**UNIT IV Journal**

Instructions

Occupational Safety and Health Administration (OSHA) has established a permissible exposure limit (PEL) for the noise of 90 decibels on the A scale (dBA) for an eight-hour work shift with an action level of 85 dBA for an eight-hour shift or an equivalent exposure of 50%. OSHA also uses a 5 dB doubling rate, meaning for every 5 dB increase in exposure, the allowable time for the exposure is cut in half. The American Conference of Governmental Industrial Hygienists (ACGIH) and the National Institute for Occupational Safety and Health (NIOSH) both recommend an eight-hour occupational exposure limit (OEL) of 85 dBA for an eight-hour shift and using a 3 dB doubling rate. Reflect on each approach, and summarize your thoughts on the merits of each approach and which method you would use if you were trying to reduce the risks associated with noise at a facility where you were hired as the safety manager.

Your journal entry must be at least 200 words in length. No references or citations are necessary.

**Unit IV Scholarly Activity**

**Instructions**

The sampling results for the chemical hazards you tested for Acme Automotive Parts (AAP) are listed in the following table. The volumes that are listed are what you provided to the laboratory.

|  |  |  |
| --- | --- | --- |
| **Hazard** | **Analytical Result** | **Volume (Time)** |
| Manganese Fume | 5 µg | 30 L (15-minute) |
| Copper Fume | 140 µg | 960 L (8-hour) |
| Lead Fume | 40 µg | 960 L (8-hour) |
| 1,2,4 trimethylbenzene | 5 µg | 48 L (8-hour) |
| Toluene | 125 µg | 48 L (8-hour) |
| Xylene | 20 µg | 48 L (8-hour) |
| Metal Working Fluids | 500 µg | 720 L (8-hour) |

Part I: For each of the chemical hazards complete the following:

* Calculate the exposure concentration in mg/m3 for the aerosols.
* Calculate the exposure in parts per million (ppm) for the vapors.
* Discuss where you think errors might have been introduced into the results.

Part II: The results for the noise sampling in the following table were recorded from your noise dosimeters. All the samples were collected for the full shift using 90 decibels on the A scale (dBA) as the criterion level and a 5 decibels (dB) exchange rate.

|  |  |  |
| --- | --- | --- |
| **Location** | **Shift Length** | **Result** |
| Shipping/Receiving | 8 hours | 78.3 dBA (Lavg) |
| Hydraulic Press | 12 hours | 93.0 dBA (Lavg) |
| Metal Working Line | 12 hours | 84 dBA (Lavg) |
| Robotic Welding | 12 hours | 80.5 dBA (Lavg) |
| Hand Welding | 12 hours | 81.3 dBA (Lavg) |
| Paint Booth | 12 hours | 79.5 dBA (Lavg) |
| QA/QC Laboratory | 8 hours | 70.0 dBA (Lavg) |
| Final Inspection | 8 hours | 73.5 dBA (Lavg) |

Answer the following for each of the locations listed above:

* Convert the results from dBA to percent.

Make sure you show all your work for calculations.

Your assignment must be a minimum of two pages in length, not including title or reference pages. Your assignment must use at least two references. One must be gathered from the CSU Online Library; the other may be your textbook. All references and in-text citations must be formatted according to APA standards.