CLAIMS

[Claim 1]

An electrodeionization device comprising a cathode; an anode; and a plurality of cation-exchange membranes and a plurality of anion-exchange membranes, the plurality of cation-exchange membranes and the plurality of anion-exchange membranes being arranged between the cathode and the anode so as to form concentrating compartments and desalting compartments, the concentrating compartments and desalting compartments being arranged alternately, the desalting compartments being filled with an ion-exchange resin,

wherein the ion-exchange resin has an average particle size of 150 to 250 μm, and

wherein the ion-exchange resin has a uniformity coefficient of 1.1 or less.

[Claim 2]

The electrodeionization device according to Claim 1, wherein the ion-exchange resin is a resin mixture of an anion-exchange resin and a cation-exchange resin.

[Claim 3]

The electrodeionization device according to Claim 2, wherein the ion-exchange resin on an entry side of the desalting compartments in a water-flow direction is a resin mixture of an anion-exchange resin and a cation-exchange

resin at a ratio of Anion-exchange resin:Cation-exchange resin = 60 to 90:40 to 10 (dry weight ratio); and

the ion-exchange resin on an exit side of the desalting compartments is a resin mixture of an anion-exchange resin and a cation-exchange resin at a ratio of Anion-exchange resin:Cation-exchange resin = 40 to 60:60 to 40 (dry weight ratio).

[Claim 4]

The electrodeionization device according to any one of Claims 1 to 3, wherein the concentrating compartments are filled with an ion-exchange resin having an average particle size of 100 to 300 μm.

[Claim 5]

The electrodeionization device according to Claim 4, wherein the ion-exchange resin filled in the concentrating compartments has a uniformity coefficient of 1.1 or less.

[Claim 6]

The electrodeionization device according to Claim 4 or 5, wherein the ion-exchange resin filled in the concentrating compartments is a resin mixture of an anion-exchange resin and a cation-exchange resin.

[Claim 7]

The electrodeionization device according to Claim 6, wherein the ion-exchange resin filled in the concentrating compartments is a resin mixture of an anion-exchange resin

and a cation-exchange resin at a ratio of Anion-exchange resin:Cation-exchange resin = 40 to 70:60 to 30 (dry weight ratio).

[Claim 8]

A method for producing deionized water using the electrodeionization device according to any one of Claims 1 to 7, the method comprising:

passing water to be treated through the desalting compartments of the electrodeionization device;

passing part of water discharged from the desalting compartments through the concentrating compartments in a direction opposite to a direction in which the water-to-be-treated is passed through the desalting compartments; and

discharging the remainder of the water discharged from the desalting compartments as treated water.

[Claim 9]

A pure-water production system comprising the electrodeionization device according to any one of Claims 1 to 7, and a reverse-osmosis membrane separation device disposed upstream of the electrodeionization device.