

CLAIMS:

1. Use of a renewable component for making an on-spec jet fuel composition from an off-spec jet fuel

wherein the off-spec jet fuel is a mineral-based kero/jet-type distillate component having an initial boiling point of at least 100°C and two or more of the following enumerated properties: a T90 boiling point from 260°C to 295°C; a final boiling point from 275°C to 300°C; a freezing point from -45°C to -20°C; a smoke point from 14 mm to 19 mm; a naphthalene content from 2.8 vol% to 3.5 vol%; a JFTOT VTR rating failing the jet fuel specification; and a sulfur content from 2000 wppm to 3500 wppm;

wherein the renewable component is a deoxygenated and dewaxed renewable component derived from triglycerides and/or fatty acids and having an isoparaffin to normal paraffin ratio from 2:1 to 6:1 and an aromatics content less than 1 vol%;

wherein from 75 vol% to 97 vol% of the mineral-based distillate components is blended with from 3 vol% to 25 vol% of the renewable component to form the on-spec jet fuel, and

wherein the on-spec jet fuel composition has all the following enumerated properties: a final boiling point of at most 300°C; a freezing point of at most -40°C; a smoke point of at least 18 mm; a naphthalene content of at most 3.0 vol%; a JFTOT VTR rating passing the jet fuel specification; and a sulfur content of at most 3000 wppm.

2. The use according to claim 1, wherein the mineral-based distillate composition has a T90 boiling point from 270°C to 285°C and a final boiling point from 285°C to 299°C.

3. The use according to claim 1, wherein the renewable component is prepared by a process that comprises:

providing a raw renewable triglyceride and/or fatty acid composition having an oxygen content and wherein at least 85% of acyl chains have from 9 to 15 carbons;

contacting the raw renewable composition with an H₂-containing gas in the presence of a deoxygenation catalyst under conditions sufficient to achieve an oxygen

content of less than 100 wppm and/or to reduce the oxygen content by at least 98% by weight; and

simultaneously with or following the deoxygenation step, performing dewaxing by contacting with an H₂-containing gas in the presence of a dewaxing catalyst under conditions sufficient to predominantly cause isomerization and to cause minimal cracking, such that the product of the dewaxing step has the requisite isoparaffin to normal paraffin ratio and aromatics content.

4. The use according to claim 3, wherein the deoxygenation and dewaxing steps are simultaneously performed using a single supported metal catalyst, in which an active metal component is disposed on a catalyst support.

5. The use according to claim 4
wherein the catalyst support comprises a zeolitic support exhibiting a 1-dimensional 10-ring pore structure.

6. The use according to claim 4 or claim 5, wherein the catalyst support comprises zeolite beta, zeolite Y, ultrastable zeolite Y, dealuminized zeolite Y, ZBM-30, ZSM-22, ZSM-23, ZSM-35, ZSM-48, MCM-41, MCM-48, or a combination or intergrowth thereof.

7. The use according to any one of claims 4-6, wherein the active metal component comprises a metal from Groups 8-10 of the Periodic Table of Elements, and optionally also comprises a metal from Group 6 of the Periodic Table of Elements.

8. The use according to claim 7, wherein the active metal component comprises a noble metal selected from the group consisting of platinum, palladium, ruthenium, and combinations thereof.

9. The use according to claim 7, wherein the active metal component comprises at least one of cobalt, nickel, and iron, and also comprises molybdenum and/or tungsten.