Implementasi Keselamatan dan Kesehatan Kerja pada Pabrik Pengolahan Gondorukem di Perhutani Pine
Chemical Industry Pemalang
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# IMPLEMENTASI KESELAMATAN DAN KESEHATAN KERJA PADA PABRIK PENGOLAHAN GONDORUKEM DI *PERHUTANI PINE CHEMICAL INDUSTRY* PEMALANG

Mahesa Putra Pratama[1], Ratih Madya Septiana[2]

## INTISARI

Keselamatan dan Kesehatan Kerja (K3) merupakan aspek fundamental dalam industri pengolahan hasil hutan, termasuk industri pengolahan getah pinus. Perhutani *Pine Chemical Industry* (PPCI) Pemalang merupakan salah satu pabrik pengolahan gondorukem dan terpentin terbesar di Asia Tenggara yang melibatkan proses bersuhu tinggi, bahan kimia berbahaya, dan peralatan bertekanan, sehingga menimbulkan potensi risiko kecelakaan kerja yang cukup tinggi. Penelitian ini bertujuan untuk mengidentifikasi potensi bahaya, menilai tingkat risiko, dan menganalisis implementasi K3 dalam kegiatan pengolahan gondorukem di PPCI Pemalang.

Penelitian dilaksanakan pada bulan Februari 2026 di Pabrik 1 PPCI Pemalang. Pengumpulan data dilakukan melalui observasi lapangan, studi pustaka dan wawancara. Wawancara dilakukan dengan metode sensus terhadap 31 pekerja pabrik menggunakan alat bantu kuesioner. Pengolahan data menggunakan metode *Hazard Identification, Risk Assessment, and Risk Control* (HIRARC) berdasarkan panduan *Ministry of Human Resources Malaysia* (2008), dengan mempertimbangkan parameter kemungkinan dan tingkat keparahan untuk menentukan tingkat risiko setiap potensi bahaya. Analisis data dilakukan dengan pendekatan deskripsi kualitatif dan kuantitatif.

Hasil penelitian menunjukkan bahwa terdapat 54 potensi bahaya yang tersebar di delapan area kerja, terdiri atas bahaya mekanik (31%), kimia (20%), lingkungan (19%), fisik (17%), dan ergonomi (13%). Penilaian risiko menunjukkan 93% potensi bahaya berada pada kategori risiko rendah dan 7% pada kategori risiko sedang, tanpa ditemukan bahaya berkategori risiko tinggi. Implementasi K3 secara umum telah berjalan baik pada aspek SOP, briefing harian, dan monitoring HSE, namun terdapat kesenjangan dalam kepatuhan penggunaan alat pelindung diri (APD), terutama masker, kacamata s*afety*, dan earplug, yang tercatat 0% di seluruh area kerja. Rekomendasi pengendalian disusun berdasarkan hierarki pengendalian risiko yang meliputi rekayasa teknik, pengendalian administratif, dan optimalisasi penggunaan APD.

**Kata Kunci:** HIRARC, kecelakaan kerja, pabrik gondorukem, alat pelindung diri, pengolahan getah pinus

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# IMPLEMENTATION OF OCCUPATIONAL SAFETY AND HEALTH AT ROSIN FACTORY IN PERHUTANI PINE CHEMICAL INDUSTRY PEMALANG

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## ABSTRACT

Occupational Safety and Health (OSH) is a fundamental aspect of the forest product processing industry, including pine resin processing. Perhutani Pine Chemical Industry (PPCI) Pemalang is one of the largest rosin and turpentine processing plants in Southeast Asia, operating high-temperature processes, handling hazardous chemicals, and using pressurized equipment, all of which pose considerable risks of occupational accidents. This study aimed to identify potential hazards, assess risk levels, and analyze the implementation of OSH in rosin processing activities at PPCI Pemalang.

The research was conducted in February 2026 at PPCI Pemalang. Data collection was carried out through field observations, literature review, and interviews. Interviews were conducted using a census method involving 31 factory workers with the aid of a questionnaire. Data were processed using the Hazard Identification, Risk Assessment, and Risk Control (HIRARC) method, following the Ministry of Human Resources Malaysia (2008) guidelines, and considered likelihood and severity to determine the risk level of each identified hazard. Data were analyzed using qualitative and quantitative approaches.

The identification results found 54 potential hazards distributed across eight work areas, comprising mechanical (31%), chemical (20%), environmental (19%), physical (17%), and ergonomic (13%) hazards. Risk assessment indicated that 93% of potential hazards were low risk and 7% moderate risk, with no high-risk hazards identified. OSH implementation was generally well-established, with SOPs, daily briefings, and HSE monitoring in place; however, a significant gap was found in personal protective equipment (PPE) compliance, particularly for masks, safety goggles, and earplugs, which showed 0% usage across all work areas. Risk control recommendations were developed based on the hierarchy of controls, encompassing engineering and administrative controls, as well as optimizing PPE use.

**Keywords:** HIRARC, occupational accident, rosin factory, personal protective equipment, pine resin processing

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