



Questioned Documents Section – 2005

J20 Analysis of Kinds of Black Signing Inks

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The College of Police of Liaoning carries out the analysis of 15 types of black signing inks from different factories utilizing thin-layer chromatography and ultraviolet-visible spectrophotometry (UV-Vis).

Thin-layer chromatography was used in the analysis of black signing inks, N,N-dimethyl formamide (DMF) was used as the abstraction reagent and a solution of acetone, ethyl alcohol, and water in the proportions of 8:19:6 was used as the spreading reagent. Paper thin-layer produced better results than using silica thin-layer. Inks containing carbon was difficult to dissolve.

Another method of analysis of the inks was the use of ultraviolet visual spectrophotometry. There were three color marks to show strong absorption at 596nm, 481nm, 537nm, 444nm, and 445nm as their peak values were obviously different. There were various diagrams and features in each type so as to achieve the distinguishing characteristics of the inks examined.

The objective of the experiment shows that paper does not interfere in obtaining the distinguishing results. To sum up, this study is to establish writing time on signing inks.

Black Signing Inks, Analysis of Thin-Layer, Ultraviolet-Visual Spectrophotometry