What is claimed is:

1. In an extraction process for removing metal salts from an organic hydroformylation reaction fluid ("HRF") prior to returning the HRF to a reaction zone of a hydroformylation process, the HRF comprising an organophosphorous ligand and a metal-organophosphorous ligand complex, the extraction process comprising the step of contacting the HRF with an aqueous buffer solution within a buffer extraction zone of the hydroformylation process, the reaction zone located upstream of the buffer extraction zone, the improvement comprising the step of contacting outside of the buffer extraction zone the HRF with water in addition ("added water") to the water present in the aqueous buffer solution.

2. The extraction process of Claim 1 in which the hydroformylation process further comprises a product separation zone located downstream of the reaction zone and upstream of the extraction zone, and the added water and the HRF are contacted with one another in at least one of the reaction zone or the separation zone.

3. The extraction process of Claim 1 in which the added water is contacted with the HRF downstream of the extraction zone and prior to the return of the HRF to the reaction zone.

4. The extraction process of Claim 1 further comprising a salt extraction zone located downstream of the buffer extraction zone, and the HRF is contacted with the added water in the salt extraction zone and prior to the return of the HRF to the reaction zone.

5. The extraction process of Claim 4 in which the salt extraction zone and buffer extraction zone are located in separate vessels.

6. The extraction process of Claim 4 in which the salt extraction zone and the buffer extraction zone are located in a single vessel.

7. The extraction process of Claim 4 in which the hydroformylation process further comprises heat exchangers and the added water is contacted with the HRF prior to the HRF entering the heat exchangers.

8. The extraction process of any of the preceding claims in which the added water is not buffered.

9. The extraction process of any of claims 1-7 in which the added water is buffered.

10. The extraction process of any of the preceding claims in which the buffer concentration of the added water is less than 50 percent of the concentration of the aqueous buffer solution.

11. The extraction process of any of Claims 1-9 in which the buffer concentration of the added water is less than 20 percent of the concentration of the aqueous buffer solution.

12. The extraction process of any of Claims 1-9 in which the buffer concentration of the added water is less than 10 percent of the concentration of the aqueous buffer solution.

13 The extraction process of any of the preceding claims in which the amount of added water is 0.1 percent or more based on the weight of the HRF.

14. The extraction process of any of the preceding claims in which the aqueous buffer solution comprises a metal salt of a weak acid.

Claims

1. In an extraction process for removing metal salts from an organic hydroformylation reaction fluid ("HRF") prior to returning the HRF to a reaction zone of a hydroformylation process, the HRF comprising an organophosphorous ligand and a metal-organophosphorous ligand complex, the extraction process comprising the step of contacting the HRF with an aqueous buffer solution within a buffer extraction zone of the hydroformylation process, the reaction zone located upstream of the buffer extraction zone, the improvement comprising the step of contacting outside of the buffer extraction zone the HRF with water in addition ("added water") to the water present in the aqueous buffer solution.

2. The extraction process of claim 1 in which the hydroformylation process further comprises a product separation zone located downstream of the reaction zone and upstream of the extraction zone, and the added water and the HRF are contacted with one another in at least one of the reaction zone or the separation zone.

3. The extraction process of claim 1 in which the added water is contacted with the HRF downstream of the extraction zone and prior to the return of the HRF to the reaction zone.

4. The extraction process of claim 1 further comprising a salt extraction zone located downstream of the buffer extraction zone, and the HRF is contacted with the added water in the salt extraction zone and prior to the return of the HRF to the reaction zone.

5. The extraction process of claim 4 in which the salt extraction zone and buffer extraction zone are located in separate vessels.

6. The extraction process of claim 4 in which the salt extraction zone and the buffer extraction zone are located in a single vessel.

7. The extraction process of claim 4 in which the hydroformylation process further comprises heat exchangers and the added water is contacted with the HRF prior to the HRF entering the heat exchangers.

8. The extraction process of claim 1 in which the added water is not buffered.

9. The extraction process of claim 1 in which the added water is buffered.

10. The extraction process of claim 9 in which the buffer concentration of the added water is less than 50 percent of the concentration of the aqueous buffer solution.

11. The extraction process of claim 9 in which the buffer concentration of the added water is less than 20 percent of the concentration of the aqueous buffer solution.

12. The extraction process of claim 9 in which the buffer concentration of the added water is less than 10 percent of the concentration of the aqueous buffer solution.

13. The extraction process of claim 1 in which the amount of added water is 0.1 percent or more based on the weight of the HRF.

14. The extraction process of claim 1 in which the aqueous buffer solution comprises a metal salt of a weak acid.