



Competency 1.2 Industrial hygiene personnel shall demonstrate a working level knowledge of study and observation methods used to identify and evaluate potential work place stressors.

1. Supporting Knowledge and Skills

- a. Discuss how the presence and use of existing control measures affect the evaluation of health stressors.
- b. Describe how the following sensory indications may help with the identification of exposures.
 - Odor
 - Hearing
 - Sight
 - Touch

2. Recommended Reading

Review

- *Fundamentals of Industrial Hygiene*, 3rd Edition, National Safety Council, Chapters 16 and 17.
- *Occupational Diseases: A Guide to Their Recognition*, U.S. Department of Health, Education, and Welfare.

3. Summary

Among the most useful means of identifying and evaluating potential occupational stressors is the review of current work or process descriptions, raw or manufactured materials consumed in the process, and personal observations made during the process.

It may not always be necessary to understand the details of the process to gauge the potential for exposure. If an employee works close to an uncontrolled process or performs the process for hours, significant exposure is possible. The further one works from the operation and the less one works in the immediate area, the less one will be exposed. Engineering controls in place may significantly or totally prevent exposure.



Sensory indications may be useful in identifying potential exposure. If workplace noise levels are such that shouting is necessary at short distances, then noise exposure could be a problem. High heat or humidity could indicate the potential for heat-stress exposure. Irritation or other sensation to mucous membranes or skin may also indicate chemical exposure or actual contact.

The detection of odor as means of identifying potential chemical exposure may be possible sometimes, but is also quite unreliable. Sensitivity to odor varies widely between individuals. Many chemicals have pronounced or even unpleasant odors well below their allowable limits, so that the chemical may be clearly sensed even at safe levels. Other chemicals have the capacity to quickly exhaust the olfactory sense, especially at high concentrations, so that the ability to detect the chemical is quickly lost. Other sensory indicators, such as faintness or blurring of vision may also be signs of significant, or even dangerous, exposure.

Unfortunately, it is not only human sensitivity that is an unreliable indicator of danger. Even chemical-specific screening through direct reading instruments is only as useful as the industrial hygienist interpreting the readings is knowledgeable of instrument limitations and potential environmental interferences.

4. Suggested Exercises

Please refer to Scenarios 1, 4, 5, and 9 in the Scenario section of this document.