

GRAFTED MULTI-FUNCTIONAL OLEFIN
COPOLYMER VI MODIFIERS AND USES THEREOF

ABSTRACT

A novel highly grafted, multi-functional olefin copolymer is provided comprising an additive reaction product of a method comprising reacting acylating agent with an olefin copolymer having a number average molecular weight greater than about 1,000 in the presence of a free radical initiator and essentially free of hydrocarbon solvent in an extruder to provide an olefin copolymer intermediate comprising an acylated olefin copolymer having a degree of grafting (DOG) of at least 0.5 wt.%, which copolymer intermediate's molecular weight is reduced, vacuum stripped of unreacted components, pelletized, dissolved in a neutral oil (preferably with inert gas sparging), and further reacted with a polyamine to provide a grafted multi-functional olefin copolymer viscosity modifier, and lubricating oil concentrates and compositions containing the same and uses thereof.

FIGURE 1.