

# **RISK ANALYSIS OF CARBON MONOXIDE GAS EXPOSURE TO PARKING ATTENDANT AT PUSAT GROSIR SURABAYA (PGS)**

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## **ABSTRACT**

Motor vehicles entering and leaving the parking area of the Pusat Grosir Surabaya produce motor vehicle exhaust emissions, namely carbon monoxide gas. Parking attendants in the parking area can be exposed to carbon monoxide gas which is a risk to the health of parking attendants. The parking lot of Pusat Grosir Surabaya is in the form of a spiral building with a closed system. Ventilation that does not cross and there is no exhaust fan causes carbon monoxide gas not to immediately come out into the free air so air circulation in the parking area is not good.

This research is a descriptive study with cross sectional design and uses the Environmental Health Risk Analysis (EHRA) study approach. The sample used is total population as many as 34 people. CO gas sampling was conducted in the basement parking area of Pusat Grosir Surabaya. Risk analysis was used to calculate CO intakes and determine risk characterization in respondents.

The average measurement result of CO gas concentration in the parking area is 1,589 ppm. The CO gas concentration below the threshold value based on the Regulation of the Minister of Manpower of the Republic of Indonesia Number 5 of 2018. The highest intake value obtained from the calculation results is 0.159 mg/kg/day. The risk level value obtained by  $RQ \leq 1$  means that it is in the safe category or is not at risk of health problems for parking attendants.

Concluded that CO gas exposure in the Pusat Grosir Surabaya area is safe or not at risk to health problems of parking attendants. It is recommended for managers to carry out administrative control by rotating work for parking attendants and installing exhaust fans in the parking area, and parking attendants use PPE such as masks to reduce CO gas exposure.

**Keywords :** EHRA, CO exposure, Parking attendant

**References:** 46 (33 journals, 11 books, 2 regulation)

# ANALISIS RISIKO PAJANAN GAS KARBON MONOKSIDA PADA PETUGAS PARKIR DI PUSAT GROSIR SURABAYA (PGS)

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## ABSTRAK

Kendaraan bermotor yang masuk dan keluar area parkir Pusat Grosir Surabaya menghasilkan emisi gas buang kendaraan bermotor yakni gas karbon monoksida. Petugas parkir yang berada di area parkir dapat terpajan gas karbon monoksida yang berisiko terhadap kesehatan petugas parkir. Tempat parkir Pusat Grosir Surabaya berupa bangunan spiral dengan sistem tertutup. Ventilasi yang tidak cross dan tidak terdapat exhaust fan menyebabkan gas karbon monoksida tidak segera keluar ke udara bebas sehingga sirkulasi di area parkir menjadi kurang baik.

Penelitian ini ialah penelitian deskriptif dengan desain *cross sectional* dan mempergunakan pendekatan studi Analisis Risiko Kesehatan Lingkungan (ARKL). Sampel yang dipergunakan ialah total populasi sebanyak 34 orang. Pengambilan sampel gas CO dilaksanakan di area parkir *basement* Pusat Grosir Surabaya. Analisis risiko dipergunakan guna menghitung *intake* CO dan menetapkan karakterisasi risiko pada responden.

Temuan pengukuran rata-rata konsentrasi gas CO di area parkir adalah 1,589 ppm. Konsentrasi gas CO dibawah Nilai ambang Batas (NAB) berlandaskan Peraturan Menteri Ketenagakerjaan RI Nomor 5 Tahun 2018. Nilai *intake* tertinggi yang diperoleh dari hasil perhitungan sebesar 0,159 mg/kg/hari. Nilai tingkat risiko yang didapat  $RQ \leq 1$  yang berarti dalam kategori aman atau tidak berisiko terhadap gangguan kesehatan petugas parkir

Menyimpulkan bahwa paparan gas CO di area parkir Pusat Grosir Surabaya aman atau tidak berisiko terhadap gangguan kesehatan petugas parkir. Disarankan bagi pengelola melakukan pengendalian administratif dengan melakukan rotasi kerja bagi petugas parkir dan pemasangan *exhaust fan* di area parkir, dan petugas parkir menggunakan APD seperti masker untuk mengurangi paparan gas CO.

**Kata kunci** : ARKL, Paparan CO, Petugas parkir

**Daftar Pustaka**: 46 (33 jurnal, 11 buku, 2 peraturan)