Claims

1. Process for oligomerization of n-butenes using a mesoporous, nickel-containing aluminosilicate catalyst over which a reactant stream containing the n-butenes is passed to form a product mixture, wherein the ratio of the amount of the formed 4,4-dimethylhexene to the amount of the formed 3,4-dimethylhexene in the product mixture is monitored and the catalyst is replaced upon exceedance of a threshold value for the ratio (amount of 4,4-dimethylhexene / amount of 3,4-dimethylhexene),

   wherein the threshold value for the ratio (amount of 4,4-dimethylhexene / amount of 3,4-dimethylhexene) is not more than 0.05.

2. Process according to Claim 1, wherein the process for oligomerization is performed at a temperature in the range from 50°C to 200°C, preferably of 60°C to 130°C.

3. Process according to Claim 1 or 2, wherein the process for oligomerization is performed at a pressure in the range from 10 bar to 70 bar, preferably from 15 bar to 42 bar.

4. Process according to any of Claims 1 to 3, wherein the mesoporous nickel-containing aluminosilicate catalyst employed in the process for oligomerization contains nickel, calculated as nickel oxide NiO, in an amount of 0.1% to 51% by weight, preferably 1% to 42% by weight, particularly preferably 5% to 33% by weight, based on the total composition of the mesoporous nickel-containing aluminosilicate catalyst.

5. Process according to any of Claims 1 to 4, wherein the mesoporous nickel-containing aluminosilicate catalyst employed in the process for oligomerization has an Si/Al ratio of 1 to 100, preferably 2 to 80, particularly preferably of 3 to 50.

6. Process according to any of Claims 1 to 5, wherein the mesoporous nickel-containing aluminosilicate catalyst contains no titanium dioxide and/or no zirconium dioxide.