

ALIEN PROPERTY CUSTODIAN

RECOVERY OF HYDROCARBONS FROM CHLORINATION WASTE GASES OF HY- DROCARBONS

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The present invention relates to a process for the recovery of hydrocarbons from waste gases in the chlorination of hydrocarbons.

It is known that during the chlorination process of hydrocarbons considerable quantities of the latter escape from the chlorination apparatus together with the waste gases consisting mainly of hydrochloric acid. The hydrochloric acid recovered is thereby contaminated and in addition the chlorination process is rendered less economical by the loss of hydrocarbons.

In the known processes the hydrocarbons contained in the chlorination waste gases are washed out with water simultaneously with the hydrochloric gas leaving the apparatus, thereupon being separated in a known manner from the resulting aqueous hydrochloric acid solution. However, a considerable loss of hydrocarbons cannot be avoided by such an operation method and besides it is not possible in this way to liquefy the hydrochloric gas directly, if desired.

According to the present invention, the hydrocarbons are separated from the chlorination waste gases prior to the absorption or liquefaction of the hydrochloric acid by washing them with an inert organic solvent. Suitable organic solvents may be used such as chlorinated hydrocarbons, especially those which are formed in the course of the chlorination process. Any hydrocarbon absorbed

by the washing agent used can be separated from the latter in any known manner, for instance by fractionated distillation.

Particularly good results as regard a complete washing can be obtained according to the present invention, if the washing agent employed is cooled until the dew point of the hydrocarbons to be washed out of the chlorination gases is reached.

Example.—The waste gases containing hydrochloric acid and benzene obtained during the chlorination process of benzene into monochlorbenzene were washed with monochlorbenzene that had been cooled to -20° C. The amount of benzene contained in said waste gases could be recovered almost quantitatively by fractionated distillation of the washing liquid and the remaining hydrochloric acid gas was recovered in a substantially purified condition. The yield of washed benzene amounted to 67 parts by weight based on 1000 parts by weight of the initial material. The total loss of benzene as calculated from the quantity of the resulting monochlorbenzene, of the nonchlorinated benzene and of the benzene that had been recovered from the waste gases could be reduced in this manner to the exceedingly low percentages of 0,5%.

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