CLAIMS:

1. A method for designing a lubricant blending component comprising:

identifying a plurality of lubricant products for formulation using a plurality of formulation components, the plurality of formulation components for each lubricant product including a first blending component;

selecting at least one first property of the first blending component;

varying the at least one first property of the first blending component to have a first plurality of selected values;

calculating a manufacturability index value for each of the plurality of lubricant products at each of the first plurality of selected values, wherein the value of a property P_p for each of the plurality of lubricant products is expressed relative to the values P_i for the property for each component i, present in an amount X_i (wt %) according to Formula (1):

$$T(P_p) = \Sigma (i) [X_i * T(P_i)] \quad (1)$$

where T is any convenient functional form, such as a polynomial function, a logarithmic function, an exponential function, or a combination thereof, the calculated manufacturability index values for each of the plurality of lubricant products corresponding to a manufacturability window for each of the plurality of lubricant products;

determining an overlap between the manufacturability windows for each lubricant product; and

formulating the plurality of lubricant products using the first blending component, the first blending component having a value for the at least one selected first property within the determined overlap of the manufacturability windows.

2. The method of claim 1, wherein the first blending component is selected from lubricant base stocks, viscosity modifiers, dispersants, detergents, pour point depressants, oil thickeners, polyisobutylenes, high molecular weight polyalphaolefins, antiwear/extreme pressure agents, antioxidants, demulsifiers, seal swelling agents, friction modifiers, corrosion inhibitors, antifoam additives, and combinations thereof.

3. The method of claim 1, further comprising:

selecting at least one second property of a second blending component; and

varying the at least one second property of the second blending component to have a second plurality of selected values, the manufacturability index values being calculated at one or more of the second plurality of values for each of the first plurality of selected values.

4. The method of claim 1, wherein at least one of the first blending component and the second blending component comprises a lubricant base stock from a slate of base stocks.

5. The method of claim 1, wherein at least one of the first blending component and the second blending component comprises an additive.

6. A method for selecting a lubricant blending component, comprising:

identifying a plurality of lubricant products for formulation using a blending component from a family of blending components;

calculating a manufacturability index value for each of the plurality of lubricant products using each blending component from the family of blending components, wherein the value of a property P_p for each of the plurality of lubricant products is expressed relative to the values P_i for the property for each component i, present in an amount X_i (wt %) according to Formula (1):

$$T(P_p) = \Sigma (i) [X_i * T(P_i)] \quad (1)$$

where T is any convenient functional form, such as a polynomial function, a logarithmic function, an exponential function, or a combination thereof;

selecting a blending component from the family of blending components based the calculated manufacturability index values; and

formulating the plurality of lubricant products using the selected blending component.

7. The method of claim 6, wherein the family of blending components comprises a plurality of additives.

8. The method of claim 7, wherein the plurality of additives are viscosity modifiers, dispersants, detergents, or a combination thereof.

9. The method of claim 6, wherein the family of blending components comprises at least one lubricant base stock from a slate of lubricant base stocks.

10. The method of claim 6, wherein the family of blending components comprises a slate of lubricant base stocks.

11. The method of claim 6, wherein the manufacturability index value is based on a smaller number of dimensions than the region associated with manufacturability index.

12. The method of claim 6, wherein the manufacturability index value for at least one lubricant product has a value of at least 0.5 along each of at least two dimensions.

13. The method of claim 6, wherein the manufacturability index value for each lubricant product has a range value of at least 0.5 along each of at least two dimensions.

14. The method of claim 6, wherein the range value along each of at least two dimensions is normalized so that a range value of 1.0 corresponds to 1.0 wt % of a corresponding additional formulation component in a lubricant product.

15. The method of claim 6, wherein the at least one first property comprises a plurality of properties.

16. The method of claim 6, wherein the plurality of formulation components comprises at least 4 formulation components for at least one lubricant product.

17. The method of claim 6, wherein the manufacturability index value is a characteristic value corresponding to a region defined based on amounts of the

formulation components that produce a lubricant product that satisfies a plurality of product specifications.

18. The method of claim 6, wherein the at least one first property and/or the at least one second property can correspond to a viscometric property, a volatility property, an oxidation stability property, a molecular weight distribution property, a fuel economy property, a dispersant-related property, a detergent-related property, or a combination thereof.