

The preparation of carboxylic acids or their esters by
carboxylation of olefins

5 Abstract

A process for preparing carboxylic acids or their esters from
olefins and carbon monoxide in the presence of water or alcohols
at from 100 to 270°C under from 30 to 100 bar, comprises employing
10 as halogen-free catalyst system a mixture of

- a) nickel or a nickel compound,
- 15 b) at least one metal from the group of chromium, molybdenum,
tungsten, rhenium, ruthenium, osmium, rhodium, iridium,
palladium, platinum, silver, gold or a compound of these
metals and
- 20 c) at least one nonmetallic compound from the group of tertiary
or quaternary nitrogen, phosphorus or arsenic compounds and
of nitrogenous heterocyclic compounds.

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