

89-180131/25 H04 (H07)
 EXXON RES & ENG CO

ESSO 18.12.87
 *EP -321-298-A

18.12.87-US-134697 (21.06.89) C10g-45/62
 Prodn. of lubricant oil base stock or blending stock - by isomerising
 slack wax on crushed catalyst with metal oxide support and
 Gp = VIII metal
 C89-079539 R(BE DE ES FR GB IT NL)

Lubricant base oil base stock or blending stock is made by
 isomerising slack wax on a halogenated refractory metal oxide
 catalyst loaded with hydrogenation metal.

The catalyst is prep'd. by depositing Gp. VIII metal(s)
 on a particle extrudate refractory metal oxide support, fluo-
 riding with HF soln., crushing to expose the inner surface and
 to give a material with particle size not above 0.79375 mm
 across the largest cross-sectional dia. and activating in H₂
 at 350-500 deg. C for at least 1-48 h.

Opt., the support may have particle size not above 0.79375
 mm before the metal is deposited.

ADVANTAGE

High yields of prods. boiling in the 370+ deg. C. range
 are obtd. Prods. obtd. from wax contg. 5-10% of oil have
 higher VI than do prods. from wax with 0% oil or 20% oil.

H(4-A7, 4-E, 4-F2A, 4-F2E) N(1-C2, 2, 4-D, 6-E)

PREFERRED CATALYST

The metal is a noble metal of Gp. VIII, on a transition
 Al₂O₃. The largest cross-sectional dimension of the sized
 catalyst is 0.39688-0.79375 mm.

PREFERRED PROCESS

The wax contains 5-15% of oil, and is isomerised at 270-
 440 deg. C, 500-3000 psi H₂, gas rate 178.1-1780 l gas/l oil,
 and space velocity 0.1-10 vols./vol/h. The isomerisate is
 fractionated into a fraction and/or lube oil fraction boiling
 in the lube oil range (pref. 330+ deg. C), and this fraction
 is dewaxed. Unconverted wax recovered in the dewaxing
 step and/or the fraction boiling above 600 deg. C is recycled
 to the isomerisation.

EXAMPLE

(A) A 1/16 inch Al₂O₃ extrudate carrying 0.6 wt. % Pt
 and 1% Cl was soaked in 11.6% aq. HF soln., washed with
 water, dried at 150 deg. C in a vacuum oven, crushed to
 particles of 1/30 inch, and activated in 50 psi flowing H₂ by
 heating from room temp. to 100 deg. C in 2 h, at 100 deg. C
 for 1 h, from 100-450 deg. C in 3 h, and at 450 deg. C for

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1 h, giving a catalyst with 8.3% F.

(B) The catalyst was used to isomerise 600N slack waxes contg. (i) less than 1%, (ii) 7% or (iii) 23% of oil.

Conversion to 370+ deg. C. prods. was: (i) 13, (ii) 24, (iii) 12.8, 25.8. The viscosity at 100 deg. C was: (i), (ii), (iii) 4.8; and viscosity index was: (i) 148, (ii) 150, (iii) 135.

(E) ISR: No Search Report.