

PRODUCTION OF HIGH VISCOSITY INDEX LUBRICANTS

ABSTRACT

Petroleum wax feeds are converted to high viscosity index lubricants by a two-step hydrocracking-hydroisomerization process in which the wax feed is initially subjected to hydrocracking under mild conditions with a conversion to non-lube range products of no more than about 40 weight percent of the feed. The hydrocracking is carried out using an amorphous or mesoporous crystalline catalyst which preferentially removes the aromatic components present in the initial feed. The hydrocracked effluent is then subjected to hydroisomerization in a second step using a low acidity hydroisomerization catalyst which contains a hydrogenation component, preferably a noble metal such as platinum, on a mesoporous support material. The mesoporous support material (for the first or second steps) comprises an inorganic, non-layered, porous, crystalline phase aluminosilicate material which exhibits a benzene adsorption capacity of greater than about 15 grams benzene per 100 grams at 6.7 kPa (50 torr) and 25°C and which, in its preferred catalytic form, has a uniform, hexagonal arrangement of pores with diameters of at least 1.3 μ m (13 Å) and exhibiting, after calcination, an X-ray diffraction pattern with at least one d-spacing greater than 1.8 μ m (18 Å) and a hexagonal electron diffraction pattern that can be indexed with a d_{100} value greater than 1.8 μ m (18 Å) which corresponds to at least one peak in the X-ray diffraction pattern. A final dewaxing step to target pour point may be used with relatively low loss, typically no more than 15 weight percent, during this dewaxing.

FIGURE 1 IS SUGGESTED FOR PUBLICATION.