

LIME - SODA PROCESS

Lime [$\text{Ca}(\text{OH})_2$] and
Soda [Na_2CO_3] are the
reagents used to precipitate
the dissolved salts of Ca^{2+} and
 Mg^{2+} as CaCO_3 $\text{Mg}(\text{OH})_2$.

The precipitated CaCO_3 and
 $\text{Mg}(\text{OH})_2$ are filtered off.

During the treatment of lime to remove the permanent hardness of Mg^{2+} , acids and alums the permanent hardness of Ca^{2+} is generated in water. Hence they require both lime soda treatment.

This presence of magnesium and calcium Carbonates in water makes it temporary hard. In this case, the hardness in water can be removed by boiling the water. When we boil water the soluble salts of $(\text{HCO}_3)_2$ is converted to $\text{Mg}(\text{OH})_2$ which is insoluble and hence gets precipitated and is removed.

