PATENT SPECIFICATION

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Complete not Accepted.

3409

COMPLETE SPECIFICATION.

Process for the Catalytic Manufacture of Synthetic Acetic Acid.

We, SOCIÉTÉ FRANÇAISE DE CATALYSE GÉNÉRALISÉE, a Joint-Stock Company duly organized according to the French Laws, of 30, Avenue des Champs-Elysées, Paris, France, Manufacturers, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention has for main object a process for the catalytic manufacture of synthetic acetic acid.

The manufacture of acetic acid, by starting from its constituent elements CO and H_2, necessitates, in addition to the temperature and pressure necessary for the reaction, the presence of a catalyser allowing to obtain, at a relatively low temperature, necessary for a proper equilibrium, acetic acid $C_2H_4O_2$.

The process in accordance with the invention substantially consists in applying to the reaction:

$$2CO + 2H_2 = C_2H_4O_2$$

one of the catalysers hereinafter indicated.

The first group of catalysers will be constituted by the bodies: nickel, cobalt, chromium in the form of metal, oxide or carbonate, taken separately or mixed with each other two together or three together. The bodies Ni, Co, Cr, when they are mixed in the form of metal, can be prepared in the form of alloys and, in these conditions, they can be used in any form whatever; wire, shot, filings, etc.

The second group of catalysers will be constituted by the bodies Ni, Co, Cr, mixed together or separately with carbonate of manganese; Ni, Co, and Cr can be used in the form of metal, oxide or carbonate and thus constitute the following general mixtures:

$Ni + CO_3MnNi + Cr + CO_3Mn$
$Ni + Cr + Co + CO_3$
$Co + CO_3MnNi + CO + CO_3Mn$
$Cr + CO_3MnCr + CO + CO_3Mn$

[*Price* 1/-]

The third group of catalysers will be constituted by carbonate of manganese CO_3Mn.

A modus operanti of the synthesis of acetic acid is described hereinafter, by way of example only.

In a metal tube, the interior of which will be lined with copper for instance, and which will be heated by means of electric resistances, will be placed one of the catalytic masses or mixtures above described. In this tube will be introduced, at a suitable pressure and temperature, the mixture $2CO + 2H_2$, so that, in its movement, it comes in contact with the catalyser. A condensing device, at the lower part of the tube, will allow to collect the acid formed.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. Process for the catalytic manufacture of synthetic acetic acid, which mainly consists in utilising, as catalysers: either nickel, chromium or cobalt, taken separately, or mixed two together or three together, these bodies Ni, Cr, Co can be used in the form of metal, oxide or carbonate, and the mixtures in the form of metal, as alloys or not.

2. Process for the catalytic manufacture of synthetic acetic acid, which consists in utilising, as catalysers, a mixture of nickel, chromium or cobalt, in the form of metal, oxide or carbonate, together or separately, mixed with carbonate of manganese.

3. Process for the catalytic manufacture of synthetic acetic acid, which consists in utilising, as catalysers, carbonate of manganese CO_3Mn.

4. Process for the catalytic manufacture of synthetic acetic acid, substantially as hereinbefore described.

Dated this 26th day of July, 1929.

JOHN P. O'DONNELL & Co.,
Agents for Applicants,
47, Victoria Street, Westminster, S.W. 1.

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