Safety Talks!

Vinyl Chloride Hazards

WHAT'S AT STAKE

Vinyl chloride can affect your health and safety. It can irritate your skin, eyes and respiratory tract, and cause death by asphyxiation. It is a fire and explosion hazard. Short exposures to high levels of vinyl chloride can affect your central nervous system (CNS), while long-term exposure can permanently injure your liver and can lead to the development of liver cancer.

WHAT'S THE DANGER

Vinyl chloride's effects on the central nervous system include dizziness, numbness and tingling of the extremities, visual disturbances, loss of consciousness or depression of the respiratory system, leading to death. In addition, there may be a period of hours to days between exposure and the start of symptoms.

Long-term exposure to vinyl chloride may lead to liver cell damage (hepatotoxicity) and cirrhosis of the liver. Vinyl chloride is associated with a type of liver cancer called angiosarcoma, but does not lead to cancers in other parts of the body.

Vinyl chloride syndrome may occur after long-term exposure to this chemical. It has three components:

1. Numbness, pain and poor blood flow to fingers and toes, (Raynaud's phenomenon),
2. Dissolution of the bones of the terminal phalanges and sacroiliac joints (acroosteolysis) , and
3. Formation of scar tissue in the skin (scleroderma-like changes).

EXAMPLE

Vinyl chloride is used to make a variety of materials, like the polyvinyl chloride to make pipes or packaging, or plastic for chairs and automobile seats. At room temperature, vinyl chloride is a toxic, colorless gas with a sickly sweet odor. You cannot rely on your senses to tell if you are being exposed to vinyl chloride, however, because:

1. Vinyl chloride is heavier than air, and stays close to the ground, and,
2. By the time you are able to smell vinyl chloride in the air, the levels are already dangerously high.

HOW TO PROTECT YOURSELF

The best way to protect yourself from exposure to vinyl chloride is through education.

For example, the exposure limit established by the US Occupational Safety and Health Administration (OSHA) for this chemical is one part per million averaged over an eight-hour day, and direct contact with liquid vinyl chloride is prohibited.

Know where the designated areas for vinyl chloride use are, and use respiratory protection whenever it is required. Finally, take part in the education and training offered by your employer, know about the monitoring that is being conducted where you work (to check your exposure), and understand what the monitoring results mean.

FINAL WORD

Vinyl chloride is a commonly used chemical that is potentially dangerous. Be sure to follow the safety rules in your workplace to prevent exposure. ■

TEST YOUR KNOWLEDGE

1. Vinyl chloride causes angiosarcoma along with a number of other types of cancer.
   ❑ True ❑ False
2. You can count on the odor of vinyl chloride to warn you about exposure.
   ❑ True ❑ False
3. One of the effects of vinyl chloride is depression of the respiratory system.
   ❑ True ❑ False
4. The OSHA allowable exposure limit for vinyl chloride is 1 ppm averaged over eight hours.
   ❑ True ❑ False
5. Numbness and tingling in your extremities might be cause for concern, since it may mean you were exposed to high levels of vinyl chloride.
   ❑ True ❑ False

What Would You Do?

Each day at work you notice that as the day goes on you seem to get very tired, and often develop a headache by the end of your shift. In addition, you have noticed that sometimes your toes feel numb, and once you even had what seemed to be a mild case of frostbite. Do you think there is a vinyl chloride leak? What would you do?

_____

_____

_____

_____

_____

T1807-04

Safety Talks!

BEFORE THE TALK 7 PREPARATION TIPS

1. Remember there is a bonus safety talk on the CD accompanying this issue. We include a bonus talk each month in case one of the four isn't suitable for your workplace.
2. Adapt this safety talk to your work situation. If vinyl chloride is part of the process in your plant, use it to introduce or review safety precautions.
3. Check with your company's safety department for any incidents involving vinyl chloride exposure.
4. Be prepared to review your company's procedures for monitoring chemical exposures.
5. Review the correct use of personal protective equipment including respirators.
6. Make sure your workers understand they are not necessarily able to detect vinyl chloride, and many other chemicals, by sense of smell.
7. Invite your company's industrial hygienist to explain monitoring results.

■ For information on a variety of safety topics, check out Bongarde's online network for safety professionals at http://www.SafetyXChange.org

■ If you want the latest in job safety news, tips, photos, health-related articles, fatality reports and audio talks, sign up for Safety Smart! Weekly Briefing at http://www.SafetySmart.com

AFTER THE TALK CHECKLIST

■ Provided extra training to workers who did poorly on quiz
Date: _____

■ Observed workers
Date: _____

■ Refresher training
Date: _____

■ Other (describe)

_____

_____

_____

_____

_____

_____

_____

_____

_____

Date: _____

Date: _____

Location: _____

Meeting conducted by: _____

MEETING WAS ATTENDED BY: Each participant is to sign below, for record kept on file.

Answers to T1807-04 Quiz:

1. False 2. False 3. True 4. True 5. True

