Patent claims

1. A process for the preparation of an alkyl mercaptan, wherein an alkyl alcohol is reacted with hydrogen sulfide in the presence of a catalyst comprising or consisting of a support and from 5 to 20 wt.-% of a promoter, based on the total weight of the catalyst, wherein the support comprises or consists of titanium dioxide, zirconium dioxide, and/or a mixture thereof, and the promoter is an alkali metal oxide.

2. The process according to claim 1, wherein at least a part of the support of the catalyst has a tetragonal phase.

3. The process according to claim 1 or 2, wherein the alkali metal of the catalyst is sodium, potassium, cesium or rubidium.

4. The process according to any of claims 1 to 3, wherein the promoter of the catalyst is cesium oxide.

5. The process according to any of claims 1 to 4, wherein the catalyst is a full catalyst.

6. The process according to any of claims 1 to 5, wherein the catalyst is a core-shell catalyst.

~~7. The process according to any of claims 1 to 6, wherein the catalyst is obtained by a process comprising the steps of~~

~~a) impregnating a support comprising or consisting of titanium dioxide, zirconium dioxide, and/or a mixture thereof with an aqueous solution comprising a soluble alkali compound,~~
~~b) drying the impregnated support obtained from step a), and~~
~~c) calcinating the dried impregnated support of step b) to provide the catalyst.~~

~~8. The process according to claim 7, wherein the steps a) to c) of the process by which the catalyst is obtained are repeated at least once.~~

~~9. The process according to claim 7 or 8, wherein the process by which the catalyst is obtained further comprises the step~~

~~d1) shaping the catalyst obtained from step c) to give a full catalyst.~~

~~10. The process according to claim 7 or 8, wherein the process by which the catalyst is obtained further comprises the step~~

~~d2) applying the catalyst obtained from step c) to a core to provide a core-shell catalyst.~~

~~11~~7. The process according to any of claims 1 to ~~10~~6, wherein the alkyl alcohol to be reacted is methanol and the alkyl mercaptan to be prepared is methyl mercaptan.