Stoichiometry of cu(ii) ion extraction with di-2-ethylhexylphosphoric acid dissolved in waste palm cooking oil

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Abstrak

This study was aimed to determine the reaction stoichiometry between Cu(II) and di-2-ethylhexylphosphoric acid (D2EHPA) in Waste Palm Cooking Oil (WPCO). The stoichiometry was computed based on the following experimental methods, namely slope analysis, loading test and Job's method. Slope analysis was used to measure the variation of the distribution coefficient D to the concentration of Cu(II) ions and D2EHPA. Besides that, the loading test and Job's method are used to determine and confirm the complexation reaction between D2EHPA and Cu(II) ions. It was found that, the reaction stoichiometry for the Cu(II) to D2EHPA was 1:2 in Cu(II) organic complexes. Therefore, the chemical equation can be determined and it will be a useful information in the reaction mechanism of Cu(II) with D2EHPA in WPCO.