

P56. RADIATION RESISTANCE ASSESSMENT OF EPDM FORMULATION FOR ELECTRICAL INSULATION

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Polymeric materials applications for electrical insulation manufacturing are based in their favorable properties related to high stability [1]. The use of EPDM (terpolymer ethylene propylene diene monomer) elastomer in electrical insulation is fostered due to its excellent resistance to bad weather, ozone and chemical agents besides presenting good flexibility at room temperature as well as in low ones [2]. Gamma-radiation effect in EPDM rubber depends on various factors as: absorbed doses, doses rate, exposure environment, material chemical structures, among others [3, 4]. The present study is focused on the evaluation of radiation resistance of EPDM compounds used in electrical insulation. The assessment of radiation effects in these compounds was based in results obtained from Chemiluminescence, DSC and FTIR essays, accomplished in non-irradiated and irradiated samples at 25, 50, 75, 100 and 200 kGy doses. Non-isothermal Chemiluminescence spectra (Fig. 1) illustrates small variations existing between oxidation forces, suggesting the competition between crosslinking and degradation. Results obtained proved the effective EPDM structural resistance against radiations, pointing toward use of EPDM compounds in electrical applications.

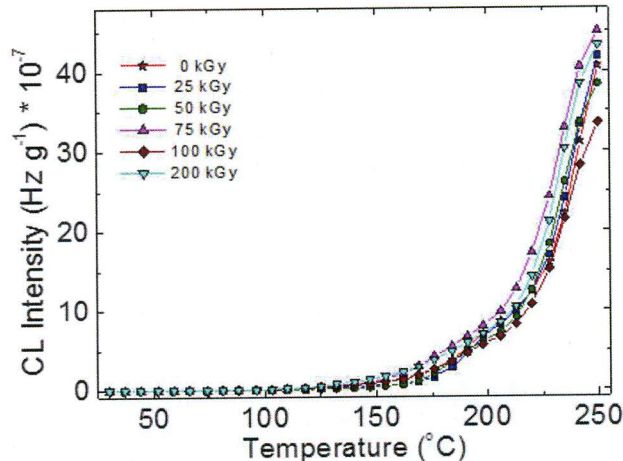


Figure 1. Non-isothermal chemiluminescence spectra recorded on the EPDM based sample

References

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