

Chemical risk evaluation : a case study in an automotive air conditioner production facility.

Abstract

There has been limited knowledge on worker's exposure to chemicals used in the automotive industries. The purpose of this study is to assess chemical risk and to determine the adequacy of the existing control measures to reduce chemical exposure. A cross sectional survey was conducted in a factory involving installation and servicing of automotive air conditioner units. Qualitative exposure assessment was carried out following the Malaysian Chemical Health Risk Assessment Manual (CHRA). There were 180 employees, 156 workers worked in the production line, which constitutes six work units Tube fin pressed, Brazing, Welding, Final assembly, Piping and Kit II. From the chemical risk evaluation for each work unit, 26 chemical compounds were used. Most of the chemicals were irritants (eye and skin) and some were asphyxiants and sensitizers. Based on the work assignment, 93 out of 180 (51.67%) of the workers were exposed to chemicals. The highest numbers of workers exposed to chemicals were from the Brazing section (22.22%) while the Final Assembly section was the lowest (1.67%). Health survey among the workers showed occurrence of eye irritation, skin irritation, and respiratory irritation, symptoms usually associated with chemical exposure. Using a risk rating matrix, several work process were identified as having 'significant risk'. For these areas, the workers are at risk of adverse health effects since chemical exposure is not adequately controlled. This study recommends corrective actions be taken in order to control the level of exposure and to provide a safe work environment for workers.

Keyword: Chemical exposure; Risk assessment; Automotive air conditioner; Qualitative exposure.