

Optimization of coke production from Algerian oil residues

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Abstract

Coke quality depends essentially on the nature of the feedstock of the process of coking. This research was performed in order to allow the study of the chemical composition influence of the coking process load on the efficiency and the quality of coke. For this reason, the coking of the following loads was realized: Atmospheric residue (RAT), vacuum Residue (RSV) and catalytic Residue of cracking (RCC). (The residues are obtained from an Algerian crude oil). As the oil residues are rich for their strongly polar composition, such as the asphaltene resins, and complex structures units (SCU), which has a role in the formation of coke, and as the dispersion of these latter improves the quality of coke, a study on the stability of aggregation was carried out by the addition of one stabilizer (oil Extract) in the coking process load. The Compounding (Extracted from /RCC oil) has been derived to the best efficiency of coke. The study consists of the influence...., this is characterized by the analyses Infra-red (IR) and x-ray diffraction (XRD).

Keywords: Coking; oil residue; dispersant; aggregation stability

Introduction

The coking of the oil residues consists of the decomposition of this latter by the delayed coking process, or by fluidized bed coking [1].

The units of coking, are generally biased by heavy residues, such as: vacuum residue, catalytic residue of cracking, residue of viscoreduction and asphalt or extracted from lubricating oils [2,3]. Coking develops these oil residues, it produces:

-Gas: they consist of a fuel gases used as fuel in the unit of coking, or sent after washing towards fuel gases of the refinery.

-Naphthas: light naphtha, after a hydro-processing is sent to the pool gasoline, heavy naphtha constitutes a catalytic load of reforming.

-Distillates: the light distillate, after a hydro-processing is sent to the pool gas oil of the refinery, and heavy distillate is used like charges with FCC, in mixture with the products of distillation [4].