CLAIMS

1. A process for rejuvenating an at least partially spent hydrotreating and/or hydrocracking catalyst, said at least partially spent catalyst comprising at least one group VIB metal chosen from molybdenum and tungsten, at least one group VIII metal chosen from cobalt, nickel and the mixture of these two elements, an oxide support, and optionally phosphorus, the at least partially spent catalyst having a content of group VIB metal of between 1% and 40% by weight, expressed as oxide of said group VIB metal, relative to the weight of the catalyst, the group VIB metal content is expressed as MoO_3 and WO_3 respectively, and a content of group VIII metal of between 1% and 10% by weight, expressed as oxide of said group VIII metal, relative to the weight of the catalyst, the group VIII metal content is expressed as CoO and NiO respectively, said process comprising the following steps:

    a) the at least partially spent catalyst is regenerated in a stream of oxygen-containing gas at a temperature of between 300°C and 550°C, so as to obtain a regenerated catalyst,

       wherein the group VIII metal to group VIB metal molar ratio of the regenerated catalyst is between 0.1 and 0.5 mol/mol,

    b) said regenerated catalyst is then brought into contact with an impregnation solution consisting of a mixture of water, at least one precursor of a group VIB metal, at least one precursor of a group VIII metal and at least one organic compound,
       the content of organic compound introduced into the impregnation solution being between 6% and 21% by weight of organic compound relative to the weight of the regenerated catalyst,
       the content of group VIB metal introduced into the impregnation solution being between 1% and 5% by weight, expressed as group VIB metal oxide, relative to the weight of the regenerated catalyst,
       the content of group VIII metal introduced into the impregnation solution being between 0.2% and 1% by weight, expressed as group VIII metal oxide, relative to the weight of the regenerated catalyst,
       the molar ratio of the organic compound to the sum of the group VIB and group VIII metals present in said solution being between 0.9 and 11 mol/mol,
       wherein the group VIII metal to group VIB metal molar ratio in the impregnation solution of step b) is between 0.1 and 0.5 mol/mol,
       wherein the group VIII metal to group VIB metal molar ratio in the impregnation solution of step b) is identical to the group VIII metal to group VIB metal molar ratio of the regenerated catalyst,

c) a drying step is then carried out at a temperature of less than 200°C, without subsequently calcining it, so as to obtain a rejuvenated catalyst.

2. The process as claimed in claim 1, wherein the content of organic compound introduced into the impregnation solution is between 6% and 16% by weight of organic compound relative to the weight of the regenerated catalyst.

3. The process as claimed in one of the preceding claims, wherein the molar ratio of the organic compound to the sum of the group VIB and group VIII metals present in said solution is between 1 and 4 mol/mol.

4. The process as claimed in one of the preceding claims, wherein the organic compound is chosen from an organic compound containing oxygen and/or nitrogen and/or sulfur.

5. The process as claimed in the preceding claim, wherein the organic compound is chosen from a compound comprising one or more chemical functions chosen from a carboxyl, alcohol, thiol, thioether, sulfone, sulfoxide, ether, aldehyde, ketone, ester, carbonate, amine, nitrile, imide, oxime, urea and amide function, or a compound including a furan ring or also a sugar.

6. The process as claimed in the preceding claim, wherein the organic compound is chosen from γ-valerolactone, 2-acetylbutyrolactone, triethylene glycol, diethylene glycol, ethylene glycol, ethylenediaminetetraacetic acid (EDTA), maleic acid, malonic acid, citric acid, acetic acid, oxalic acid, malic acid, gluconic acid, glucose, fructose, sucrose, sorbitol, xylitol, γ-ketovaleric acid, a di(C1-C4 alkyl) succinate and more particularly dimethyl succinate, dimethylformamide, 1-methyl-2-pyrrolidinone, propylene carbonate, 2-methoxyethyl 3-oxobutanoate, bicine, tricine, 2-furaldehyde (also known under the name furfural), 5-hydroxymethylfurfural, 2-acetylfuran, 5-methyl-2-furaldehyde, ascorbic acid, butyl lactate, ethyl lactate, butyl butyryllactate, ethyl 3-hydroxybutanoate, ethyl 3-ethoxypropanoate, 2-ethoxyethyl acetate, 2-butoxyethyl acetate, 2-hydroxyethyl acrylate, 1-vinyl-2 pyrrolidinone, 1,3-dimethyl-2-imidazolidinone, 1,5-pentanediol, 1-(2-hydroxyethyl)-2 pyrrolidinone, 1-(2-hydroxyethyl)-2,5-pyrrolidinedione, 5-methyl-2(3H)-furanone, 1-methyl-2-piperidinone, 4-aminobutanoic acid, butyl glycolate, ethyl 2- mercaptopropanoate, ethyl 4-oxopentanoate, diethyl maleate, dimethyl maleate, dimethyl fumarate, diethyl fumarate, dimethyl adipate and dimethyl 3-oxoglutarate.

7. The process as claimed in one of the preceding claims, wherein the at least partially spent catalyst contains phosphorus, the total content of phosphorus being between 0.1% and 20% by weight, expressed as P_2O_5, relative to the weight of the catalyst.

8. The process as claimed in one of the preceding claims, wherein the oxide support is chosen from aluminas, silica, silica-aluminas or also titanium or magnesium oxides, used alone or as a mixture with alumina or silica-alumina.

9. The process as claimed in one of the preceding claims, wherein the regeneration step is preceded by a deoiling step which comprises bringing an at least partially spent catalyst resulting from a hydrotreating and/or hydrocracking process into contact with a stream of inert gas at a temperature of between 300°C and 400°C.

10. The process as claimed in one of the preceding claims, wherein the rejuvenated catalyst is subjected to a sulfidation step after step c).

11. The use of the catalyst obtained according to the process as claimed in one of claims 1 to 10 in a process for the hydrotreating and/or hydrocracking of hydrocarbon cuts.