

## Removal of Metals from Heavy Oil

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**Abstract :** Crude oil contains various compounds of hydrocarbons but low concentrations of inorganic compounds or metals. Vanadium and Nickel are the most common metals in crude oil. These metals usually exist in solution in the oil and residual fuel oil in the refining process is condensed. Deleterious effects of metals in petroleum have been known for some time. These metals do not only contaminate the product but also cause intoxication and loss of catalyst and corrosion to equipment. In this study, removal of heavy metals and petroleum residues were investigated. These methods include physical, chemical and biological treatment processes. For example, processes such as solvent extraction and hydro-catalytic and catalytic methods are effective and practical methods, but typically often have high costs and cause environmental pollution. Furthermore, biological methods that do not cause environmental pollution have been discussed in recent years, but these methods have not yet been industrialized.

**Keywords :** removal, metal, heavy oil, nickel, vanadium

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