ABSTRACT

The main objective of the present work is to reduce the concentrations of the levels of polychlorinated biphenyls to less than 50 ppm, which may be present in dielectric oils; Polychlorinated biphenyls (hereinafter PCB), according to the latest research, were determined to be carcinogenic as a threat to human health and the environment. Dielectric oils from contaminated electrical transformers and capacitors; were treated, by destroying PCBs, with the chemical dichlorination method, reacting dielectric oil contaminated with PCBs with metallic sodium, considering the following variables; Temperature, volume, concentration, time and reaction speed; After carrying out several years of work, in the field, laboratory, and cabinet, it has been possible to meet the objective of obtaining uncontaminated dielectric oil, free of PCBs, since the laboratory results show reports of concentrations of less than 1 ppm.

To achieve our objective, various technologies and alternatives for the treatment and destruction of polychlorinated biphenyls have been evaluated and reviewed, and it has been determined that the method of chemical dichlorination treatment, with metallic sodium, is presented as one of the most efficient alternatives, of accessible technology, flexible operation and saving of resources.

With the present work we are contributing for human beings and the environment, a better quality of life, without PCB.

Keywords; Polychlorinated biphenyls, dielectric mineral oil, metallic sodium