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New clay sorbents originated in the Czech Republic were applied for regeneration of the used transformer insulation oil to prevent the transformer failures. The cause of failure has been a short circuit in the dielectric isolation. This effect is attributed to the so-called "corrosive sulphur". Corrosive sulphur is defined as various forms of organic sulphur compounds (often thermally unstable) such as Cu_2S, which can cause corrosion of metal parts of the transformer, in particular copper and silver. Dibenzyl disulfide (DBDS) has been found to be the leading corrosive sulphur compound in the insulation oil

The key physico-chemical and chemical properties of transformer oils containing corrosive sulfur were defined. Thus, viscosity at 40°C, density at 20°C, group composed of transformer oils and gas chromatograph with chemiluminescence sulfur detector (GC SCD) were determined in the real transformer oil.

This work is focused on finding an effective way to decontaminate such oils. For this purpose sorption was chosen as a cheap and simple decontamination technique. As sorbents two types of Czech clays were applied and their sorption efficiencies were compared with commercial sorbent usually used for treatment of an insulation oil. The real used transformer electroinsulation oil was applied in two differently sized column filled by sorbent.

Moreover, new sorbents were thoroughly characterized by physical adsorption of nitrogen, mercury porosimetry, helium pycnometry as well as by XRD.

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