CLAIMS

WHAT IS CLAIMED IS:

1. A method comprising:

introducingcasting an annular packer comprising on a tubular, wherein casting the annular packer comprises:

preparing a two-part liquid resin mixture by combining a dicyclopentadiene polymeric resin with a catalyst;

supplying the two-part liquid resin mixture to a casting mold, wherein the casting mold comprises an annular region around the tubular;

curing the two-part liquid resin mixture at ambient conditions to form the annular packer, wherein the annular packer is cured in less than 5 hours; and

removing the annular packer from the casting mold;

introducing the annular packer into a wellbore;

exposing a dicyclopentadiene polymeric resin region of the annular packer to a hydrocarbon fluid having a temperature of from 130 °C to 300 °C; and

sealing an annular region of the wellbore with the dicyclopentadiene polymeric resin region of the annular packer.

2. The method of claim 1, wherein further comprising increasing a temperature of the hydrocarbon fluid exceeds thedicyclopentadiene polymeric resin region to above a glass transition temperature of the dicyclopentadiene polymeric resin to swell the dicyclopentadiene polymeric resin region of the annular packer with the hydrocarbon fluid.

3. The method of claim 2, wherein increasing the temperature of the dicyclopentadiene polymeric resin region comprises contacting the annular packer with the hydrocarbon fluid having a temperature that ranges between from 130 ºC°C to 300 ºC°C.

4. The method of claim 1, wherein the dicyclopentadiene polymeric resin further comprises dicyclopentadiene and one or more monomers.

5. The method of claim 4, wherein the monomers comprise at least one of norbornene, ethylene, propylene, styrene, butadiene, cyclopentene, cycloheptene, cyclooctene, or their derivatives.

6. The method of claim 1, ~~wherein~~further comprising swelling the dicyclopentadiene polymeric resin region of the annular packer ~~swells~~swells' in response to exposure to the hydrocarbon fluid.

7. The method of claim 1, ~~further comprising:~~wherein the annular packer has a hardness of at least 50 Shore D.

8. The method of claim 7, wherein the annular packer has a hardness of at least 80 Shore D.

9. The method of claim 1, wherein the catalyst comprises up to 10 weight percent of the two-part liquid resin mixture.

10. The method of claim 1, wherein the ambient conditions include room temperature conditions.

11. The method of claim 1, wherein the ambient conditions include a relative humidity of from 20 to 100%.

12. The method of claim 1, wherein the ambient conditions include a barometric pressure of from 975 mbar to 1050 mbar.

13. The method of claim 1, wherein the annular packer has a tensile strength of from 60 and 80 MPa.

14. The method of claim 1, wherein a temperature of the hydrocarbon fluid exceeds a glass transition temperature of the dicyclopentadiene polymeric resin.

15. The method of claim 1, wherein casting the annular packer further comprises combining the two-part liquid resin mixture with fillers or reinforcement fibers, wherein the fillers include one or more of fumed silica, precipitated silica, clay, functionalized clay, talc, functionalized talc, carbon black, graphite, and PTFE, and wherein the reinforcement fibers include one or more of mineral fibers, carbon fibers, glass fibers, and synthetic fibers.

16. The method of claim 15, wherein combining the two-part liquid resin mixture with the reinforcement fibers enhances a swell speed of the annular packer.

17. The method of claim 1, wherein the casting mold includes at least one of an aluminum alloy, a steel alloy, a copper alloy, brass lead, glass, or thermoset resins.

18. ~~on a tubular~~ The method of claim 1, further comprising adding a barrier coating to the annular packer prior to introducing the annular packer ~~with the tubular~~ into the wellbore.

~~8.~~19. The method of ~~claim 7~~1, wherein ~~casting~~ the ~~annular packer comprises:~~

~~combining a polymeric resin with a catalyst to form a~~two-part liquid resin mixture~~;~~

~~supplying the resin mixture to a casting mold, wherein the casting mold comprises an annular region around the tubular and at least one vent; and~~

~~~~, upon curing ~~the resin mixture to form the annular packer~~, forms a thermoset material.

~~9.~~20. The method of ~~claim 8~~1, wherein ~~curing of~~ the ~~resin mixture is performed at ambient conditions.~~

~~10. The method of claim 8, wherein the~~annular packer is cured in less than ~~5~~4 hours.

~~11. The method of claim 8, wherein the cured packer has a hardness of at least 50 Shore D.~~

~~12. A packer comprising:~~

~~a tubular positionable in a wellbore; and~~

~~a dicyclopentadiene polymeric resin annularly around a portion of the tubular, the dicyclopentadiene polymeric resin being swellable in response to contact with a hydrocarbon fluid in the wellbore.~~
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~~13. The packer of claim 12, wherein the dicyclopentadiene polymeric resin is swellable in response to contact with the hydrocarbon fluid at a temperature in a range of 130 ºC to 300 ºC in the wellbore.~~

~~14. The packer of claim 12, further comprising a monomer that is at least one of norbornene, ethylene, propylene, styrene, butadiene, cyclopentene, cycloheptene, cyclooctene, or their derivatives for changing a temperature of fluid at which the packer is swellable.~~

~~15. The packer of claim 12, wherein the packer is devoid of any barrier and is swellable in the wellbore subsequent to running in the wellbore to a desired position to pressure-isolate areas in the wellbore.~~

~~16. The packer of claim 12, wherein the dicyclopentadiene polymeric resin is formable around the portion of the tubular using a mold and a curing process at ambient temperature.~~

~~17. An article of manufacture comprising:~~

~~a dicyclopentadiene polymeric resin cast in a mold, the article being swellable in a wellbore in response to exposure to a hydrocarbon fluid at temperatures between from 130 ºC to 300 ºC.~~

~~18. The article of manufacture of claim 17, wherein the polymeric resin further comprises one or more monomers.~~

~~19. The article of manufacture of claim 18, wherein the monomers comprise at least one of norbornene, ethylene, propylene, styrene, butadiene, cyclopentene, cycloheptene, cyclooctene, or their derivatives.~~

~~20. The article of manufacture of claim 17, wherein the article is a frac ball.~~