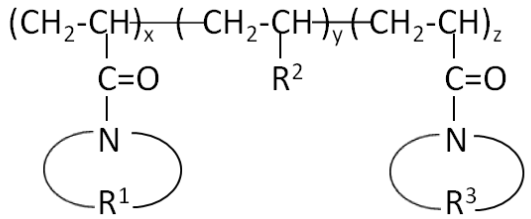
CLAIMS

1. A method for inhibiting formation of clathrate hydrates in a fluid capable of forming the clathrate hydrates, the method comprising:

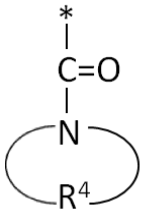
contacting the fluid with at least one terpolymer of General Formula (I) under conditions suitable for forming the clathrate hydrates:



in which:

R^1 and R^3 are each independently chosen from divalent C_4-C_7 aliphatic groups and divalent C_4-C_7 heteroaliphatic groups, optionally substituted with one or more C_1-C_6 aliphatic groups, heteroatoms independently chosen from O, N, and S, or combination thereof, where: the divalent C_4-C_7 heteroaliphatic groups of R^1 and R^3 comprise one or two heteroatoms independently chosen from O, N, and S, and the maximum number of heteroatoms in R^1 or R^3 is two;

R^2 is Q^1:



(Q^1)

in which:

R^4 is chosen from divalent C_4-C_7 aliphatic groups and divalent C_4-C_7 heteroaliphatic groups, optionally substituted with one or more C_1-C_6 aliphatic groups, heteroatoms independently chosen from O, N, and S, or combination thereof, where: the divalent C_4-C_7 heteroaliphatic groups of R^4 comprise one or two heteroatoms independently chosen from O, N, and S, and the maximum number of heteroatoms in R^4 is two;

x is a molar fraction range chosen from 0.1 to 0.9; y is a molar fraction range chosen from 0.1 to 0.9; and

z is a molar fraction range chosen from greater than 0 to 0.8, where the summation of x, y, and z equals 1.

2. The method of claim 1, where the fluid comprises water host molecules and natural gas guest molecules chosen from methane, ethane, propane, butane, pentane, carbon dioxide, hydrogen sulfide, nitrogen, or combination thereof.

3. The method of claim 1, where the contacting inhibits the formation of the clathrate hydrates at a first subcooling temperature of from 0°C to 4.0°C.

4. The method of claim 1, where the contacting inhibits the formation of the clathrate hydrates at a second subcooling temperature of from 4.0°C to 10.0°C.

5. The method of claim 1, where the contacting inhibits the formation of the clathrate hydrates in a pressure range of from 40 bars to 200 bars.

6. The method of claim 1, where the fluid is contacted with a composition comprising the at least one terpolymer of Formula (I) and at least one of a corrosion inhibitor or solvent.

7. The method of claim 1, where the fluid is a brine.

8. The method of claim 1, where the fluid is contacted with the at least one terpolymer at a tie-in platform.