

# Solvent extraction of zirconium from zircon leach liquor using triphenylphosphine oxide

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## **Abstract**

*A technique is described for the solvent extraction of zirconium. In this method, zirconium has been extracted quantitatively from 0.005 M sodium salicylate solution at pH 2.5 - 3 using 0.01 M triphenylphosphine oxide dissolved in toluene as an extractant. Zirconium has also been recovered quantitatively from 0.2 M potassium thiocyanate solution, but extractions in nitric and hydrochloric acids (as media) were negligible. The resulting extracted metal ion has been stripped with sulfuric acid (0.5 M) and determined with inductively coupled plasma atomic emission spectrometry. This method has been applied successfully to achieve 95% recovery of zirconium from zircon concentrate.*

**Key words:** Zirconium, Solvent extraction, Triphenylphosphine oxide, Thiocyanate, Salicylate