

# HAZARDOUS MATERIALS (HAZMAT) TRAINING TOOLS FOR RESPONDERS

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# Who Needs To Know About HazMat ?

- Police & Fire Personnel
- Emergency Medical Service Personnel
- Health Officers
- Environmental Inspectors & Responders
- Emergency Management Volunteers ( CERTS )
- Environmental Consultants
- Public Works Personnel
- Manufacturers, Transporters and End Users

# Where Do We Find HazMat In Our Communities ?

- “ On The Road “ 1.2 Million Shipments daily /  
3.1 Billion Tons of HazMat Annually ( Trucks,  
Tankers, Railroads, Air Freight & Ships )
- At Our Businesses
- In Our Schools & Homes

# HazMat Awareness

*Awareness is Key to Protecting:*

- Yourself
- The Public
- Property
- Environment



HOT  
DOGS  
BUY ONE  
GET ONE  
**FREE!**





LEFT LANE  
MUST  
TURN LEFT





7 ELEVEN 7 ELEVEN

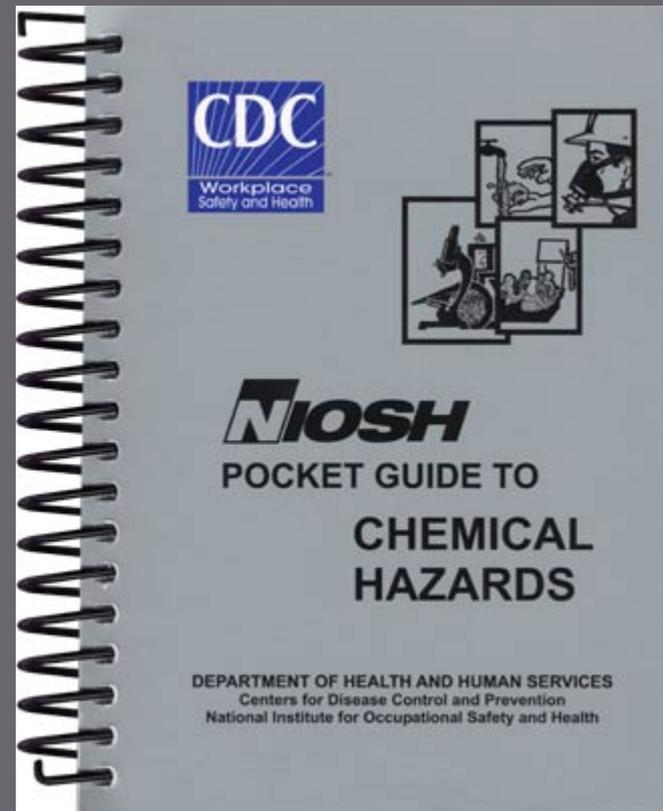
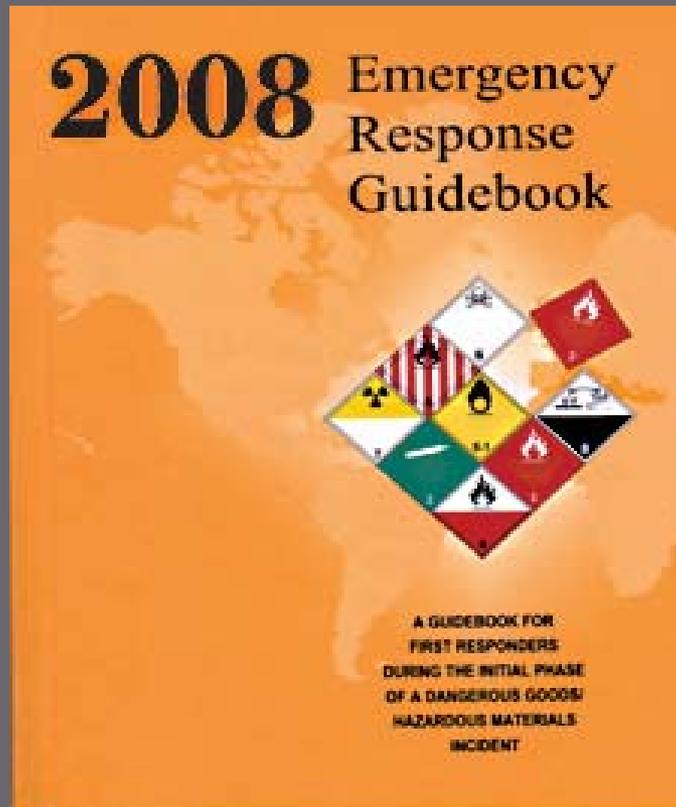
HOT DOGS  
ANY ONE  
GET ONE  
FREE!

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King  
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CAUTION TAPE

# Emergency Response Guidebook & NIOSH Pocket Guide as Training Tools



# 2008 Emergency Response Guidebook ( ERG2008 )

- The ERG2008 was developed jointly by the US DOT, Transport Canada, and the Secretariat of Communications and Transportation of Mexico (SCT)
- The ERG2008 is used by personnel who may be the first to arrive at the scene of a transportation incident involving a hazardous material
- The ERG2008 is a guide to quickly identifying the specific or generic classification of the material(s) involved in an incident
- The ERG2008 is used to protect responders and the general public during the initial response phase of the incident
- The ERG is updated every three to four years to accommodate new products and technology
- The next version is scheduled for 2012

# Advantages Of The Emergency Response Guidebook

- Small – Pocket Sized
- Easy To Use / 3 Step Process
- Contains Multiple Ways To Look Up Information
- Provides Examples Of Identification Of Placards And Containers
- Lists Important Emergency Response Telephone Numbers For The US, Canada & Mexico

# Guidebook Three Step Process

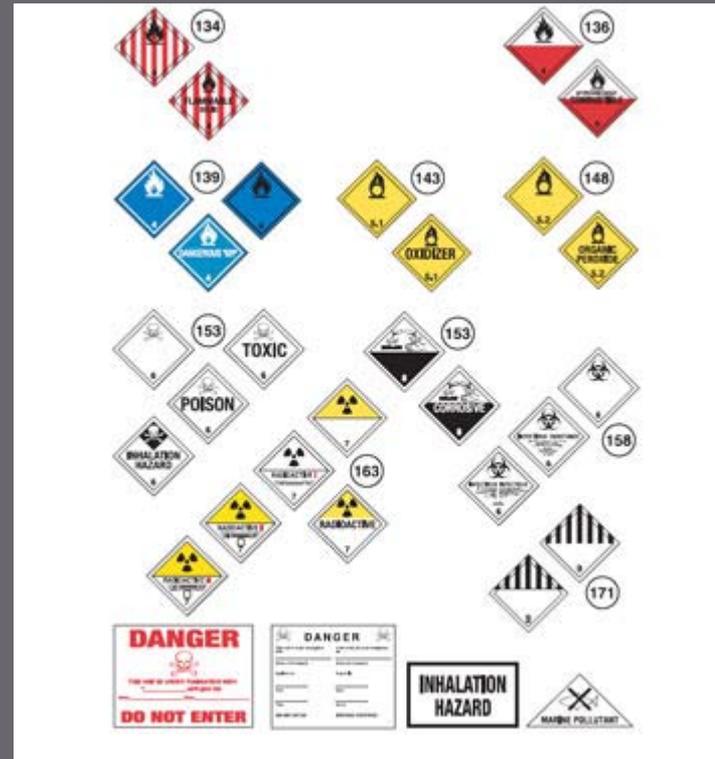
- Identify Material
  - ID Number from Container
  - Shipping Documents
- Identify 3 Digit Guide
  - Yellow ID Number Index
  - Blue Name Index
- Follow Guide Details
  - Hazards, Public Safety
  - Emergency Response



# 5 Sections Of The ERG2008

White:

- Introduction,
- Initial Response Safety Precautions
- Placard and Container Identification Chart
- Glossary
- Important Phone Numbers



# 5 Sections Of The ERG2008 Con't.

Yellow:

- Indexed By Placard Number

Blue:

- Indexed By Chemical Name

Orange:

- Response Guides

Green:

- Isolation & Protective Action Distances

ID No.	Guide No.	Name of Material	ID No.	Guide No.	Name of Material
1176	129	Ethyl borate	1202	128	Diesel fuel
1177	130	2-Ethylbutyl acetate	1202	128	Fuel oil
1177	130	Ethylbutyl acetate	1202	128	Fuel oil, no. 1,2,4,5,6
1178	130	2-Ethylbutyraldehyde	1202	128	Gas oil
1179	127	Ethyl butyl ether	1202	128	Heating oil, light
1180	130	Ethyl butyrate	1203	128	Gasohol
1181	155	Ethyl chloroacetate	1203	128	Gasoline
1182	155	Ethyl chloroformate	1203	128	Motor spirit
1183	139	Ethylchlorosilane	1203	128	Petrol
1184	131	Ethylene dichloride	1204	127	Nitroglycerin, solution in alcohol, with not more than 1% Nitroglycerin
1185	131P	Ethyleneimine, stabilized	1206	128	Heptanes
1188	127	Ethylene glycol monomethyl ether	1207	130	Hexaldehyde
1189	129	Ethylene glycol monomethyl ether acetate	1208	128	Hexanes
1190	129	Ethyl formate	1208	128	Neohexane
1191	129	Ethylhexaldehydes	1210	129	Ink, printer's, flammable
1191	129	Octyl aldehydes	1210	129	Printing ink, flammable
1192	129	Ethyl lactate	1210	129	Printing ink related material
1193	127	Ethyl methyl ketone	1212	129	Isobutanol
1193	127	Methyl ethyl ketone	1212	129	Isobutyl alcohol
1194	131	Ethyl nitrite, solution	1213	129	Isobutyl acetate
1195	129	Ethyl propionate	1214	132	Isobutylamine
1196	155	Ethyltrichlorosilane	1216	128	Isocetenes
1197	127	Extracts, flavoring, liquid	1218	130P	Isoprene, stabilized
1197	127	Extracts, flavouing, liquid	1219	129	Isopropanol
1198	132	Formaldehyde, solution, flammable	1219	129	Isopropyl alcohol
1198	132	Formaldehyde, solutions (Formalin)	1220	129	Isopropyl acetate
1199	132P	Furaldehydes	1221	132	Isopropylamine
1199	132P	Furfural	1222	130	Isopropyl nitrate
1199	132P	Furfuraldehyde	1223	128	Kerosene
1201	127	Fusel oil	1224	127	Ketones, liquid, n.o.s.

# Drawbacks To The Emergency Response Guidebook

- Assist Responders Only In Making Initial Decisions Upon Arriving At The Scene
- **Should Not Be A Substitute For Emergency Response Training, Knowledge Or Sound Judgment**
- Does Not Address All Possible Circumstances That May Be Associated With Dangerous Goods Incidents
- Primarily Designed For The Use At A Dangerous Goods Incident Occurring On A Highway Or Railroad
- May Be Limited Value In Its Application At Fixed Facility Locations
- **Requires Training In Its Use Prior To An Incident To Be Highly Effective**

# NIOSH Pocket Guide To Chemical Hazards

- A Source Of General Industrial Hygiene Information For Workers, Employers, And Occupational Health Professionals
- Presents Key Information And Data In Abbreviated Tabular Form For 677 Chemicals Or Substance Groupings That Are Found In The Work Environment
- Industrial Hygiene Information Helps Users Recognize And Control Occupational Chemical Hazards
- The Chemicals Or Substances Include All Substances For Which The National Institute For Occupational Safety And Health (NIOSH) Has Recommended Exposure Limits (RELs) And Those With Permissible Exposure Limits (PELs)

# NIOSH Pocket Guide Sections

- Chemical Name & Formula
- CAS & DOT Number
- Synonyms And Trade Names
- Exposure Limits
- Immediately Dangerous To Life Or Health (IDLH)
- Physical Description
- Chemical & Physical Properties
- Incompatibilities & Reactivities
- Personal Protection & Sanitation
- First Aid
- Recommendations For Respirator Selection
- Exposure Route, Symptoms, Target Organs

# Hydrogen Peroxide Example

<b>Hydrogen peroxide</b>		<b>Formula:</b> H <sub>2</sub> O <sub>2</sub>	<b>CAS#:</b> 7722-84-1	<b>RTECS#:</b> MX0900000	<b>IDLH:</b> 75 ppm
<b>Conversion:</b> 1 ppm = 1.39 mg/m <sup>3</sup>		<b>DOT:</b> 2984 140 (8-20% solution); 2014 140 (20-60% solution); 2015 143 (>60% solution)			
<b>Synonyms/Trade Names:</b> High-strength hydrogen peroxide, Hydrogen dioxide, Hydrogen peroxide (aqueous), Hydroperoxide, Peroxide					
<b>Exposure Limits:</b> NIOSH REL: TWA 1 ppm (1.4 mg/m <sup>3</sup> ) OSHA PEL: TWA 1 ppm (1.4 mg/m <sup>3</sup> )				<b>Measurement Methods</b> (see Table 1): OSHA ID126SG	
<b>Physical Description:</b> Colorless liquid with a slightly sharp odor. [Note: The pure compound is a crystalline solid below 12°F. Often used in an aqueous solution.]					
<b>Chemical &amp; Physical Properties:</b> MW: 34.0 BP: 286°F Sol: Miscible Fl.P: NA IP: 10.54 eV Sp.Gr: 1.39 VP(86°F): 5 mmHg FRZ: 12°F UEL: NA LEL: NA Noncombustible Liquid, but a powerful oxidizer.		<b>Personal Protection/Sanitation</b> (see Table 2): Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contam Remove: When wet or contam Change: N.R. Provide: Eyewash Quick drench		<b>Respirator Recommendations</b> (see Tables 3 and 4): NIOSH/OSHA 10 ppm: Sa* 25 ppm: Sa:Cf* 50 ppm: ScbaF/SaF 75 ppm: SaF:Pd,Pp §: ScbaF:Pd,Pp/SaF:Pd,Pp:AScba Escape: GmFS/ScbaE	
<b>Incompatibilities and Reactivities:</b> Oxidizable materials, iron, copper, brass, bronze, chromium, zinc, lead, silver, manganese [Note: Contact with combustible material may result in SPONTANEOUS combustion.]					
<b>Exposure Routes, Symptoms, Target Organs (see Table 5):</b> ER: Inh, Ing, Con SY: Irrit eyes, nose, throat; corn ulcer; eryt, vesic skin; bleaching hair TO: Eyes, skin, resp sys				<b>First Aid (see Table 6):</b> Eye: Irr immed Skin: Water flush immed Breath: Resp support Swallow: Medical attention immed	

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# Advantages To The NIOSH Pocket Guide

- Portable / Can Be Used In The Field
- Detailed Information On Various Chemicals
- Chemical Specific Data To Supplement General Industrial Hygiene Knowledge
- Index Of CAS and DOT Numbers

# Drawbacks To The NIOSH Pocket Guide

- Large Size
- Limited Chemical List
- Updated Only Periodically - Reflects New Data Regarding The Toxicity Of Various Substances And Any Changes In Exposure Standards Or Recommendations
- To Maximize The Amount Of Data Provided In This Limited Space, Abbreviations And Codes Have Been Used Extensively

# Guides Training Advantages

- Very Effective In Small Group Training Activities
- Excellent Sources Of Portable Information
- Guides Are Updated Regularly With Additional Useful Resources
- Useful For Diverse Group Of Responders
- Review Of Guides can be part of annual Refreshers, Tool Box Talks or Safety Meetings

# Small Group Activities

## ACTIVITY - Using the 2008 U. S. DOT Emergency Response Guide

A “tool-box talk” is an informal group discussion that focuses on a particular safety issue. It does not take the place of formal training but is designed to provide workers with a general understanding of an issue or topic.

Develop a “tool-box talk” for the following:

What information is contained in the Yellow-bordered pages of the U. S. Department of Transportation’s 2008 Emergency Response Guidebook? (Hint: Page 3)

What information is contained in the Blue-bordered pages of the U.S. DOT 2008 ERG? (Hint: Page 3)

3) What is the DOT ID # for Benzene?

4) List two places in the 2008 ERG where the DOT ID # for Benzene may be found.

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