Living in today’s environment we are in constant contact with hazardous chemicals. This can be especially true when you look at what you work with and around on a daily basis. When figuring out the health risks that chemicals can cause, we need to understand the difference between toxicity and hazard.

* Toxicity is the ability of a chemical to produce health issues when it reaches a certain concentration in your body. The more toxic a substance is, the smaller the amount needed to cause harmful effects. Toxicity is usually measured by the LD50 (Lethal Dose) or LC50 (Lethal Concentration). LD50 is the amount needed to kill 50% of test animals exposed to the chemical. LD50 is listed on a chemical’s SDS in units like mg/kg. LC50 is the same idea as the LD50, but it looks at the concentration of the chemical in the air. An example would be carbon monoxide and is measured in ppm (parts per million).
* Hazard is how likely you are to reach the toxic concentration in your body. A material may not be very toxic but because of how it’s used and handled, it may be very hazardous. While on the jobsite, you are typically more concerned about the hazard of a chemical because working with or around a chemical will increase the possibility of reaching the toxic level. Contact with a chemical will cause health effects that can be fatal. These effects can either be acute or chronic. An acute effect is one that occurs immediately after you are exposed. If you spill a strong acid on your hand, there will be an immediate effect; the skin will be burned. Chronic health effects occur over time, sometimes many years. If you’ve been exposed to asbestos or tobacco smoke you may develop lung cancer after as many as 20 years.

Chronic and acute can also be used to describe your exposure to a hazardous chemical. Chronic exposure is one that occurs with frequency, daily or weekly over an extended time period. If you’re exposed to a chemical one time and the absorption of it is rapid, then this would be an acute exposure. Typically, chronic exposures occur at low chemicals levels while acute exposures happen at higher concentrations.

It is important for you to be familiar with these terms to help protect yourself for the chemicals that you work with and around.

DISCUSSION QUESTIONS

Two liquids have the same degree of toxicity, which is more hazardous? Liquid 1 is nonirritating to the eyes and nose and is colorless; Liquid 2 is irritating to the eyes and respiratory system and has a strong odor.

What is the main difference between acute and chronic chemical exposures?

COMPANY: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_** SAFETY MEETING

JOB/DEPT: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_** SAFETY TRAINING

DATE: **\_\_\_\_/\_\_\_\_/\_\_\_\_\_\_\_** TIME: **\_\_\_\_\_\_\_\_\_**

TOPICS ADDRESSED: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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EMPLOYEE SUGGESTIONS AND RECOMMENDATIONS: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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ACTION TAKEN: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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