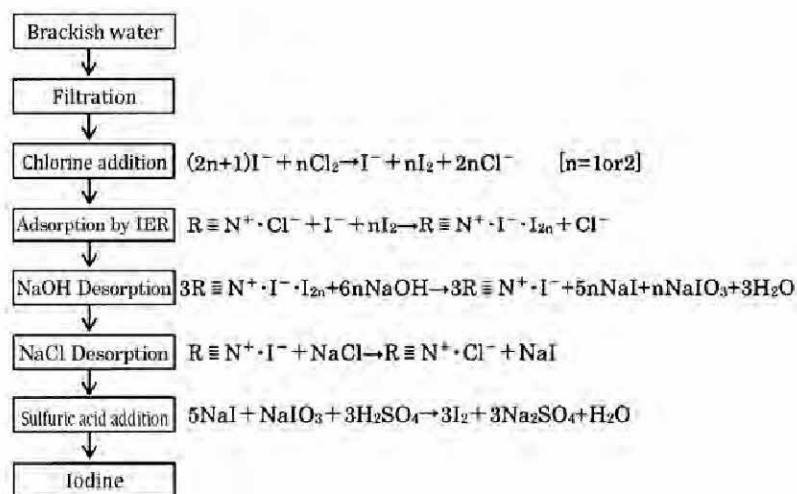


industries. Japan produces about 40% of iodine consumed worldwide, and the majority of it is extracted from underground brackish water in the natural gas wells in Chiba prefecture.

Iodine exists in underground brackish water as sodium iodide, and it is collected by three kinds of methods: the activated carbon, the blowing-out and the ion exchange methods.

The activated carbon method: Sodium iodide is oxidized in sulfuric acid to free iodine, and the free iodine is collected by adsorption with activated carbons. Iodine absorbed by A/C is desorbed as sodium iodide by heating in NaOH solution.

The blowing-out method: Iodide ion is oxidized by chlorine and liberated iodine gas is introduced into an adsorbing tower with a large amount of air. Iodine is collected by absorption with sulfurous acid solutions and then is precipitated as iodine and collected after oxidizing with chlorine.



[Fig. VII-14-1] Iodine Recovery with SBAER:  
(NaOH/ NaCl desorption)

#### 14. Manufacturing of Iodine

Iodine is one of the indispensable and important elements to humans. It is widely and highly utilized not only as roentgen contrast medium and pharmaceuticals but also in high-technology, agriculture, and food

The ion exchange method: Iodine or sodium iodide is oxidized by chlorine into poly-iodide anion and the poly-iodide anion is ion-exchanged

