

## **Antioxidant effects of Rosemary extract on the accelerated degradation of ethylene-propylene-diene monomer**

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### **Abstract**

The goal of this paper is the qualification of natural antioxidants (rosemary extract, capsaicin, quercetin or oleanolic acid) playing as antioxidant. The stabilization activities were investigated in several formulations based on ethylene-propylene-diene-terpolymer (EPDM) in pristine state or after  $\gamma$ -irradiation, when the accelerated degradation scission of polymer macromolecules followed by the mitigation of oxidation. Three evaluation procedures: chemiluminescence, FTIR spectroscopy and thermal analysis were applied for the characterization of the stability contribution. The durability of studied EPDM formulations is discussed for the assessment of material life. The improved behavior of structured hybrids useful for the optimization application regimes is essentially based on the antioxidant properties of polyphenolic components in the cases of natural antioxidant.