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JP03075385	Parts for machine sliding part made of tial-base alloy SUMITOMO METAL INDUSTRIES

Oxidation resistant tial base alloy JP06279898

<ul style="list-style-type: none"> • Patent Assignee SUMITOMO METAL INDUSTRIES • Inventor ANADA HIROYUKI • International Patent Classification C22C-014/00 	<ul style="list-style-type: none"> • Publication Information JPH06279898 A 1994-10-04 [JP06279898] <li style="text-align: right;">  • Priority Details 1993JP-0068567 1993-03-26 				
<ul style="list-style-type: none"> • Fampat family <table style="width: 100%; border: none;"> <tr> <td style="text-align: left;">JPH06279898</td> <td style="text-align: center; vertical-align: middle;">A</td> <td style="text-align: center; vertical-align: middle;">1994-10-04</td> <td style="text-align: right; vertical-align: middle;">[JP06279898]</td> </tr> </table> 		JPH06279898	A	1994-10-04	[JP06279898]
JPH06279898	A	1994-10-04	[JP06279898]		

- **Abstract:**

(JP06279898)

PURPOSE: To obtain an alloy improved in oxidation resistance and ductility and workability by specifying the composition in a TiAl base alloy added with silver. CONSTITUTION: This TiAl base alloy contains, by weight, 31 to 44% Al and 0.5 to 2.0% Ag and contains, at need, 0.5 to 10% Mo and 0.5 to 4.0% Mn, and the balance Ti. By the addition of Ag, its oxidation resistance is remarkably improved, its ductility is shown from: $\geq 0.5\%$ and, in the case of $>2.0\%$, it conversely starts to deteriorate. Moreover, by blending the same amount of Mo together with Ag, its oxidation resistance is furthermore improved, and for improving its ductility, the same amount of Mn may be blended. Al is formed into TiAl intermetallic compounds of a γ phase by the incorporation by 35 to 44%, and in the case it is more than that, a mixed phase with a $\text{TiAl}_{(2)}$ phase or a $\text{TiAl}_{(3)}$ phase is formed to make it very brittle. On the other hand, on a side in which the amount of Al is slightly small, $\text{Ti}_{(3)}\text{Al}$ is precipitated by a trace amount to exhibit its ductility, and its limit is 31%. COPYRIGHT: (C)1994,JPO

Claims

(JP06279898)

1. At weight ratio, Al: 31-44% and Ag: 0.5 -2.

The alloy composition which consists of the 0%, remainder Ti and the substantial inevitable impurity
The TiAl basic alloy which it possesses, is superior in the oxidation resistance.


2. Furthermore, at weight ratio, Mo: 0.5-10% containing

The TiAl basic alloy of the claim 1 statement which features that it possesses.

3. Furthermore, at weight ratio, Mn: 0.5 - 4.0%

The claim TiAl of 1 which features that it contains or 2 statements
Basic alloy.

TiAl intermetallic compound base alloy excellent in strength at high temperature JP06264167

<ul style="list-style-type: none">• Patent Assignee SUMITOMO METAL INDUSTRIES• Inventor MAEDA HISASHI OKADA MINORU• International Patent Classification C22C-014/00	<ul style="list-style-type: none">• Publication Information JPH06264167 A 1994-09-20 [JP06264167]  <ul style="list-style-type: none">• Priority Details 1993JP-0053976 1993-03-15				
<ul style="list-style-type: none">• Fampat family <table><tr><td>JPH06264167</td><td>A</td><td>1994-09-20</td><td>[JP06264167]</td></tr></table>		JPH06264167	A	1994-09-20	[JP06264167]
JPH06264167	A	1994-09-20	[JP06264167]		

- **Abstract:**

(JP06264167)

PURPOSE: To produce a TiAl intermetallic compound base alloy excellent in strength at high temp. by incorporating specific percentages of Al and Hf into Ti. CONSTITUTION: A TiAl intermetallic compound base alloy, having a composition which consists of, by weight, 28-38% Al, >4.5-<9.0% Hf, and the balance Ti with inevitable impurities and with which, if necessary, 0.01-0.5%, in total, of at least one element selected from the group consisting of B, C, and Si and/or 0.1-12.0%, in total, of at least one element selected from the group consisting of Nb, Mo, Ta, and W is blended, is prepared. By this method, a TiAl intermetallic compound base alloy member having ≥ 500 MPa 0.2% yield strength at 800 deg.C and used under heated condition to a maximum of ≥ 800 deg.C can be obtained. COPYRIGHT: (C)1994,JPO&Japio





Claims

(JP06264167)

1. Weight % With, Al 28-38% and Hf 4.5% super
Under the 9.0% to contain, the remainder from Ti and the inevitable impurity forming
The TiAl intermetallic basic alloy which is superior in [ru] strength at elevated temperature.
2. Furthermore, B, from the group which consists of C and Si
At least 1 where it chooses kind total weight % with the 0.01- 0.5%,
The [bi]/or, it chose from the group which consists of Nb, Mo, Ta and W
At least, 1 kind total weight % with 0.1 -12.0% it contains, receiving
TiAl intermetallic basic alloy of seeking section 1 statement.
3. Claim to possess the alloy constitution of 1 or 2, 80
0 .deg.C the 0.2% yield in above 500MPa, maximum of 80
0 .deg.C the TiAl intermetallic basis which is used under heating circumstance above
Alloy component.

TiAl-based alloy member excellent in ductility at ordinary temperature and its production

JP06192776

<ul style="list-style-type: none"> • Patent Assignee SUMITOMO METAL INDUSTRIES • Inventor MAEDA HISASHI OKADA MINORU • International Patent Classification C22C-001/00 C22C-014/00 C22C-021/00 C23C-004/08 	<ul style="list-style-type: none"> • Publication Information JPH06192776 A 1994-07-12 [JP06192776]     • Priority Details 1992JP-0349126 1992-12-28
<ul style="list-style-type: none"> • Fampat family JPH06192776 A 1994-07-12 [JP06192776] 	

- **Abstract:**

(JP06192776)

PURPOSE: To obtain a TiAl alloy member excellent in ductility at ordinary temp. by forming a Ti or Ti alloy surface layer on the surface of a heat resistant lightweight material made of a TiAl-based alloy having a specified compsn. CONSTITUTION: A layer of pure Ti or a (.alpha./beta.) type Ti alloy (Ti-6Al-4V) is formed by plasma spraying or other method on the surface of a member made of a TiAl intermetallic compd. type alloy consisting of 44-52 atomic % Al and the balance Ti or further contg. <+6 atomic %, in total, of one or more among Mo, V, Cr, Mn, Fe, Ta, W, Hf, Zr, B, C and Si. Inferior ductility at ordinary temp. as a defect of the TiAl-based alloy is remarkably improved and the objective heat resistant lightweight member is obtd. COPYRIGHT: (C)1994,JPO&Japio

Claims

(JP06192776)

Claims machine translated from Japanese

1. Atomic % With the 44-52% to include Al, the remainder substance

Alloy or Al which consists of Ti in the mark atomic % with 44-52% containing

Seeing, furthermore Mo, V, Cr, Mn, Fe, Ta, W, Hf, Zr and B,

C, above the inside 1 or 2 kinds of Si containing below total 6at%

The base substance and the [so] which consist of the alloy where the seeing and the remainder substantially consist of Ti

Surface layer and empty structure of the titanium or titanium alloy which is provided with respect to

The TiAl basic alloy which is superior in the normal temperature ductility which features that it is formed

Part.

2. Atomic % With the 44-52% to include Al, the remainder substance

Alloy or Al which consists of Ti in the mark atomic % with 44-52% containing

Seeing, furthermore other element below total 6at% above 1 or 2 kinds





It is constituted from the alloy where impingement and the remainder consist of Ti substantially most

On surface of end form part titanium or titanium alloy layer formation

The TiAl basic alloy part which is superior in the normal temperature ductility which features [se] ru thing

Production method.

TiAl intermetallic compound based alloy member JP05271830

<ul style="list-style-type: none"> • Patent Assignee SUMITOMO METAL INDUSTRIES • Inventor MAEDA HISASHI HOSOMI MASAKATSU OKADA MINORU YAMAGUCHI MASA HARU • International Patent Classification C22C-001/00 C22C-014/00 	<ul style="list-style-type: none"> • Publication Information JPH05271830 A 1993-10-19 [JP05271830]     • Priority Details 1992JP-0071643 1992-03-27
<ul style="list-style-type: none"> • Fampat family JPH05271830 A 1993-10-19 [JP05271830] 	

- **Abstract:**

(JP05271830)

PURPOSE: To provide a TiAl intermetallic compd. based alloy member which reduces the possibility of breaking by deformation due to external stress and enhances reliability as an industrial material by enhancing the ductility of a TiAl intermetallic compd. based alloy member at ordinary temp. to $\geq 2.5\%$. CONSTITUTION: The average grain diameter (d) of a TiAl intermetallic compd. based alloy member is regulated to $\leq 200\mu\text{m}$ and the average grain diameter (d) and the max. surface roughness Rmax (μm) are allowed to satisfy relation within the defined range of the diagram.

Claims


(JP05271830)

1. Average crystal grain size d is 200 .micro.m or less,
 d (.micro.m) with largest surface roughness (R_{max} and .micro.m) relationship of lower system
The TiAl based intermetallic basic alloy component which it is satisfied.

[Several 1]

2. The aforementioned TiAl based intermetallic basic alloy component structure
Forming is done the TiAl based intermetallic basic alloy which, Al: 44-52at%,
It is remainder Ti, the TiAl based intermetallic basis of claim 1 statement go
Gold component.

**Production of alloy based on tial intermetallic compound
JP05255827**

<ul style="list-style-type: none">• Patent Assignee SUMITOMO METAL INDUSTRIES• Inventor MAEDA HISASHI OKADA MINORU• International Patent Classification C22C-001/00 C22C-014/00 C22F-001/00 C22F-001/18	<ul style="list-style-type: none">• Publication Information JPH05255827 A 1993-10-05 [JP05255827] • Priority Details 1992JP-0055482 1992-03-13
<ul style="list-style-type: none">• Fampat family JPH05255827 A 1993-10-05 [JP05255827]	

- **Abstract:**
(JP05255827)
PURPOSE: To produce an alloy based on a TiAl intermetallic compd. and having balanced ductility and strength at ordinary temp. CONSTITUTION: Multistage thermo-mechanical treatment is carried out by working at >=50% working degree at 800-1,300 deg.C, holding under heating at 1,200-1,400 deg.C above the working temp., cooling to a temp. below the heating temp. by >=100 deg.C and further working at >=50% working degree at 800-1,250 deg.C. COPYRIGHT: (C)1993,JPO&Japio

Claims

(JP05255827)

1. Atomic % With, Al: 44-52% and remainder substantial

Alloy or Al which consists of Ti: 44-52% and ductile improvement

Third element of for the sake of: Total 8% or less: The remainder substantial from Ti

It processes the alloy which becomes, (1) in the temperature range of 800 -1300.deg.C

Approximately with degree of processing which is defined in decrease ratio of thickness or the area

The process which administers processing 50% or more, (2) is obtained with process (1) the adding which

The manufacture material, being the temperature whose process (1) is higher than process temperature, 1200

.deg.C Below or more 1400.deg.C at speed after the heating keeping and below 10.deg.C/s

(Heating temperature - 100) .deg.C to temperature below the process which cools,

-(3) process (2) with cool do work timber to furthermore process (1) with same

A way, at temperature of 800 -1250.deg.C processing degree of processed 50% or more

The process which is administered, it is constituted from each process, strength, in ductility superior

The [re] it is production method of the TiAl intermetallic basic alloy.

2. In the method of claim 1 statement, the aforementioned process

(2) and process (3) one time is repeated at least, the TiAl gold

Thermomechanical treatment method of intergeneric chemical compound basic alloy.


3. The aforementioned third element, Mo, V, Mn, Cr, Fe and N

b, Ta, W, Hf, Zr and B, from the group which consists of C, and Si

The claim 1 which is above the 1 or 2 kinds which it chooses or 2 statements

Method.

Intermetallic compound ti3al-base lightweight heat-resistance alloy JP02274829

<ul style="list-style-type: none"> • Patent Assignee SUMITOMO METAL INDUSTRIES • Inventor MAEDA HISASHI OKADA MINORU • International Patent Classification C22C-014/00 	<ul style="list-style-type: none"> • Publication Information JPH02274829 A 1990-11-09 [JP02274829]  <ul style="list-style-type: none"> • Priority Details 1989JP-0096146 1989-04-14
<ul style="list-style-type: none"> • Fampat family JPH02274829 A 1990-11-09 [JP02274829] 	


- **Abstract:**
(JP02274829)
PURPOSE: To improve the cold ductility of the Ti(sub 3)Al-base alloy without deteriorating the characteristics of lightness in weight and high strength by dispersing a .beta. phase into an intermetallic compound Ti(sub 3)Al in a specified ratio and incorporating specified small amounts of B, C, Si, etc., thereto. CONSTITUTION: The raw material of a V-Al series master alloy constituted of high purity sponge Ti, Al and 3 to 12wt.% V as the element for stabilizing a .beta. phase as well as TiB(sub 2), TiC, Si, etc, is melted in a vacuum arc melting furnace to refine an intermetallic compound Ti(sub 3)Al in which 1 to 20vol.% .beta.phase is dispersed and contg. 0.001 to 0.4wt.% of one or more kinds among C, B, Si, etc. To Ti(sub 3)Al which has the characteristics of lightness in weight and excellent high strength, but is inferior in cold ductility, V as a stabilizer for a .beta. phase is added and B, C, Si, etc., are incorporated to suppress the amt. of the .beta. phase to the minimum, by which low cold ductility which has been the defect of the alloy can highly be improved without deteriorating the characteristics of lightness in weight and high strength. COPYRIGHT: (C)1990,JPO&Japio

Claims

(JP02274829)

JP9614689 1989-04-14 [1989JP-0096146]

Ti3Al-base lightweight heat-resistant and high corrosion-resistant alloy JP02217432

<ul style="list-style-type: none">• Patent Assignee SUMITOMO METAL INDUSTRIES• Inventor MAEDA HISASHI OKADA MINORU• International Patent Classification C22C-014/00	<ul style="list-style-type: none">• Publication Information JPH02217432 A 1990-08-30 [JP02217432] • Priority Details 1989JP-0038932 1989-02-18
<ul style="list-style-type: none">• Fampat family JPH02217432 A 1990-08-30 [JP02217432]	

- **Abstract:**

(JP02217432)

PURPOSE: To improve the cold ductility and corrosion resistance of the alloy by using Ti(sub 3)Al as a base and incorporating specified amount of Al and Mo thereto.





CONSTITUTION: The compsn. of the lightweight heat-resistant and corrosion-resistant alloy in which Ti(sub 3)Al is used as a base is constituted of by weight, 13 to 17% Al, 1 to 10% Mo and the balance Ti with inevitable impurities. If required, <+50% of Mo is substituted by one or both of Nb and V. Furthermore, total 0.01 to 0.5% of one or both of C and Si are incorporated thereto as well. In this way, the alloy light in weight and having excellent heat resistance, formability and corrosion resistance can be obtd. By using the alloy, the performance of spacecraft, aircraft, gas turbines for generating power, chemical apparatus and devices or the like can be improved. COPYRIGHT: (C)1990,JPO&Japio

Claims

(JP02217432)

JP3893289 1989-02-18 [1989JP-0038932]

Intermetallic compound ti3al-base lightweight heat-resisting alloy JP01298128

<ul style="list-style-type: none"> • Patent Assignee SUMITOMO METAL INDUSTRIES • Inventor MAEDA HISASHI OKADA MINORU SHIDA YOSHIAKI • International Patent Classification C22C-014/00 	<ul style="list-style-type: none"> • Publication Information JPH01298128 A 1989-12-01 [JP01298128]     • Priority Details 1988JP-0129643 1988-05-27
<ul style="list-style-type: none"> • Fampat family JPH01298128 A 1989-12-01 [JP01298128] 	

- **Abstract:**

(JP01298128)


PURPOSE: To improve the cold ductility of the title alloy without impairing the excellent high temp. strength of Ti(sub 3)Al by adding specific amt. of V to Ti(sub 3)Al of which specific amt. of Al is incorporated into Ti. CONSTITUTION: The lightweight heat-resisting alloy is constituted of, by weight, 12-16% Al, 3-12% V and the balance Ti. In the Ti alloy, since Ti(sub 3)Al which does not show the drastical lowering of strength even if the range of high temp. is regulated to the base, it has excellent high temp. strength, and since the two-phase structure of (Ti(sub 3)Al+.beta.) can be obtd. by the addition of V, its cold ductility is ensured. In the Ti alloy, at the time of <12% Al content, even if the above two-phase structure is obtd., strength is lowered, and, at the time of >16% Ti(sub 3)Al single phase is easy to form and cold ductility can not be ensured, and even if the above two-phase structure is obtd., a large amt. of V addition is required to impair its lightweight characteristics. As for the V content, the above two-phase structure can not be obtd. at the time of <3%, and a .beta. phase is run to excess at the time of >15% to reduce the high temp. strength and to lose the lightweight characteristics. COPYRIGHT: (C)1989,JPO&Japio

Claims

(JP01298128)

JP12964388 1988-05-27 [1988JP-0129643]

Production of titanium-aluminium intermetallic compound ingot JP09137238

<ul style="list-style-type: none">• Patent Assignee SUMITOMO METAL INDUSTRIES• Inventor INAGAKI YASUHIRO• International Patent Classification C22B-009/20 C22C-001/00 C22C-001/02	<ul style="list-style-type: none">• Publication Information JPH09137238 A 1997-05-27 [JP09137238] • Priority Details 1995JP-0289973 1995-11-08				
<ul style="list-style-type: none">• Fampat family <table border="0" style="width: 100%;"><tr><td style="text-align: left;">JPH09137238</td><td style="text-align: center; padding: 0 20px;">A</td><td style="text-align: center; padding: 0 20px;">1997-05-27</td><td style="text-align: right;">[JP09137238]</td></tr></table>		JPH09137238	A	1997-05-27	[JP09137238]
JPH09137238	A	1997-05-27	[JP09137238]		

- **Abstract:**

(JP09137238)

PROBLEM TO BE SOLVED: To provide a method for producing a Ti-Al ingot at a low cost by which the weldability of a primary electrode used for VAR melting at the time of assembling is secured and stable VAR melting is made possible in the case of producing a Ti-Al intermetallic compound ingot by a vacuum arc melting (VAR) furnace. SOLUTION: As a primary electrode 1 for VAR melting, the one obtd. by producing a compact composed of the following composition and assembling and welding the same is used. Fine-grained sponge Ti of <+5 meshes is used as an outside layer 2. A base material stock which is the mixture of sponge Ti of normal grains and Al grains having 5 to 15mm size and in which the volume ratio of Al is regulated to <+45% is used as an inside layer 3. COPYRIGHT: (C)1997,JPO

Claims

(JP09137238)

1. From minute grain sponge Ti of 5 mesh or less

Outside it becomes layer and, usually sponge Ti of the grain and 5-15m

With blend of Al grain of m diameter, at the same time Al specific volume 45% or less





The compact which is formed inside it consists of the basic material raw materials due to with layer

Those which it produced, the assembly it welded this compact primary electricity

As a pole the vacuum arc TiAl which features that it melts

Production method of intermetallic ingot.

Method for forming tial intermetallic compound JP03177551

<ul style="list-style-type: none">• Patent Assignee SUMITOMO METAL INDUSTRIES• Inventor FUKUYASU TOMIHIKO• International Patent Classification B21C-023/00 C22F-001/00 C22F-001/18	<ul style="list-style-type: none">• Publication Information JPH03177551 A 1991-08-01 [JP03177551]    • Priority Details 1989JP-0317041 1989-12-05
<ul style="list-style-type: none">• Fampat family JPH03177551 A 1991-08-01 [JP03177551]	

- **Abstract:**

(JP03177551)


PURPOSE: To produce an intermetallic compound capable of plastic working with light load by charging a TiAl intermetallic compound into a capsule made of Ti alloy, heating the above up to a specific temp., cooling the capsule down to a specific temp., and then carrying out hot forming. CONSTITUTION: A TiAl intermetallic compound is charged to a capsule made of Ti alloy (Ti-6Al-4V, Ti-6Al-2Sn-4Zn-2Mo, etc.) and heated up to ≥ 1200 deg.C. Subsequently, prior to hot forming, the capsule is cooled down to 750-1100 deg.C to allow respective deformation resistances of the intermetallic compound and the capsule material to come more close to each other, and then, hot forming is performed. By this method, the forming of the TiAl intermetallic compound can be carried out with light load at a low cost. COPYRIGHT: (C)1991,JPO&Japio

Claims

(JP03177551)

JP31704189 1989-12-05 [1989JP-0317041]

Heat treatment for intermetallic compound tial-base alloy JP03053049

<ul style="list-style-type: none">• Patent Assignee SUMITOMO METAL INDUSTRIES• Inventor MAEDA HISASHI OKADA MINORU• International Patent Classification C22F-001/00 C22F-001/18	<ul style="list-style-type: none">• Publication Information JPH0353049 A 1991-03-07 [JP03053049] • Priority Details 1989JP-0185664 1989-07-18
<ul style="list-style-type: none">• Fampat family JPH0353049 A 1991-03-07 [JP03053049]	

- **Abstract:**

(JP03053049)


PURPOSE: To improve the creep resistance of a TiAl-base alloy by subjecting an intermetallic compound TiAl-base alloy having a microstructure of a specific average grain size to annealing and cooling under respectively specified conditions and increasing the average grain size of the above microstructure. CONSTITUTION: A casting of an intermetallic compound TiAl-base alloy having large crystalline grains is extruded at a time at \geq about 50% percentage of reduction of area and worked to form a microstructure in which the crystalline grains are temporarily refined to $<5\mu$, which is subjected to hot working, such as isothermal forging and hot rolling, to undergo working into the prescribed shape. Subsequently, the worked alloy is annealed at $<+1100$ deg.C (preferably at about 1100-1400 deg.C) and cooled at $<+1$ deg./sec cooling rate, by which the crystalline grains are coarsened so that average grain size is regulated to $\geq 5\mu$ (preferably about $>5-15\mu$). By this method, superior creep resistance can be provided to the products made of TiAl-base alloy. COPYRIGHT: (C)1991,JPO&Japio

Claims

(JP03053049)

JP18566489 1989-07-18 [1989JP-0185664]

Working method for tial based alloy of intermetallic compound JP02274307

<ul style="list-style-type: none"> • Patent Assignee SUMITOMO METAL INDUSTRIES • Inventor MAEDA HISASHI OKADA MINORU SATO YASUHIRO • International Patent Classification B21C-023/00 C22F-001/00 C22F-001/18 	<ul style="list-style-type: none"> • Publication Information JPH02274307 A 1990-11-08 [JP02274307] <div style="text-align: right;">  </div> <ul style="list-style-type: none"> • Priority Details 1989JP-0096144 1989-04-14
<ul style="list-style-type: none"> • Fampat family JPH02274307 A 1990-11-08 [JP02274307] 	





- **Abstract:**
(JP02274307)
PURPOSE:To refine crystal grains and to improve cold ductility and cold strength together with hot workability by hot extruding an alloy which TiAl of intermetallic compound is the essential component by specifying the reduction of area per one time. CONSTITUTION:When the TiAl based alloy of intermetallic compound is worked by hot extruding, the extruding is executed by applying $\geq 50\%$ the degree of working in the reduction of area per one time. The temperature of hot extruding is specified to the temperature range of 700-1000 deg.C. Thus the blank material of the TiAl based alloy of intermetallic compound which has the fine crystal grains and possesses an excellent cold ductility, cold strength and hot workability is obtained.

Claims

(JP02274307)

JP9614489 1989-04-14 [1989JP-0096144]

Intermetallic TiAl basic lightweight heat resistant alloy JP01298127

<ul style="list-style-type: none"> • Patent Assignee SUMITOMO METAL INDUSTRIES • Inventor MAEDA HISASHI OKADA MINORU SHIDA YOSHIAKI • International Patent Classification C22C-014/00 • CPC Code C22C-014/00 	<ul style="list-style-type: none"> • Publication Information JPH01298127 A 1989-12-01 [JP01298127]     • Priority Details 1988JP-0129642 1988-05-27 								
<ul style="list-style-type: none"> • Fampat family <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">JPH01298127</td> <td style="width: 10%; text-align: center;">A</td> <td style="width: 20%;">1989-12-01</td> <td style="width: 30%;">[JP01298127]</td> </tr> <tr> <td>JP2679109</td> <td style="text-align: center;">B2</td> <td>1997-11-19</td> <td>[JP2679109]</td> </tr> </table> 		JPH01298127	A	1989-12-01	[JP01298127]	JP2679109	B2	1997-11-19	[JP2679109]
JPH01298127	A	1989-12-01	[JP01298127]						
JP2679109	B2	1997-11-19	[JP2679109]						

- **Abstract:**

(JP2679109)

PURPOSE: To improve the cold ductility of the title alloy without impairing the excellent high temp. strength of TiAl by specifying the compsn. of Ti and Al into two-phase structure and incorporating specific amounts of Nb, etc., thereto. CONSTITUTION: The lightweight heat-resisting alloy contains, by weight, 30-36% Al and one kind among 0.5-15% Nb, 0.1-4% Cr and 0.1-6% Mo, contains, at need, one or more kinds among 0.01-0.5% B, C and Si and the balance Ti. Or, the alloy is constituted of the above Al, B, etc., and 0.1-8% V and the balance consisting of Ti. In the alloy, (TiAl+Ti3Al) consisting essentially of TiAl is regulated to its base and to which stabilizing elements such as Nb are added to facilitate the generation of twins. In the alloy, at the time of $\leq 30\%$ Al content, the volume of Ti3Al is made too large to lower high temp. strength and cold ductility. As for Nb, Cr, Mo or V, the addition of the lower limit or the above is required to improve its cold ductility; in the case of the upper limit or the above, normal ductility is lowered as for the Cr content, and high temp. strength is lowered as for the other elements.

Claims

(JP2679109)

Claims machine translated from Japanese

1. At weight ratio

Al: 30-36% and Nb: 0.5-15%

As it contains, furthermore 1 kinds or more of C and Si or

1 kinds or more of C and Si and B with compound 0.01-0.5% implication,

The remainder consists of Ti and the inevitable impurity, TiAl is designated as the basis, it is light

Quantitative heat resistant alloy.

2. At weight ratio

Al: 30-36% and Cr: 0.1-4%

As it contains, furthermore

B, 1 kinds or more of C and Si: 0.01-0.5%

It includes, the remainder consists of Ti and the inevitable impurity, TiAl

The lightweight heat resistant alloy which is made the basis.

3. At weight ratio

Al: 30-36% and Mo: 0.1-6%

It contains, the remainder consists of Ti and the inevitable impurity, TiAl

The lightweight heat resistant alloy which is made the basis.

4. At weight ratio

Al: 30-36% and Mo: 0.1-6%

As it contains, furthermore

B, 1 kinds or more of C and Si: 0.01-0.5%

It includes, the remainder consists of Ti and the inevitable impurity, TiAl

The lightweight heat resistant alloy which is made the basis.

5. At weight ratio

Al: 30-36%, V: 0.1-8%

As it contains, furthermore Si independently or Si and B

-compound with 0.01-0.5% include, remainder Ti and inevitable impurity

The lightweight heat resistant alloy which and others becomes, designates TiAl as the basis.

Parts for machine sliding part made of tial-base alloy JP03075385

<ul style="list-style-type: none"> Patent Assignee SUMITOMO METAL INDUSTRIES Inventor TAKAHASHI WATARU OKADA MINORU MAEDA HISASHI International Patent Classification C23C-004/06 C23C-004/10 C23C-008/24 C23C-014/06 C23C-014/08 C23C-014/14 C23C-014/16 C23C-030/00 F01L-003/02 	<ul style="list-style-type: none"> Publication Information JPH0375385 A 1991-03-29 [JP03075385] Priority Details 1989JP-0211163 1989-08-16
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- Abstract:**

(JP03075385)

PURPOSE: To provide parts for a machine sliding part minimal in wear by coating the surface of a TiAl-base alloy with a molybdenum-containing metal. CONSTITUTION: The surface of machine sliding parts made of TiAl-base alloy is coated with one among a molybdenum-containing metal, a cobalt-base alloy, a compound containing titanium nitride, a compound containing titanium carbide, a compound containing aluminum oxide, a compound containing tungsten and a compound containing chromium carbide. By this method, the above parts can be used for engine valve for automobile, aircraft, etc., and engine performance can be improved. COPYRIGHT: (C)1991,JPO&Japio

Claims

(JP03075385)

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