

ABSTRACT

The present invention discloses a method for producing magnesium carbonate using seawater desalination brine. The method for producing magnesium carbonate using seawater desalination according to the present invention comprises: (A) a step of continuously supplying seawater desalination brine and an alkaline solution to a first reactor and reacting them, thereby forming solid-state magnesium hydroxide; (B) a step of continuously separating and discharging the solid-state magnesium hydroxide from the concentrated water continuously supplied from the first reactor to a first solid-liquid separator; (C) a step of transferring the concentrated water discharged from the first solid-liquid separator to a second reactor and introducing a polymer hydrogel to bind and remove residual magnesium and calcium in the concentrated water; (D) a step of mixing water with the magnesium hydroxide discharged from the first solid-liquid separator to form a mixed liquid and supplying the mixed liquid together with carbon dioxide to a third reactor to precipitate magnesium carbonate; (E) a step of supplying the mixed liquid from the third reactor to a third solid-liquid separator to separate and discharge the magnesium carbonate; and (F) a step of producing sodium hydroxide, hydrogen, and chlorine, through a chlor-alkali process, with respect to the concentrated water discharged from the second reactor, to reduce a concentration of sodium in the concentrated water.

Fig. 1