



NATIONAL INSTITUTE FOR
OCCUPATIONAL HEALTH

Division of the National Health Laboratory Service



COMPARISON OF AMENDED OEL-ML IN THE REGULATIONS FOR HAZARDOUS CHEMICAL AGENTS WITH INTERNATIONAL LIMITS

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Healthy, Safe, Happy & Sustainable Workplaces

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SERVICES, INFOR AND TRAINING



A COMPARISON OF THE AMENDED OCCUPATIONAL EXPOSURE LIMITS (MAXIMUM LIMITS) PROMULGATED IN THE REGULATIONS FOR HAZARDOUS CHEMICAL AGENTS WITH INTERNATIONAL LIMITS

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INTRODUCTION

In South Africa, occupational exposure limits (OELs) for hazardous chemical agents are established by the Department of Employment and Labour, and are legally binding standards. The Regulations for Hazardous Chemical Agents, 2021 (RHCA)¹ was promulgated in March 2021 under the Occupational Health and Safety Act, replacing the Hazardous Chemical Substances Regulations of 1995 (HCSR).² The lists of OELs included in the RHCA subsequently replaced the lists of OELs in the HCSR, effective from September 2022. Some of the updated OELs were reduced significantly, which may impact on workplaces where exposure to the affected hazardous chemical agents (HCA) may occur.

AIM / OBJECTIVES

The study aims to identify those hazardous chemical agents listed in Table 2 of Annexure 2 of which the assigned maximum limits were reduced by 50% or more when compared with the previous applicable OELs from the HCSR. The international occupational exposure limits assigned to the same hazardous chemical agents will be obtained to understand how South African OELs compare with international OELs. Industries in both the formal sector and informal economy where occupational exposure to these chemicals are likely to occur will be identified and described. Where possible, the impact of reduced limits on formal industries will be described.

BACKGROUND

There are two lists of OELs for airborne concentration of HCA in the workplace, being Maximum Limits (ML) as described in Table 2 of Annexure 2 of the RHCA, and Restricted Limits (RL) as described in Table 3 of Annexure 2. OEL-MLs are typically assigned to chemical agents known to be carcinogens, sensitizers, mutagens or teratogens, and is the maximum concentration to which employees may be exposed to in a workplace via inhalation. The RHCA instructs the employer to maintain occupational exposure to these chemicals as far below the assigned maximum limit as can be achieved.^{1,2} This usually entails implementation of control measures other than personal protective equipment, such as local exhaust ventilation (LEV) systems or other engineering control measures. Significant reductions in maximum limits may therefore necessitate implementation of additional control measures.³

METHODS

The study will be conducted as desktop research, and will be a cross-sectional, descriptive study. Data will be obtained from current and previously promulgated South African occupational exposure limits, the GESTIS-ILV database⁴ containing international occupational exposure limits and the CDC ASTDR⁵, International Chemical Safety Cards⁶ and other relevant databases to obtain toxicological and exposure data on the applicable chemical agents. Questionnaires will be used to gather information regarding the impact of reductions in OELs on formal industries where exposure to these substances occurs.

POSSIBLE BENEFITS OF THE STUDY

The study will give perspective on how the South African occupational exposure limits that are included in the study compare with international limits assigned to the same chemical agents. It may also help to understand challenges and successes experienced by affected industries in the formal sector due to significant reductions in occupational exposure limits. Occupational Hygiene practitioners may benefit from the identification and description of industries where exposure to these hazardous chemical agents may occur.

ACKNOWLEDGEMENTS

NHLS – granting the opportunity to study
Dr Nico Claassen (UP) – Supervisor
Guidance and support from Mrs. Jeanneth Manganyi (NIOH – Head of Section: Occupational Hygiene)

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THANK YOU FOR YOUR ATTENTION





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