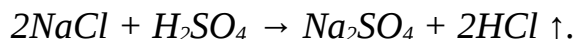


5) Dehydration of soda crystalline hydrate by calcination.

Preparation of Glauber's salt:



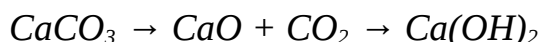
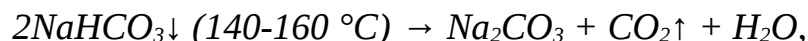
Until the beginning of the 19th century, *soda* (Na_2CO_3) was obtained from the seaweed ash and coastal plants.

In 1764, *Laxman* proposed a method for producing soda by sintering natural sodium sulfate by the reaction:



Laxman's method was tested at a glassworks in *Taltsinsk* (near *Irkutsk*) in 1784.

In 1861, *E. Solve* (*Belgium*) developed a method for producing soda from a solution of sodium chloride:



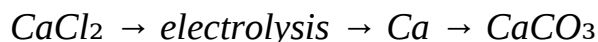
In 1930 a method for producing soda according to *Hou* (*Hou Debang*) was developed:

$\text{NaCl}_{\text{solution}} + \text{NH}_3 + \text{CO}_2$ ($T = 40^\circ\text{C}$) $\rightarrow \text{NaHCO}_3 \downarrow + \text{NH}_4\text{Cl} \rightarrow$ (cooled to $T = 10^\circ\text{C}$) $\rightarrow \text{NH}_4\text{Cl} \downarrow \rightarrow$ *the solution is fed back to the process,*

$\text{NaHCO}_3 \downarrow \rightarrow$ *calcinate* ($T, ^\circ\text{C}$) $\rightarrow \text{Na}_2\text{CO}_3 + \text{CO}_2 \uparrow + \text{H}_2\text{O}.$

The main difference of this method is that CaCO_3 is not used.

The chemical scheme for the production of soda by the ammonia method was proposed by *Ernest* and *Solve*:



Sodium bicarbonate is widely used in the chemical industry for the production of dyes, foams, organic products, fluoride reagents, household chemicals, fillers in fire extinguishers, for the separation of carbon dioxide and hydrogen sulfide from gas mixtures.

In light industry, it is used in the manufacture of rubber soles, artificial leather, for tanning and skin neutralization.

In the textile industry, it is used for finishing silk and cotton fabrics.

In the food industry, sodium bicarbonate is used in bakery, the manufacture of confectionery products, the preparation of drinks, etc.

In medicine, it is used for the preparation of anti-TB drugs, antibiotics, solutions for injection, etc.

In metallurgy, it is used for the deposition of rare-earth metals, for flotation concentration of ores.