

Title (en)

IMMOBILISATION OF VANADIUM DEPOSITED ON SORBENT MATERIALS DURING THE TREATMENT OF OILS CONTAINING HEAVY METALS AND COKE PRECURSORS

Publication

EP 0063683 B1 19860910 (EN)

Application

EP 82101793 A 19820306

Priority

- EP 84111374 A 19840924
- US 27775281 A 19810330
- US 28179781 A 19810709
- US 42735582 A 19820929

Abstract (en)

[origin: EP0063683A2] Crude oils or residual fractions from the distillation of petroleum containing substantial amounts of metals such as Ni, V, Fe, Cu, Na and high Conradson carbon values are made suitable for processing in reduced crude conversion processes by preliminary contacting with a sorbent containing a metal additive to immobilize vanadium pentoxide deposited on the sorbent material. It has been shown previously that as the vanadium pentoxide level builds up on the sorbent, the elevated temperature encountered in the regeneration zone causes the vanadia to flow and form a liquid coating on each particle. Any interruption of particle flow results in coalescence between the sorbent particles. Once coalescence occurs, fluidization becomes difficult to reinitiate. This results in stoppage of flow in the cyclone diplegs, ineffective operation of cyclones, rapid increase in loss of the sorbent, finally resulting in unit shutdown. The sorbent can also be made, as we have done, by combining and precipitating other gels with the clay so as to act as a binder for initial utilization until some hydrothermal conditioning occurs. This binder, such as silica, alumina, titania, zirconia, calcia, boria, or magnesia then serves a dual purpose as disclosed herein. Metal additives, described in this invention, when properly applied serve to form compounds or complexes with vanadia which have melting points above the temperatures encountered in the regeneration zone, thus avoiding the formation of liquid vanadia and coalescence between particles. A second method of avoiding vanadia liquidation can be employed by means of select regeneration conditions wherein the regenerated sorbent is recovered in a partially coked state. In this case, the deposited vanadia is held in a lower oxidation state, the oxides of which have melting temperatures above those encountered in the regeneration zone.

IPC 1-7

C10G 25/00; **C10G 25/06**

IPC 8 full level

C10G 25/00 (2006.01); **C10G 25/09** (2006.01)

CPC (source: EP)

C10G 25/00 (2013.01); **C10G 25/003** (2013.01); **C10G 25/09** (2013.01)

Cited by

US4980045A; EP0175799A1

Designated contracting state (EPC)

AT BE CH DE FR GB IT LI LU NL SE

DOCDB simple family (publication)

EP 0063683 A2 19821103; **EP 0063683 A3 19830817**; **EP 0063683 B1 19860910**

DOCDB simple family (application)

EP 82101793 A 19820306