Claims:

1. An extracted conjunct polymer naphtha, comprising a hydrogenated conjunct polymer, from a used ionic liquid catalyst, having a final boiling point less than 246°C (475°F), a Bromine Number of 5 or less, at least 30 wt% naphthenes, and having at least 60 wt% carbon numbers in a range of C5 through C10.

2. The extracted conjunct polymer naphtha of claim 1 additionally having at least 40 wt% naphthenes.

3. The extracted conjunct polymer naphtha of claim 1,

   having a RON of 60 or greater; or

   additionally comprising at least 3 wt% methylcyclohexane and optionally up to 30 wt% methylcyclohexane.

4. The extracted conjunct polymer naphtha of claim 1, having a boiling point range distribution from 90°F to 474°F (32°C to 245°C).

5. A blended alkylate gasoline, comprising an extracted conjunct polymer naphtha as defined in claim 1 and alkylate products.

6. The blended alkylate gasoline of claim 5,

   wherein the blended alkylate gasoline comprises greater than 40 wt% C7 and C8 hydrocarbons; or

   wherein the blended alkylate gasoline comprises greater than 50 wt% trimethyl isomers in C8 hydrocarbons.

7. The blended alkylate gasoline of claim 5,

   wherein the blended alkylate gasoline comprises at least 0.01 wt% to 20.00 wt% of the extracted conjunct polymer naphtha; or

   wherein the blended alkylate gasoline comprises greater than 50 wppm methylcyclohexane.

8. The blended alkylate gasoline of claim 5,

   wherein the blended alkylate gasoline has a solvent washed gum less than 5.0 mg/100 mL; or

wherein the blended alkylate gasoline has either a slight tarnish or no tarnish in a silver strip test and a rating of 1a or 1b in a copper strip test; or

wherein the blended alkylate gasoline has an AKI from 85 to 100.

9. A process for making an extracted conjunct polymer naphtha comprising:
   a. regenerating a used ionic liquid catalyst comprising a conjunct polymer in a hydrogenation reactor to make a regenerated catalyst effluent, wherein the hydrogenation reactor contacts the used ionic liquid catalyst with hydrogen and a hydrogenation catalyst and the hydrogenation is carried out at hydrogen gauge pressure of 50 to 3000 psi (0.3 to 21 MPa);
   b. mixing the regenerated catalyst effluent or a separated liquid from the regenerated catalyst effluent with a conjunct polymer extraction solvent; and
   c. separating out the conjunct polymer extraction solvent to produce an extracted conjunct polymer naphtha; wherein the extracted conjunct polymer naphtha has a final boiling point less than 246°C (475°F), a Bromine Number of 5 or less, and at least 30 wt% naphthenes, wherein at least a portion of the conjunct polymer extraction solvent comes from an effluent from an alkylation reactor.

10. An integrated alkylation process, comprising:
   a. regenerating a used ionic liquid catalyst comprising a conjunct polymer in a hydrogenation reactor to make a regenerated catalyst effluent, wherein the hydrogenation reactor contacts the used ionic liquid catalyst with hydrogen and a hydrogenation catalyst and the hydrogenation is carried out at hydrogen gauge pressure of 50 to 3000 psi (0.3 to 21 MPa);
   b. mixing the regenerated catalyst effluent or a separated liquid from the regenerated catalyst effluent with an effluent from an alkylation reactor to make a mixture; and
   c. separating out an ionic liquid catalyst stream from the mixture made in step b) to produce a blended alkylate gasoline comprising greater than 50 wppm methylcyclohexane.

11. The integrated alkylation process of claim 10, wherein conditions in the hydrogenation reactor are selected to produce a hydrogenated conjunct polymer having a property selected from the group consisting of a final boiling point less than 246°C (475°F), a Bromine Number of 5 or less, at least 30 wt% naphthenes, at least 3 wt%

methylcyclohexane, and combinations thereof.

12. A method to analyze alkylate products comprising a blend comprising an extracted conjunct polymer naphtha as set out in claim 1, the method comprising: determining an amount of methylcyclohexane in the alkylate products and based on the amount of methylcyclohexane, estimating a quantity of hydrogenated extracted conjunct polymer naphtha in the alkylate products.