

# ALIEN PROPERTY CUSTODIAN

## PROCESS FOR THE PRODUCTION OF CHLORO-2-BUTADIENE, 1,3 (CHLORO- PREN)

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The method relates to the production of chloropren from acetylene and hydrogen chloride or from vinylacetylene and hydrogen chloride at a temperature, which is higher than 110° C. According to the invention the gases to be reacted are conducted over a catalyst, which consists of a solid carrier, such as for instance kaolin, pumicestone or silicagel impregnated with cuprous- and ammonium-chloride. The employment of cuprous- and ammonium-chloride without carrier in solution to the synthesis of chloropren from vinylacetylene and hydrogen chloride is known. In a former patent of the inventor a catalyst is mentioned for the direct synthesis of chloropren, which catalyst consists of cuprous- and ammonium-chloride strewed in powderous state on active coal. For the direct synthesis of chloropren from acetylene and hydrogen chloride or for the synthesis of chloropren from vinylacetylene and hydrogen chloride there has never been used a catalyst of the above described composition. The supposition, that at higher temperature compounds with higher content of chlorine (for instance dichlorine butene) will form has proved to be incorrect.

### Example 1

Shaped bodies are pressed from moist kaolin and impregnated with a solution of 200 g cuprous-chloride and 100 g ammonium-chloride in 100 g water. The shaped bodies thus impregnated are dried in a flow of hydrogen or nitrogen. Over 450 cm<sup>3</sup> of these shaped bodies a mixture of 2 parts acetylene and 1 part hydrogen chloride is conducted at 180°-200° C at a speed of 400 cm<sup>3</sup> per minute. In the receiver collects, within a short time, 100 cm<sup>3</sup> of a liquid which contains more than 80% chloropren. The content in dichlorine-butene does not exceed 10%.

### Example 2

From similar parts of moist kaolin and infusorial earth shaped bodies are produced, which

are impregnated with a similar solution as that indicated in example 1 and dried in a flow of hydrogen. Over 450 cm<sup>3</sup> of these shaped bodies a mixture of 2 parts acetylene and 1 part hydrogen chloride is conducted at 180°-200° C at a speed of 400 cm<sup>3</sup> per minute. In the receiver collects then within a short time 100 cm<sup>3</sup> of a liquid, which at a distillation test showed 90% of chloropren.

### Example 3

Over shaped bodies, which were prepared in the same manner as in the example 1 or 2, a mixture of similar parts vinylacetylene and hydrogen chloride was conducted at 180° C at a speed of 400 cm<sup>3</sup> per minute. In the receiver chloropren, which contained approximately 10% dichlorine-butene, condensed.

### Example 4

The experiment was carried out in the same manner as in the example 3, but the temperature was increased to 200° C and the speed to 500 cm<sup>3</sup> per minute. Also in this instance almost pure chloropren was obtained.

### Example 5

Pumicestone was impregnated with a solution of cuprous- and ammonium-chloride same as the shaped bodies from kaolin in example 1 and dried in a flow of hydrogen. A tube was filled with pieces which were smaller than peas and 2 parts acetylene and 1 part hydrogen-chloride were conducted through the tube at 200° C. In the receiver almost pure chloropren condensed.

A carrier is preferably employed, which itself shows no activity. By the invention the following advantages are obtained: The reaction takes place very rapidly. Corrosions are reduced to a minimum, as dry gases are employed. The catalyst has a great duration and the reaction product possesses a great purity.

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