

Leuna - October 13, 1941.

THE DETERMINATION OF CARBON DISULPHIDE IN BENZENE

The colorimetric method for the determination of CS_2 in city gas using the colored copper salt of the piperidine-carbon disulphide compound has been modified to make it applicable to the determination of carbon disulphide in benzol.

The original method used copper oleate which is soluble in benzene and at low concentrations of carbon disulphide interferes with the colorimetric method because of the color of the copper oleate. It was found possible to use copper sulphate instead of copper oleate and in this case only that quantity of copper is dissolved in the benzol which is bound to the carbon disulphide-piperidine complex.

To 10 cc. of the benzol sample is added 2 cc. of piperidine solution (1% solution in monochlorobenzene) and 5 cc. of an aqueous 15% $CuSO_4$ solution and the mixture is shaken for 1 minute. The primary reaction product from the reaction of carbon disulphide and piperidine is a compound analogous to diethyldithiocarbamic acid which subsequently reacts with copper and forms a brown or, in strong dilution, yellow copper salt which remains in solution. The color is compared as usual with two or three samples prepared with solutions of known carbon disulphide content. The colors of the solutions are compared in a colorimeter or photometer.

The method is applicable to concentrations of carbon disulphide ranging from $1 \cdot 10^{-7}$ - $5 \cdot 10^{-6}$ %, but can probably be extended to 1%.