CLAIMS

What is claimed is:

1. A fuel or fuel blending component comprising a kinematic viscosity at 50°C of 5.0 cSt to 100 cSt, a sulfur content of 150 wppm or less, a density at 15°C of 800 kg/m^3 to 900 kg/m^3, a CCAI of 800 or less and an aromatics content of 5.0 wt% to 25 wt%.

2. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises a T90 distillation point of 525°C or more, or wherein the fuel or fuel blending component comprises a sulfur content of 50 wppm to 150 wppm, or a combination thereof.

3. The fuel or fuel blending component of claim 1, wherein the sulfur content is 5.0 wppm or less, or wherein the nitrogen content is 5.0 wppm or less, or a combination thereof.

4. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises a T90 distillation point of 525°C or less, or wherein the fuel or fuel blending component comprises a viscosity index is 120 or more, or wherein the fuel or fuel blending component comprises a BMCI of 30 or less, or a combination thereof.

5. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises a nitrogen content of 100 wppm or less, or wherein the density at 15°C is 800 kg/m^3 to 860 kg/m^3, or wherein the fuel or fuel blending component comprises a T10 distillation point of 350°C or more, or a combination thereof.

6. The fuel or fuel blending component of claim 1, wherein the aromatics content is 12 wt% to 25 wt%, or wherein the aromatics content is 5.0 wt% to 15 wt%.

7. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises 1.0 vol% to 80 vol% of a renewable fraction and 20 vol% to 99 vol% of a hydrotreated atmospheric resid fraction, the hydrotreated atmospheric resid fraction comprising a kinematic viscosity at 50°C of 5.0 cSt to 100 cSt, a sulfur content of 150 wppm or less, a density at 15°C of 800 kg/m^3 to 900 kg/m^3, and an aromatics content of 5.0 wt% to 25 wt%.

8. The fuel or fuel blending component of claim 7, wherein the renewable fraction comprises a hydrotreated vegetable oil, a biodiesel, a fatty acid methyl ester, or a combination thereof.

9. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises 1.0 vol% to 80 vol% of a distillate fraction, a resid fraction, or a combination thereof, and 20 vol% to 99 vol% of a hydrotreated resid fraction, the hydrotreated resid fraction comprising a kinematic viscosity at 50°C of 5.0 cSt to 100 cSt, a sulfur content of 150 wppm or less, a density at 15°C of 800 kg/m^3 to 900 kg/m^3, and an aromatics content of 5.0 wt% to 25 wt%.

10. The fuel or fuel blending component of claim 9, wherein the hydrotreated resid fraction comprises a sulfur content of 5.0 wppm or less, or wherein the hydrotreated resid fraction comprises a nitrogen content of 5.0 wppm or less, or a combination thereof.

11. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises a pour point of 0°C or more.

12. A fuel or fuel blending component comprising a density of 930 kg/m^3 or less, a kinematic viscosity at 50°C of 100 cSt or more, a sulfur content of 50 wppm to 150 wppm, a BMCI of 50 or less, and a CCAI of 800 or less.

13. The fuel or fuel blending component of claim 12, wherein the fuel or fuel blending component comprises a nitrogen content of 100 wppm or less, or wherein the density at 15°C is 800 kg/m^3 to 900 kg/m^3, or a combination thereof.

14. The fuel or fuel blending component of claim 12, wherein the fuel or fuel blending component comprises a T10 distillation point of 400°C or more, or wherein the fuel or fuel blending component comprises a T90 distillation point of 550°C or more, or a combination thereof.

15. The fuel or fuel blending component of claim 12, wherein the fuel or fuel blending component comprises a viscosity index is 80 or more, or wherein the aromatics content is 12 wt% to 25 wt%, or a combination thereof.

16. The fuel or fuel blending component of claim 12, wherein the fuel or fuel blending component comprises 1.0 vol% to 80 vol% of a renewable fraction and 20 vol% to 99 vol% of a

hydrotreated resid fraction, the hydrotreated resid fraction comprising a density of 930 kg/m^3 or less, a kinematic viscosity at 50°C of 100 cSt or more, a sulfur content of 50 wppm to 150 wppm or less, a BMCI of 50 or less, and a CCAI of 800 or less.

17. The fuel or fuel blending component of claim 16, wherein the renewable component comprises a hydrotreated vegetable oil, a biodiesel, a fatty acid methyl ester, or a combination thereof.

18. A method for forming a hydrotreated resid-containing fraction, comprising:

fractionating a crude oil comprising a final boiling point of 550°C or more to form at least a resid-containing fraction, the crude oil comprising a naphthenes to aromatics volume ratio of 2.0 or more and a sulfur content of 0.2 wt% or less; and

hydrotreating the resid-containing fraction to form a hydrotreated resid-containing fraction comprising a density of 930 kg/m^3 or less, a sulfur content of 150 wppm or less, a BMCI of 50 or less, and a CCAI of 800 or less.

19. The method of claim 18, wherein hydrotreated resid-containing fraction comprises a kinematic viscosity at 50°C of 5.0 cSt to 100 cSt, a sulfur content of 150 wppm or less, a density at 15°C of 800 kg/m^3 to 900 kg/m^3, and an aromatics content of 5.0 wt% to 25 wt%.

20. The method of claim 18, wherein the resid-containing fraction is hydrotreated prior to the fractionating, the fractionating comprising forming at least the hydrotreated resid-containing fraction.

21. The method of claim 18, wherein the hydrotreated resid-containing fraction comprises a kinematic viscosity at 50°C of 100 cSt or more, and a sulfur content of 50 wppm to 150 wppm.

22. The method of claim 18, wherein the hydrotreated resid-containing fraction comprises a sulfur content of 5.0 wppm or less, or wherein the hydrotreated resid-containing fraction comprises a nitrogen content is 5.0 wppm or less, or a combination thereof.

23. The method of claim 18, further comprising blending the hydrotreated resid-containing fraction with a distillate fraction, resid fraction, or combination thereof to form a blended fuel or fuel blending component,

wherein the blended fuel or fuel blending component comprises 1.0 vol% to 80 vol% of the distillate fraction, resid fraction, or combination thereof, and 20 vol% to 99 vol% of a hydrotreated resid-containing fraction.

24. The method of claim 23, wherein the distillate fraction, resid fraction or combination thereof comprises a renewable fraction.

25. The method of claim 24, wherein the renewable fraction comprises a hydrotreated vegetable oil, a biodiesel, a fatty acid methyl ester, or a combination thereof.