

ABSTRACT

5 Provided is a method for highly selectively producing 7-octenal with a
high conversion ratio through the isomerization reaction of 2,7-octadiene-1-ol.
Specifically, provided is a method for producing 7-octenal, in which a copper-
based catalyst is obtained by reducing a copper-based catalyst precursor
described below, and an isomerization reaction of 2,7-octadiene-1-ol is caused in a
gas phase using a fixed-bed reaction in the presence of the obtained copper-based
10 catalyst.

 The copper-based catalyst precursor: a copper-based catalyst precursor
obtained by calcining a mixture containing copper, iron, aluminum, and calcium
silicate in which an atomic ratio of iron and aluminum to copper $[(\text{Fe}+\text{Al})/\text{Cu}]$ is
in a range of 1.71 to 2.5, an atomic ratio of aluminum to iron $[\text{Al}/\text{Fe}]$ is in a range
15 of 0.001 to 3.3, and calcium silicate is contained in a range of 15% by mass to 65%
by mass at a temperature in a range of 500°C to 1,000°C.