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(54) **Title:** PROCESSES FOR IMPROVING ACETIC ACID YIELD BY REMOVING IRON

(57) **Abstract:** In a process for improving a carbonylation process, iron is removed to maintain an effective Space Time Yield (STY) of the rhodium catalyst of at least 80% of the maximum STY. The process comprises carbonylating methanol in a reactor in a reaction medium comprising water, a rhodium catalyst, methyl iodide and a halide salt, separating a portion of the reaction medium in a flash vessel to form a less volatile stream and a vapor product stream comprising acetic acid, recycling a liquid stream to the reactor, wherein the liquid stream comprises a portion of the less volatile stream and wherein the liquid stream comprises iron, and removing a portion of the iron from the liquid stream to maintain an effective STY of the rhodium catalyst of at least 80% of the maximum STY.



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