

THIS SHEET HAS BEEN REPLACED

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 30 weight percent of the feed. The hydrocracking is carried out at a hydrogen pressure of at least 7000 kPa (1000 psig) using an amorphous 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 dicarboxylic acid-treated zeolite Beta or mordenite catalyst which effects a preferential isomerization on the paraffin components to less waxy, high V.I. isoparaffins. The second stage may be operated at high pressure by cascading the first stage product into the second stage or at a lower pressure, typically from 1480 to 7000 kPa (200 to 1000 psig). The second stage catalyst is preferably a noble metal containing zeolite Beta catalyst which is treated with oxalic acid to give a low Alpha Value, typically below 10. The second stage is carried out at relatively low temperature, typically from 316° to 343°C (600° to 650°F) with a 343°C+ (650°F+) conversion in the range of 10 to 20 weight percent of the second stage feed but with high selectivity for isomerization of the paraffins.