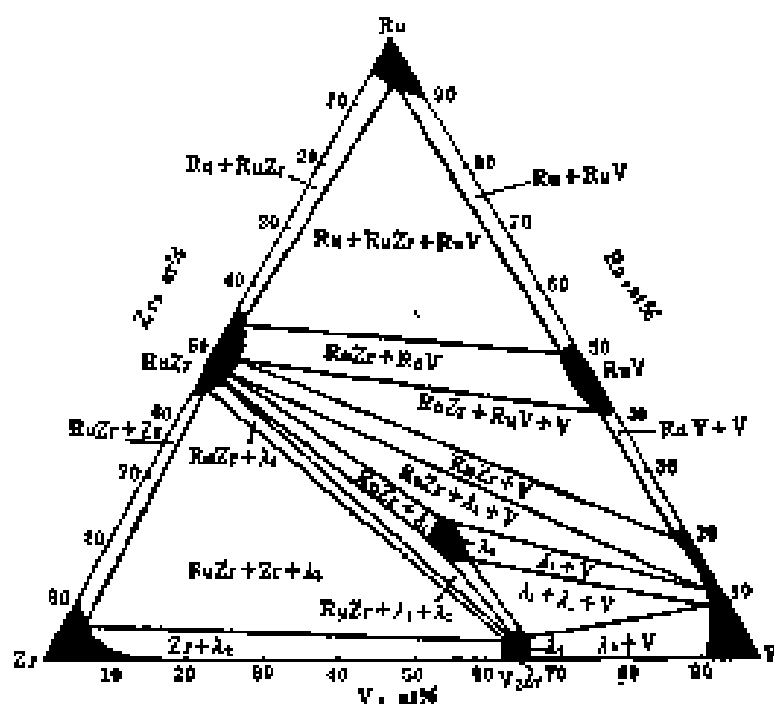


Fig. 734 Ru-V-Zr 钌-钒-锆 Ruthenium-Vanadium-Zirconium (201)

900°C 等温截面 isotherm at 900°C

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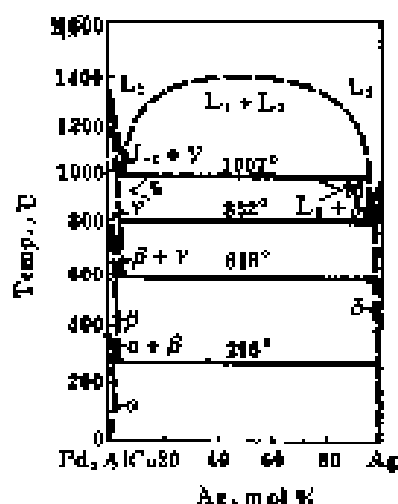


Fig. 735 Ag-Al-Cu-Pd 银-铝-铜-钯  
Silver-Aluminum-Copper-Palladium (1)  
Pd, AlCu-Ag 横面 Section at Pd, AlCu-Ag

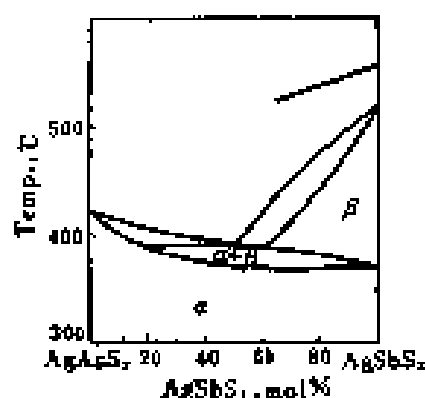


Fig. 736 Ag-As-S-Sb 银-砷-硫-锑  
Silver-Arsenic-Sulfur-Antimony (2)  
AgAsS<sub>2</sub>-AgSbS<sub>2</sub> 横面 Section at AgAsS<sub>2</sub>-AgSbS<sub>2</sub>,  
Zn + Ag 30.6%

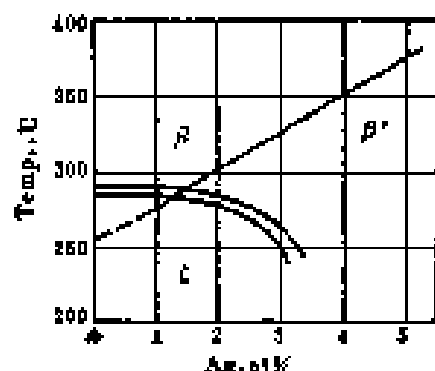


Fig. 737 Ag-Au-Cd-Zn 银-金-镉-锌  
Silver-Gold-Cadmium-Zinc (3)  
Ag<sub>1-x-y</sub>Au<sub>x</sub>Zn<sub>y</sub>Cd<sub>1-y</sub> 合金系图 Phase diagram of  
Ag<sub>1-x-y</sub>Au<sub>x</sub>Zn<sub>y</sub>Cd<sub>1-y</sub> alloys

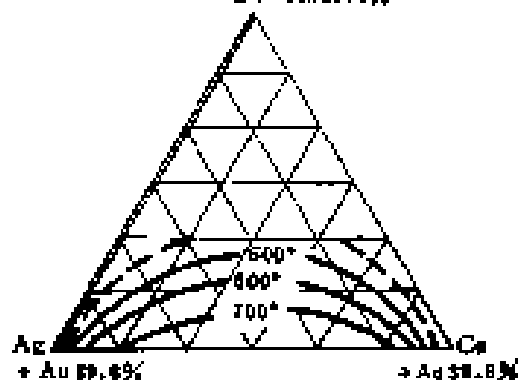


Fig. 738 Ag-Au-Cu-Zn 银-金-铜-锌  
Silver-Gold-Copper-Zinc (4)  
指定温度下的两相区 Isotherms  
defining the two-phase ( $\alpha_1 + \alpha_2$ ) region

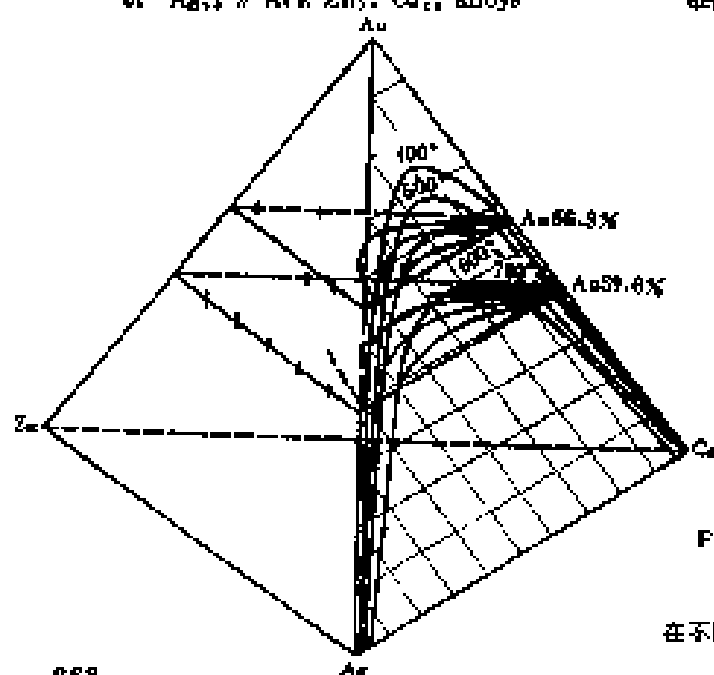


Fig. 739 Ag-Au-Cu-Zn 银-金-铜-锌  
Silver-Gold-Copper-Zinc (4)

在不同温度下的两相区 ( $\alpha_1 + \alpha_2$ ) Phase  
boundaries at various temperature

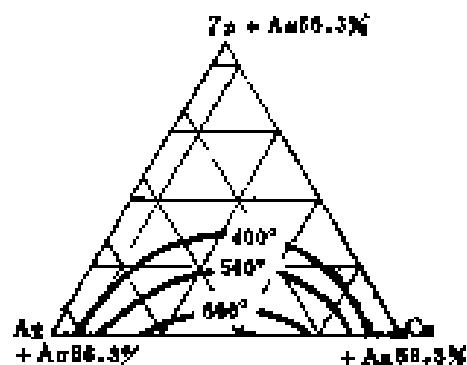


Fig. 740 Ag-Au-Cu-Zn 银-金-铜-锌  
Silver-Gold-Copper-Zinc(4)

指定温度下的两相区 Isotherms defining  
the two-phase ( $\alpha_1 + \alpha_2$ ) region

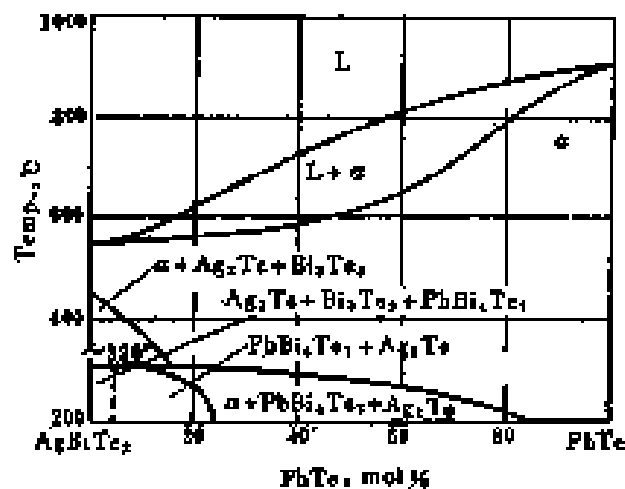


Fig. 741 Ag-Bi-Pb-Te 银-铋-铅-碲  
Silver-Bismuth-Lead-Tellurium(5)

Ag 48Te₂-PbTe 截面 Section at  
Ag 48Te₂-PbTe

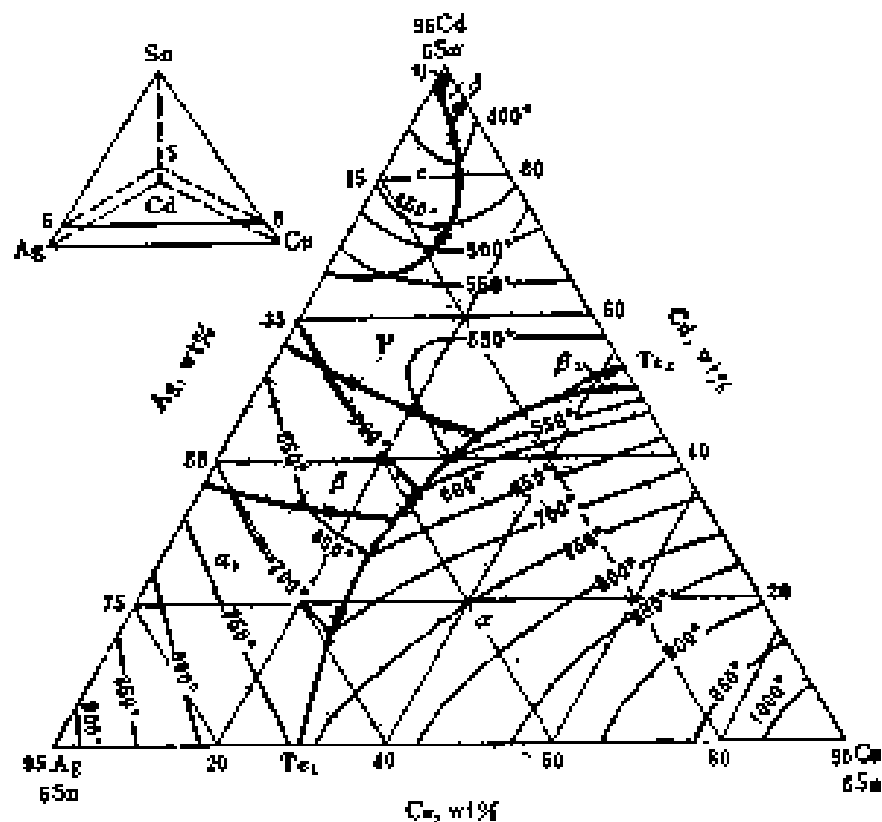


Fig. 742 Ag-Cd-Cu-Sn 银-镉-铜-锡 Silver-Cadmium-Copper-Tin(6)

液相面 Liquidus

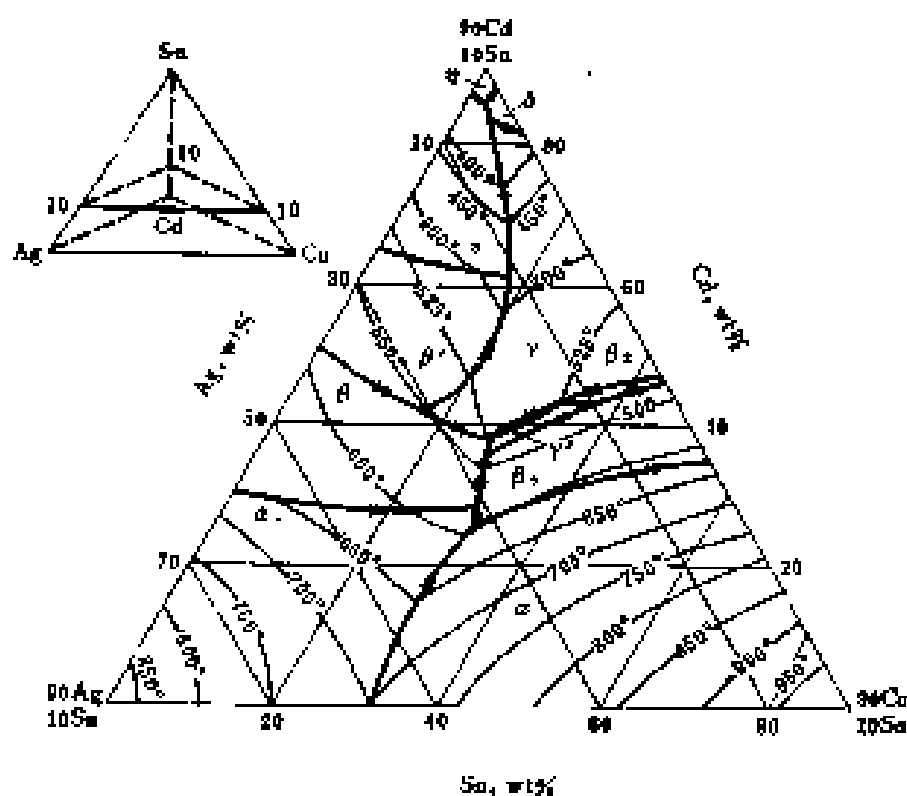


Fig. 743 Ag-Cd-Cu-Sn 銀-鎘-銅-錫 Silver-Cadmium-Copper-Tin(7)  
液相面 Liquidus

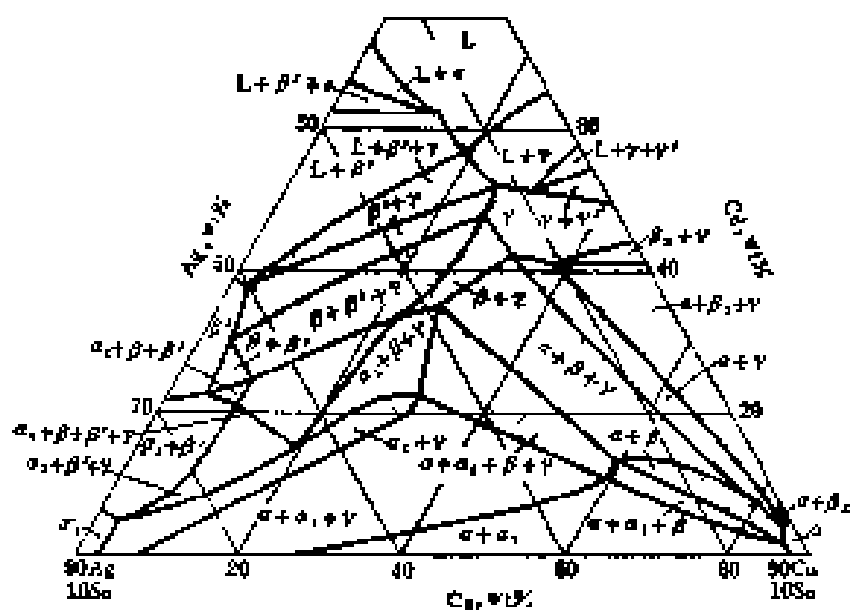


Fig. 744 Ag-Cd-Cu-Sn 銀-鎘-銅-錫 Silver-Cadmium-Copper-Tin(7)  
500℃ 等溫線面 Isotherm at 500℃



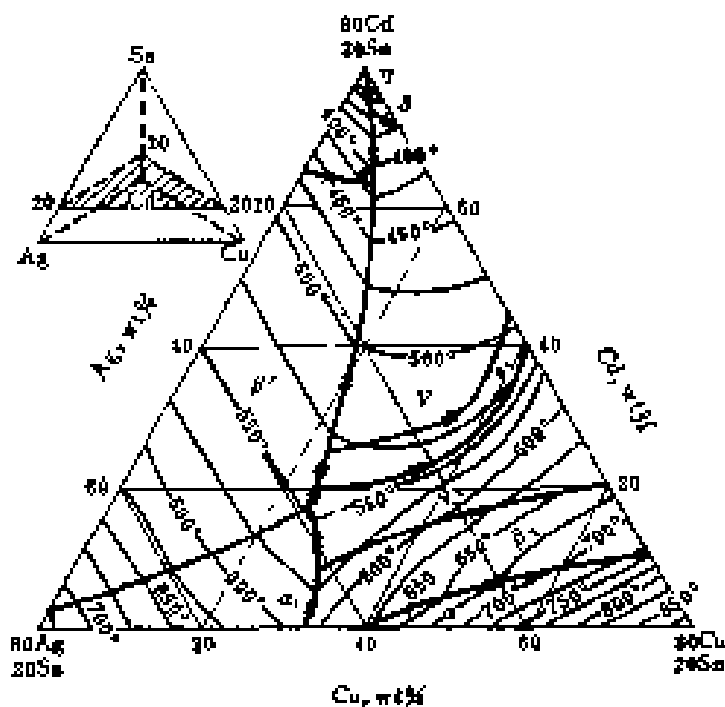


Fig. 745 Ag-Cd-Cu-Sn 銀-鎘-銅-錫  
Silver-Cadmium-Copper-Tin (8)

液相面 Liquidus

Fig. 746 Ag-Cd-Cu-Sn 銀-鎘-銅-錫  
Silver-Cadmium-Copper-Tin (8)

500℃ 等溫截面 Isotherm at 500℃

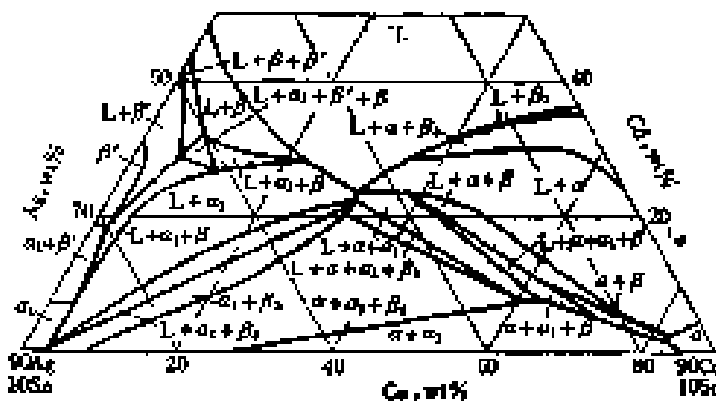
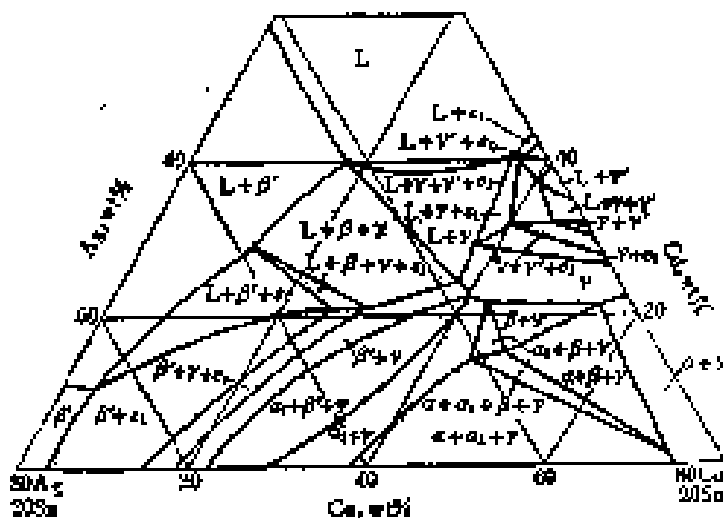


Fig. 747 Ag-Cd-Cu-Sn 銀-鎘-銅-錫  
Silver-Cadmium-Copper-Tin (7)

600℃ 等溫截面 Isotherm at 600℃

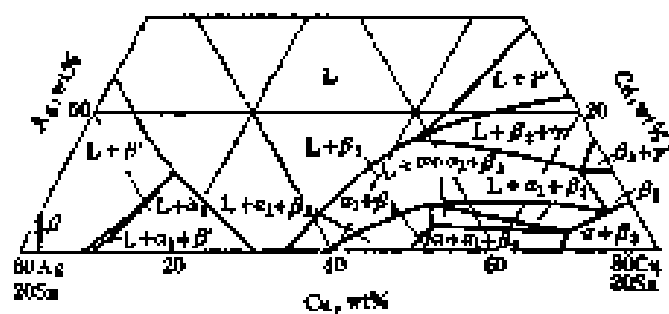


Fig. 748 Ag-Cd-Cu-Sn 銀-鎘-銅-錫 Silver-Cadmium-Copper-Tin (8)

600°C 等溫截面 isotherm at 600°C

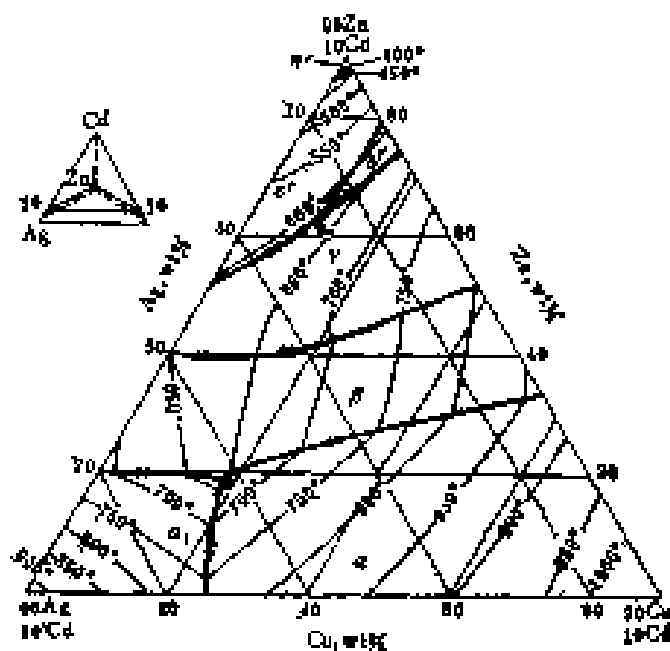
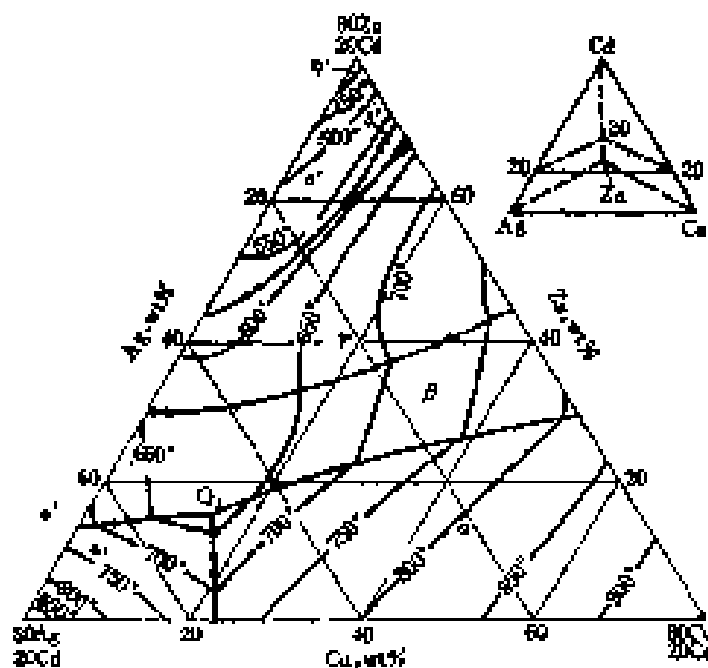


Fig. 749 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅 Silver-Cadmium-Copper-Zinc (9)

液相面 Liquidus

Fig. 750 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅 Silver-Cadmium-Copper-Zinc (9)

液相面 Liquidus



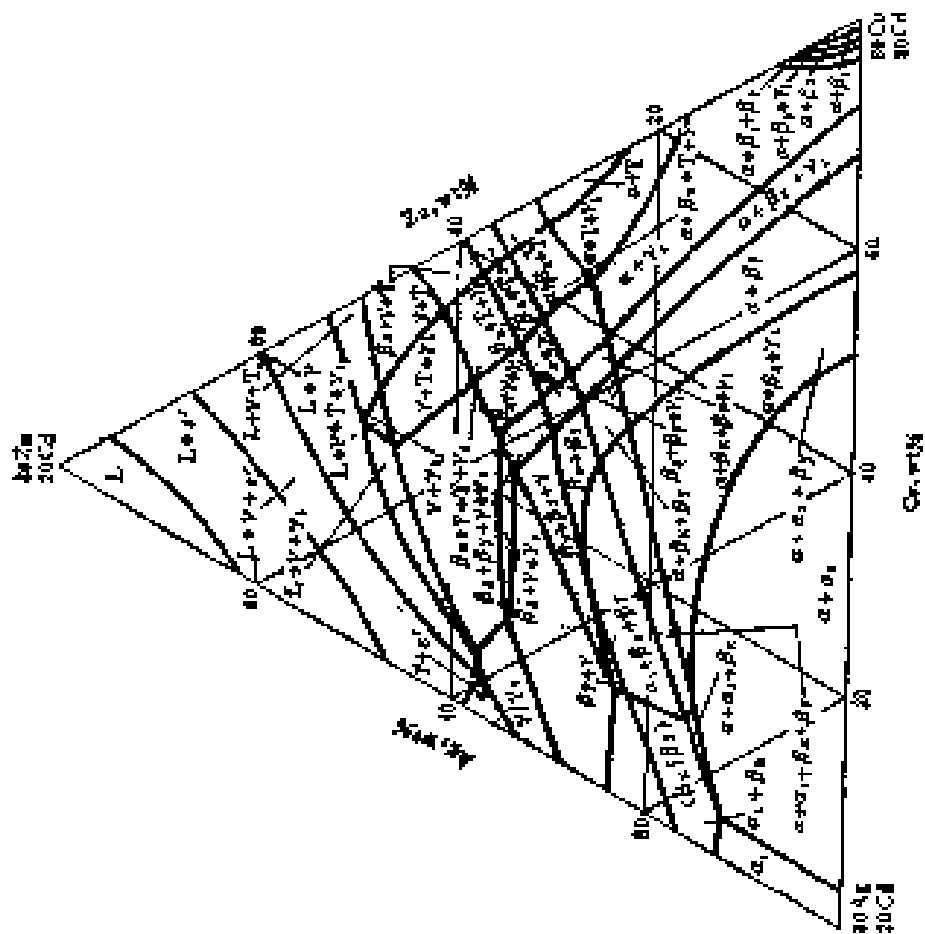


Fig. 731 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅 Isotherm at 400°C

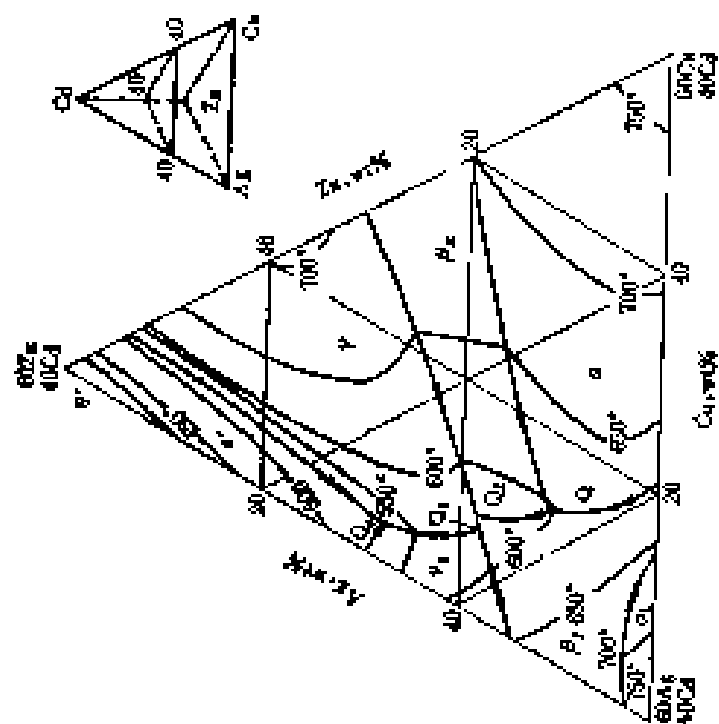


Fig. 733 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅 Silver-Cadmium-Copper-Zinc(10)

液相面 | liquidus

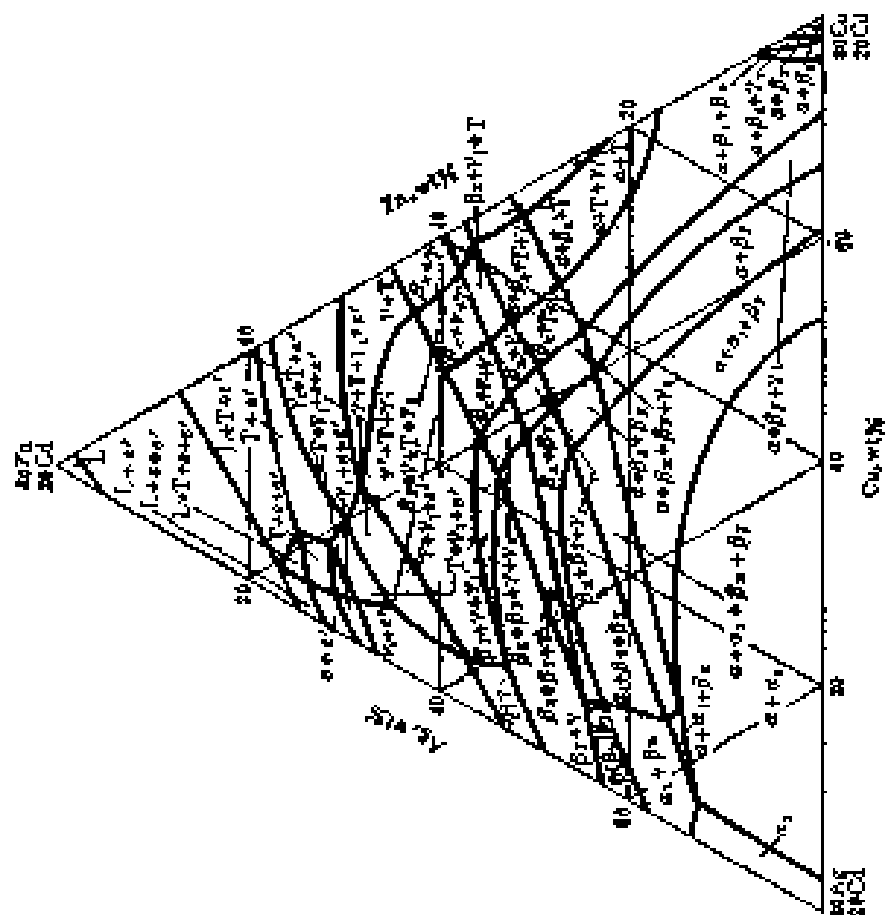
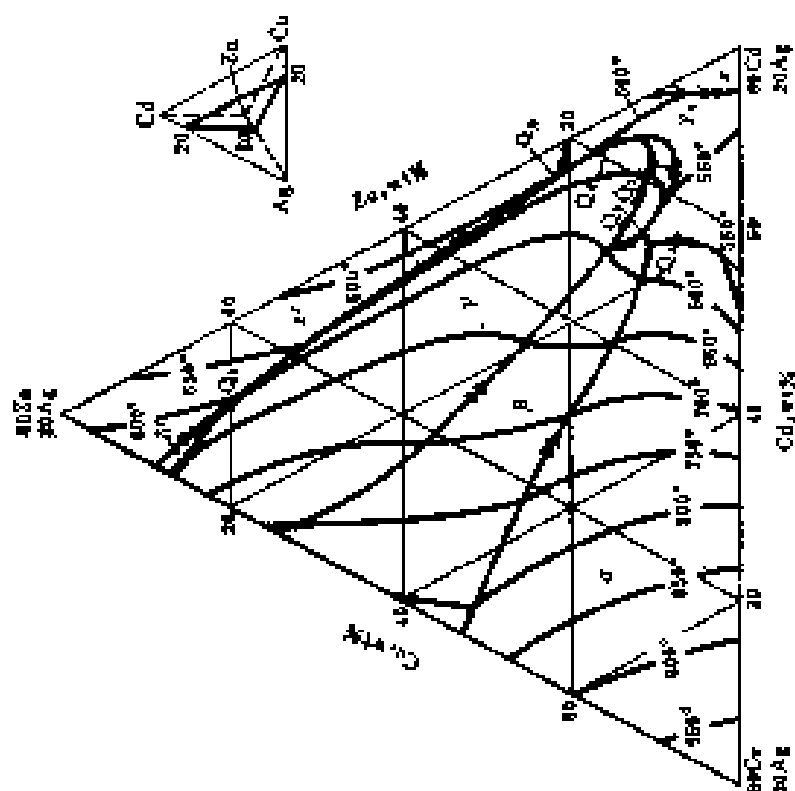


Fig. 752 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅 Silver-Cadmium-Copper-Zinc(9)

500°C 等溫線面 Isotherms at 500°C

Fig. 754 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅  
Silver-Cadmium-Copper-Zinc(9)

液相面 Liquidus



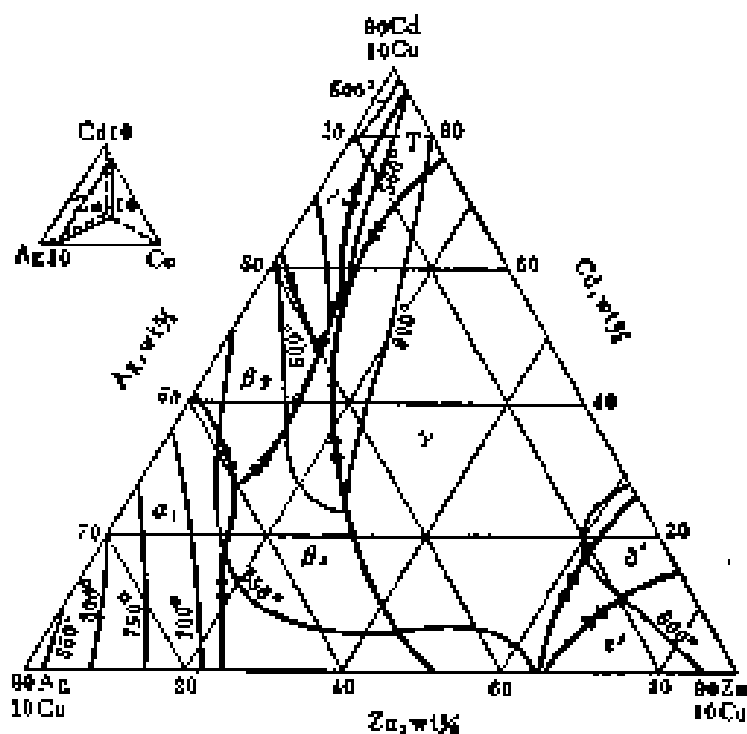


Fig. 737 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅 Silver-Cadmium-Copper-Zinc(9)  
液相面 Liquidus

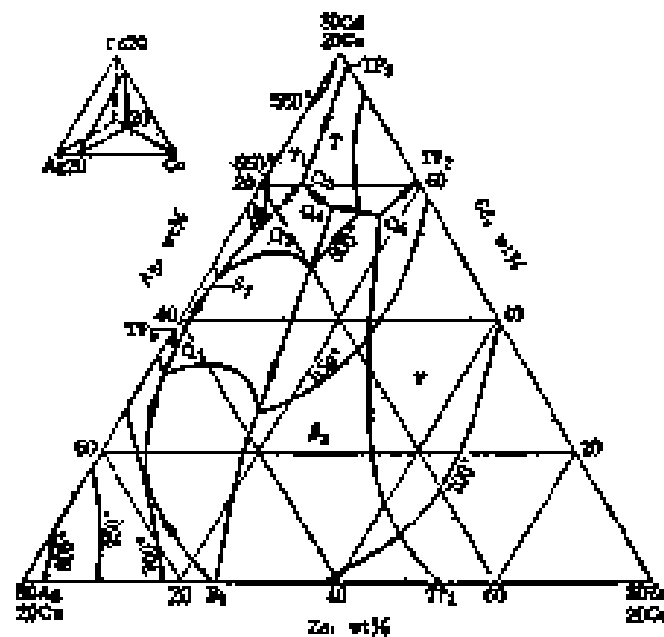


Fig. 758 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅 Silver-Cadmium-Copper-Zinc(9)  
液相面 Liquidus

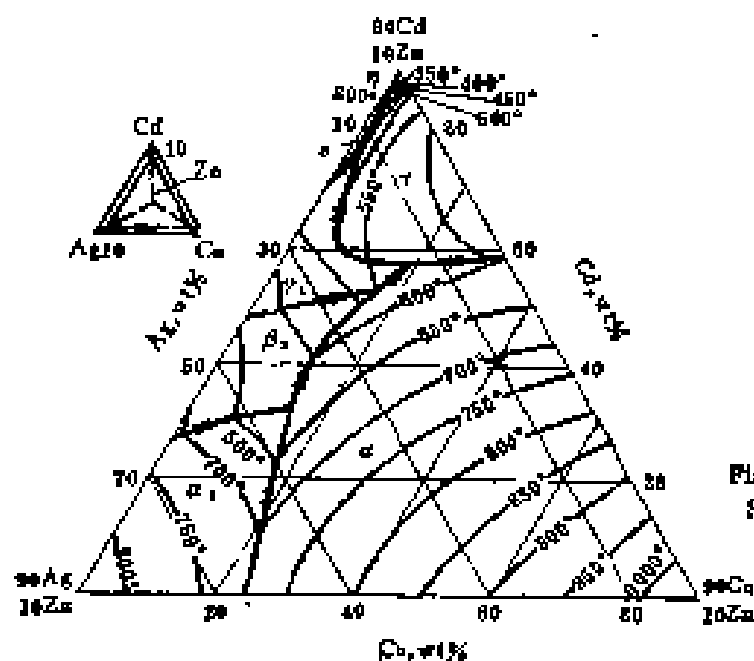


Fig. 759 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅  
Silver-Cadmium-Copper-Zinc (9)

液相面 Liquidus

Fig. 760 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅  
Silver-Cadmium-Copper-Zinc (9)

液相面 Liquidus

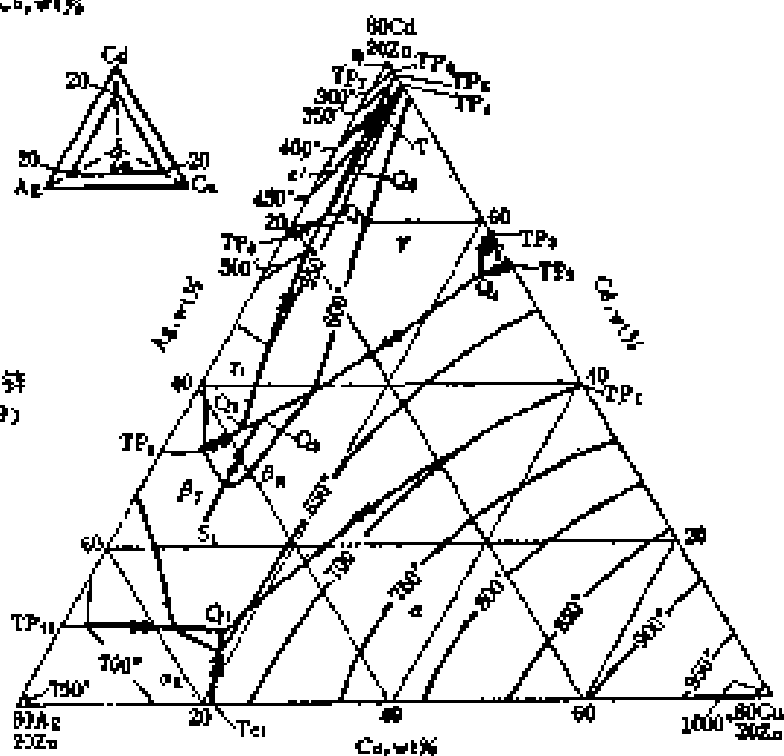
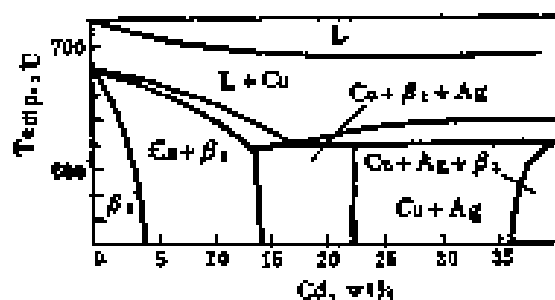
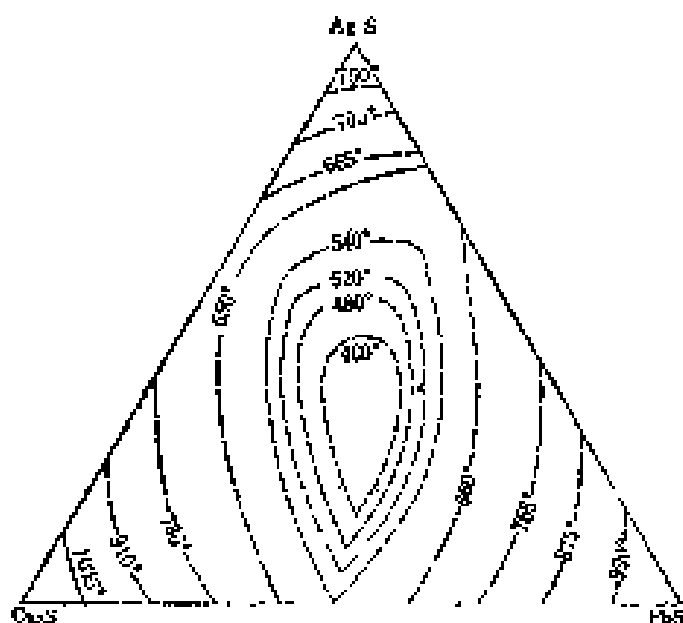
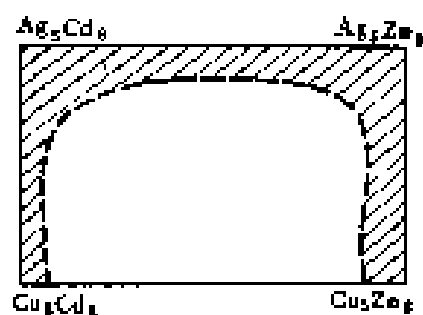
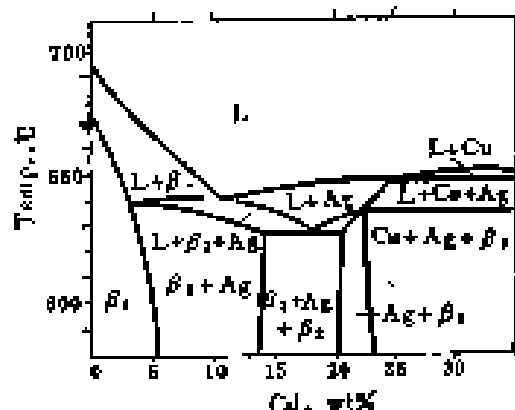
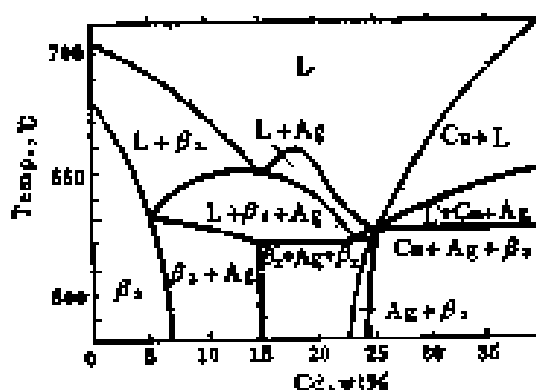
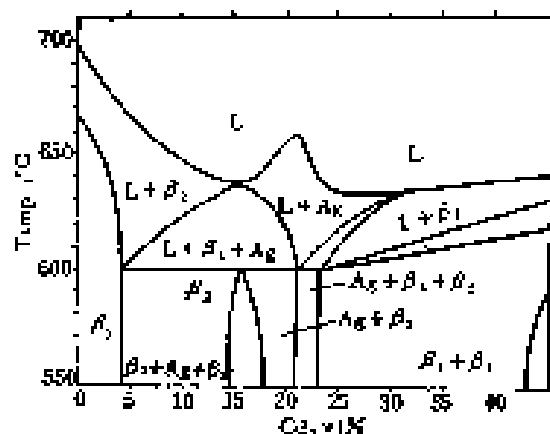


Fig. 761 Ag-Cd-Cu-Zn 銀-鎘-銅-鋅  
Silver-Cadmium-Copper-Zinc (11)

含 Ag 35% 和 Cu 25% 的截面  
Section of Ag 35% and Cu 25%







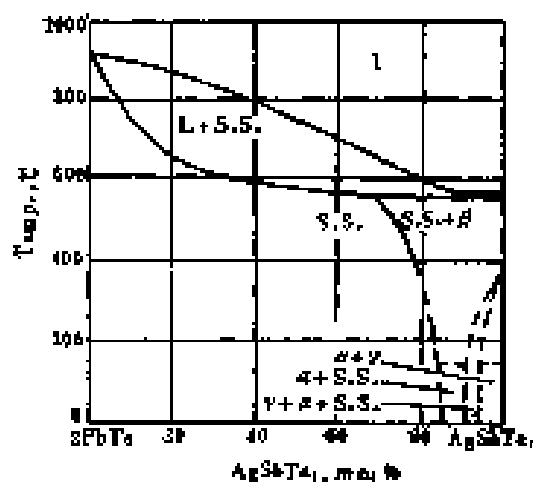


Fig. 767 Ag-Pb-Sb-Te 银-铅-锑-碲  
Silver-Lead-Antimony-Tellurium (14)

AgSbTe<sub>2</sub>-PbTe 截面 Section at AgSbTe<sub>2</sub>-PbTe  
S.S. - 固溶体 Solid solution  
 $\alpha = \alpha\text{-Ag}_2\text{Te}$ ,  $\beta = \beta\text{-Ag}_2\text{Te}$   
 $\gamma = \text{Sb}_2\text{Te}_3$

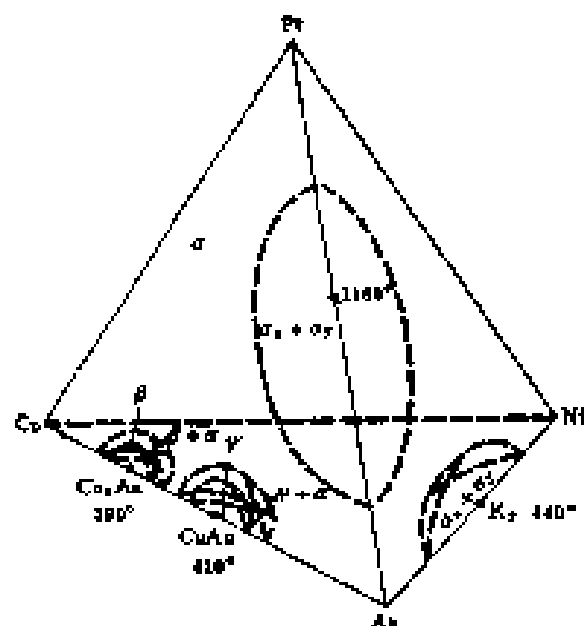


Fig. 768 Au-Cu-Ni-Pt 金-铜-镍-铂  
Gold-Copper-Nickel-Platinum (15)

20°C 相区 Phase region at 20°C

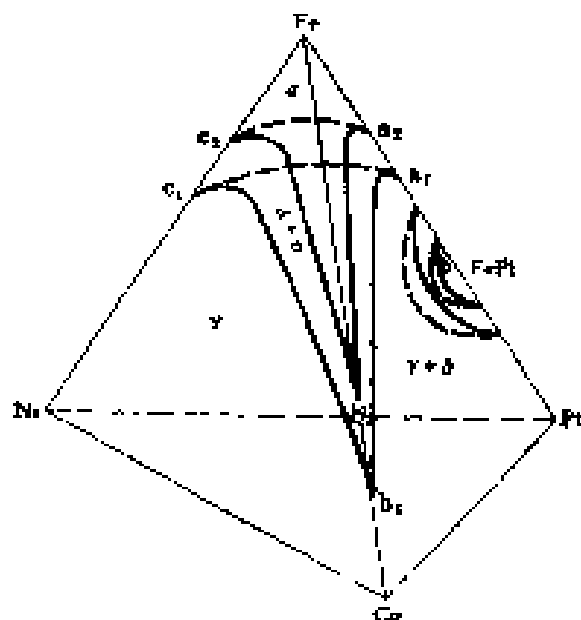


Fig. 769 Co-Fe-Ni-Pt 钴-铁-镍-铂  
Cobalt-Iron-Nickel-Platinum (15)

20°C 相区 Phase region at 20°C

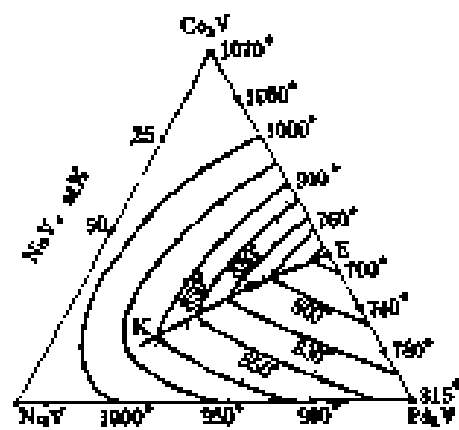


Fig. 770 Co-Ni-Pd-V 钴-镍-钯-钒  
Cobalt-Nickel-Palladium-Vanadium (16)

γ相的有序-无序转变温度 Order-disorder  
transformation temperature of the γ phase

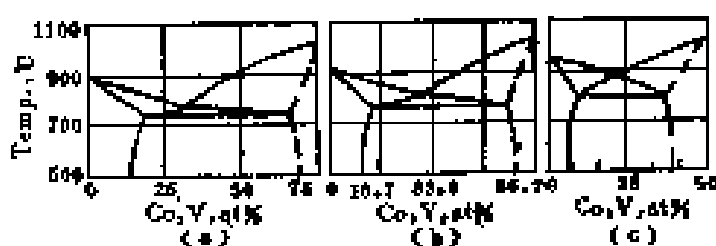


Fig.771 Co-Ni-Pd-V 钴-镍-钯-钒 Cobalt-Nickel-Palladium-Vanadium(16)

Ni, V—Co, V—Pd, V 系截面 Section of Ni, V—Co, V—Pd, V system with  
(a) Ni, V 23%, (b) Ni, V 33.3%, and (c) Ni, V 30%

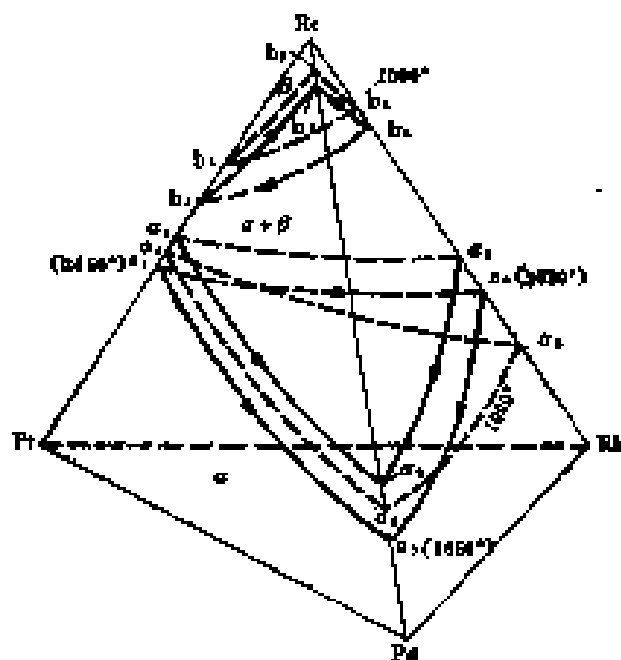


Fig 772 Pd-Pt-Re-Rh 钯-铂-铑-铑 Palladium-Platinum-Rhenium-Rhodium(17)

点  $n_1$ ,  $n_2$  和  $n_3$  是相应于 Re—Pt, Re—Rh 和 Re—Pd 系的包晶点。1000°C 以下两相区  
Point of  $n_1$ ,  $n_2$  and  $n_3$  are peritectic point of Re—Pt, Re—Rh and  
Re—Pd system respectively, duplex regions below 1000°C

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