CLAIMS

1. Process for hydrogenating a petroleum low-sulphur feed containing less than 15ppm sulphur and less than ~~70~~40% aromatics, into very low sulphur and very low aromatic hydrocarbon fluids containing less than 5ppm sulphur and having a content in aromatics below 100ppm, having a boiling temperature in the range of from 100 to 400°C and in which the difference between the final boiling temperature and the initial boiling temperature is not more than 80°C, said process comprising:
- a step of prefractionation of the low-sulphur feed prior to hydrogenation, into low-sulphur feed fractions in which the difference between the final boiling temperature and the initial boiling temperature is less than 90°C then ;
- the step of catalytically hydrogenating said feed at a temperature from 80 to 180°C and at a pressure from 60 to 160 bars, in two or three hydrogenation stages with a nickel-containing catalyst~~, each hydrogenation stage being operated in one reactor~~.

2. Process of claim 1, wherein the fluids contain less than 50ppm, and preferably less than 30ppm.

3. Process of claim 1 or 2, wherein the fluids have a boiling temperature in the range 150 to 400°C, preferably from 200 to 400°C.

4. Process of any one of claims 1 to 3, wherein the difference between the final boiling temperature and the initial boiling temperature is below 75°C and preferably between 40 and 50°C.

5. Process of any one of claims 1 to 3, wherein the fluids have a sulphur content of less than 3ppm, preferably less than 0.5ppm.