

ABSTRACT OF THE DISCLOSURE

Disclosed is a novel catalyst for use in producing a carboxylic ester from an aldehyde, an alcohol and molecular oxygen, which comprises a carrier having supported thereon Pd and Pb in a Pd/Pb atomic ratio (S) of $3/0.7 \leq S \leq 3/1.3$, and which exhibits a maximum intensity peak at a diffraction angle (2θ) in the range of from 38.55° to 38.70° in a powder X-ray diffraction pattern thereof, wherein the peak is ascribed to the (111) crystal face diffraction of a Pd-Pb intermetallic compound.

The catalyst can be efficiently produced by subjecting a catalyst precursor comprising a carrier having supported thereon a reducible Pd compound or a mixture of a reducible Pd compound and a reducible Pb compound to a reduction treatment in the presence of lead ions and at least one compound selected from a lower fatty acid, an alkali metal salt and an alkaline earth metal salt, or by subjecting a catalyst prepared by a conventional method, which comprises a carrier having supported thereon Pd or a mixture of Pd and Pb, to an activation treatment. By using the catalyst, the desired carboxylic ester can be produced with high selectivity, while suppressing the formation of by-products, even under high temperature and high aldehyde concentration conditions. Further, in the continuous production of a carboxylic ester using the catalyst, stabilization of the catalyst can be effectively performed, so that a desired carboxylic ester can be stably produced with high efficiency and in high yield for a prolonged period of time.