THE STABILITY OF NATRIUM-HIPOCHLORIDE

Gabil Sharifov, Gorxmaz Bayramov, Valex Dzafarov, Taxir Alxazov

Institute of Polymer Materials of Azerbaijan National Academy of Sciences, Sumgait
Tel.: (994164)55875, Fax: (994164)20400, E-mail: ipoma@dcacs.ab.az

Due to its oxidizing, whitening and disinfection properties, Natrium-Hipochloride (NaOCl) is widely used in industry. These properties are gained by this chemical because of it producing atomic oxygen while splitting under the temperature:

\[
\text{NaOCl} \rightarrow \text{NaCl} + \frac{1}{2}\text{O}_2 \uparrow
\]

The velocity of shown chemical reaction depends on temperature, concentration, direct light rays, accidentally contacted composites, especially variable valented chemicals and existence of Hidrogen ions (H\(^+\)) in the solution.

The work describes splitting properties of NaOCl under different pH and temperature conditions. It was configures that there is a linear relationship between the velocity gradient of self-splitting reaction of NaOCl and pH of the solution:

\[
\ln (k) = a - 2.303 \text{pH}
\]

Mathematic equation for velocity is:

\[
W = 5.7 \times 10^{-16} [\text{H}^+] \text{[NaOCl]} \text{ exp } 0.16T, \text{ q/1 min},
\]

where W is velocity of chemical reaction.

In practice, this given equation can be used for technical-engineering calculations during production, storage, transportation and use of NaOCl.

Reference