LUBRICANT TREATMENTS FOR FREE-RADICAL POLYMERIZATIONS

ABSTRACT

A process to prepare an ethylene-based polymer, said process comprising polymerizing a mixture comprising ethylene, at a pressure greater than, or equal to, 100 MPa, in the presence of at least one free-radical initiator; and in a reactor system comprising at least one reactor and at least one Hyper-compressor, and

wherein at least one oil formulation, optionally comprising one or more lubrication agents, is added to the Hyper-compressor; and wherein at least one of the following steps takes place:

A) thermally treating the one or more lubrication agents, in an oxygen-free atmosphere, to achieve a peroxide level ≤ 10 ppm, based on the weight of the lubrication agent(s), and then adding said agent(s) to the oil formulation, prior to adding the oil formulation to the Hyper-compressor; or

B) thermally treating the oil formulation, in an oxygen-free atmosphere, to achieve a peroxide level ≤ 10 ppm, based on the weight of the oil formulation, prior to adding the oil formulation to the Hyper-compressor;

C) a combination of A and B.

[No suitable figure]