CLAIMS

[Claim 1]

A silica-containing water treatment system, comprising:

a magnesium dissolving unit in which a magnesium salt and an acid are mixed with each other and reacted at a pH of 4 to 7 to prepare a magnesium-containing liquid; and

a magnesium reaction unit in which a mixed liquid obtained by mixing silica-containing water and the magnesium-containing liquid is reacted at a pH in a range of 10 to 12.

[Claim 2]

The silica-containing water treatment system according to claim 1, comprising:

a magnesium dissolving tank as the magnesium dissolving unit in which the magnesium salt and the acid are mixed with each other and reacted at a pH of 4 to 7 to prepare the magnesium-containing liquid; and

a magnesium reaction tank as the magnesium reaction unit in which the mixed liquid obtained by mixing the silica-containing water and the magnesium-containing liquid is reacted at a pH in a range of 10 to 12.

[Claim 3]

The silica-containing water treatment system according to claim 1, comprising:

a magnesium dissolving tank as the magnesium dissolving unit in which the magnesium salt and the acid are mixed in silica-containing water and reacted at a pH of 4 to 7 to prepare the mixed liquid including a mixture of the magnesium-containing liquid and the silica-containing water; and

a magnesium reaction tank as the magnesium reaction unit in which the mixed liquid is reacted at a pH in a range of 10 to 12.

[Claim 4]

The silica-containing water treatment system according to any one of claims 1 to 3, further comprising:

a removing unit for separating and removing an insolubilized substance obtained by a reaction performed by the magnesium reaction unit, at a stage subsequent to the magnesium reaction unit.

[Claim 5]

The silica-containing water treatment system according to claim 4, wherein

the removing unit includes:

a flocculation unit for flocculating the insolubilized substance using a flocculating agent; and

a solid-liquid separating unit for solid-liquid separating the flocculated substance, at a stage subsequent to the flocculation unit.

[Claim 6]

The silica-containing water treatment system according to claim 5, wherein

the flocculating agent is at least one of an iron-based inorganic flocculating agent and a cationic polymer flocculating agent.

[Claim 7]

A silica-containing water treatment method comprising:

a magnesium dissolving process in which a magnesium salt and an acid are mixed with each other and reacted at a pH of 4 to 7 to prepare a magnesium-containing liquid; and

a magnesium reaction process in which a mixed liquid obtained by mixing silica-containing water and the magnesium-containing liquid is reacted at a pH in a range of 10 to 12.

[Claim 8]

The silica-containing water treatment method according to claim 7, wherein

in the magnesium dissolving process, the magnesium salt and the acid are mixed with each other and reacted at a pH of 4 to 7 to prepare the magnesium-containing liquid; and

in the magnesium reaction process, the mixed liquid obtained by mixing the silica-containing water and the magnesium-containing liquid is reacted at a pH in a range of 10 to 12.

[Claim 9]

The silica-containing water treatment method according to claim 7, wherein

in the magnesium dissolving process, the magnesium salt and the acid are mixed in silica-containing water and reacted at a pH of 4 to 7 to prepare the mixed liquid including a mixture of the magnesium-containing liquid and the silica-containing water, and

in the magnesium reaction process, the mixed liquid is reacted at a pH in a range of 10 to 12.

[Claim 10]

The silica-containing water treatment method according to any one of claims 7 to 9, further comprising:

a removing process of separating and removing an insolubilized substance obtained by a reaction performed in the magnesium reaction process, at a stage subsequent to the magnesium reaction process.

[Claim 11]

The silica-containing water treatment method according to claim 10, wherein

the removing process includes:

a flocculation process of flocculating the insolubilized substance using a flocculating agent; and

a solid-liquid separating process of solid-liquid separating the flocculated substance, at a stage subsequent to the flocculation process.

[Claim 12]

The silica-containing water treatment method according to claim 11, wherein the flocculating agent is at least one of an iron-based inorganic flocculating agent and a cationic polymer flocculating agent.