

Occupational Healthhazards and Safety In Chemical Industry: A Review

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Abstract

This paper deals with overview of Occupational health hazards and safety in Chemical industry. And it outlines to the occupational health and safety and importance of the occupational health and safety. And this paper also makes a special note onOccupational health Hazardsand the potential risks to the health and safety those who workin chemical industry risks such as Physical, Biological, Psychological and Ergonomics are exposed to at the workplace.

Keywords: Occupational Health, Hazards, Safety, Potential risks

Introduction

Occupational health and safety defined by the world health organisation (WHO) “Occupational health deals with all aspects of health and safety in the workplace and has strong focus on primary prevention of hazards”. Since 1950, the International Labour organisation (ILO) and the World health organisation (WHO) have shared a common definition of occupational health. It was adopted by the joint ILO/WHO committee on occupational health at its first session and revised at its twelfth session in 1995.

Occupational health and safety is a discipline with a broad scope involving many specialized fields. It should aim at:

- ❖ The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations

- ❖ The prevention among workers of adverse effects on health caused by their working conditions
- ❖ The protection of workers in their working environment from risks resulting from factors adverse to health conditions
- ❖ The placing and maintenance of workers in an occupational environment adopted to physical and mental requirement
- ❖ The International labour organisation (ILO) and WHO in 1950 jointly shared and adopted a common definition in 1950 and revised 1995

Occupational health and safety Important

Work plays a central role in people's, since most workers spend at least eight hours a day in the workplace, whether it is on plantation, in an office, factory etc., Therefore work environment should be safe and healthy. Yet this is not the case for many workers. Every day workers are faced with health hazards, such as

- Dust
- Gases
- Noise
- Vibration
- Extreme Temperature

Occupational Health Hazards

Occupational health hazards refer to the potential risks to health and safety for those who work outside the home (major 2009). Employees have suffered from these hazards and they have been exposed to at workplace. Workplace hazards are diverse in nature in different settings. Hazards are moderate health risk industries and it accompanies many service and people from diverse professions. It's a service delivery industry, of high work demand profoundly reliant on staff for efficient delivery of services (Sadleir, 2010).

There are Five Types of Health Hazards in Chemical Industry

- Biological
- Physical
- Psychological
- Ergonomics
- Psycho sociological

Occupational health Hazards will be measured in terms of non-supportive working environment that can cause harm if not controlled in a proper way.

Potential Health Hazards in the Chemical industries

Chemical industry has to identify the hazards, assess the associated risks and bring the risks to tolerable level in a continuous basis. Chemical industry having a hazardous operation has considerable safety risks for workers (Pinthankar, 2011).

Studies on Occupational Health and Safety

N.A. Siddiqui, SadeepMadhwal, AbishekNandan (2014), have studied that the Assessment of Occupational Health, safety and environmental Problems in Chemical Industries of Uttarakhand, safety and Safety & Health in chemical industries are a vital issue in achieving productivity and an edge in the competitive world. This paper is an effort to present the various factors governing the safety and Health of chemical industries with a special focus on air quality, water quality, noise, light intensity monitoring, fire safety and safety audit. This paper has mentioned the issues arise from the industry, which can lead to incident or hazard in it. It has raised psychological issues such as occupational safety, safety attitudes, safety climate and environmental problems in the chemical industries of Uttarakhand. The study will also help in development of standard checklist and safety training required for the specific industry. Random sampling techniques were applied to this study and 150 questionnaire were collected, qualitative data were used. The results concluded that the respective industries for improving their environment, health & safety performance and in reducing number of accidents.

B.W Osungbemi, O.A. Adejumo, A.A Akinbodewa and A.A. Adelosoye (2016), have found that the assessment of occupational health and safety and Hazards among government health workers Ondo City, that the study to identify common occupational hazards and to determine the associate between profession and the experience level of awareness Healthcare workers (HCW) in Ondo city. This study and comprised out of 136 (39.47 per cent) males 209 (60.4 per cent) females. About the 85 per cent respondents were aware of OHS and undergraduate training was the major sources of awareness in 177 (51.3 per cent). The common hazards identified 244 (77.7 per cent). Descriptive cross-sectional study was part of the study. Frequency (percentage) and chi-square test analysis was applied to this study. This study found that the majority of the government health workers in Ondo had high occupational safety measures

despite high awareness of Occupational Health and Safety (OHS). Clinical health workers and health workers with than 10 years' experience had better awareness of OHS.

TeklitGebregiorgisAmbye (2015), has pointed out that stratified that the Occupational Risks and hazards exposure, Knowledge of Occupational Health and safety Practice and safety Measures among workers of Sheba Leather Plc, Wulkro, TigrayEthiopi, A close-ended questionnaire adapted and the questionnaire carried out the four sections,

- i. Socio demographic characteristics
- ii. Occupational risks and hazards exposure
- iii. Knowledge of Occupational health & safety practices
- iv. Safety precautionary

And Convenience sampling method was used to the recruit of 231 workers at the sheba leather company Plcmaiduguri, Chi-Square and Percentage analysis test were carried over the study. In the study was revealed that the more than a quarter of the workers were exposed to the high occupational risks & hazards exposure among workers at the Sheba Leather Company Plc. And, the workers had a good knowledge of occupational health and safety practices, safety precautionary measures, Personal Productive Equipment (PPE). Minimize the level of Occupational hazards.

R. Muthuviknesh, and K. Anil Kumar (2014), have explained that “Effect of Occupational Health and Safety Management on Work Environment: A Prospective Study”, carried out that workplace safety is a most important thing and necessary to encourage the employees in various level of organisation, and the aimed at the study was occupational health and safety system include fostering a safe and healthy work environment, occupational health and non occupational safety included that the activity outside of the work. And the study mainly focused on the effect of OHS management on the working environment and health. The qualitative research study has been used and the interview scheduled method was carried out. The descriptive research design was adopted for this study. And Non-probability sampling method was applied. Convenience sampling technique has been undertaken for the collecting the

samples. There are 100 sample have been collected. Percentage analysis was the method to represent raw streams of data as a percentage It overall outline of the study was majority of the employees perceive the presents efforts taken on safety measures and working environment.

Ibrahim Oluoch, Paul Niogu, Jared O.H. Ndeda (2017), have found that the Effects of Occupational safety and Health Hazards'Exposure on Work Environment in the Water Service Industry within Kisumu Country-Kenya, this study was taken ad a descriptive research method and qualitative data techniques have been used and interview schedule had been contacted. Descriptive statistical tools will be applied, frequencies, percentage, mean, standard deviation were used. The results shows the employee working in the water sercie industry in Kisumu country were exposed to hazards and risks and the both biological and chemical risks are high and major water sector while Ergonomics, physical psychological risks are minor but are likey to happen. It was inferred that there is relationship between exposure to Hazards and risks and working environment. If the exposure to hazards and risks are reduced then the work environment would improve.

SadafJaved and TehminaYaqoob (2011), explained that the Gender based Occupational Health Hazards among Paramedical Staff in Public Hospitals, in this study applied that the quantitative techniques and used to find out the gender difference in exposure to occupational health hazards. And the 120 paramedics are taken by the sample size and 60 was male and 60 was female. And this study was considered of two phases, Phase for development of questionnaire and Phase II was testament of hypothesis and fulfilment of objectives. Self designed questionnaire were used to this study and of 38 items have been used. The reliability test was used to the study. Otherwise both physical and psychological factors are influencing the paramedical staff' and physiological hazards are influencing paramedic's health more as compared to psychological health hazards. Hypothesis test was essentially used to finding the females are facing more occupational health hazards as compared to the males. Females are more influenced to the stress, tension, and depression as compared to the physiological hazards.

Najaf Shah et.al. (2015), studied that the Assessment of the workplace Conditions and Health and safety Situation in Chemical and Textile industries of Pakistan, this study taken as a risk assessment tool and through the qualitative and quantitative assessment methods. The effluents and gases emissions in the textile and chemical mills of Faisalabad were monitored. And the results were indicated the working conditions in the work place were not conducive for maximum productive and there was a high risk that may be

befalling to the workers from multiple hazards exacerbated by inadequate physical conditions. Over all the temperature, humidity, noise and light levels were either below or above the defined NEQS (National Environmental Quality Standards) at multiple places in each industry. Workers were uniformed of th health protocols at workplace and there is dire need to training and awareness regarding health and safety issues.

OlufunshoAwodele et.al. (2014), have stated that the Occupational Hazards and Safety measures Amongst the Paint Factory Workers in Lagos, Nigeria, in this study total of 400 random sampling method were used to the paint factory workers were involved in the study. And well-workers to elicit information on awareness to occupational hazard, use of personal protective devices, and commonly experienced adverse symptoms, urine samples were obtained from 50 workers and randomly selected from these 400 participants, and the concentrations of the heavy metals such as lead, cadmium, arsenic, and chromium were determined using atomic absorption spectroscopy. In these connections represents the results was 72.5 per cent of the respondents are aware of the hazards associated with their jobs, 30 per cent have a formal training on hazards and safety measures; 40 per cent do not use personal protective devices, and 90 per cent of the respondents reported symptoms relating to hazards exposures. There was significant of p value was less than 0.05 and increase in the mean of heavy metal concentrations in the urine samples obtained from paint factory workers as compared with nonfactor workers. This study concluded that the need to develop effective frame workers that will initiate the integration and ensure implementation of safety regulations in the paint factories is evident.

Conclusion:

This study concluded that the effects of Occupational health hazards and improving the safety practices of the chemical industries. In this connection concerned with the occupational health hazards and health safety defined by the hazardous processes, materials, or environmental conditions are associated with the workplace. Potential chemical hazards in the Industries during the chemical industries are like fire, explosions, Toxic release, Short Circuiting, Chemical/gas leakage or reaction these are all the chemical hazards affected by occupational health, safety to the chemical industry.

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