value in the $H_2S$ combustion, this reduces the overall economic viability of the process.

It is an object of the embodiments disclosed herein~~present invention~~ to provide an economically viable process for preparing methyl mercaptan from mixtures which comprise especially hydrocarbons and sulfur, wherein the hydrogen sulfide obtained is utilized in an economically viable manner. The carbon disulfide which forms as an intermediate can also originate from other sources.

The disclosure~~invention~~ provides a process for preparing methyl mercaptan, comprising the steps of

a) hydrogenating carbon disulfide with water and

b) reacting the hydrogen sulfide formed in this reaction

with at least one of the compounds selected from the group consisting of aldehydes, ethers, alcohols, CO, $CO_2$, $CO+CO_2$ and COS, in the presence of a metal oxide catalyst. The reaction with the carbon oxides is effected in the presence of hydrogen. The further oxygen compounds mentioned should preferably be used as a co-feed in this case.

In a first aspect, there is provided a process for preparing methyl mercaptan, comprising the steps of a) hydrogenating carbon disulfide in the presence of a catalyst and b) reacting the hydrogen sulfide formed in this reaction with at least one of the compounds selected from the group consisting of alcohols, ethers, aldehydes, COS, CO, $CO_2$, $CO+ CO_2$, in the presence of a metal oxide catalyst, wherein hydrogen is only added if required, characterized in that molybdate or tungstate comprising catalysts comprising transition metal and alkali metal oxides or sulfides as promoters are used.

This process can preferably follow the preparation of the carbon disulfide. Carbon disulfide can explicitly also be obtained via the disproportionation of carbonyl sulfide (COS) to carbon disulfide ($CS_2$) and carbon dioxide.

The reaction mixture obtained in the preparation of carbon disulfide comprises, in addition to the in the any unconverted sulfur and hydrocarbon(s), carbon disulfide, the hydrogen sulfide formed simultaneously and possibly further compounds, and is referred to as the reactant mixture.

In a preferred embodiment, the methyl mercaptan formed in the hydrogenation of the carbon disulfide is removed before