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[EP1195445](#)

Titanium aluminide alloy containing boron, tungsten and silicon
ALSTOM ALSTOM TECHNOLOGY


[EP-455005](#)

High temperature alloy for engine components, based on modified titanium aluminide.
ABB ABB TURBO SYSTEMS ALSTOM

[US5286443](#)

High temperature alloy for machine components based on boron doped TiAl
ALSTOM

Titanium aluminide alloy containing boron, tungsten and silicon EP1195445

<ul style="list-style-type: none"> • Patent Assignee ALSTOM ALSTOM TECHNOLOGY • Inventor NAZMY MOHAMED DR STAUBLI MARKUS • International Patent Classification C22C-014/00 • US Patent Classification PCLO=420418000 PCLX=148421000 • CPC Code C22C-014/00 	<ul style="list-style-type: none"> • Publication Information EP1195445 A1 2002-04-10 [EP1195445] <div style="text-align: right; margin-top: 5px;">  </div> <ul style="list-style-type: none"> • Priority Details 2000DE-1049026 2000-10-04 2001DE-5001467 2001-10-01 																								
<ul style="list-style-type: none"> • Fampat family <table style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 30%;">EP1195445</td> <td style="width: 20%;">A1</td> <td style="width: 20%;">2002-04-10</td> <td style="width: 30%;">[EP1195445]</td> </tr> <tr> <td>DE10049026</td> <td>A1</td> <td>2002-04-11</td> <td>[DE10049026]</td> </tr> <tr> <td>US2003124021</td> <td>A1</td> <td>2003-07-03</td> <td>[US20030124021]</td> </tr> <tr> <td>US6676897</td> <td>B2</td> <td>2004-01-13</td> <td>[US6676897]</td> </tr> <tr> <td>EP1195445</td> <td>B1</td> <td>2004-02-11</td> <td>[EP1195445]</td> </tr> <tr> <td>DE50101467</td> <td>D1</td> <td>2004-03-18</td> <td>[DE50101467]</td> </tr> </table> 		EP1195445	A1	2002-04-10	[EP1195445]	DE10049026	A1	2002-04-11	[DE10049026]	US2003124021	A1	2003-07-03	[US20030124021]	US6676897	B2	2004-01-13	[US6676897]	EP1195445	B1	2004-02-11	[EP1195445]	DE50101467	D1	2004-03-18	[DE50101467]
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- **Abstract:**

(EP1195445)

High temperature alloy used for thermal machines contains aluminum, tungsten, silicon, boron, and a balance of titanium
High temperature alloy contains (in weight %) 44.5- more than 46 aluminum, 1-4 tungsten, 0.1-1.5 silicon, 0.0001-4 boron, and a balance of titanium. Preferred Features: The alloy contains (in weight %) 44.5- more than 46 aluminum, 1-3 tungsten, 0.4-1 silicon, 1-4 boron; and a balance of titanium; or 45 aluminum, 2 tungsten, 0.5 silicon, 2 boron; and a balance of titanium.

Claims

(EP1195445)

1. High-temperature alloy for a highly mechanically loaded component of a thermal machine based on doped TiAl having the following composition (in atomic%):

44.5 to <46 Al

1-3 W

0.4-1 Si

1-4 B

remainder Ti and production-related impurities.

2. High-temperature alloy according to Claim 1 having the following composition (in atomic%) :

45 Al

2 W


0.5 Si

2 B

remainder Ti and production-related impurities.

High temperature alloy for engine components, based on modified titanium aluminide.

EP-455005

<ul style="list-style-type: none"> • Patent Assignee ABB ABB TURBO SYSTEMS ALSTOM • Inventor NAZMY MOHAMED DR STAUBLI MARKUS • International Patent Classification C22C-014/00 • US Patent Classification PCLO=420418000 PCLO=420418000 PCLX=148407000 PCLX=148421000 PCLX=420421000 • CPC Code C22C-014/00 	<ul style="list-style-type: none"> • Publication Information EP0455005 A1 1991-11-06 [EP-455005] <div style="text-align: right;">  </div> <ul style="list-style-type: none"> • Priority Details 1990CH-0001523 1990-05-04 1990CH-0001524 1990-05-04 1990CH-0001616 1990-05-11 1991US-07695406 1991-05-03 1992US-07981479 1992-11-25 1993US-08145227 1993-11-03 																																				
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- **Abstract:**

(US5207982)

Abstract in publication language, translation not available Die Hochtemperaturlegierung ist für mechanisch und thermisch hochbeanspruchte Bauteile von Maschinen bestimmt. Sie basiert im wesentlichen auf dotiertem TiAl und weist folgende Zusammensetzung auf: Tix Ely Mez Al1-(x+y+z) , wobei El = B, Ge oder Si und Me = Co, Cr, Ge, Hf, Mn, Mo, Nb, Pd, Ta, V, W, Y, und/oder Zr bedeuten und gilt: (cf schema 1 seite 0)

Claims

(US5207982)

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1.


A high temperature alloy for a component subjected to high mechanical stress in thermal equipment, based on doped TiAl, having the composition $Ti_x Ely Mez Al_{1-(x+y+z)}$, in which $EI=Si$ and $Me=Hf, Mo, Ta$ and/or W and

2. The alloy of claim 1, wherein Me comprises Ta or W .

3. The alloy of claim 1, wherein Me comprises Hf and at least one of Mo, ta and W .

High temperature alloy for machine components based on boron doped TiAl

US5286443

<ul style="list-style-type: none"> • Patent Assignee ALSTOM • Inventor NAZMY MOHAMED STAUBLI MARKUS • International Patent Classification C22C-014/00 • US Patent Classification PCLO=420418000 PCLX=148421000 PCLX=148669000 PCLX=420421000 • CPC Code C22C-014/00 	<ul style="list-style-type: none"> • Publication Information US5286443 A 1994-02-15 [US5286443] <div style="text-align: right;">  </div> <ul style="list-style-type: none"> • Priority Details 1990CH-0001523 1990-05-04 1990CH-0001524 1990-05-04 1990CH-0001616 1990-05-11 1991US-07695406 1991-05-03 1992US-07981479 1992-11-25
<ul style="list-style-type: none"> • Fampat family US5286443 A 1994-02-15 [US5286443] 	

- **Abstract:**

(US5286443)

The high temperature alloy is intended for machine components subjected to high mechanical and thermal stress. It is essentially based on doped TiAl and has the following composition: $TixElyMezAl_{1-(x+y+z)}$, in which $EI=B, Ge$ or Si and $Me=Co, Cr, Ge, Hf, Mn, Mo, Nb, Pd, Ta, V, W, Y,$ and/or Zr and: $-0.46 \leq x \leq 0.54, -0.001 \leq y \leq 0.015$ for $EI = Ge$ and $Me = Cr, Hf, Mn, Mo, Nb, Ta, V$ and/or $W, -0.001 \leq y \leq 0.015$ for $EI = Si$ and $Me = Hf, Mn, Mo, Ta, V$ and/or $W, -0 \leq y \leq 0.01$ for $EI = B$ and $Me = Co, Ge, Pd, Y$ and/or $Zr, -0 \leq y \leq 0.02$ for $EI = Ge$ and $Me = Co, Ge, Pd, Y$ and/or $Zr, -0.0001 \leq y \leq 0.01$ for $EI = B$ and $Me = Cr, Mn, Nb$ and/or $W, -0.01 \leq z \leq 0.04$ if $Me =$ an individual element, $-0.01 \leq z \leq 0.08$ if $Me =$ two or more individual elements and $-0.46 \leq (x + y + z) \leq 0.54.$

Claims

(US5286443)

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1.

A high temperature alloy for a component subjected to high mechanical stress in thermal equipment, based on doped TiAl, having the composition

in which E1=B and Me=Co, Cr, Mn, Nb, Pd, W, Y and/or Zr and

2. The alloy of claim 1, wherein Me comprises W and at least one of Cr and Nb.

3. The alloy of claim 1, wherein Me comprises Mn and at least one of Nb and Cr.

4. The alloy of claim 1, wherein Me comprises W and at least two of Cr, Nb and Mn.

5. The alloy of claim 1, wherein Me comprises all of W, Cr, Nb and Mn.

6. The alloy of claim 1, wherein Me comprises all of Mn, Cr and Nb.