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(54) Title: REPLENISHING COMPOSITIONS AND METHODS OF REPLENISHING PRETREATMENT COMPOSITIONS

(57) Abstract: Disclosed are replenisher compositions and methods of replenishing pretreatment compositions. The methods include adding a replenisher composition to a pretreatment composition wherein the replenisher composition includes: (a) a dissolved complex metal fluoride ion wherein the metal ion comprises a Group IIIA metal, Group IVA metal, Group IVB metal, or combinations thereof; (b) a component comprising an oxide, hydroxide, or carbonate of Group IIIA, Group IVA, Group IVB metals, or combinations thereof; and optionally (c) a dissolved metal ion comprising a Group IB metal, Group IIB metal, Group VIIB metal, Group VIII metal, Lanthanide Series metal, or combinations thereof.



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