

ABSTRACT**Process for blackening a plastic or rubber material**

A method for blackening a hydrophobic polymer matrix, which method comprises introducing monomers of an electrically conductive polymer into the polymer matrix, and polymerising the monomers in the polymer matrix in the presence of oxidant. The monomers may be introduced into the polymer matrix before introduction of the oxidant, in which case a surface of the polymer matrix is blackened, or the oxidant may be introduced into the polymer matrix before introduction of the monomers, in which case the bulk of the polymer matrix is blackened. Also, disclosed are a hydrophobic polymer matrix produced by such a process, a hydrophobic polymer matrix containing nanoparticles of an electrically conductive polymer, a method of producing an oxidant by reacting $(\text{NH}_4)_2\text{S}_2\text{O}_8$ with HCl having a concentration of approximately 2.5M or more and a molecule having the chemical formula Cl_2O .

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