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A Validation Study of the 1,2-Indandione Reagent for Operational Use in the UK: Part 2 – Optimization of Processing Conditions

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Abstract: This paper contains details of work carried out to identify the most effective processing conditions for the optimized 1,2-indandione/zinc formulation developed for use under UK conditions. Using direct measurements of fluorescence taken from test spots of amino acids and eccrine sweat during oven processing, complemented with experiments on real fingerprints, it was established that processing temperatures above 120°C in the oven were detrimental to the fluorescence of the developed mark. Alternative methods of development to oven processing were found to be effective, but less controllable. High levels of humidification were also found to be detrimental to the fluorescence of 1,2-indandione developed marks, and oven processing at 100°C and 0% relative humidity is therefore recommended for further studies. It has also been shown that 1,2-indandione can develop fingerprints at temperatures as low as 20°C, making it a candidate for use at crime scenes.

Keywords

1,2-indandione, IND, Zinc, Processing Conditions, Optimization

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