

Manufacturing method of alkenyl succinimide-amides

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The subject matter of the invention is a method of manufacturing alkenyl succinimide-amides as ash-free detergent and dispersant additives with high thermal stability for the refinement of, especially, diesel oils designed for use in diesel engines with common rail direct injection systems.

The manufacture of alkenyl succinimide-amides is such that polyalkylene polyamines are acylated using alkenyl succinic anhydride with a molecular weight of 750 to 2500 Daltons, and the resultant mono-alkenyl succinimides and/or bisalkenyl succinimides and/or trisalkenyl succinimides are partially amidated using carboxylic acids and/or dicarboxylic acids and/or methyl (ethyl) esters of dicarboxylic acids.

The thus obtained alkenyl succinimide-amides show improved washing and deposit precursor solubilisation properties, and are re-

sistant, at higher temperatures, to the nucleophilic thermal decomposition into unstable diamides, which are vulnerable to thermal degradation and coking.



This is of utmost importance because temperature at multiple-hole injector in common rail injection systems (CRS) can exceed 300°C. Under conditions of high pressure and temperature fuel is subjected to thermal degradation, and temperature and pressure make the deposit precursors contained in such fuel undergo thermal and pressure flocculation into adhesive deposits so that they accumulate across high-pressure multiple-hole injectors, preventing proper fuel atomisation.

Such phenomena can be averted using the alkenyl succinimide-amides developed according to the invention.