

Abstract**Oligomerization of ethene in supercritical mode**

5 The invention is concerned with the oligomerization of supercritical ethene. An essential aspect of
the invention is that of mixing ethene with an inert medium and setting the conditions in the reaction
such that both ethene and inert medium are supercritical. This is because the solubility for ethene
in the inert medium is greater in the supercritical state, such that more ethene is dissolved in the
10 supercritical inert medium than in a liquid solvent. The process regime in the supercritical state
therefore enables the use of a much higher proportion of ethene in a homogeneous mixture of
ethene and inert medium than is possible on the basis of the thermodynamic solubility restriction in
a purely liquid hydrocarbon stream. In this way, the space-time yield is distinctly enhanced. Since a
greater amount of ethene can be passed into the reactor, it is possible as a result to better exploit
15 the apparatus volume compared to a liquid phase process. The inert medium used may, for
example, be isobutane.

(No drawing to be published)