

What is a hazardous material?

A substance or material that is capable of posing an unreasonable risk to human health, safety, or the environment, when transported in commerce, used incorrectly, or not properly contained or stored

What are our roles as first responders?

- To size up the scene
- Securing the scene
- Stabilizing the incident within our abilities
- Coordinating other resources as needed
- We only work to the level of our training, we are not experts
- We only perform the skills we are equipped to perform
- WE DO NOT PERFORM CLEANUP



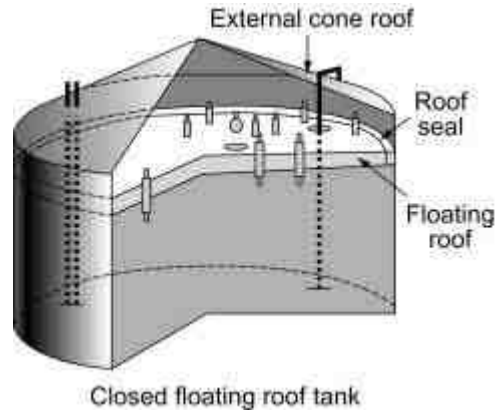
Recognizing Hazardous Materials

- Occupancy and Location
- Senses
- Containers
- Transportation



Bulk Containers

Cone Roof Tank



Floating Roof Tank



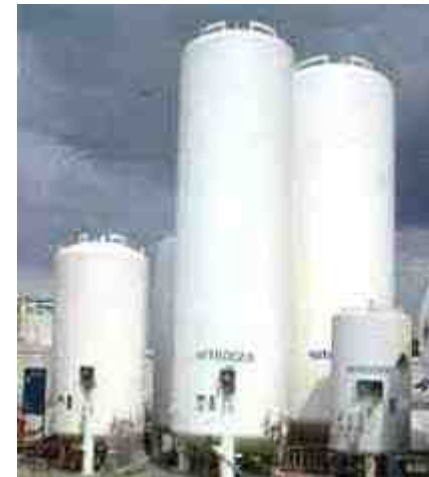
Spherical Storage Tank



High Pressure Tank



Cryogenic Tank



Intermodal Containers

IMO Type 1



IMO Type 2



IMO Type 5



IMO Type 7



Tube Container



Shipping Container



Non-bulk Packaging

220 L Drum



13 Kg LPG cylinder



Box



Bag



Carboys



Roadway Transportation

Flammable Liquids



Compressed liquified gas



Corrosives



Intermodal Containers

















Pipeline



Identifying Products

Placards & Labels

Intermodal containers, non-bulk packaging, roadway transportation

DANGEROUS GOODS CLASSES			
CLASS 1 Explosives eg. TNT		CLASS 4.3 Dangerous when wet eg. Calcium Carbide	
CLASS 2.1 Flammable Gases eg. Acetylene		CLASS 5.1 Oxidising Substances eg. Silver Nitrate	
CLASS 2.2 Non-Flammable Non-Toxic Gases eg. Nitrogen		CLASS 5.2 Organic Peroxides eg. Methyl Ethyl Ketone Peroxide	
CLASS 2.3 Toxic Gases eg. Chlorine		CLASS 6 Toxic Substances eg. Sodium Cyanide	
CLASS 3 Flammable Liquids eg. Petrol		CLASS 7 Radioactive Substances eg. Uranium	
CLASS 4.1 Flammable Solids eg. Sulfur		CLASS 8 Corrosive Substances eg. Hydrochloric Acid	
CLASS 4.2 Spontaneously Combustible Substances eg. Zinc Dust		CLASS 9 Miscellaneous eg. Asbestos	
DANGEROUS GOODS PACKING GROUPS PACKING GROUP I GREAT DANGER PACKING GROUP II MEDIUM DANGER PACKING GROUP III MINOR DANGER			

Hazard ID Numbers UN Numbers

- Top number is from a list of hazards
 - 2-Gas
 - 3-Flammable liquid
 - 4-Flammable solid
 - 5-Oxidizing substance
 - 6-Toxic
 - 7-Radioactive
 - 8-Corrosive
 - 9-Environmentally hazardous
 - Doubled=particularly hazardous (33=extremely flammable)
 - 0 after = adequate for single digit
 - Combination = multiple hazards
 - X=water reactive
- Bottom number is 4 digit UN ID number
- Found on Intermodal. UN Numbers on road transport

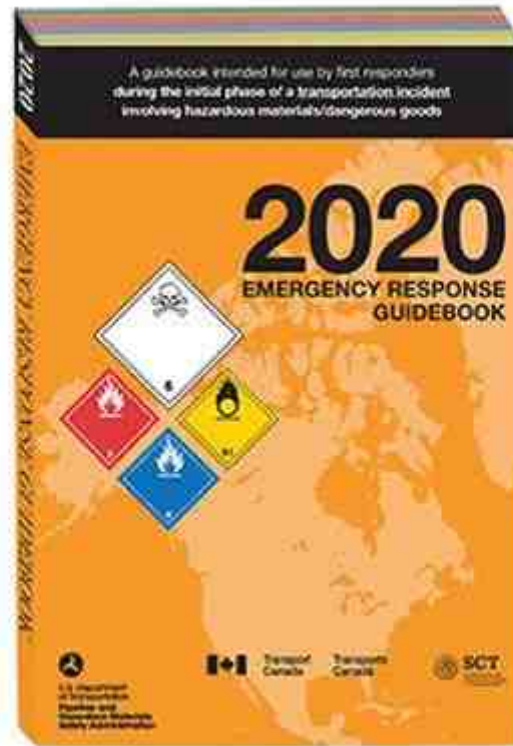
Hazard ID	X338	33
UN Number	1717	1088

Shipping Papers

	A	B	C	D	E	F	G	
1		Shipping Manifest						
2		ACME Trading Company			September 7, 2013			
3								
4		Address:	Address		Ship To:	Company		
5			City, State ZIP Code			Address		
6		Phone:	+1-555-555-5555			City, State ZIP Code		
7		Fax:	+1-555-555-5555					
8								
9		Customer Account:	3421		Attention:	John Doe		
10		Order Date:	January 24, 2004		Phone:	+1-555-555-5555		
11		Order Number:	892345					
12								
13		Product	Description		Weight	Order Quantity	Ship Quantity	
14								
..								

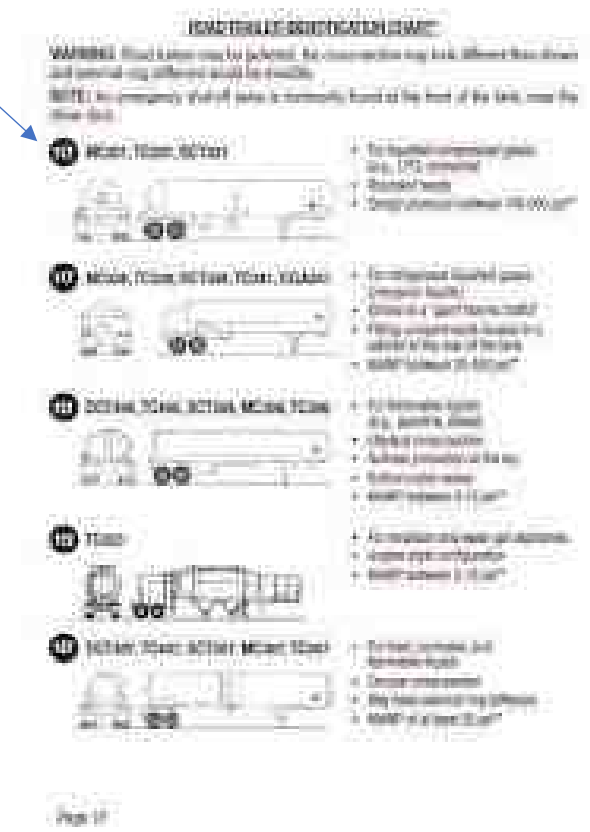
Emergency Response Guide

- First responder reference book to hazardous materials/dangerous goods
- Online www.phmsa.gov/hazmat/training
- Google Playstore App ERG 2020 for Android
- Guides by placard, product name, UN Number, container type
- Information on response based on product types
- Information on isolation and evacuation distances



Reference by Placard and Container Shape

Guide
Number



ID Reference Pages (Yellow Pages)

ID	Code	Form of Material	ID	Code	Form of Material
100	100	100	100	100	100
200	100	200	200	100	200
300	100	300	300	100	300
400	100	400	400	100	400
500	100	500	500	100	500
600	100	600	600	100	600
700	100	700	700	100	700
800	100	800	800	100	800
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9700	100	9700	9700	100	9700
9800	100	9800	9800	100	9800
9900	100	9900	9900	100	9900

Product Reference Pages (Blue Pages)



The image shows four columns of product reference data, likely from a catalog or database. Each column has a header with a title and a page number. The data is organized into rows, with several rows highlighted in green. The columns are:

- Column 1:** Header: "Product Reference" (Page 10). Contains product names and descriptions.
- Column 2:** Header: "Product Reference" (Page 11). Contains product names and descriptions.
- Column 3:** Header: "Product Reference" (Page 12). Contains product names and descriptions.
- Column 4:** Header: "Product Reference" (Page 13). Contains product names and descriptions.

Highlighted rows in green include:

- Row 1: Product name, description, and price.
- Row 2: Product name, description, and price.
- Row 3: Product name, description, and price.
- Row 4: Product name, description, and price.
- Row 5: Product name, description, and price.
- Row 6: Product name, description, and price.
- Row 7: Product name, description, and price.
- Row 8: Product name, description, and price.
- Row 9: Product name, description, and price.
- Row 10: Product name, description, and price.
- Row 11: Product name, description, and price.
- Row 12: Product name, description, and price.
- Row 13: Product name, description, and price.
- Row 14: Product name, description, and price.
- Row 15: Product name, description, and price.
- Row 16: Product name, description, and price.
- Row 17: Product name, description, and price.
- Row 18: Product name, description, and price.
- Row 19: Product name, description, and price.
- Row 20: Product name, description, and price.
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- Row 40: Product name, description, and price.
- Row 41: Product name, description, and price.
- Row 42: Product name, description, and price.
- Row 43: Product name, description, and price.
- Row 44: Product name, description, and price.
- Row 45: Product name, description, and price.
- Row 46: Product name, description, and price.
- Row 47: Product name, description, and price.
- Row 48: Product name, description, and price.
- Row 49: Product name, description, and price.
- Row 50: Product name, description, and price.

Emergency Response Guides

Potential Hazards

- Fire or Explosion
- Health

Public Safety

- Initial response actions
- Protective Clothing
- Evacuation, immediate, large spill, fire

Emergency Response

- Fire
- Small Fire
- Large Fire
- Fire Involving Tanks

Spill or Leak

First Aid

Guide
Number

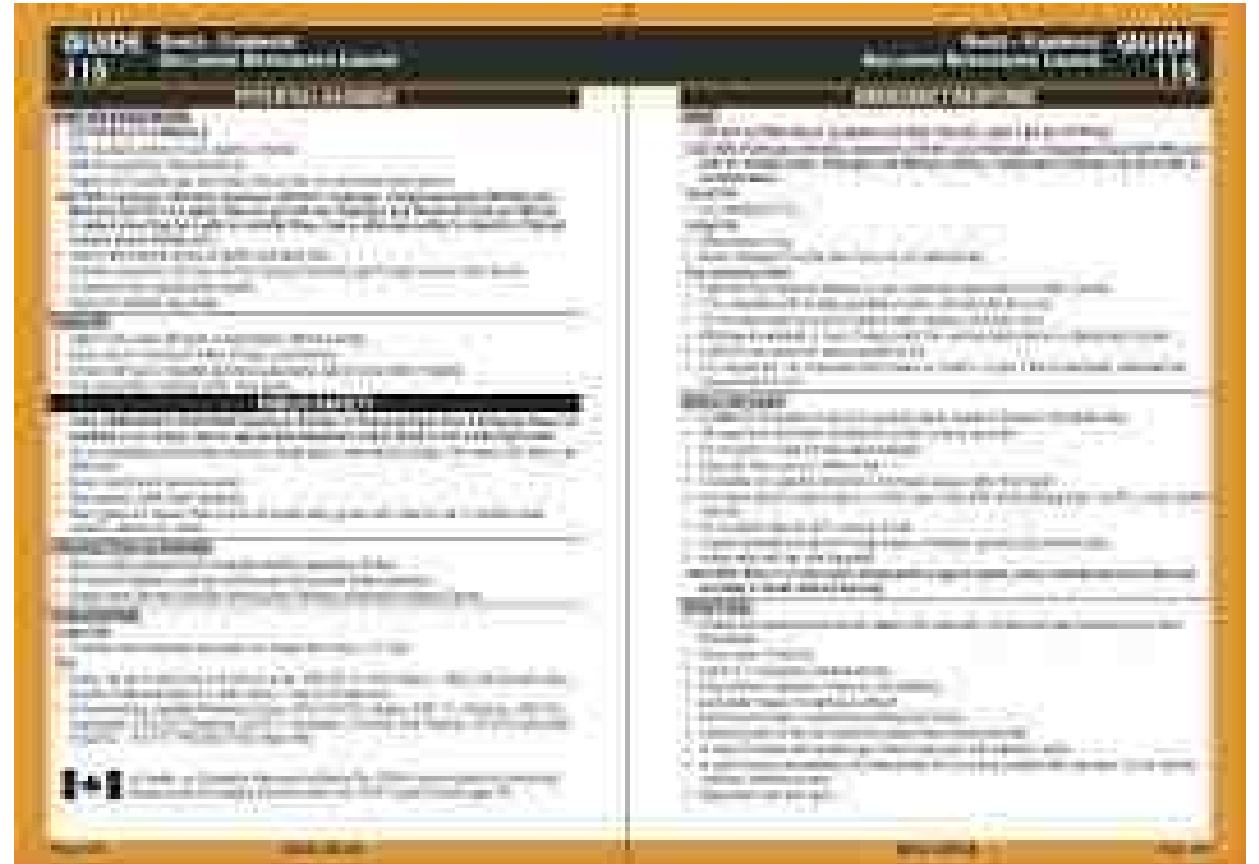


Table of Initial Isolation and Protective Distances (Green Pages)

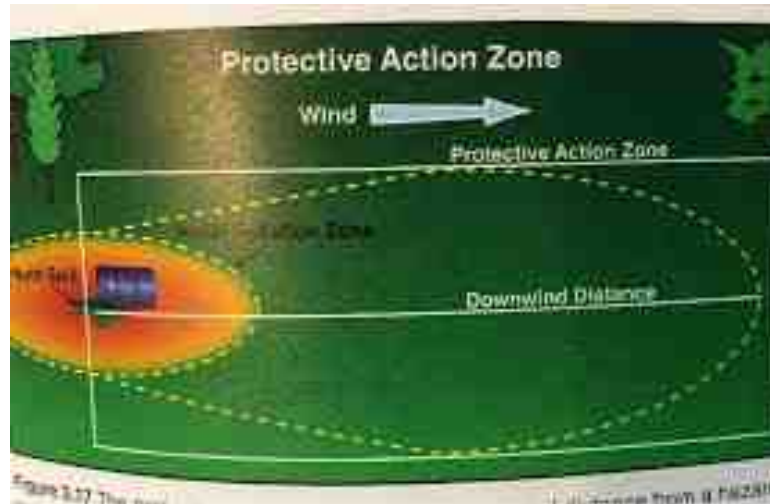


TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

HAZARD ID	HAZARD NAME	SMALL SPILLS		LARGE SPILLS	
		Initial Isolation Distance (ft)	Protective Action Distance (ft)	Initial Isolation Distance (ft)	Protective Action Distance (ft)
001-100	Acetylene cylinders	500	1,000	500	1,000
001-101	Acetylene cylinders	500	1,000	500	1,000
001-102	Acetylene cylinders	500	1,000	500	1,000
001-103	Acetylene cylinders	500	1,000	500	1,000
001-104	Acetylene cylinders	500	1,000	500	1,000
001-105	Acetylene cylinders	500	1,000	500	1,000
001-106	Acetylene cylinders	500	1,000	500	1,000
001-107	Acetylene cylinders	500	1,000	500	1,000
001-108	Acetylene cylinders	500	1,000	500	1,000
001-109	Acetylene cylinders	500	1,000	500	1,000
001-110	Acetylene cylinders	500	1,000	500	1,000
001-111	Acetylene cylinders	500	1,000	500	1,000
001-112	Acetylene cylinders	500	1,000	500	1,000
001-113	Acetylene cylinders	500	1,000	500	1,000
001-114	Acetylene cylinders	500	1,000	500	1,000
001-115	Acetylene cylinders	500	1,000	500	1,000
001-116	Acetylene cylinders	500	1,000	500	1,000
001-117	Acetylene cylinders	500	1,000	500	1,000
001-118	Acetylene cylinders	500	1,000	500	1,000
001-119	Acetylene cylinders	500	1,000	500	1,000
001-120	Acetylene cylinders	500	1,000	500	1,000
001-121	Acetylene cylinders	500	1,000	500	1,000
001-122	Acetylene cylinders	500	1,000	500	1,000
001-123	Acetylene cylinders	500	1,000	500	1,000
001-124	Acetylene cylinders	500	1,000	500	1,000
001-125	Acetylene cylinders	500	1,000	500	1,000
001-126	Acetylene cylinders	500	1,000	500	1,000
001-127	Acetylene cylinders	500	1,000	500	1,000
001-128	Acetylene cylinders	500	1,000	500	1,000
001-129	Acetylene cylinders	500	1,000	500	1,000
001-130	Acetylene cylinders	500	1,000	500	1,000