CONDENSATION POLYMERS FROM PERFLUOROPOLYETHER BLOCKS AND HYDROGENATED BRIDGE REACTANTS : LOW TEMPERATURE NEW ELASTOMERS

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Dicarboxylic intermediates (I), resulting from reductive cleavage of TFE photooxidation perfluoropolyethers, have been condensed with aliphatic and aromatic diamines

$$ROOCCF_2(O\text{-}C_2F_4)_n(OCF_2)_mOCF_2COOR \qquad (I)$$

By properly choosing the M.W. of the dicarboxylic intermediates and the structure of the parent diamine, a new class of elastomers, crosslinkable with conventional organic peroxides, has been obtained.
Particularly, the aromatic polyamides of this class are characterized by a good balance of low temperature elasticity, chemical resistance to solvents and thermostability.
The dynamic-mechanical behaviour of these polymers is discussed.