CLAIMS

1. A liquid hydrocarbon marine fuel oil comprising a marine distillate fuel or a heavy fuel oil or a blend thereof, the fuel oil comprising an additive combination consisting of:
   (A) a polyalkenyl-substituted carboxylic acid or anhydride; and
   (B) a metal detergent system comprising a hydrocarbyl-substituted hydroxybenzoate metal salt or a hydrocarbyl-substituted sulfonate metal salt or a mixture of both salts or complex thereof;

   where the mass:mass ratio of (A) to (B) is in the range of 20:1 to 1:20, such as 10:1 to 1:10, preferably 3:1 to 1:3, and the treat rate of the additive combination is in the range of 5, 10, 100 or 500 to 1000, 5000 or 10000, preferably 100 to 5,000 such as 500 to 1,000, ppm by mass;

   and wherein:

   i. the fuel oil is defined according to at least one of the marine fuel specifications for petroleum products of ISO 8217:2017, ISO 8217:2012, ISO 8217:2010 and/or ISO 8217:2005;
   ii. the fuel oil has a sulfur content of no greater than 0.5, mass % of atoms of sulfur;
   iii. all or part of the fuel oil is produced from crude oil by means of fractional distillation;
   iv. the additives (A) and (B) are used as or with one or more of detergents, dispersants, stabilisers, demulsifiers, emulsion preventatives, corrosion inhibitors, cold flow improvers such as pour point depressants and CFPP modifiers, viscosity improvers, lubricity improvers and/or combustion improvers and/or other additives; or
   v. any combination of i. to iv.

2. The marine fuel oil of claim 1 defined according to the marine fuel specification for petroleum products of ISO 8217:2017, ISO 8217:2012, ISO 8217:2010 and/or ISO 8217:2005.

3. The marine fuel oil of claim 1 or claim 2 having a sulfur content of no greater than 0.5, less than 0.5, no greater than 0.4, less than 0.4, no greater than 0.3, less than 0.3, no

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greater than 0.2, less than 0.2, no greater than 0.1 or less than 0.1, mass % of atoms of sulfur.

4. The marine fuel oil of any of claims 1 to 3 all or part of which is produced from crude oil by means of fractional distillation.

5. The marine fuel oil of any of claims 1 to 4 where the mass:mass ratio of (A) to (B) is in the range of 1:1 to 1:6 such as 1:1 to 1:3.

6. The marine fuel oil of any of claims 1 to 5 where, in (A), the polyalkenyl substituent has from 8 to 400, preferably 12 to 100, more preferably, 16 to 64, carbon atoms.

7. The marine fuel oil of any of claims 1 to 6 where, in (A), the polyalkenyl substituent has a number average molecular weight of from 350 to 2000, preferably from 500 to 1000.

8. The marine fuel oil of any of claims 1 to 7 where (A) is a succinic acid anhydride.

9. The marine fuel oil of claim 8 where (A) is a polyisobutene succinic acid anhydride.

10. The marine fuel oil of any of claims 1 to 9 where, in (B), the metal is calcium.

11. The marine fuel oil of any of claims 1 to 10 where, in (B), the hydrocarbyl-substituted hydroxybenzoate is a salicylate.

12. The marine fuel oil of any of claims 1 to 11 where, in (B), the hydrocarbyl group has from 8 to 100, such as 8 to 24, preferably 14 to 20, carbon atoms.

13. The marine fuel oil of any of claims 1 to 12 where, in (B), the detergent has a TBN in the range with a lower limit of 0, 50, 100 or 150 and with an upper limit of 300, 350, 400, 450 or 500.

14. The marine fuel oil of any of claims 1 to 13 wherein (B) the or each detergent is present as an overbased detergent.

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15. The marine fuel oil of any of claims 1 to 14 wherein the additives (A) and (B) are used as or with one or more of detergents, dispersants, stabilisers, demulsifiers, emulsion preventatives, corrosion inhibitors, cold flow improvers such as pour point depressants and CFPP modifiers, viscosity improvers, lubricity improvers and/or combustion improvers and/or other additives.

16. The use of a combination of additives (A) and (B) as defined in any of claims 1 and 5 to 15, for inhibiting asphaltene agglomeration, and/or flocculation, and/or dispersing asphaltenes and/or controlling deposition onto surfaces, in a liquid hydrocarbon marine fuel oil as defined in any of claims 1 to 4.

17. A method of inhibiting asphaltene agglomeration and/or flocculation, and/or dispersing asphaltenes and/or controlling deposition onto surfaces in a liquid hydrocarbon marine fuel oil comprises adding to the oil an effective amount of a combination of additives (A) and (B) as defined in any of claims 1 and 5 to 15, wherein:
    i. the fuel oil is defined according to at least one of the marine fuel specifications for petroleum products of ISO 8217:2017, ISO 8217:2012, ISO 8217:2010 and/or ISO 8217:2005;
    ii. the fuel oil has a sulfur content of no greater than 0.5, mass % of atoms of sulfur;
    iii. all or part of the fuel oil is produced from crude oil by means of fractional distillation; or
    iv. any combination of i. to iii.

18. The method of claim 17, wherein the additives (A) and (B) are used as or with one or more of detergents, dispersants, stabilisers, demulsifiers, emulsion preventatives, corrosion inhibitors, cold flow improvers such as pour point depressants and CFPP modifiers, viscosity improvers, lubricity improvers and/or combustion improvers and/or other additives.

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