storage-stable cyanohydrin in which the method should at the same time show marked improvements with regard to yields with respect to the aldehyde used and to the hydrogen cyanide.

Summary

In an aspect, there is provided a method for producing 2-hydroxy-4-(methylthio)butyronitrile, in which 3-methylmercaptopropionaldehyde is reacted with hydrogen cyanide in the presence of a base as catalyst in a main reaction zone to form the nitrile and residual amounts of gaseous hydrogen cyanide which leave the main reaction zone are absorbed in an absorption and post-reaction zone comprising a device for contacting a gas with a liquid and containing a mixture of 3-methylmercaptopropionaldehyde and catalyst and optionally 2-hydroxy-4-(methylthio)butyronitrile and are further reacted, wherein

the mixture contained in the absorption and post-reaction zone originates at least partially from the main reaction zone and wherein the molar ratio of prussic acid to 3-(methylthio) propanal is 0.99 to 1.01.

Description of the invention

These and further objects are achieved by a method for the production of 2-hydroxy-4-methylthiobutyronitrile, in which 3-(methylmercapto)propionaldehyde is reacted with hydrogen cyanide in the presence of a base as catalyst in a main reaction zone to form the nitrile and residual amounts of gaseous hydrogen cyanide (HCN), which leave the main

reaction zone are absorbed in an absorption and post-reaction zone containing a mixture of 3-(methylmercapto)-propionaldehyde and catalyst and optionally 2-hydroxy-4-(methylthio)butyronitrile and are further reacted.

The residual content of HCN reacts, owing to the absorption or condensation with the aldehyde to form the cyanohydrin. Owing to the effective removal of the HCN from the gas phase, it is possible, in contrast to the methods known in the literature to use a molar ratio of hydrogen cyanide to aldehyde of 0.99 to 1.01, which is a great economic advantage for the method.

The invention relates, in particular, to a method for the addition reaction of hydrogen cyanide to MMP in the presence of a base, in particular an amine, wherein the method is arranged in such a manner that residual contents of gaseous hydrogen cyanide are absorbed outside a main reaction zone at temperatures of about 0°C to 25°C into a liquid mixture of the aldehyde MMP and the reaction product