CLAIMS

WHAT IS CLAIMED IS:

1. A fuel oil or fuel oil blend component composition, comprising: 1.0 vol% to 75 vol% of a blend component comprising an isoparaffinic blend component, an iso-olefinic blend component, or a combination thereof; and 25 vol% to 95 vol% of a mineral fraction, the composition comprising a density at 15°C of 0.880 g/cm^3 to 0.990 g/cm^3, a calculated carbon aromaticity index of 780 or more, a flash point of 60°C or more, and a sulfur content of 5000 wppm or less, a pour point of the composition being lower than a pour point of the mineral fraction.

2. The composition of claim 1, wherein the mineral fraction comprises a sulfur content of 2000 wppm or more, the composition comprising 80 vol% to 95 vol% of the mineral fraction.

3. The composition of claim 1, wherein the composition comprises a kinematic viscosity at 50°C of 380 cSt or less.

4. The composition of claim 1, wherein the composition further comprises 1.0 vol% to 40 vol% of a bio-derived component different from the blend component.

5. The composition of claim 1, wherein an estimated cetane number of the composition is greater than an estimated cetane number of the mineral fraction, or wherein the estimated cetane number of the composition is greater than an estimated cetane number of the bio-derived fraction, or a combination thereof.

6. The composition of claim 1, wherein the blend component contains 5.0 wt% or less of C_{19+} hydrocarbons, or wherein the blend component comprises 10 wt% to 50 wt% of C_{19+} hydrocarbons.

7. A fuel oil or fuel oil blend component composition, comprising: 1.0 vol% to 40 vol% of a blend component comprising an isoparaffinic blend component, an iso-olefinic blend component, or a combination thereof; 5.0 vol% to 50 vol% of a bio-derived component different from the blend component; and 15 vol% or more of a mineral fraction, the composition comprising a density at 15°C of 0.880 g/cm^3 to 0.990 g/cm^3, a calculated carbon aromaticity index of 800 or more, a flash point of 60°C or more, and a sulfur content of 5000

wppm or less, a pour point of the composition being lower than a pour point of the bio-derived component.

8. The composition of claim 7, wherein the mineral fraction comprises a sulfur content of greater than 5000 wppm.

9. The composition of claim 7, wherein the composition comprises a kinematic viscosity at 50°C of 380 cSt or less.

10. The composition of claim 7, wherein an estimated cetane number of the composition is greater than an estimated cetane number of the mineral fraction, or wherein the estimated cetane number of the composition is greater than an estimated cetane number of the bio-derived fraction, or a combination thereof.

11. The composition of claim 7, wherein the composition comprises 2.0 wt% or more of C_{12-} isoparaffins, iso-olefins, or a combination thereof.

12. The composition of claim 7, wherein the composition comprises a pour point of 0°C or less.

13. The composition of claim 7, wherein the mineral fraction comprises a sulfur content of less than 6500 wppm and the composition comprises a sulfur content of 1000 wppm or less.

14. The composition of claim 7, wherein the composition comprises 1.0 vol% to 50 vol% of an isoparaffinic blend component containing 80 wt% or more of isoparaffins and 5.0 wt% or less of iso-olefins; or wherein the composition comprises 1.0 vol% to 50 vol% of an iso-olefinic blend component containing greater than 5.0 wt% iso-olefins and 80 wt% or more of combined isoparaffins and iso-olefins.

15. The composition of claim 7, wherein the blend component contains 5.0 wt% or less of C_{19+} hydrocarbons, or wherein the blend component comprises 10 wt% to 50 wt% of C_{19+} hydrocarbons.

16. The composition of claim 7, wherein the bio-derived component a) contains less than 80 wt% of isoparaffins, iso-olefins, or a combination thereof, b) has a ratio of Hd hydrogens to Hc_2 hydrogens of 1.6 or more, c) has a ratio of Hd hydrogens to Hc_2 hydrogens of 1.0 or less, d) a combination of a) and b), or e) a combination of a) and c).

17. The composition of claim 7, wherein the composition comprises a ratio of Hd hydrogens to Hc_2 hydrogens of 1.01 to 2.00.

18. The composition of claim 7, wherein the composition comprises a ratio of Hd hydrogens to Hc_2 hydrogens of 1.01 to 1.35.