

UNITED STATES PATENT OFFICE.

PAUL SEIDEL, OF LUDWIGSHAFEN, AND LUDWIG PREUSS, OF BONN, GERMANY, ASSIGNORS TO THE BADISCHE ANILIN AND SODA FABRIK, OF LUDWIGSHAFEN, GERMANY.

PROCESS OF MAKING ANTHRANILIC ACID.

SPECIFICATION forming part of Letters Patent No. 661,821, dated November 13, 1900.

Application filed January 10, 1900. Serial No. 985. (No specimens.)

To all whom it may concern:

Be it known that we, PAUL SEIDEL, doctor of philosophy, a subject of the King of Saxony, residing at Ludwigshafen-on-the-Rhine, in the Kingdom of Bavaria, and LUDWIG PREUSS, a subject of the Grand Duke of Hesse, residing at Bonn, in the Kingdom of Prussia, Germany, have invented new and useful Improvements in the Manufacture of Anthranilic Acid, of which the following is a specification.

Our invention relates to an improvement in the art of making anthranilic acid. We have found that ortho-nitro-toluene is capable of yielding anthranilic acid when it is treated with an alcoholic or aqueous solution of caustic alkali. We have also found that the yield of anthranilic acid can be in some cases increased if the treatment with the solution of caustic alkali be supplemented by a treatment with a reducing agent, such as ammonium sulfid.

In the following description we illustrate the nature of our invention by means of examples showing how our invention may be carried into effect, without, however, confining ourselves to the exact proportions and conditions there given. The parts are by weight.

Example 1—Production of anthranilic acid from ortho-nitro-toluene by treatment with alcoholic alkali.—Mix together one hundred and thirty-seven parts of ortho-nitro-toluene, one hundred and twenty parts of caustic soda, and five hundred parts of alcohol. Heat this mixture until it boils in a vessel provided with an inverted condenser, and maintain the boiling until the smell of the ortho-nitro-toluene has practically disappeared. Saturate the reaction product with ammonia and sulfureted hydrogen and then boil again for several hours in order to complete the conversion to anthranilic acid. Next evaporate to dryness to drive off the excess of ammonium sulfid and alcohol. Treat the reaction product with water, filter, if necessary, acidify with acetic acid, and precipitate the anthranilic acid with copper sulfate. Isolate and purify the acid in any known way.

Example 2—Production of anthranilic acid from ortho-nitro-toluene by treatment with aqueous alkali.—Heat about one hundred parts of caustic-soda lye (containing about thirty-five per cent. real NaOH) in a closed vessel provided with a stirrer. Then add while stirring and maintaining the same temperature, gradually, one hundred parts of ortho-nitro-toluene. Maintain the temperature while continually stirring until an examination of test portions shows that the greater part of the nitro-toluene has disappeared. This usually takes place in about twelve hours. Then distil off the remainder of the oil with steam and separate the anthranilic acid from the aqueous solution remaining behind in any known way.

We claim—

1. The process of producing anthranilic acid by treating ortho-nitro-toluene with a solution of caustic alkali and subsequently with a reducing agent, all substantially as described.

2. The process of producing anthranilic acid by treating ortho-nitro-toluene with a solution of caustic soda and then with ammonium sulfid, all substantially as described.

3. The process of producing anthranilic acid by treating ortho-nitro-toluene with a solution of caustic soda, all substantially as described.

4. The process of producing anthranilic acid by treating ortho-nitro-toluene with a caustic alkali, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of the subscribing witnesses.

PAUL SEIDEL.
LUDWIG PREUSS.

Witnesses as to the signature of the said Paul Seidel:

J. L. HEINKE,
PERCY J. JONES.

Witnesses as to the signature of the said Ludwig Preuss:

ARTHUR BINZ,
A. KUFFERATH.