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(54) Title: WATER-BASED DEMULSIFIER FORMULATION WITH ENHANCED CORROSION INHIBITION PROPERTY

(57) Abstract: A water-based demulsifier includes two or more demulsifying resins, a surfactant, a hydrophilic linker, and a base solvent, which is water. In various embodiments, the two or more demulsifying resins include acid-catalyzed alkoxyated alkylphenol resins, base-catalyzed alkoxyated alkylphenol resins, polyol resins, and diepoxide resins. In one aspect, a method of using a water-based demulsifier with a desalter includes the steps of providing the water-based demulsifier and applying it at the desalter, where the water-based demulsifier includes an acid-catalyzed alkoxyated alkylphenol resin, a base-catalyzed alkoxyated alkylphenol resin, a surfactant, a hydrophilic linker, and a base solvent. In yet another aspect, a water-based demulsifier includes two or more demulsifying resins, a surfactant, a hydrophilic linker, and water as a base solvent, where the hydrophilic linker includes a C3-C18 branched linker, which may be a branched alkyl alcohol, a branched glycol, or a branched alkyl glycerin.

WO 2025/072357 A1