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.

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).

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

4. The composition of any of claims 1 to 3, wherein the composition comprises 50 vol% to 99 vol% of the isoparaffinic blend component.

5. The composition of any of claims 1 to 3, wherein the composition comprises 30 vol% to 95 vol% of the isoparaffinic blend component.

6. The composition of any of claims 1 to 3, 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, the wear scar diameter produced by the composition optionally being 10% or more smaller than the wear scar diameter produced by the mineral jet boiling range fraction.

8. The composition of any of claims 1 to 7, wherein the composition comprises a ratio of Hd hydrogens to Hc_2 hydrogens of 1.01 to 2.00, preferably 1.01 to 1.35, the composition optionally comprising 40 vol% to 70 vol% of the isoparaffinic blend component.

9. The composition of any of claims 1 to 8, 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.

10. The composition of any of claims 1 to 9, wherein the isoparaffinic blend component comprises 8.0 wt% or less of compounds different from isoparaffins and iso-olefins.

11. 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.

12. The composition of claim 11, 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.

13. The composition of any of claims 11 to 12, wherein the composition comprises a ratio of Hd hydrogens to Hc_2 hydrogens of 0.9 to 1.1.

14. The composition of any of claims 11 to 13, wherein the isoparaffinic blend component contains 1.0 wt% or less of aromatics, or wherein the isoparaffinic blend component comprises 8.0 wt% or less of compounds different from isoparaffins and iso-olefins, or a combination thereof.

15. The composition of any of claims 1 to 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.

16. The composition of any of claims 1 to 15, 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.

17. The composition of any of claims 1 to 16, 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.

18. The composition of any of claims 1 to 17, 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.