

ERRATA

Erratum to “Martyna Rzelewska, Monika Baczyńska, Magdalena Regel-Rosocka, Maciej Wiśniewski: Trihexyl(tetradecyl)phosphonium bromide as extractant for Rh(III), Ru(III) and Pt(IV) from chloride solutions”, Chemical Papers 70 (4) 454–460 (2016)*

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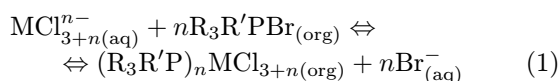
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On page 459 of the original article Rzelewska et al. (2016), incorrect data were provided in the “Conclusions” paragraph. The correct Conclusions are given below. The authors wish to apologise to the readers for this mistake in the published article.

Conclusions

The preliminary results showed that Cyphos IL 102: *i*) extracts Ru(III), Rh(III) and Pt(IV) from the fresh feeds in the increasing order: Rh(III), Ru(III), Pt(IV), while the increasing order Ru(III), Rh(III), Pt(IV) was recorded for the aged feeds; *ii*) is the best extractant for the extraction of Pt(IV) (90 % of extracted Pt(IV)). The addition of NaCl to the feed solutions increases the extraction efficiency of all the three metal ions investigated. The extraction equilibrium was quickly established (after 5 min of shaking for Rh(III) and Ru(III) and only one minute of shaking for Pt(IV)). This indicates that Cyphos IL 102 exhibits one of the properties of a good extractant (fast kinetics of extraction). The HCl concentration in the feed solution does not significantly affect the extraction of Rh(III) and Pt(IV), while the extraction efficiency of Ru(III) decreases by half with the increasing HCl concentration in the fresh feed. The extraction efficiencies of Rh(III) and Ru(III) increase with the increase in the concentration of Cyphos IL 102 in the organic phase. However, it should be noted that the ageing of the feed solutions has a major impact on

the extraction, especially for Ru(III) ions. The extraction efficiency of Ru(III) from the aged feeds containing 0.1 M HCl decreases six-fold, in comparison with the extraction of Ru(III) ions from the fresh solutions. By contrast, the extraction efficiency of Ru(III) from the aged feeds containing 5 M HCl shows no significant change. As the chemistry of Ru(III) and Rh(III) species in the aqueous feeds is very complex, further investigation of the mechanism of their extraction is in progress. It is possible to now propose the following general reaction (Eq. (1)) of Rh(III) or Ru(III) (denoted as M) extraction with Cyphos IL 102:



Further research is in progress to determine the mechanism of the Ru(III) and Rh(III) ion transport from aged solutions to phosphonium ionic liquid solutions and the selectivity of extraction from mixtures of these metal species.

References

- Rzelewska, M., Baczyńska, M., Regel-Rosocka, M., & Wiśniewski, M. (2016). Trihexyl(tetradecyl)phosphonium bromide as extractant for Rh(III), Ru(III) and Pt(IV) from chloride solutions. *Chemical Papers*, 70, 454–460. DOI: 10.1515/chempap-2015-0223.