

Preparation, characterization, and catalytic evaluation of first stage hydrocracking catalyst. Ahmed, Shakeel; Ali, Syed A.; Hamid, Halim; Honna, Kosaku. Center for Refining & Petrochemicals, The Research Institute, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia. *Studies in Surface Science and Catalysis* (2003), 145(*Science and Technology in Catalysis* 2002), 295-298. Publisher: Elsevier Science B.V., CODEN: SSCTDM ISSN: 0167-2991. Journal written in English. CAN 139:339754 AN 2003:640874 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

A series of amorphous silica-alumina and zeolite based first stage hydrocracking catalyst was prepd. Nickel and molybdenum were impregnated as active metals on 0.8 mm extrudates of silica-alumina supports prepd. with an alumina binder. For the better performance of hydrocracking catalyst a balance between the acid function and hydrogenation/dehydrogenation function of the catalyst is required. Detn. of acidity is straight forward but the measurement of the metal function of bi-functional hydroprocessing catalyst is a complicated procedure. An attempt has been made to measure the metal function by cyclohexane dehydrogenation reaction. The catalysts were characterized for acidity measurement by temp. programmed desorption of ammonia (TPD), pulse reaction test (PRT) method for hydrogenation/dehydrogenation activity and evaluated for vacuum gas oil (VGO) conversion. The characterization results are discussed in relation to the catalytic activities in hydrocracking reactions.