# CLAIMS

[Claim 1] Copper or a copper alloy, wherein an α-ray emission of a sample after being subject to melting/casting is 0.001 cph/cm$^2$ or less, Pb content including $^{210}$Pb as an isotope of Pb is less than 0.01 ppm, U content is less than 5 wtppb, and Th content is less than 5 wtppb.

[Claim 2] The copper or copper alloy according to claim 1, wherein respective α-ray emissions of samples 1 week after, 3 weeks after, 1 month after, 2 months after, 6 months after and 30 months after the melting/casting are 0.001 cph/cm$^2$ or less.

[Claim 3] The copper or copper alloy according to claim 1 or claim 2, wherein the purity is 4N (99.99%) or higher.

[Claim 4] A bonding wire obtained by using, as its raw material, the copper or copper alloy according to any one of claims 1 to 3.

[Claim 5] A method of producing copper of which a sample after being subject to melting/casting has an α-ray emission of 0.001 cph/cm$^2$ or less, wherein a copper sulfate solution is used as an electrolytic solution, a diaphragm is provided between a positive electrode and a negative electrode, lead sulfate as a deposit in the electrolytic solution extracted from the positive electrode side is removed, the electrolytic solution is thereafter supplied to the negative electrode side, electrolysis is performed to obtain an electrodeposit, and the obtained electrodeposit is subject to melting/casting.

[Claim 6] The method of producing copper having an α-ray emission of 0.001 cph/cm$^2$ or less according to claim 5, wherein a copper sulfate solution having a Cu concentration of 30 to 200 g/L is used as the electrolytic solution.

[Claim 7] The method of producing copper having an α-ray emission of 0.001 cph/cm$^2$ or less according to claim 5 or claim 6, wherein an anion-exchange membrane, through which $Pb^{2+}$ ions do not pass, is used as the diaphragm.

[Claim 8] The method of producing copper having an α-ray emission of 0.001 cph/cm$^2$ or less according to any one of claims 5 to 7, wherein the copper has Pb content, which includes $^{210}$Pb as an isotope of Pb, of less than 0.01 ppm, U content of less than 5 wtppb, and Th content of less than 5 wtppb.

[Claim 9] The method of producing copper having an α-ray emission of 0.001 cph/cm$^2$ or less according to any one of claims 5 to 8, wherein respective α-ray

emissions of samples 1 week after, 3 weeks after, 1 month after, 2 months after, 6 months after and 30 months after the melting/casting are 0.001 cph/cm$^2$ or less.

[Claim 10] The method of producing copper having an α-ray emission of 0.001 cph/cm$^2$ or less according to any one of claims 5 to 9, wherein the copper has a purity of 4N (99.99%) or higher.

[Claim 11] A method of producing a copper alloy, wherein the copper produced based on the method of producing copper according to any one of claims 5 to 10 is used as a raw material for producing the copper alloy.

[Claim 12] A method of producing a bonding wire, wherein the copper produced based on the method of producing copper according to any one of claims 5 to 10 or the copper alloy produced based on the method of producing a copper alloy according to claim 11 is used as a raw material for producing the bonding wire.

[CLAIMS]

[Claim 1]

A method of producing copper of which a sample after being subject to melting/casting has an α-ray emission of 0.001 cph/cm$^2$ or less, wherein: a copper sulfate solution having a Cu concentration of 30 to 200 g/L is used as an electrolytic solution; a diaphragm made of an anion-exchange membrane, through which $Pb^{2+}$ ions do not pass, is provided between a positive electrode and a negative electrode; lead sulfate as a deposit in the electrolytic solution extracted from the positive electrode side is removed; the electrolytic solution is thereafter supplied to the negative electrode side; electrolysis is performed to obtain an electrodeposit; and the obtained electrodeposit is subject to melting/casting.

[Claim 2]

The method of producing copper according to claim 1, wherein the copper has Pb content, which includes $^{210}Pb$ as an isotope of Pb, of less than 0.01 ppm, U content of less than 5 wtppb, and Th content of less than 5 wtppb.

[Claim 3]

The method of producing copper according to claim 1 or claim 2, wherein respective α-ray emissions of samples 1 week after, 3 weeks after, 1 month after, 2 months after, 6 months after and 30 months after the melting/casting are 0.001 cph/cm$^2$ or less.

[Claim 4]

The method of producing copper according to any one of claims 1 to 3, wherein the copper has a purity of 4N (99.99%) or higher.

[Claim 5]

A method of producing a copper alloy, wherein the copper produced based on the method according to any one of claims 1 to 4 is used as a raw material for producing the copper alloy.

[Claim 6]

A method of producing a bonding wire, wherein the copper produced based on the method according to any one of claims 1 to 4 is used as a raw material for producing the bonding wire.

[Claim 7]

Copper or a copper alloy produced based on the method according to any one of claims 1 to 5, wherein an α-ray emission of a sample after being subject to melting/casting is 0.001 cph/cm$^2$ or less, Pb content including $^{210}Pb$ as an isotope of

Pb is less than 0.01 ppm, U content is less than 5 wtppb, and Th content is less than 5 wtppb.

[Claim 8]

The copper or copper alloy according to claim 7, wherein respective α-ray emissions of samples 1 week after, 3 weeks after, 1 month after, 2 months after, 6 months after and 30 months after the melting/casting are 0.001 cph/$cm^2$ or less.

[Claim 9]

The copper or copper alloy according to claim 7 or claim 8, wherein the purity is 4N (99.99%) or higher.

[Claim 10]

A bonding wire obtained by using, as its raw material, the copper or copper alloy according to any one of claims 7 to 9.