# NITROXIDE HYDROXYLAMINE AND PHENYLENEDIAMINE COMBINATIONS AS POLYMERIZATION INHIBITORS FOR ETHYLENICALLY UNSATURATED MONOMER PROCESSES


## ABSTRACT

Polymerization inhibitor compositions are provided. The polymerization inhibitor compositions may include at least one hydroxylamine of a nitroxide and at least one phenylenediamine. Methods of inhibiting the unwanted polymerization of monomers are also provided. The methods include adding the presently disclosed polymerization inhibitor compositions to a fluid containing the monomers. The monomers may be ethylenically unsaturated monomers, such as acrylic acid, methacrylic acid, acrylonitrile, methacrylonitrile, acrolein, methacrolein, acrylate, methacrylate, acrylamide, methacrylamide, vinyl acetate, butadiene, ethylene, propylene, and styrene.

(Fig. 3)