

NOTE ON THE COLOR OF CHLORINE SOLUTIONS.

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SOME time ago it was noticed that upon passing chlorine into ethyl alcohol to make chloral, the liquid finally separated into a lower yellow layer, and an upper green layer. The upper layer was a grass-green, not a yellowish green.

It seems therefore that chlorine can dissolve with a green color as well as with the usual yellow color. This fact has apparently been overlooked, for a considerable search through the chemical literature has revealed no record of a green-colored solution of chlorine; the matter seemed therefore worth looking into.

Litmus paper was immediately bleached by the green liquid but, upon blowing air through to remove uncombined chlorine, the bleaching power disappeared, the liquid losing its green color and giving simply an acid reaction. The color also disappeared upon passing carbon dioxide through the green liquid and upon standing for several hours exposed to the air. These facts would indicate a true solution of chlorine, chloral, chloroform, carbon disulphide, all giving yellow-colored solutions; no trace of green was observed by the naked eye.

After fractionating the green liquid and passing chlorine into the fractions, the green color reappeared only in the fractions boiling below 94° C., but the result was not satisfactory as the color of the fraction had lost much of the original green brilliancy. This indicates that the solvent is either easily decomposed or that it is very volatile, and that consequently only a small part is caught on distilling. This indication is strengthened by the fact that after several fractionations, the green color is lost entirely and cannot be regained on adding chlorine.

Considerable time has been spent in seeking the conditions most favorable to the formation of the green solution. The best results have so far been obtained by cooling the alcohol to about -15° C. with ice and crystallized calcium chloride while passing chlorine in. These results are preliminary; I intend to carry the investigation to some conclusion and hope to be able to announce the result soon.