

Title: **Synthesis and optimization of a chelate azo dye of Cr(III)**

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Color chemistry has been quite present in our lives, as in the colors of nature, utility objects or simply in the clothes we wear.

For this reason, some years ago, we could see how these dyes were often extracted from plant and animal sources, such as roots of plants or insects, like the famous cochineal.

In short, what we have done is to perform a process of synthesis and optimization of an azoic chelate of chromium(III), which is destined to dyeing leather products.

Regarding the memory, firstly there is a brief explanation of various topics related to the dyeing world; and then, its synthesis and/or characteristic properties in more detail. Finally, we talk about the obtained results and their corresponding reasoning, which have been the followings:

First, the influence on modifying certain molar rates have been studied, increasing the concentration during the synthesis and/or lowering the pH of reaction in some cases and we were able to verify that the yield is very related to the working temperature.

Subsequently, different modifications were analysed in the process: how to form the diazo group indirectly instead of direct, or try to shorten the synthesis steps. In this way, satisfactory results have been obtained, as also negative.

Finally, the effect of adding some additives in small quantities and/or changing a key reagent for another with interesting properties has been evaluated. Obtaining mostly satisfactory results; which together with those concepts mentioned above, should be considered applicable or not to an industrial scale.

Keywords: Dye, azo compound, metal chelate, azo coupling.