molar excesses of HCN have to be used. The excess amounts of HCN are lost in the methods described and are a great economic disadvantage.

Furthermore, the catalysts used in the methods described also promote the formation of unwanted byproducts from the aldehydes used, which lead to contamination of the product which cannot be tolerated.

Object of the invention

It was the object of this invention to prepare a cyanohydrin that is storage stable for a relatively long time, in particular at least 4 weeks, preferably MMP-cyanohydrin, and to provide a method which catalyzes the reaction of aldehydes, in particular of MMP with hydrogen cyanide. The method should at the same time show marked improvements with regard to yields with respect to the aldehyde used and hydrogen cyanide. In particular, the method should provide a product having a very low molar residual MMP content. Furthermore, the method, in contrast to the methods described in the literature, should succeed as far as possible without further addition of water.

Description of the invention

In a first aspect, there is provided a mixture containing 86 to 97% by weight of 2-hydroxy-4-methylthiobutyronitrile, 2 to 14% by weight of water, 0.05 to 0.5% by weight of HCN and having a pH of 1 to 4, measured using a pH electrode at 23°C.

In a second aspect, there is provided a method for

producing a mixture containing 2-hydroxy-4-(methylthio)butyronitrile as defined herein, characterized in that a) 3-methylmercaptopropionaldehyde is reacted with hydrogen cyanide in the presence of a base as catalyst to form the nitrile and during which and/or thereafter b) the water content, if desired, is set by water addition at 2 to 14% by weight, preferably 3 to 12% by weight, the HCN content if desired is set by HCN addition to 0.05 to 0.5% by weight of HCN, preferably 0.1 to 0.3% by weight, and thereafter c) the pH, if desired, is set by acid addition to pH 1-4, preferably to pH 2 to 3.

In a third aspect, there is provided a mixture containing 2-hydroxy-4-(methylthio)butyronitrile produced as defined herein.

In fourth aspect, there is provided the use of a mixture containing 2-hydroxy-4-(methylthio)butyronitrile as defined herein for producing D,L-methionine or 2-hydroxy-4-methylthiobutyronitrile acid.

In a fifth aspect, there is provided the use of a mixture containing 2-hydroxy-4-(methylthio)butyronitrile as defined herein as storage-stable form.

These and further objects are achieved by a

mixture containing 86 to 97% by weight of 2-hydroxy-4-methylthiobutyronitrile, 2 to 14% by weight of water, 0.05 to 0.5% by weight of HCN and having a pH of 1 to 4, measured using a pH electrode at 23°C, and a method for production thereof.