In the present study, half maximal effective concentration (EC$_{50}$) of the Linear Alkylbenzene Sulfonate on microalgae Nannochloropsis oculata were investigated. The experiment was carried out with seven treatments (six main treatments and one control) with three replications in 25 ºC and pH of 6.9 for 72 hours on July 2017. The concentration of linear alkyl benzene sulfonate in first to six treatments were 2, 2.5, 3, 4, 5, and 7 mg/l, respectively. After the experiment and counting the microalgae, inhibitory concentration percent was calculated in each treatment. Also, half maximal effective concentration (EC$_{50}$) was calculated using with probit regression test. EC$_{50}$ was obtained 3.05 mg/l. The level of detergents in marine ecosystems is rising; therefore, in order to reduce their irreparable damage to aquatic organisms, especially microalgae organisms, detergents with high degradability should be used instead of detergents that create very persistent foam.

**Keywords:** Microalgae Nannochloropsis oculata, Surfactants, Linear alkyl benzene sulfonates, Inhibitory concentrations.