

McHenry Western Lake County EMS System

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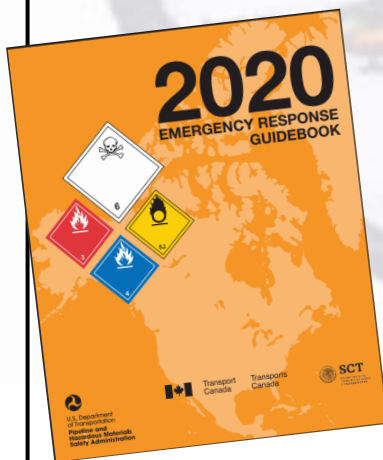
Hazardous Materials -

Hazardous materials touch our lives in more ways than people sometimes realize. These products, while most are safe if handled properly and contained, some can be extremely dangerous or deadly if handled or stored improperly. It is during those times when they are used carelessly or escape their container that they become an issue. Due to the hazardous nature of various chemicals, OSHA has established a code for training and response to the types of incidents, 29 CFR 1910.120. This code establishes levels of personal protective equipment, training and education, incident command, and also medical monitoring of response personnel. Hazardous materials incident can also have a large impact on EMS based on size of release and the type of product. Recently, a structure fire inside a warehouse involving lithium batteries forced the evacuation of approximately 3000 people. Prior to that a large warehouse fire involving hazardous materials ignited requiring a response of hundreds of Fire and HazMat personnel, as well as EMS. The incidents are infrequent, but when they do happen they are usually catastrophic. Having even a little base knowledge of hazardous materials can help in protecting you as the responder, even if HazMat is not

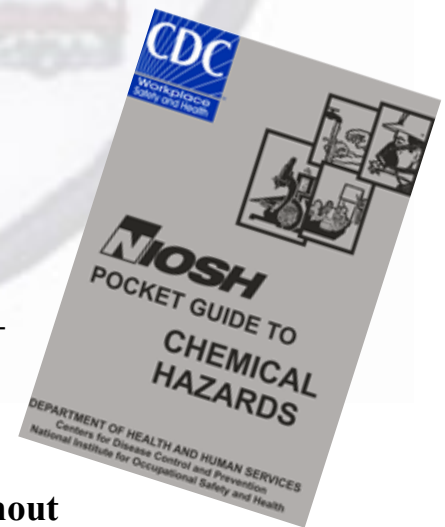
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Should Have References-



- The Emergency Response Guidebook should be the first go-to reference for responding to incidents involving hazardous materials. This book will provide initial recommendations about isolation distances, proper PPE, as well as what to do for spills, leak, first aid, and fires.
- The NIOSH pocket guide goes a little more in-depth with respect to certain chemicals. It will provide information about chemical properties, exposure routes with symptoms, and first aid.



- ⇒ **Both references are of no help without review and practice.**
- ⇒ **Don't let the first time these are opened be in front of an incident**

Exposure Limits

◆ **IDLH– IMMEDIATELY DANGEROUS TO LIFE AND HEALTH**

Do not enter without proper PPE and knowledge of product

- ◆ **STEL (Short-term Exposure Limit)** – a 15-minute TWA exposure that should not be exceeded at any time during a workday.
- ◆ **TWA (Time Weighted Average)** – a time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek.
- ◆ **OSHA PEL (Permissible Exposure Limit)**-must not be exceeded during any 8-hour work shift of a 40-hour workweek

Chemical Properties

Flash Point– Temperature at which sufficient vapors are produced to ignite

Vapor Pressure– How bad a liquid wants to be a gas.

Specific Gravity– This tells if a product will sink or float on water. Greater than 1 the product will sink.

Boiling point- When a product will boil

FRZ– When a product will freeze

UEL/LEL- This is the upper and lower explosive ranges for a product to ignite/explode.

Personal Protective Equipment

Level A-

- Fully encapsulated chemical protective protection suit
- Positive pressure demand full face SCBA
- Inner and outer chemical resistant gloves
- Chemical resistant safety boots

Level B-

- Hooded chemical resistant clothing or suite
- Positive pressure demand full face SCBA
- Inner and outer chemical resistant gloves
- Chemical resistant safety boots

Level C-

- Hooded chemical resistant clothing or site
- Full or half mask air purifying respirator
- Inner and outer chemical resistant gloves
- Safety boots

Level D-

- Coveralls
- Safety boots/shoes
- Safety glasses or chemical splash goggles
- No respiratory protection is required under Level D and there is no chemical protective suit.

Training-

Guided by OSHA 29 CFR 1910.120

Awareness-

This level of a training allows the responder to recognize a hazardous materials incident and properly report it. Providers at this level may not enter the Hot Zone or Warm Zone.

Operations-

This level allows offers more instruction on chemical properties, PPE , and decontamination. Providers at this level may not enter the Hot Zone

Technician-

This is the highest level of training and builds on the Operations Level, and adds in training and education on mitigation, or stopping the release. This is the only level that can enter the Hot Zone.



Name: _____ Dept: _____ Email: _____

V E U X T K M F K M T K F D R M C R N Z
I A Q E U J V A Q H K M D P R M M U E I
F N P T E C H N I C I A N O V Y E X R S
H W B O O R Q T X J O C L F Y J A I H P
N S D Z R U U V B U M W H H O H Z J N Y
Y Y P K Y P G S Z D X N O T O X R X U N
F D R L R C R Q S W K I W D N S H G I X
N A K P D W O E J E P Y Y K A L R O Q Z
H O L H P Y Z A S L R W P W C N S C S Q
P V K S D O D E K S F P W K K H T A O E
T M O D E I W Q X R U Z E L W M N A J N
H X X G N E S J Q Z B R L V L Z K B H O
S Q R Z C J I U I A V D E C I A E B G E
U E A D M X A F G I D J X X G T Q E X L
I Z J A E E M G N E I Z B K V G I Z Z B
S B N J B M H T B H D Z K R P X N S L A
I Y C Y D N O I T A L U S P A C N E O T
F S H O R T T E R M H X T E R D G I X P
T Z N T F Q Y H U L D A I G W X O J F G
T T W G H A K G V I N R I V I Q I E J P

Hazardous Materials : CE Credit

McHenry Western Lake County EMS System

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Directions:

As all the questions then find
the answers in the puzzle.

- 1) 15 minute limit for exposure? _____
- 2) How bad does a liquid want to be a vapor? _____
- 3) What environment should not be entered without proper PPE? _____
- 4) This is a CDC reference on chemical hazards? _____
- 5) Level A PPE Suits provide full _____
- 6) Level A and B PPE require what type of air for breathing? _____
- 7) Chemical in any amount, requiring placards are listed in what table? _____
- 8) Where can a responder find information about isolation distances? _____
- 9) Who can enter the "Hot Zone"? _____
- 10) A EMS crew with no hazardous materials training can perform decon? True or False



**Continuing Education Hours: Each completed newsletter will
earn the provider 0.25 hours of continuing education**

*For CE Credit, Please scan your quiz to Cindy Tabert by email to cynthia.tabert@nm.org.
If you are NOT a provider within of the McHenry Western Lake County EMS System,
please include your mailing address. You may submit by email or via mail to: Northwestern
Medicine – McHenry Hospital EMS, 4201 Medical Center Drive, McHenry, Illinois 60050.
We will forward verification of your continuing education hours to your home address.*