

ABSTRACT

Batik is a cultural heritage of Indonesia, rich in meaning and diverse motifs that reflect the history and local traditions. The batik production process, particularly during the dyeing stage, faces challenges related to occupational health and safety (OHS). This study focuses on Batik Rahmat Sidoarjo, which uses chemical dyes such as naphtol and indigosol in the dyeing process, posing health risks, including irritation, organ damage, and potential carcinogenic effects.

Additionally, inadequate workplace conditions exacerbate these risks. The study employs the HIRARC (Hazard Identification, Risk Assessment, and Risk Control) approach to analyze hazards and design OHS-based dyeing procedures to enhance workplace safety. The results identify the risk levels of the dyeing process at Batik Rahmat Sidoarjo into four categories: low, medium, high, and extreme. Evaluation results show that 34% of risks fall into the high category, 44% into the medium category, and 22% into the low category, with no risks in the extreme category.

The highest risks are associated with exposure to hazardous chemicals such as naphtol, Turkish Red Oil, caustic soda, and diazonium salts, as well as hot water heating that could cause burns. Additionally, chemical spills and exposure to fumes pose significant risks to worker health and the environment, while poor wastewater management threatens the ecosystem. Based on these findings, a dyeing procedure guide was developed, including the use of appropriate personal protective equipment (PPE), engineering controls, and effective waste management. This guide aims to improve OHS performance, protect workers, and create a safer and more efficient work environment.

Keyword: batik, HIRARC, K3, risk, procedure

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