CLAIMS

WHAT IS CLAIMED IS:

1. A blended jet boiling range composition comprising:

30 vol% to 99 vol% of an isoparaffinic blend component containing 80 wt% or more of isoparaffins, 5.0 wt% or less of olefins, and 5.0 wt% or less of C_{19+} hydrocarbons; and

1.0 vol% to 70 vol% of a mineral jet boiling range fraction,

the composition comprising a T10 distillation point of 205°C or less, a final boiling point of 300°C or less, a freeze point of -40°C or lower, and 2.0 wt% or more of C_{17} – C_{18} hydrocarbons,

wherein the composition comprises a ratio of Hd hydrogens to Hc_2 hydrogens of 1.01 to 2.00.

2. A blended jet boiling range composition comprising:

1.0 vol% to 99 vol% of an isoparaffinic blend component containing 80 wt% or more of isoparaffins, 5.0 wt% or less of olefins, and 5.0 wt% or less of C_{19+} hydrocarbons; and

1.0 vol% to 99 vol% of a mineral jet boiling range fraction,

the composition comprising a T10 distillation point of 205°C or less, a final boiling point of 300°C or less, a freeze point of -40°C or lower, and i) 10 wt% or more of C_9 hydrocarbons, ii) a flash point of 50°C or higher, or iii) a combination of i) and ii),

wherein the composition comprises a ratio of Hd hydrogens to Hc_2 hydrogens of 1.01 to 2.00.

3. The composition of claim 1 or 2, wherein the mineral jet boiling range fraction comprises a conventional jet fuel or kerosene component.

4. The composition of claim 1 or 2, wherein the composition comprises 50 vol% to 99 vol% of the isoparaffinic blend component.

5. The composition of claim 1 or 2, wherein the composition comprises 30 vol% to 95 vol% of the isoparaffinic blend component.

6. The composition of claim 1 or 2, wherein the composition comprises 50 vol% to 90 vol% of the isoparaffinic blend component and 10 wt% to 50 wt% of the mineral jet boiling range fraction.

7. The composition of claim 6, wherein the composition produces a smaller wear scar diameter under the procedure of ASTM D5001 than a wear scar diameter produced by the mineral jet boiling range fraction under the procedure of ASTM D5001.

8. The composition of claim 7, wherein the wear scar diameter produced by the composition is 10% or more smaller than the wear scar diameter produced by the mineral jet boiling range fraction.

9. The composition of claim 1 or 2, wherein the isoparaffinic blend component comprises a ratio of Hd hydrogens to Hc_2 hydrogens of 1.01 to 1.35.

10. The composition of claim 1 or 2, wherein the ratio of Hd hydrogens to Hc_2 hydrogens is 1.01 to 1.35.

11. The composition of claim 1 or 2, wherein the composition comprises 40 vol% to 70 vol% of the isoparaffinic blend component.

12. The composition of claim 1 or 2, wherein the isoparaffinic blend component contains 1.0 wt% or less of aromatics, or wherein the composition comprises 20 wt% or less of aromatics, or a combination thereof.

13. The composition of claim 1 or 2, wherein the isoparaffinic blend component comprises 8.0 wt% or less of compounds different from isoparaffins and iso-olefins.

14. A blended jet boiling range composition comprising:

1.0 vol% to 20 vol% of an isoparaffinic blend component, and

80 vol% to 99 vol% of a mineral jet boiling range fraction,

the isoparaffinic blend component comprising 80 wt% or more of isoparaffins, 5.0 wt% or less of olefins, and 5.0 wt% or less of C_{19+} hydrocarbons,

the composition comprising a T10 distillation point of 205°C or less, a final boiling point of 300°C or less, and a freeze point of -40°C or lower,

wherein the isoparaffinic blend component comprises 8.0 wt% or less of compounds different from isoparaffins and iso-olefins.

15. The composition of claim 14, wherein the blended jet boiling range composition comprises 1.0 wt% to 10 wt% of the isoparaffinic blend component, or wherein the blended jet boiling range composition comprises 5.0 wt% to 15 wt% of the isoparaffinic blend component.

16. The composition of claim 14 or 15, wherein the composition comprises a ratio of Hd hydrogens to Hc_2 hydrogens of 0.9 to 1.1.

17. The composition of claim 14 or 15, wherein the isoparaffinic blend component contains 1.0 wt% or less of aromatics.

18. The composition of any of claims 1, 2 and 14, wherein the composition comprises 0.1 wt% to 1.0 wt% of C_{19+} hydrocarbons, or wherein the composition comprises 3.0 wt% or less of C_{8-} compounds, or a combination thereof.

19. The composition of any of claims 1, 2 and 14, wherein the isoparaffinic blend component comprises a T10 distillation point of 205°C or less, a final boiling point of 300°C or less, and a freeze point of -40°C or lower.

20. The composition of any of claims 1, 2 and 14, wherein the C_{12} hydrocarbons in the isoparaffinic blend component comprise 1.5% or less of quaternary carbons, relative to the total number of carbons in the C_{12} hydrocarbons of the isoparaffinic blend component.

21. The composition of any of claims 1, 2 and 14, wherein the composition comprises a fuel that satisfies the specifications for a jet fuel in accordance with at least one of ASTM D1655, UK Ministry of Defence Standard 91-091, and Canadian General Standards Board 3.23.