surface to be 120 mm. After the melting process, the molten metal was cooled to obtain a cast ingot. After the cast ingot was taken out, it was processed into a shape having a diameter of 440 mm and a thickness of 12 mm to form a Cu sputtering target. As a result of analyzing the contents of Ar and H in this sputtering target, the H content was 1.5 wtppm and the Ar content was 1 wtppm. Further, in the evaluation test of the discharge stability performed in the same manner as Example 1 regarding this sputtering target, the continuous duration of the plasma was 299 seconds.

Example 6

[0032] 1.0 wt% of high purity Al having a purity of 5N or higher was added to high purity Cu having a purity of 6N and this was used as a raw material, and it was heated and melted to obtain a raw material molten metal. During the heating and melting of the raw material, H_2 gas was continuously blown at a flow rate of 0.2 scfm (5.66 slm) and Ar gas was continuously blown at a flow rate of 8 scfm (226.4 slm) from a gas blowing nozzle having a circular blowing port shape, in which the diameter thereof is 10 mm, toward a surface of the raw material molten metal upon setting a shortest distance between a tip of the blowing port and the molten metal surface to be 130 mm. After the melting process, the molten metal was cooled to obtain a cast ingot. After the cast ingot was taken out, it was processed into a shape having a diameter of 440 mm and a thickness of 12 mm to form a Cu sputtering target. As a result of analyzing the contents of Ar and H in this sputtering target, the H content was 1.4 wtppm and the Ar content was 1 wtppm. Further, in the evaluation test of the discharge stability performed in the same manner as Example 1 regarding this sputtering target, the continuous duration of the plasma was 304 seconds.

Example 7

[0033] 5.0 wt% of high purity Al having a purity of 5N or higher was added to high purity Cu having a purity of 6N and this was used as a raw material, and it was heated and melted to obtain a raw material molten metal. During the heating and melting of the raw material, H_2 gas was continuously blown at a flow rate of 0.5 scfm (14.15 slm) and Ar gas was continuously blown at a flow rate of 16 scfm (452.8 slm) from a gas blowing nozzle having an oval blowing port shape, in

Example 11

[0037] 2.0 wt% of high purity Mn having a purity of 4N or higher was added to high purity Cu having a purity of 6N and this was used as a raw material, and it was heated and melted to obtain a raw material molten metal. During the heating and melting of the raw material, H_2 gas was continuously blown at a flow rate of 0.5 scfm (14.15 slm) and Ar gas was continuously blown at a flow rate of 17 scfm (481.1 slm) from a gas blowing nozzle having an isosceles triangle blowing port shape, in which the base thereof is 12 mm and the height thereof is 8 mm, toward a surface of the raw material molten metal upon setting a shortest distance between a tip of the blowing port and the molten metal surface to be 50 mm. After the melting process, the molten metal was cooled to obtain a cast ingot. After the cast ingot was taken out, it was processed into a shape having a diameter of 440 mm and a thickness of 12 mm to form a Cu sputtering target. As a result of analyzing the contents of Ar and H in this sputtering target, the H content was 1.8 wtppm and the Ar content was 1.5 wtppm. Further, in the evaluation test of the discharge stability performed in the same manner as Example 1 regarding this sputtering target, the continuous duration of the plasma was 305 seconds.

Example 12

[0038] 15 wt% of high purity Mn having a purity of 4N or higher was added to high purity Cu having a purity of 6N and this was used as a raw material, and it was heated and melted to obtain a raw material molten metal. During the heating and melting of the raw material, H_2 gas was continuously blown at a flow rate of 0.4 scfm (11.32 slm) and Ar gas was continuously blown at a flow rate of 15 scfm (424.5 slm) from a gas blowing nozzle having an oval blowing port shape, in which the major axis thereof is 20 mm and the minor axis thereof is 10 mm, toward a surface of the raw material molten metal upon setting a shortest distance between a tip of the blowing port and the molten metal surface to be 100 mm. After the melting process, the molten metal was cooled to obtain a cast ingot. After the cast ingot was taken out, it was processed into a shape having a diameter of 440 mm and a thickness of 12 mm to form a Cu sputtering target. As a result of analyzing the contents of Ar and H in this sputtering target, the H content was 1.5 wtppm and the Ar content was 1 wtppm. Further, in

	Material	Composition	Shape of blowing port	Distance between blowing port and molten metal (mm)	Blowing amount of H (scfm)	Blowing amount of Ar (scfm)	H content in material (wtppm)	Ar content in material (wtppm)	Discharge duration (sec)
Example 1	Cu	-	Circle (ϕ5 mm)	100	0.7	24	2	1.5	350
Example 2	Cu	-	Quadrangular (8 mm × 3 mm)	120	0.4	14	1.2	1	320
Example 3	Cu	-	Oval (10 mm × 4 mm)	90	0	8	<1	1.2	314
Example 4	Cu	-	Triangle (10 mm × 10 mm)	110	0.5	0	1.2	<1	307
Example 5	CuAl	0.1 wt% Al	Circle (ϕ7 mm)	120	0.3	10	1.5	1	299
Example 6	CuAl	1.0 wt% Al	Circle (ϕ10 mm)	130	0.2	8	1.4	1	304
Example 7	CuAl	5.0 wt% Al	Oval (15 mm × 10 mm)	80	0.5	16	2.1	2	311
Example 8	CuAl	3.0 wt% Al	Triangle (15 mm × 10 mm)	110	0	10	<1	1.3	305
Example 9	CuAl	0.5 wt% Al	Quadrangular (15 mm × 10 mm)	130	0.4	0	1.3	<1	296
Example 10	CuMn	0.1 wt% Mn	Quadrangular (15 mm × 10 mm)	90	0.3	10	1.2	1.4	334
Example 11	CuMn	2.0 wt% Mn	Triangle (12 mm × 8 mm)	50	0.5	17	1.8	1.5	305
Example 12	CuMn	15 wt% Mn	Oval (20 mm × 10 mm)	100	0.4	15	1.5	1	289
Example 13	CuMn	8.0 wt% Mn	Square (5 mm × 5 mm)	80	0	6	<1	1.4	300
Example 14	CuMn	1.0 wt% Mn	Circle (ϕ8 mm)	90	0.3	0	1.2	<1	280
Comparative Example 1	Cu	-	Circle (ϕ5 mm)	500	0	6	<1	<1	135
Comparative Example 2	Cu	-	Circle (ϕ50 mm)	200	0.5	0	<1	<1	125
Comparative Example 3	CuAl	2.0 wt% Al	Circle (ϕ50 mm)	200	0.3	10	<1	<1	87
Comparative Example 4	CuAl	0.5 wt% Al	Circle (ϕ5 mm)	500	0	6	<1	<1	122
Comparative Example 5	CuMn	0.1 wt% Mn	Circle (ϕ50 mm)	200	0.4	14	<1	<1	143
Comparative Example 6	CuMn	1.0 wt% Mn	Circle (ϕ5 mm)	500	0.1	4	<1	<1	75

CLAIMS

1. A sputtering target formed from copper or a copper alloy comprising:

containing argon and/or hydrogen;

containing argon and/or hydrogen each in an amount of 1 wtppm or more and 10 wtppm or less in a case of only containing argon out of argon or hydrogen, or in a case of containing both argon and hydrogen; and

containing hydrogen in an amount of 1.2 wtppm or more and 2.1 wtppm or less in a case of only containing hydrogen out of argon and hydrogen.

2. The sputtering target according to claim 1, wherein the sputtering target contains only argon out of argon or hydrogen.

3. The sputtering target according to claim 1, wherein the sputtering target contains only hydrogen out of argon or hydrogen.

4. The sputtering target according to claim 1, wherein the sputtering target contains both argon and hydrogen.

5. The sputtering target according to any one of claims 1 to 4, wherein the sputtering target is formed from a copper alloy containing either aluminum or manganese.

6. The sputtering target according to any one of claims 1 to 5, wherein the copper alloy is a copper alloy which contains 0.1 to 5 wt% of aluminum, or 0.1 to 15 wt% of manganese.

7. A method of producing the sputtering target according to any one of claims 1 to 6, the method comprising:

preparing a copper or copper alloy raw material;

melting the prepared raw material in an atmosphere into which argon and/or hydrogen was introduced;

cooling and solidifying the melted raw material into a copper or copper alloy ingot; and

processing the ingot into a sputtering target.