Claims

1. Modified alkylphenol-aldehyde resins which can be obtained by a Mannich reaction of an alkylphenol-aldehyde condensation resin

- with at least one aldehyde and/or a ketone having 1 to 8 carbon atoms, preferably 1 to 4 carbon atoms;
- and at least one hydrocarbon compound having at least one alkylmonoamine or alkylpolyamine group (alkylamine) with an aliphatic chain having between 4 and 30 carbon atoms,

said alkylphenol-aldehyde condensation resin can itself be obtained by condensation

- of at least one alkylphenol substituted by at least one linear or branched alkyl group having 1 to 30 carbon atoms, preferably a monoalkylphenol,
- with at least one aldehyde and/or a ketone having 1 to 8 carbon atoms, preferably 1 to 4 carbon atoms.

2. Resins according to claim 1, which can be obtained from at least one alkylphenol substituted in para position, preferably from p-nonylphenol.

3. Resins according to claim 1 or 2, which can be obtained from at least one aldehyde and/or a ketone chosen from formaldehyde, acetaldehyde, propionaldehyde, butyraldehyde, 2-ethyl hexanal, benzaldehyde, acetone, and preferably from at least formaldehyde.

4. Resins according to one of claims 1 to 3, which can be obtained from at least one alkylamine having at least one primary amine group, and advantageously at least one compound, all the amine groups of which are primary amines.

5. Resins according to one of claims 1 to 4, which can be obtained from p-nonylphenol, formaldehyde and at least one hydrocarbon compound having at least one alkylmonoamine or alkylpolyamine group.

6. Resins according to one of claims 1 to 5, which can be obtained from at least one alkylamine with an aliphatic chain or a mixture of alkylamines with an aliphatic chain, and preferably alkylamine(s) having a number of carbon atoms between 12 and 24, preferably between 12 and 22.

7. Resins according to one of claims 1 to 6 with a viscosity at 50°C measured using a dynamic rheometer with a shear rate of 100 s^{-1} on a solution of said resin diluted with 30% by mass of an aromatic solvent comprised between 1,000

and 10,000 mPa.s, preferably 1,500 and 6,000 mPa.s and advantageously between 2,500 and 5000 mPa.s.

8. Use of one or more resins as defined in one of claims 1 to 7 as additives improving the low-temperature properties of motor fuels and hydrocarbon liquid fuels.

9. Use according to claim 8 of one or more resins for improving the dispersion of waxes and/or for limiting the settling of waxes in motor fuels and liquid fuels based on hydrocarbon oils and middle distillates the boiling temperature range of which is in the majority comprised between 100 and 500°C.

10. Use according to claim 8 or 9 of one or more resins incorporated in motor fuels and/or fuels having a boiling range from 120 to 500°C, preferably 140 to 400°C, and advantageously in jet fuels, gas oils or diesel motor fuels, domestic fuel, heavy fuel oils.

11. Compositions of motor fuels and liquid hydrocarbon fuels the boiling temperatures range of which is in the majority comprised between 100 and 500°C comprising:

a majority proportion of hydrocarbon compounds and/or vegetable and/or animal oils and/or their esters of oils and/or biodiesels of animal and/or vegetable origin

and a minority proportion, preferably comprised between 5 and 5,000 ppm by mass of at least one of the resins as defined in claims 1 to 7.