

CLAIMS

1. A diesel fuel blend comprising a blend of a renewable fuel component and a mineral middle distillate fuel component in which the renewable fuel component and mineral middle distillate fuel component are present in a ratio of amounts by volume of from 10:90 to 5 90:10 and the diesel fuel blend contains 10-25 wt% n-paraffins in the C14-C20 range and an amount of isoparaffins in the C14-C20 range such that the ratio of the sum of wt% amounts of isoparaffins in the C14-C20 range to the sum of wt% amounts of n-paraffins in the C14-C20 range is less than 2.2.
2. A diesel fuel blend according to claim 1, wherein the renewable fuel component 10 and mineral middle distillate fuel component have cloud points that differ by no more than 17 °C, preferably by no more than 13 °C.
3. A diesel fuel blend according to claim 1 or 2, wherein the ratio of the sum of wt% amounts of isoparaffins in the C14-C20 range to the sum of wt% amounts of n-paraffins in the C14-C20 range is from 1.1 to 2.2.
- 15 4. A diesel fuel blend according to any of the previous claims, wherein the diesel fuel blend has from 22 wt% to 55 wt% isoparaffins in the C14-C20 range.
5. A diesel fuel blend according to any of the previous claims, wherein the mineral middle distillate fuel component is derived from sources selected from crude petroleum oil, shale oil, and combinations thereof.
- 20 6. A diesel fuel blend according to any of the previous claims, wherein the mineral middle distillate fuel component is a diesel fuel.
7. A diesel fuel blend according to any of the previous claims, wherein the fresh feed for renewable fuel component is selected from plant oils/fats, animal fats/oils, fish fats/oils, fats contained in plants bred by means of gene manipulation, recycled fats of food 25 industry and combinations thereof.
8. A diesel fuel blend according to any of the previous claims, wherein the renewable fuel component and mineral middle distillate fuel component are present in a ratio of amounts by volume of from 20:80 to 80:20.
9. A diesel fuel blend according to any of the previous claims, wherein the 30 isomerization ratio of the renewable fuel component is at least 50%, preferably from 50 to 69%, more preferably at least 60 % and most preferably from 60 to 69 %.

10. A method of making a diesel fuel blend having enhanced cold properties comprising:
- 5 (a) selecting a renewable fuel component and a mineral middle distillate fuel component having cloud points that differ by no more than 17 °C, preferably by no more than 13 °C; and
- (b) blending the renewable fuel component and mineral middle distillate fuel component in a ratio of amounts by volume of from 10:90 to 90:10 to form a diesel fuel blend,
- 10 wherein the diesel fuel blend contains 10-25 wt% n-paraffins in the C14-C20 range and an amount of isoparaffins in the C14-C20 range such that the ratio of the sum of wt% amounts of isoparaffins in the C14-C20 range to the sum of wt% amounts of n-paraffins in the C14-C20 range is less than 2.2; and the diesel fuel blend has a cloud point that is lower than the weighted mean of the cloud points of the mineral middle distillate component and the
- 15 renewable fuel component.
11. A method according to claim 10, wherein the diesel fuel blend has a ratio of the sum of wt% amounts of isoparaffins in the C14-C20 range to the sum of wt% amounts of n-paraffins in the C14-C20 range that is from 1.1 to 2.2.
12. A method according to any of claim 10 or 11, wherein the diesel fuel blend has
- 20 from 22 wt% to 55 wt% isoparaffins in the C14-C20 range.
13. A method according to any of claims 10-12, wherein the fresh feed of renewable fuel is selected from plant oils/fats, animal fats/oils, fish fats/oils, fats contained in plants bred by means of gene manipulation, recycled fats of food industry and combinations thereof.
14. A method according to any of claims 10-13, wherein the isomerization ratio of
- 25 the renewable fuel component is at least 50%, preferably from 50 to 69%, more preferably at least 60 % and most preferably from 60 to 69 %.
15. A method according to any of claims 10-14, wherein the diesel fuel blend has a cloud point that is lower than the cloud point of the mineral middle distillate fuel component.
16. A method according to any of claims 10-14, wherein the diesel fuel blend has a
- 30 cloud point that is lower than the cloud point of the renewable fuel component.

17. A use of a renewable fuel for lowering the cloud point of a mineral middle distillate fuel comprising:
- (a) determining the cloud point of a mineral middle distillate fuel;
 - (b) selecting a renewable fuel having the following properties:
 - 5 (i) a cloud point that differs by no more than 17 °C from the cloud point of the mineral middle distillate fuel;
 - (ii) an amount of n-paraffins sufficient to provide a diesel fuel blend containing 10-25 wt% n-paraffins in the C14-C20 range when the renewable fuel is blended with the mineral middle distillate fuel; and
 - 10 (iii) an amount of isoparaffins in the C14-C20 range sufficient to provide a diesel fuel blend having a ratio of the sum of wt% amounts of isoparaffins in the C14-C20 range to the sum of wt% amounts of n-paraffins in the C14-C20 range of from 1.1 to 2.2 when the renewable fuel is blended with the mineral middle distillate fuel; and
 - 15 (c) blending the renewable fuel with the mineral middle distillate fuel in a ratio of amounts by volume of from 10:90 to 90:10 to form a diesel fuel blend having a cloud point that is lower than the cloud point of the mineral middle distillate fuel.
18. A use of a mineral middle distillate fuel for lowering the cloud point of a renewable fuel comprising:
- 20 (a) determining the cloud point of a renewable fuel;
 - (b) selecting a mineral middle distillate having the following properties:
 - (i) a cloud point that differs by no more than 17 °C from the cloud point of the renewable fuel;
 - (ii) an amount of n-paraffins sufficient to provide a diesel fuel blend containing
 - 25 10-25 wt% n-paraffins in the C14-C20 range when the renewable fuel is blended with the mineral middle distillate fuel; and
 - (iii) an amount of isoparaffins in the C14-C20 range sufficient to provide a diesel fuel blend having a ratio of the sum of wt% amounts of isoparaffins in the C14-C20 range to the sum of wt% amounts of n-paraffins in the C14-C20 range of

from 1.1 to 2.2 when the renewable fuel is blended with the mineral middle distillate fuel; and

- (c) blending the renewable fuel with the mineral middle distillate fuel in a ratio of amounts by volume of from 10:90 to 90:10 to form a diesel fuel blend having a cloud point that is lower
5 than the cloud point of the renewable fuel.

19. A diesel fuel blend having enhanced cold properties obtainable by a method according to one of claims from 10 to 16 or by a use according to claim 17 or 18.