

Abstract

The invention relates to the field of processing hydrocarbon oil, in particular to a process and a system for processing aromatics-rich fraction oil, comprising: (1) 5 introducing an aromatics-rich fraction oil into a fifth reaction unit for hydrosaturation, followed by fractionation, to provide a first light component and a first heavy component; (2) introducing a deoiled asphalt and an aromatics-comprising stream comprising the first heavy component into a hydrogen dissolving unit to be mixed with hydrogen, and introducing the mixed material into a first reaction unit for a hydrogenation reaction, 10 wherein the first reaction unit is a liquid-phase hydrogenation reaction unit; (3) fractionating a liquid-phase product from the first reaction unit to provide a second light component and a second heavy component; (41) introducing the second light component into a second reaction unit for reaction; and (42) introducing the second heavy component into a delayed coking unit for reaction; or using the second heavy component as a 15 component of low sulfur ship fuel oil. The treatment process provided by the invention can realize high-value utilization of DOA.

Fig. 1