

ABSTRACTIRIDIUM-CATALYSED CARBONYLATION PROCESS FOR THE
PRODUCTION OF A CARBOXYLIC ACID

A process for the production of a carboxylic acid having $n+1$ carbon atoms comprises (a) carbonylating with carbon monoxide in a first reaction zone at elevated temperature and pressure an alkyl alcohol having n carbon atoms and/or a reactive derivative thereof to produce a carboxylic acid having $n+1$ carbon atoms in a liquid reaction composition comprising carboxylic acid product, an iridium catalyst, an alkyl halide co-catalyst, water, an ester of the carboxylic acid product and the alkyl alcohol, and optionally one or more promoters, (b) withdrawing from the first reaction zone at least a portion of the liquid reaction composition together with dissolved and/or entrained carbon monoxide, and passing at least a portion of the withdrawn liquid reaction composition and carbon monoxide to a second reaction zone, ((c) reacting at least 1% of the dissolved and/or entrained carbon monoxide in the withdrawn reaction composition by further carbonylation at elevated temperature and pressure in the second reaction zone to produce further carboxylic acid product.

FIG. 1