ETHYLENE/ALPHA-OLEFIN/ POLYENE BASED COMPOSITIONS

REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Application No. 61/731,891, filed on November 30, 2012.

BACKGROUND OF THE INVENTION

There is a need for new compositions containing ethylene/alpha-olefin/nonconjugated polyene interpolymers that can be used for vulcanized rubber compositions, and provide improved mixing and processibility, improved mechanical properties, and improved product consistency.

WO 2007/136494 disclosed ethylene/alpha-olefin/diene polymers prepared from a catalyst composition comprising a zirconium complex of a polyvalent aryloxyether. WO 2006/009976 discloses processes for preparing polyolefins in the presence of a perfluorocarbon or hydrofluorocarbon with an activated, nonmetallocene, metal-centered, heteroaryl ligand catalyst.

Rubber compositions are also disclosed in the following: WO2011/008837, WO2012/092491, US20060183631, WO2011/163176, EP1433812A1, WO2011/041230, WO2006/009976, WO2000/26268, US8178031, EP751182A1, EP718324A1, WO2011/0065877, JP04132672B2 (abstract), JP2004035813 (abstract), EP1433812A1.

However, as discussed above, there is a need for new polymer compositions containing ethylene/alpha-olefin/nonconjugated polyene interpolymers that can be used for vulcanized rubber compositions, and provide improved mixing and processibility and improved mechanical properties, and improved product consistency.

SUMMARY ~~OF THE INVENTION~~

~~The invention provides~~In an aspect, there is provided a composition comprising a first composition that comprises at least one ethylene/alpha-olefin/nonconjugated polyene interpolymer; and

wherein the first composition has a Mooney Viscosity (ML1+4, 125°C) greater than, or equal to, 10, and

wherein the first composition has a "13C NMR % Peak Area," which is the {[(13C NMR peak area from 21.3 ppm to 21.8 ppm) divided by the (total integral area from 19.5 ppm to 22.0 ppm)] x 100}, that is greater than 3.5 percent, as determined by 13C NMR.

In another aspect, there is provided a crosslinked composition formed from the composition as defined above.

In a further aspect, there is provided an article comprising at least one component formed from the composition as defined above.