[0006] With the use of powders, particularly when the product is used for off-shore platforms (e.g., on a floating production, storage and offloading or FPSO), elaborate powder equipment is required for the handling of very large quantities of powder. Additionally, much time is needed to suspend the polymer powders directly into water, as well as necessary special equipment for the mixing of powders into water. USP2004/008571 discloses an apparatus and method for hydrating particulate polymer, including a pre-wetter, a high-energy mixer, and a blender. USP 2004/0136262 discloses an apparatus and method for wetting powdered material for subsequent distribution of the material in bulk water for EOR applications. USP 2012/0199356 discloses an installation which includes a "polymer slicing unit" for the dissolution of polymer powder for EOR applications.

[0007] There is a need for improved polymer compositions / preparations, and methods to prepare / transfer such polymer compositions / preparations for convenient and efficient EOR applications, particularly off-shore EOR.

SUMMARY

[0007a] In one aspect, the invention relates to a polymer composition for use in enhancing the production of oil from a formation, the composition comprising:

a powder polymer having an average molecular weight of 0.5 to 30 Million Daltons suspended in a water soluble solvent having an HLB of greater than or equal to 8 and selected from the group of surfactants, glycol ethers, alcohols, co-solvents, and mixtures thereof, at a weight ratio of powder polymer to water soluble solvent ranging from 20:80 to 80:20; and

wherein the polymer composition is substantially anhydrous;

wherein the polymer composition is hydrated in an aqueous fluid for an injection solution in less than or equal to 4 hours containing a polymer concentration ranging from 100 ppm to 50,000 ppm and having a filter ratio of less than or equal to 1.5 at 15 psi using a 1.2μm filter.

[0007b] In one aspect, the invention relates to a method of enhancing oil recovery in a subterranean reservoir, the method comprising

providing a wellbore in fluid communication with the subterranean reservoir;

providing a polymer suspension, wherein the polymer suspension comprises a powder polymer having an average molecular weight of 0.5 to 30 Million Daltons suspended in a water soluble solvent having an HLB of greater than or equal to 8 and selected from the group of surfactants, glycol ethers, alcohols, co-solvents, and mixtures thereof, at a weight

ratio of powder polymer to water soluble solvent ranging from 20:80 to 80:20; wherein the polymer suspension is substantially anhydrous;

providing an aqueous fluid selected from any of surface water, water recovered from a production well, sea water, synthetic water, produced reservoir brine, reservoir brine, fresh water, produced water, water, saltwater, brine, synthetic brine, synthetic seawater brine, and mixtures thereof;

mixing a sufficient amount of the polymer suspension in the aqueous fluid for the polymer to be hydrated resulting an injection solution in less than or equal to 4 hours, the injection solution containing a polymer concentration ranging from 100 ppm to 50,000 ppm and having a filter ratio of less than 1.5 at 15 psi using a 1.2μm filter;

injecting the injection solution into the wellbore into the subterranean reservoir.

[0007c] In one aspect, the invention relates to a method for making a polymer suspension for use in enhancing the production of oil from a formation, the method comprising

mixing a powder polymer having an average molecular weight of 0.5 to 30 Million Daltons into a water soluble solvent having an HLB of greater than or equal to 8 for less than or equal to 24 hours,

the water soluble solvent is selected from the group of surfactants, glycol ethers, alcohols, co-solvents, and mixtures thereof, at a weight ratio of powder polymer to water soluble solvent ranging from 20:80 to 80:20;

wherein the polymer suspension is stable, pumpable, and substantially anhydrous; and

wherein the polymer suspension is hydrated for an injection solution in less than or equal to 4 hours, containing a polymer concentration ranging from 100 ppm to 50,000 ppm and having a filter ratio of less than or equal to 1.5 at 15 psi using a 1.2μm filter, by mixing a sufficient amount of the polymer suspension in an aqueous fluid.

[0008] In one aspect, the invention relates to a polymer composition for use in enhancing the production of oil from a formation. In one embodiment, the composition comprises a powder polymer having an average molecular weight of 0.5 to 30 Million Daltons suspended in a water soluble solvent having an HLB of greater than or equal to 8 and selected from the group of surfactants, glycol ethers, alcohols, co-solvents, and mixtures thereof, at a weight ratio of powder polymer to water soluble solvent ranging from 20:80 to 80:20. The polymer composition is substantially anhydrous. The polymer composition is

[0009] hydrated in an aqueous fluid for an injection solution in less than or equal to 4 hours containing a polymer concentration ranging from 100 ppm to 50,000 ppm and having a filter ratio of less than or equal to 1.5 at 15 psi using a 1.2μm filter.

[0010] In one aspect, the invention relates to a method of enhancing oil recovery in a subterranean reservoir. In one embodiment, the method comprises providing a wellbore in fluid communication with the subterranean reservoir. The method comprises providing a polymer suspension, wherein the polymer suspension comprises a powder polymer having an average molecular weight of 0.5 to 30 Million Daltons suspended in a water soluble solvent having an HLB of greater than or equal to 8 and selected from the group of surfactants, glycol ethers, alcohols, co-solvents, and mixtures thereof, at a weight ratio of powder polymer to water soluble solvent ranging from 20:80 to 80:20. The polymer suspension is substantially anhydrous. The method comprises providing an aqueous fluid selected from any of surface water, water recovered from a production well, sea water, synthetic water, produced reservoir