PATENT SPECIFICATION

Application Date: May 6, 1937. No. 12957/37. **490,785**

(Patent of Addition to No. 478,317: dated July 14, 1936).

Complete Specification Left: May 3, 1938.

Complete Specification Accepted: Aug. 22, 1938.

PROVISIONAL SPECIFICATION

Improvements in the Manufacture and Production of Oxidation Products from Paraffin Hydrocarbons of High Molecular Weight

I, GEORGE WILLIAM JOHNSON, a British Subject, of 47, Lincoln's Inn Fields, in the County of London, Gentleman, do hereby declare the nature of this invention (which has been communicated to me from abroad by I. G. Farbenindustrie Aktiengesellschaft, of Frankfort-on-Main, Germany, a Joint Stock Company organised under the Laws of Germany), to be as follows:—

In the specification No. 19560 A.D. 1936 there is described a process for the manufacture and production of oxidation products from paraffin hydrocarbons of high molecular weight according to which the oxidation of the paraffin hydrocarbons is carried out at temperatures not above 115° Centigrade in the presence of manganese-alkali compound, such as tain the manganese in the anion and the alkali as the cation.

My foreign correspondents have now found that the oxidation can be carried out in a very advantageous manner by using the manganese-alkali compounds in solution. As solvents there may be mentioned water or suitable organic solvents, as for example acetone, methyl alcohol, ethyl alcohol, methyl ethyl ketone, acetonitrile and pyridine, or mixtures of water and watersoluble organic solvents. For example the manganese-alkali compound, such as potassium permanganate, may be dissolved in from 5 to 10 times its amount of water or in 5 to 20 times its amount of one of the said organic solvents and the said solutions added to the paraffin hydrocarbons to be oxidised. After good and thorough mixing, the water or organic solvent is vaporised by gentle heating while stirring or removed from the mixture by leading air or other gases in. The addition of the solution of the manganese-alkali compound to the products to be oxidised may take place in the oxidation vessel. In this case the solvent is removed at the commencement of the oxidation by blowing in the oxidising gas. For the rest, the oxidation is carried out in the manner described in the said specification No. 19560 A.D. 1936.

The use of the manganese-alkali compound in solution offers the advantage that the oxidation commences at relatively low temperatures after blowing in the oxidising gas for only a short time and proceeds very uniformly.

The following Examples will further illustrate the nature of this invention but the invention is not restricted to these Examples. The parts are by weight.

EXAMPLE 1.

100 parts of brown coal paraffin wax are well mixed with a solution of 0.12 part of potassium permanganate in 1.25 parts of water and oxidised with air or oxygen at from 112° to 114° Centigrade after introduction into the reaction vessel. The oxidation commences even after 15 minutes and a product having an acid value of 80 is obtained after working for about 8 hours.

EXAMPLE 2.

100 parts of petroleum paraffin wax have added thereto a solution of 0.12 part of potassium permanganate in 2 parts of acetone. The mixture is stirred for about 15 minutes at 125° Centigrade and then treated with air at from 112° to 114° Centigrade after introduction into the reaction vessel. The oxidation commences immediately and a product having an acid value of 81 is obtained even after from 7 to 8 hours.

Dated this 6th day of May, 1937.

J. Y. & G. W. JOHNSON,
47, Lincoln's Inn Fields, London, W.C.2,
Agents.

COMPLETE SPECIFICATION

Improvements in the Manufacture and Production of Oxidation Products from Paraffin Hydrocarbons of High Molecular Weight

I, GEORGE WILLIAM JOHNSON, a British Subject, of 47, Lincoln's Inn Fields, in the County of London, Gentleman, do hereby declare the nature of this invention (which has been communicated to me from abroad by I. G. Farbenindustrie Aktiengesellschaft, of Frankfort on-Main, Germany, a Joint Stock Company organised under the Laws of Germany), and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

In the specification No. 478,317 there is described a process for the manufacture and production of oxidation products from paraffin hydrocarbons of high molecular weight according to which the oxidation of the paraffin hydrocarbons is carried out at temperatures not above 115° Centigrade in the presence of manganese-alkali compounds which contain the manganese in the anion and the alkali as the cation.

My foreign correspondents have now found that the oxidation can be carried out in a very advantageous manner by using the manganese-alkali compounds in solution. As solvents there may be mentioned water or suitable organic solvents, as for example acetone, methyl alcohol, ethyl alcohol, methyl ethyl ketone, acetonitrile and pyridine, or mixtures of water and watersoluble organic solvents. For example the manganese-alkali compound, such as potassium permanganate, may be dissolved in from 5 to 10 times its amount of water or in 5 to 20 times its amount of one of the said organic solvents and the said solutions added to the paraffin hydrocarbons to be oxidised. After good and thorough mixing, the water or organic solvent is vaporised by gentle heating while stirring or removed from the mixture by leading air or other gases in. The addition of the solution of the manganese-alkali compound to the products to be oxidised may take place in the oxidation vessel. In this case the solvent is removed at the commencement of the oxidation by blowing in the oxidising gas. For the rest, the oxidation is carried out in the manner described in the said specification No. 478,317.

The use of the manganese-alkali compound in solution offers the advantage that the oxidation commences at relatively low temperatures after blowing in the oxidising gas for only a short time and proceeds very uniformly.

The following Examples will further illustrate how the said invention may be carried out in practice but the invention is not restricted to these Examples. The parts are by weight.

EXAMPLE 1.

100 parts of brown coal paraffin wax are well mixed with a solution of 0.12 part of potassium permanganate in 1.25 parts of water and oxidised with air or oxygen at from 112° to 114° Centigrade after introduction into the reaction vessel. The oxidation commences even after 15 minutes and a product having an acid value of 80 is obtained after working for about 8 hours.

EXAMPLE 2.

100 parts of petroleum paraffin wax have added thereto a solution of 0.12 part of potassium permanganate in 2 parts of acetone. The mixture is stirred for about 15 minutes at 125° Centigrade and then treated with air at from 112° to 114° Centigrade after introduction into the reaction vessel. The oxidation commences immediately and a product having an acid value of 81 is obtained even after from 7 to 8 hours.

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

1. An improvement in or a modification of the process as described in the specification No. 478,317 which consists in employing the alkali compounds of manganese, which contain the manganese in the anion and the alkali as cation, dissolved in water or organic solvents.

2. The process for the manufacture and production of oxidation products from paraffin hydrocarbons of high molecular weight substantially as described in each of the foregoing Examples.

3. Oxidation products of paraffin hydrocarbons of high molecular weight when obtained according to the process particularly described and ascertained.

Dated this 3rd day of May, 1938.

J. Y. & G. W. JOHNSON,
47, Lincoln's Inn Fields, London, W.C.2,
Agents.

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