



**Keywords:** *Acute toxicity, LD50, mortality, sublethal effects, water quality, environmental health.*

**Introduction:** The present study aims to evaluate the acute toxicity of a chemical substance in a freshwater environment. The *Daphnia magna* bioassay was used to determine the 48-hour LC50 (lethal concentration for 50% of the organisms) and to observe sublethal effects on the survival and reproduction of the organisms. The results show that the chemical substance is highly toxic to *D. magna*, with a 48-hour LC50 of approximately 0.5 mg/L. Sublethal effects were observed at concentrations below the LC50, including reduced survival and reproduction rates. These findings highlight the need for strict control and regulation of this chemical substance in aquatic environments to protect the health of the ecosystem and the organisms that inhabit it.

