Ozone is highly bactericide and fungicide sanitizer that does not generate hazardous residues. Thereby it can be used as an alternative for traditional chemical sanitizers on surfaces, vegetables and packaging decontamination. This study aimed to characterize the ozone decay kinetic and to evaluate the ozonated water (OW) efficacy on bottles decontamination. The PET bottles were contaminated with initial inoculum of $2 \times 10^7$ UFC/mL spores of *Bacillus subtilis* followed by an adherence step (agitation for 2 minutes followed by oven drying at 37°C/16h). Then bottles were washed with OW at concentrations of 1 and 4 mg/L during 3, 7 and 10 minutes. *B. subtilis* reductions were determined by microbial counts performed on nutrient agar after samples neutralization. The ozone concentration decay was determined through ozone measurement in water at 0 to 20 minutes after ozone generation at 25°C. The ozone decay was expressed by the equation: $[\text{ozone}] = 3.672e^{-0.06t}$ ($R^2 = 0.985$) and the half-life was 3.5 minutes. Based on this equation, the times of bottle washing were chosen. The results of *B. subtilis* spores reduction showed that OW at 1 mg/L was not effective. On contrary, 1,5 to 2,5 spores decimal reduction were reached by applying OW at 4 mg/L during 3-10 minutes of contact time. The results showed that OW has a potential to be applied on bottle surface decontamination, but the process efficacy is highly dependent on type and microbial level of contamination and also dependent on ozone concentration, temperature and time of exposure.