New Claims (clean copy)

1. A process for the preparation of a catalyst for the use in a hydrocarbon conversion reaction, said catalyst containing a titanium zeolite and carbonaceous material, the catalyst containing said carbonaceous material in an amount of from 0.01 to 0.5 % by weight based on the total weight of titanium zeolite contained in the catalyst, the process comprising
   (i) preparing a catalyst containing the titanium zeolite;
   (ii) depositing carbonaceous material on the catalyst according to (i) in an amount of from 0.01 to 0.5 % by weight based on the total weight of titanium zeolite contained in the catalyst by contacting said catalyst, prior to using the catalyst in said hydrocarbon conversion reaction, with a fluid containing at least one hydrocarbon in an inert atmosphere at elevated temperature, to obtain the carbonaceous material containing catalyst,

   wherein in (ii), the catalyst is not contacted with an oxygen containing gas, and wherein after step (ii), the catalyst is not subjected to an additional heat treating step, wherein the hydrocarbon is treated with an inert gas at high temperatures above 300°C.

2. The process of claim 1, wherein in (ii), the fluid is a gas stream.

3. The process of claim 1 or 2, wherein the inert atmosphere is an inert gas or a mixture of inert gases, the inert atmosphere preferably being nitrogen.

4. The process of any of claims 1 to 3, wherein in (ii), the fluid is a gas stream containing the at least one hydrocarbon and an inert gas or a mixture of inert gases, wherein in the gas stream, the volume ratio of hydrocarbon to inert gas or inert gases is in the range of from 1:50 to 1:5.

5. The process of any of claims 1 to 4, wherein the at least one hydrocarbon employed in (i) corresponds to the hydrocarbon being converted in the hydrocarbon conversion process.

6. The process of any of claims 1 to 5, wherein the hydrocarbon is an olefin, preferably propylene.

7. The process of any of claims 1 to 6, wherein contacting according to (ii) is carried out at a temperature in the range of from 400 to 500 °C.

8. The process of any of claims 1 to 7, wherein contacting according to (ii) is carried out for a time in the range of from 12 to 48 h.

9. The process of any of claims 1 to 8, wherein the titanium zeolite has an MFI, MEL, MWW, BEA or FER structure or a mixed structure of two or more thereof, preferably an MFI structure.

10. The process of any of claim 1 to 9, wherein neither before nor after (ii), the catalyst is subject to a silylation treatment.

11. The process of any of claims 1 to 10, wherein after (i) and prior to (ii), the catalyst is subject to hydrothermal treatment, the hydrothermal treatment preferably comprising
   (I) treating the catalyst with water in an autoclave, preferably at a pressure of from 2 to 3 bar, preferably at a temperature in the range of from 130 to 150 °C, preferably for a period of from 12 to 48 h;
   (II) drying the catalyst, preferably at a temperature in the range of from 100 to 150 °C; and
   (III) calcining the dried catalyst, preferably at a temperature in the range of from 450 to 500 °C.

12. The process of any of claims 1 to 11, wherein in (i), the titanium zeolite is shaped, preferably extruded, to give a molding comprising the titanium zeolite and preferably at least one binder, in particular a silica binder.

13. The process of any of claims 1 to 12, wherein the catalyst contains the carbonaceous material in an amount of from 0.01 to 0.1 % by weight, preferably from 0.01 to 0.06 % by weight, more preferably from 0.02 to 0.05 % by weight, more preferably from 0.03 to 0.04 %, based on the total weight of titanium zeolite contained in the catalyst, and wherein in (ii), the carbonaceous material is deposited on the catalyst according to (i) in an amount of from 0.01 to 0.1 % by weight, preferably from 0.01 to 0.06 % by weight, more preferably from 0.02 to 0.05 % by weight, more preferably from 0.03 to 0.04 % by weight, based on the total weight of titanium zeolite contained in the catalyst.

14. A catalyst containing a titanium zeolite and carbonaceous material, the catalyst containing the carbonaceous material in an amount of from 0.01 to 0.5 %, preferably from 0.01 to 0.1 % by weight, more preferably from 0.01 to 0.06 % by weight, more preferably from 0.02 to 0.05 % by weight, more preferably from 0.03 to 0.04 % by weight, based on the total weight of titanium zeolite contained in the catalyst, said catalyst being obtainable or obtained by a process according to any of claims 1 to 13, wherein the titanium zeolite has an MFI, MEL, MWW, BEA or FER structure or a mixed structure of two or more thereof, preferably an MFI structure.

15. The catalyst of claim 14, wherein the molding comprises micropores and mesopores.

16. The catalyst of claim 15, wherein the molding comprises the titanium zeolite and the carbonaceous material in an amount of from 70 to 80 % by weight, and from 20 to 30 % by weight of a binder, preferably a silica binder, in each case based on the total weight of the molding.

17. The catalyst of claim 15 or 16, wherein the molding has a crush strength of at least 22 N, preferably from 22 to 25 N, determined using an apparatus from Zwick, type BZ2.5/TS1S as described in detail the specification.

18. Use of a catalyst according to any of claims or the 14 to 17 in a process for the conversion of a hydrocarbon, preferably for the oxidation of a hydrocarbon, more preferably for the epoxidation of an olefin, in particular for the epoxidation of propylene.

19. The use of claim 18, wherein the process for the conversion of a hydrocarbon is a process for the preparation of propylene oxide in the presence of a catalyst containing at least one titanium zeolite and carbonaceous material, the catalyst comprising said carbonaceous material in a range of from 0.01 to 0.5 % by weight based on the total weight of titanium zeolite, the process comprising

(i) providing a catalyst containing the titanium zeolite;

(ii) depositing carbonaceous material on the catalyst according to (i) in the range of from 0.01 to 0.5 % by weight based on the total weight of titanium zeolite contained in the catalyst by contacting said catalyst, prior to using the catalyst in said hydrocarbon conversion reaction, with a fluid

containing at least one hydrocarbon in an inert atmosphere at elevated temperature, to obtain the carbonaceous material containing catalyst,

(iii) contacting the catalyst obtained according to (ii) with a reaction mixture comprising propylene, hydroperoxide, and at least one solvent,

wherein in (ii), the catalyst is not contacted with an oxygen containing gas, and wherein after step (ii) the catalyst is not subjected to an additional heat treating step, wherein the hydrocarbon is treated with an inert gas at high temperatures above 300°C.

20. The use of claim 19, wherein in (iii), the catalyst is a titanium silicalite-1 catalyst, the hydroperoxide is hydrogen peroxide and the solvent is methanol.

21. The use of claim 19 or 20, wherein the catalyst contains the carbonaceous material in an amount of from 0.01 to 0.1 % by weight, preferably from 0.01 to 0.06 % by weight, more preferably from 0.02 to 0.05 % by weight, more preferably from 0.03 to 0.04 %, based on the total weight of titanium zeolite contained in the catalyst, and wherein in (ii), the carbonaceous material is deposited on the catalyst according to (i) in an amount of from 0.01 to 0.1 % by weight, preferably from 0.01 to 0.06 % by weight, more preferably from 0.02 to 0.05 % by weight, more preferably from 0.03 to 0.04 % by weight, based on the total weight of titanium zeolite contained in the catalyst.

CLAIMS

1. An invention not claimed in any divisional application.