

Abstract**Production of at least 1-hexene and octene from ethene**

5 The invention is concerned with the production of 1-hexene and octenes from ethene. 1-Butene is optionally also to be produced. The problem addressed by the present invention is that of developing a process for producing 1-hexene from ethene by MTHxE etherification to achieve better chemical utilization of the employed carbon atoms. This problem is solved by catalytic retrocleavage of MTHxE into the C₆ olefins and the alcohol, reuse of the alcohol in the etherification and reaction of the obtained C₆ olefins with ethene to afford C₈ olefins. In this way the alcohol is not
10 lost from the process but rather is internally recirculated as a derivatizing agent. The less attractive C₆ olefins from the cleavage product are upgraded to octene with further ethene in order to provide a further commercial product.

Figure 1 relating to abstract