

**OSC 10**  
Ohio Safety Congress & Expo

**Hazardous materials basics  
for emergency medical  
technicians**  
**204**  
**Robert Lantman**

Tuesday, March 30, 2010 1 to 2 p.m.

**Hazardous Material Recognition  
for the EMS Provider**

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HAZARDOUS MATERIALS  
TECHNICIAN/COMMANDER



**Objectives**

- The EMS Provider must be able to identify potentially hazardous material incidents
- Once identified, they must be able to act accordingly to prevent exposure to themselves and others
- Need to be familiar with hazard indicators for Haz Mat scenes



**What is a Hazardous Material?**

- Defined as any quantity of material that poses a threat or unreasonable risk to life, health or property if not controlled during manufacture, processing, packaging, handling, storage, transportation, use and disposal.
- The principal dangers include toxicity, flammability and reactivity

**Scene arrival**

- As emergency responders, we are used to solving a problem immediately
- With a Hazardous Material scenes, responders need to take a step back instead of forward

## Scene Arrival

- As EMS Providers, we want to get in the scene, help the injured, and mitigate the scene as fast as possible
- Not now...It is imperative to know what you are getting in to!

## Identification

- One of the most important aspect is identification
- There are numerous cues you can use to determine a hazardous substance
  - Placards
  - Shipping Papers
  - Container types
  - Your senses

## Placards

- US Department of transportation requires vehicles with hazardous materials to have the containers labeled with placards.

## Placards

- Diamond shape with a 4 digit UN number to identify the substance in shipping container
- There are 9 specific classification of Hazardous Materials

## Class 1 - Explosives



## Class 2 - Gases



Class 3 - Liquids



Class 4 - Solids



Class 5 – Oxidizers and Organic Peroxides



Class 6 – Poisonous agents



Class 7 – Radioactive Materials



Class 8 - Corrosives



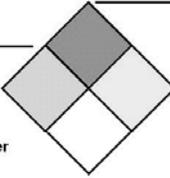
### Class 9 - Miscellaneous



The image shows a diamond-shaped hazard label for Class 9 Miscellaneous. The top half of the diamond is filled with vertical black and white stripes. The number '9' is printed in the center of the diamond.

### NFPA Label

Chem. name \_\_\_\_\_



The diagram shows a diamond divided into four quadrants: top (red), bottom (yellow), left (blue), and right (white). A central box is labeled 'Specific Hazard'.

**Fire Hazard (red)**  
Flash Point Temp.  
4 - below 73F - v.flam.  
3 - 73 to 100F - flam.  
2 - 101 to 200F - comb.  
1 - over 200F -slightly combustible  
0 - will not burn

**Health (blue)**  
4 - deadly  
3 - extreme danger  
2 - hazardous  
1 - slightly hazardous  
0 - normal material

**Reactivity (yellow)**  
4 - may detonate  
3 - shock or heat may detonate  
2 - violent chem. reaction  
1 - unstable if heated  
0 - stable

**Specific Hazard**  
OXY - oxidizer  
ACID - acid  
ALK - Alkali  
COR - corrosive  
W- use no water  
RAD - radiation haz.

### Shipping Papers

- Can be difficult!
- Driver can be of assistance if they are able to help.

### Containers

- The style of truck can help in determining

### Non Pressure Liquids



The image shows a white tanker truck with a large cylindrical tank, used for transporting non-pressure liquids.

Gasoline, Petroleum products, Ethanol

### Cryogenic Liquids



The image shows a white tanker truck with a large cylindrical tank, used for transporting cryogenic liquids.

### Low Pressure Chemicals



### Compressed Gas Tubes



### Corrosive Liquids



### High Pressure Tank



### Dry Bulk Cargo



### Identification

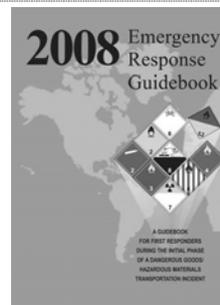
- It is imperative that when you make the identification, use resources to assist in the identification of material and the potential hazards associated with the material
- Identification for placards should be made from a distance

## Resources

- Emergency Response Guide (ERG)
- Shipping Papers
- Material Safety Data Sheets (MSDS)
- CAMEO (Computer-Aided Management of Emergency Operations)
- CHEMTREC (Chemical Transportation Emergency Center) – 800-424-9300
- CHEMTEL (Chemical Telephone Inc) – 800-255-3024

## Emergency Response Guide

- Most common identification guide used in Emergency
- Helps to identify the material and initial emergency operations
- Helps with initial phase of operations



## Material Safety Data Sheets



- Found in fixed facilities
- Detailed information about the chemicals in a facility
- Identifies Characteristics of chemical

## Shipping Papers

- Identify the material being shipped by the truck
- Has contacts in case of emergency
- How to formulate a response to the material



## Other Resources

- CAMEO
- CHEMTREC
- CHEMTEL
- All resources to get information on the products that you may be dealing with

## Now what?

- Have we gone too far?
- Are we now part of the problem?
- Are we safe?
- Are there victims?
- Resources?
- What are the dangers?

## Dangers

- Haz Mat scenes offer many dangers, some seen and others not
  - Fire
  - Fumes
  - Run off
  - People
  - Clouds

## Dangers



## Dangers



## Dangers



## Dangers



## Dangers



## Dangers



## Final Thoughts

- Haz Mat scenes take time
- We should not be in a hurry
- Rushing could result in deadly results

## Final Thoughts

- Become part of the solution not the problem
- Identification is the key
  - Know what you are dealing with
  - Understand the hazards and dangers
- Time and distance

## Rule of Thumb

- If you can see the scene on the outside of your thumb.....

YOU ARE TOO CLOSE!

And...

If it green, gooey and not yours...

DON'T TOUCH IT!