PATENT SPECIFICATION

Convention Date (Germany): March 10, 1936.

491,927

Application Date (In United Kingdom): March 9, 1937. No. 6985/37.

Complete Specification Accepted: Sept. 9, 1938.

1622

COMPLETE SPECIFICATION

Process for the Production of Aliphatic Carboxylic Acids

We, ARTHUR IMHAUSEN and CLEMENS STAENNINGS, both German Citizens, trading as the Firm MÄRKISCHE SEIFEN-INDUSTRIE, of 50, Ruhrstrasse, Witten/Ruhr, Germany, 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:—

This invention relates to a process for the production of aliphatic carboxylic acids from hydrocarbons by oxidation with oxidising gases.

It has already been proposed to utilise the hydrogenation products of carbon and carbon compounds as originating materials for the production of the corresponding carboxylic acids. These hydrogenation products have however the disadvantage of containing a high proportion of such hydrocarbons as do not form straight chains.

Another proposal has therefore already been made to employ for the foregoing purpose originating materials consisting practically exclusively of aliphatic hydrocarbons with the practical absence of naphthene or cyclic hydrocarbons.

It has now been ascertained in accordance with the present invention, that technically valuable carboxylic acids with very little undesirable by-products can be obtained, by using as originating material the products which are obtained by the hydrogenation of gaseous oxides of carbon, for example the products from the Fischer synthesis. The fatty acid mixture obtained from this raw material has an extremely favourable composition, as is apparent from the following test Example.

	Saponification Number		
	Calculated.	Found.	%
Stearic Acid	188	193	21.5
Palmitic Acid	214	214.2	13.8
Myristic Acid	238	240.5	16
Lauric Acid	262	266	21
Capric Acid	301	307	16
Acids below Capric Acid	—	—	5.5

The individual members were isolated in this example by way of their methyl esters.

The oxidation can be carried out in any desired manner, preferably in the presence of reaction accelerators, of which the heavy metal salts of acrylic unsaturated carboxylic acids of the type $C_nH_{2n-x}O_2$, in which $_n$ is greater than 15 and $_x$ is greater than 5, have proved especially suitable.

WORKING EXAMPLE.

1000 kgs. of a hydrogenation product obtained by the Fischer synthesis with a distillation temperature above 250° C. are treated with a suitable catalyst and a vigorous current of air is passed through at a temperature of 115° C. The oxidation is conducted accordingly until a saponification number of 150 is reached, whereupon the unsaponifiable matter is separated off and the fatty acid distilled. A light yellow product is obtained with an odour resembling cocoanut oil.

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). A process for the production of aliphatic carboxylic acids which comprises subjecting hydrocarbons obtained by the hydrogenation of oxides of carbon to oxidation with oxidising gases in the presence or absence of catalysts.

2). A method of carrying out the process claimed in claim 1, in which the oxidation is carried out in the presence of reaction accelerators, especially of heavy metal salts of acrylic unsaturated carboxylic acids of the type $C_nH_{2n-x}O_2$ in which $_n$ is greater than 15 and $_x$ is greater than 5.

3). The process for the production of aliphatic carboxylic acids, substantially as described.

Dated this 9th day of March, 1937.

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Chancery Lane, London, W.C.2,
Agents for the Applicants.

Reference has been directed, in pursuance of Section 8, sub-section (2) of the Patents and Designs Acts, 1907 to 1938, to Specification No. 467,328.

Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1938.

[Price

CORRECTION OF CLERICAL ERROR

SPECIFICATION No. 491,927

The following correction is in accordance with the decision of the Assistant Comptroller, acting for the Comptroller-General, dated the twenty-fourth day of January, 1939:-

Page 1, line 2, *for* "Staennings" *read* "Stallmeyer".

THE PATENT OFFICE,
February, 20th 1939.