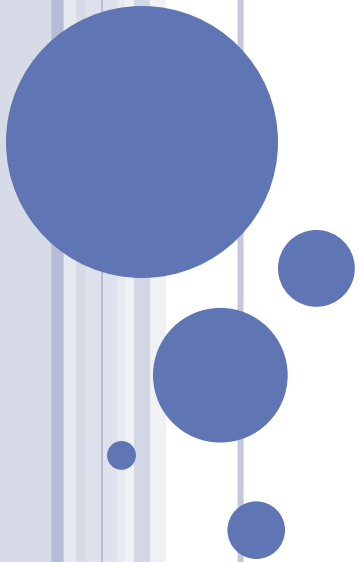


HAZARDOUS MATERIALS & HAZARDOUS WASTE  
TRANSPORTATION REGULATIONS

**THE BASICS**



# OVERVIEW

- Why do we have *Regulations*?
- Hazardous Materials *Inspections*
- Hazardous Materials *Transportation* Regulations
- *Safety* Considerations
- Questions & Answers



# A LITTLE ABOUT ME.....

- Officer with the California Highway Patrol for over 21 years. For the last 16 years, I've committed myself to the education, enforcement, and response to hazardous materials and hazardous waste incidents with an emphasis on hazardous materials inspections, hazardous materials response tactics, and environmental crimes.
- I have overseen California's Office of Emergency Service's (CalOES) Region II's Local Emergency Planning Committee (LEPC) as its Chairperson, and still sit on the LEPC Board as the Law Enforcement Leader.
- Over the years, I have instructed and facilitated the Hazardous Materials Investigations course (sponsored by the California Hazardous Materials Investigators Association - CHMIA) and facilitated the Advanced Environmental Crimes Training Program (sponsored by the US Federal Law Enforcement Training Center (FLETC) and CHMIA).



# A LITTLE ABOUT ME.....

- I am certified by CalOES and the California Specialized Training Institute (CSTI) as a Hazardous Materials Outreach Instructor.
- As an Outreach Instructor and a certified Hazardous Materials Specialist, I instruct and course manage numerous courses throughout the state to the CHP, local LE & FD departments, State departments, and dozens of Hazardous Materials Response Teams:
  1. **First Responder Awareness**
  2. **First Responder Operations**
  3. **Hazardous Materials Incident Commander**
  4. **Hazardous Materials Technician Series, B-D weeks (Applied Chemistry, Incident Considerations & Offensive Control)**
  5. **Hazardous Materials Specialist Series, F-G weeks (Emergency Response Tactics)**
  6. **Hazardous Materials / Waste Transportation Regulations**
  7. **Radiological & Nuclear Awareness**
  8. **WMD for the Hazardous Materials Technician**
  9. **Chemical Suicides (Detergent Suicides)**
  10. **Clandestine Labs**
  11. **Evidence Collection**
  12. **Field Sampling**



# A LITTLE ABOUT ME.....

- General Hazardous Materials Certified (US DOT)
- Hazardous Materials Cargo Tank Inspector Certified (US DOT)
- Radiological and Nuclear Awareness Certified (DOE / DHS)
- Radiological and Nuclear Operations Certified (DOE / DHS)
- HM Container Inspector Certified (USCG / DHS)
- Nuclear Radiation Response Certified (US EPA)
- Hazardous Materials Other Bulk Packaging Certified (US DOT)
- Transuranic Nuclear Waste Certified (US DOT/ DOE)
- Hazardous Materials Investigations (CHMIA / CalOES)
- Advanced Environmental Crimes Certified (US EPA)
- Environmental Enforcement & Field Sampling (DTSC)
- Radiological Materials Certified (US DOT)
- Hazardous Materials Technician (CalOES / CSTI)
- Hazardous Materials Specialist (CalOES / CSTI)
- Hazardous Materials Specialist WMD (CalOES / CSTI)



# HAZARDOUS MATERIALS REGULATIONS

# THE BASICS





Why do we have  
Hazardous  
Materials  
Transportation  
Regulations?





SAFETY! SAFETY!  
SAFETY!!

SAFETY! SAFETY!



**MOST hazardous materials, at some point, will be transported on HIGHWAY. It is imperative that Hazmat Transportation Regulations are adhered to for the safety of the truck driver, the motoring public, FIRST RESPONDERS and our environment!!**



# AUTHORITY



Hazardous Materials  
& Hazardous Waste  
Laws AND  
Regulations come  
from both **FEDERAL**  
AND **STATE**  
Statutes.



# AUTHORITY

## FEDERAL

### Hazardous Materials Transportation Act

- **US DEPARTMENT OF TRANSPORTATION**
  - Title 49 Code of Federal Regulations

### Resource Conservation and Recovery Act

- **US ENVIRONMENTAL PROTECTION AGENCY**
  - Title 40 Code of Federal Regulations



# AUTHORITY

## STATE

### California Vehicle Code

- **CALIFORNIA HIGHWAY PATROL**
  - Title 13 California Code of Regulations

### California Health and Safety Code

- **DEPARTMENT OF TOXIC SUBSTANCES CONTROL**
  - Title 22 California Code of Regulations



# AUTHORITY

## STATE

### California Vehicle Code

- **CALIFORNIA HIGHWAY PATROL**
  - Title 13 California Code of Regulations

### California Health and Safety Code

- **DEPARTMENT OF TOXIC SUBSTANCES CONTROL**  
**& CALIFORNIA HIGHWAY PATROL**
  - Title 22 California Code of Regulations



## KEEP IN MIND.....

In addition to the numerous responsibilities tasked to the Department of the California Highway Patrol (CHP), our primary mission is the management and regulation of traffic to achieve safe, lawful, and efficient use of the highway transportation system.

The CHP has statewide authority and is responsible for enforcing state traffic laws, as well as numerous other rules, regulations and provisions relating to the transportation of hazardous materials and hazardous wastes pursuant to the California Vehicle Code, California Health and Safety Code, California Code of Regulations Title 13 and Title 22, and Code of Federal Regulations Title 40 and Title 49.



## KEEP IN MIND.....

*It is the intent of the California Legislature for the Department of the California Highway Patrol to provide additional protection to the public and reduce the risk of possible hazards in the highway transportation of hazardous materials.*

*In addition, it is further the intent of the Legislature for the Department of the California Highway Patrol to place a high priority to license and inspect hazardous materials shipments to ensure compliance with the provisions of the California Vehicle Code and Regulations adopted pursuant to the CVC, and in some incidences, establishing special safeguards for particular hazardous materials shipments.*





A blue-tinted image showing hands holding puzzle pieces, symbolizing fragmented laws and regulations. The background is a light blue gradient. The puzzle pieces are dark blue and are being held by hands, with one piece being moved towards another. The word 'AUTHORITY' is written in a dark blue, sans-serif font in the upper right quadrant. At the bottom, the text 'SOMETIMES THESE LAWS AND REGULATIONS SEEM FRAGMENTED...' is written in a bold, black, sans-serif font.

AUTHORITY

**SOMETIMES THESE LAWS AND  
REGULATIONS SEEM FRAGMENTED...**



.... but they really do fit together!



# HAZARDOUS MATERIALS INSPECTIONS



# HAZARDOUS MATERIALS INSPECTIONS



## CHP GEOGRAPHICAL ORGANIZATION

1-2009

### 101 NORTHERN DIVISION REDDING

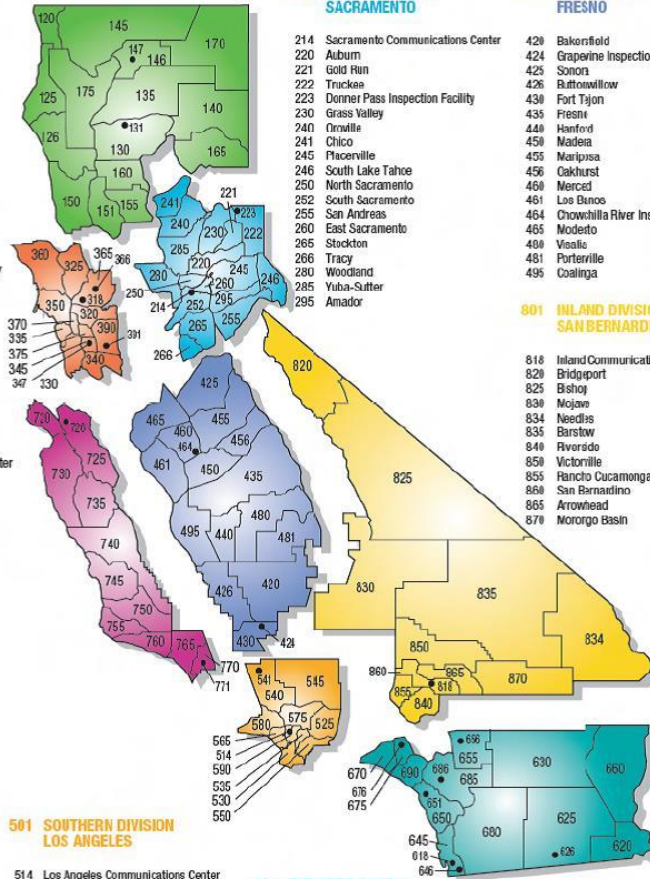
- 120 Crescent City
- 125 Humboldt
- 126 Garberville
- 130 Red Bluff
- 131 Cottonwood Inspection Facility
- 135 Redding
- 140 Susanville
- 145 Yreka
- 146 Mt. Shasta
- 147 Dunsmuir Grads Inspection Facility
- 150 Ukiah
- 151 Clear Lake
- 165 Williams
- 160 Willows
- 165 Quincy
- 170 Alturas
- 175 Trinity River

### 301 GOLDEN GATE DIVISION VALLEJO

- 318 Golden Gate Communications Center
- 320 Corina Costa
- 325 Napa
- 330 Redwood City
- 335 San Francisco
- 340 San Jose
- 345 Hayward
- 347 Nimitz Inspection Facility
- 350 Marin
- 360 Santa Rosa
- 365 Solano
- 366 Cordella Inspection Facility
- 370 Oakland
- 375 Castro Valley
- 380 Dublin
- 391 Mission Grade Inspection Facility

### 701 COASTAL DIVISION SAN LUIS OBISPO

- 720 Santa Cruz
- 725 Hollister-Gilroy
- 726 Gilroy Inspection Facility
- 730 Monterey
- 735 King City
- 740 Templeton
- 745 San Luis Obispo
- 750 Santa Maria
- 755 Buellton
- 760 Santa Barbara
- 765 Ventura
- 770 Moorpark
- 771 Conejo Inspection Facility



8 CHP Divisions

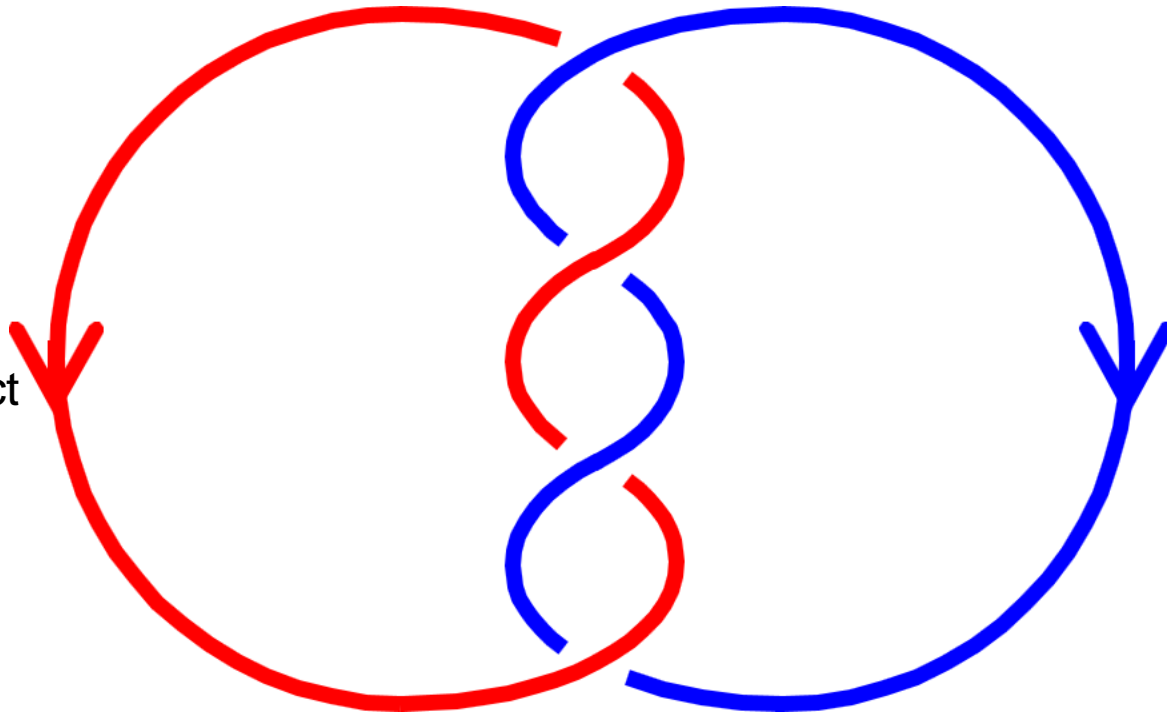
16 Inspection Facilities

Numerous Platform Scales



# HAZARDOUS MATERIALS INSPECTIONS

**PHASE 1**  
Driver Contact



**PHASE 2**  
Hands On



# HAZARDOUS MATERIALS INSPECTIONS

## Phase 1 – Driver Contact:

- Driver License
- Vehicle/s Registration
- CA / DOT Identification Numbers
- California Hazardous Materials Transportation License
- Federal DOT Hazardous Materials License
- DTSC Hazardous Waste Transporter Registration
- Emergency Response Information
- Driver Training
- Hazardous Materials Shipping Papers / Uniform Hazardous Waste Manifests



# HAZARDOUS MATERIALS INSPECTIONS

## Phase 2 – Hands On:

- Hazardous Materials Shipping Papers / Uniform Hazardous Waste Manifests
- HM Packaging
- HM Segregation
- HM Markings
- HM Labels
- HM Placards
- Two-Way Communications
- Safety Equipment
- Locking Device
- HM Securement
- HM Package Integrity / Leaking Packages

### DRIVER/VEHICLE EXAMINATION REPORT



CHP 407F/343A-Aspen  
California Highway Patrol  
601 North 7th Street  
Sacramento, CA 95811  
Phone: (916)843-4260 Fax: (916)843-3898

Report Number: CA3LN611402  
Inspection Date: 2013-08-31  
Start Time: 10:45 End Time: 11:45  
Insp. Level: III - Driver/Credential Inspection  
HM Inspection Type: N

INC Driver: [Redacted]  
License # [Redacted] State: CA  
Date of Birth: 1958-09-06  
CoDriver: [Redacted] State: [Redacted]  
License #: [Redacted] Date of Birth: [Redacted]  
Date of Birth: [Redacted]  
Location: E/B LIVERMORE PLATFORM SCALE MilePost: [Redacted] Shipper: [Redacted]  
Highway: I-580 Origin: FRESNO Bill of Lading: [Redacted]  
County: [Redacted] Destination: OAKLAND Cargo: CHEMICALS

VEHICLE IDENTIFICATION										
Unit	Type	Make	Year	State	License #	Company #	Vin #	GVWR	CVSA#	OOS#
1	TT	INTL	2006	IN	1103399	3X GRN		80000		
2	ST	STRI	2008	ME	1664863	1X VAN		0		
3	DC	UNK	2000	ME	NONE	1X DC		0		
4	ST	GDAN	2007	ME	1560119	1X VAN		0		

**BRAKE ADJUSTMENTS**  
Axle # [Redacted]  
Right [Redacted]  
Left [Redacted]  
Chamber [Redacted]

VIOLATIONS										
Section Code	Federal Code	Type	Unit	OOS	Citation #	Verify	Crash	Violation Discovered		
172.504B	172.504B	C	4	1	83180RK	U	0	Dangerous placard violation - missing 4 O/S		
177.834A	177.834A	C	4	1		U	0	Package not secure in vehicle - Four 55 gal. plastic drums strapped to side of van but not secured on pallet, drums shifted, 1 drum tipping off pallet O/S		

HazMate: 8 Placard: Yes Cargo Tank: 0  
HazMate: 3 Placard: Yes Cargo Tank: 0  
Special Checks: [Redacted]

State Information: Beat/Sub Area: 881; Veh #1 Type: 75; Veh #2 Type: 31; Veh #3 Type: DC; Veh #4 Type: 31;  
83180RK; 215; 15439; Regulated Vehicle: Y; Pre-Cleared Vehicle: N;  
 I hereby notify and declare TIMOTHY BREILING to be Out-of-Service. No motor carrier shall permit or require TIMOTHY BREILING to drive or operate any motor vehicle until his/her driving privileges have been reinstated.  
This is not a citation. Please read the instructions on the reverse side of this form.  
Note: \* Owner Responsibility



# HAZARDOUS MATERIALS INSPECTIONS

Phase 1

Phase 2





# HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS

# THE BASICS



# APPLICABILITY OF REGULATIONS



**CFR 49**

**CODE OF FEDERAL REGULATIONS - TITLE 49 - TRANSPORTATION**

- HAZARDOUS MATERIALS COMPLIANCE PRODUCTS**
- DOT COMPLIANCE PRODUCTS**
- FMCSA COMPLIANCE PRODUCTS**
- OSHA COMPLIANCE PRODUCTS**
- DRIVER TRAINING & COMPLIANCE REGULATIONS**

# HAZARDOUS MATERIALS REGULATIONS

## APPLICABILITY OF REGULATIONS

- **§171.1 CFR 49**

(c) Transportation Functions. Requirements in the HMR (Hazardous Materials Regulations) apply to transportation of a hazardous material in commerce and to each person who transports a hazardous material in commerce. Transportation of a hazardous material in commerce begins when a carrier takes physical possession of the hazardous material for the purpose of transporting it and continues until the package containing the hazardous material is delivered to the destination indicated on a shipping document, package marking, or other medium. For a private motor carrier, transportation of a hazardous material in commerce begins when a motor vehicle driver takes possession of a hazardous material for the purpose of transporting it and continues until the driver relinquishes possession of the package containing the hazardous material at its destination and is no longer responsible for performing functions subject to the HMR with respect to that particular package.



# HAZARDOUS MATERIALS REGULATIONS

## APPLICABILITY OF REGULATIONS

- **§171.1 CFR 49**

(f) No person may transport a hazardous material in commerce unless the hazardous material is transported in accordance with applicable requirements of this subchapter or an exemption, approval, or registration issued under this subchapter.



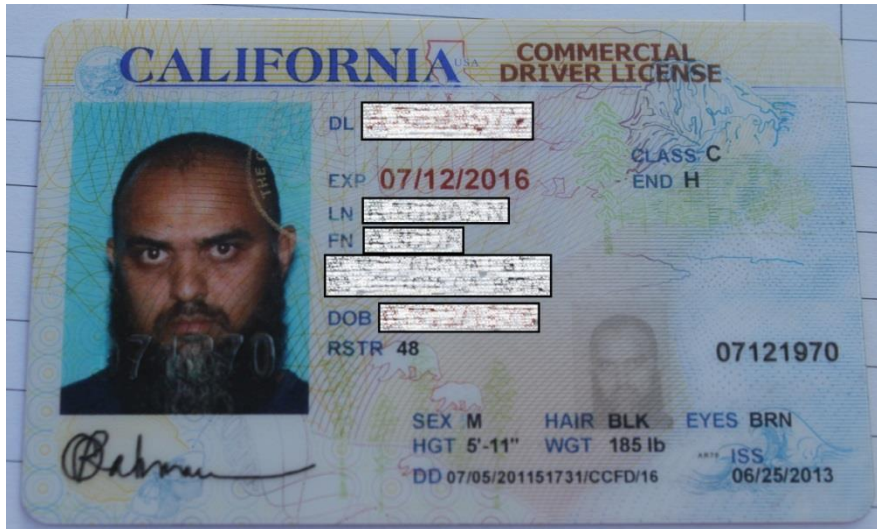
PHASE 1  
DRIVER CONTACT



# DRIVER LICENSE



# DRIVER LICENSE



## Common Violations:

- CDL Not in possession
- Inappropriate CDL Class
- No Hazardous Materials Endorsement
- No Tank Endorsement



12951VC, 15275VC

# VEHICLE REGISTRATION & CA / DOT NUMBERS

SELF EXPLANATORY





# CALIFORNIA HAZARDOUS MATERIALS TRANSPORTATION LICENSE

**CHMTL**

# CALIFORNIA HAZARDOUS MATERIALS TRANSPORTATION LICENSE (CHMTL)

## Common Violations:

- Current copy of CHMTL not in possession
- CHMTL not on file
- CHMTL on file, but Expired

 STATE OF CALIFORNIA DEPARTMENT OF CALIFORNIA HIGHWAY PATROL <b>HAZARDOUS MATERIALS TRANSPORTATION LICENSE</b> CHP 360H (REV. 1/00) OPI 052	CONTROL NUMBER 215302	LICENSE NUMBER 141001	ISSUE DATE 6/30/2015	EFFECTIVE DATE 7/31/2016
	CHP CARRIER NUMBER CA 449534	LOCATION	<input type="checkbox"/> Duplicate <input type="checkbox"/> Initial	<input checked="" type="checkbox"/> Replacement <input type="checkbox"/> Renewal
<b>PROPERTY OF THE CALIFORNIA HIGHWAY PATROL (CHP)</b> The original valid license must be kept at the licensee's place of business as indicated on the license and a legible copy must be carried in any vehicle or combination transporting hazardous materials and must be presented to any CHP officer upon request. This license is NOW TRANSFERABLE and must be surrendered to the CHP upon demand or as required by law. A majority change in ownership or control of the licensed activity shall require a new license. This license may be renewed by submitting an application and appropriate fee to the CHP. Persons whose licenses have expired or are otherwise no longer valid must immediately cease the activity requiring a license. THERE IS NO GRACE PERIOD. For licensing information contact CHP, Commercial Vehicle Section at (916) 843-3400.				
LICENSEE NAME AND PHYSICAL ADDRESS <i>(only if different from below)</i> SUMMIT ENVIRONMENTAL SERVICES INC 8041 DORY DRIVE HUNTINGTON BEACH CA 92646				
LICENSEE NAME AND MAILING ADDRESS SUMMIT ENVIRONMENTAL SERVICES INC 7071 WARNER AVE F353 HUNTINGTON BEACH CA 92647 ATTENTION: TONY M ORLANDO				
This carrier is on the special routing/safe stopping place mailing lists as indicated below: <input type="checkbox"/> (HMX) Explosives subject to Division 14, California Vehicle Code (CVC). <input type="checkbox"/> (HMPH) Poison Inhalation Hazard materials in bulk packagings subject to Division 14.3, CVC. <input type="checkbox"/> (HRCQ) Highway Route Controlled Quantity radioactive materials subject to Division 14.5, CVC.				
Any person who dumps, spills, or causes the release of hazardous materials or hazardous waste upon any highway shall immediately notify the CHP or the agency having jurisdiction for that highway. The minimum fine for failure to make the appropriate notification is \$2,000.00. (CVC Section 23112.5)				



32000.5(a)VC

# DTSC HAZARDOUS WASTE TRANSPORTER REGISTRATION



Department of  
Toxic Substances  
Control

# DTSC HAZARDOUS WASTE TRANSPORTER REGISTRATION

- Transporting any Hazardous Waste
- Must carry current copy in vehicle
- Must display upon demand

## Common Violations:

- No DTSC Registration on file
- DTSC Registration on file, but Expired
- DTSC Registration not in possession



Linda S. Adams  
Secretary for  
Environmental Protection



Department of Toxic Substances Control

Deborah O. Raphael, Director  
8800 CalCenter Drive  
Sacramento, California 95826-3200



Edmund G. Brown Jr.  
Governor

\*\*\*HAZARDOUS WASTE TRANSPORTER REGISTRATION\*\*\*  
HAZARDOUS WASTE OF CONCERN TRANSPORTER WITH  
CONSOLIDATED TRANSPORTER NOTIFICATION

NAME AND ADDRESS OF REGISTERED TRANSPORTER:

\_\_\_\_\_  
140 WEST MONTE AVENUE  
BLOOMINGTON, CA 92316

TRANSPORTER REGISTRATION NO: 5508

**EXPIRATION DATE: DECEMBER 31, 2014**

THIS IS TO CERTIFY THAT THE FIRM NAMED ABOVE IS DULY REGISTERED TO TRANSPORT HAZARDOUS WASTE IN THE STATE OF CALIFORNIA IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 6.5, DIVISION 20 OF THE HEALTH AND SAFETY CODE AND TITLE 22 OF THE CALIFORNIA CODE OF REGULATIONS, DIVISION 4.5.

THIS REGISTRATION CERTIFICATE MUST BE CARRIED WITH EACH SHIPMENT OF HAZARDOUS WASTE.

FOR REGISTRATION INFORMATION, PLEASE CALL (916) 440-7145.

  
\_\_\_\_\_  
(AUTmztWATURE)

\_\_\_\_\_  
(DATE)



♻️ Printed on Recycled Paper

25163(a)(b)HSC

# EMERGENCY RESPONSE INFORMATION



# EMERGENCY RESPONSE INFORMATION

- (1) The basic description and [technical name](#) of the [hazardous material](#)
- (2) Immediate hazards to health;
- (3) Risks of fire or explosion;
- (4) Immediate precautions to be taken in the event of an accident or incident;
- (5) Immediate methods for handling fires;
- (6) Initial methods for handling spills or leaks in the absence of fire; and
- (7) Preliminary first aid measures

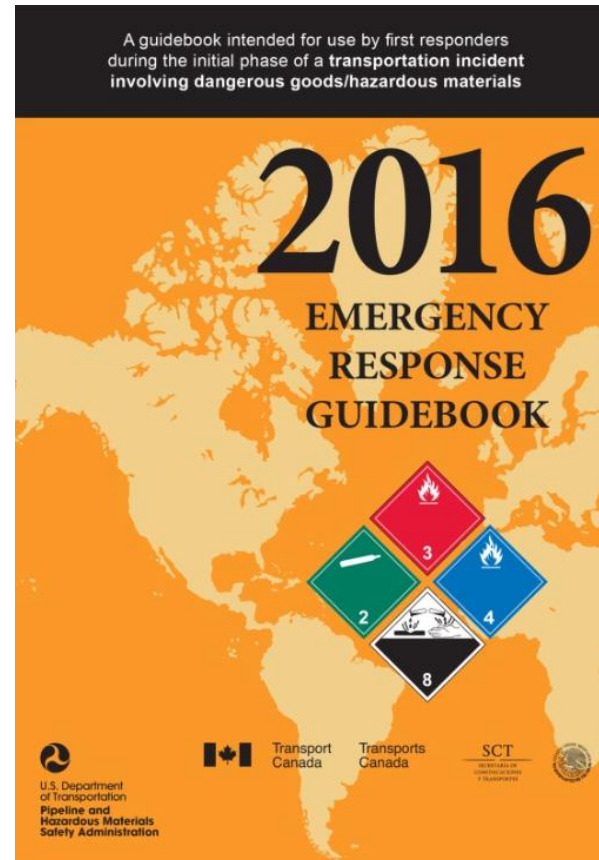


# EMERGENCY RESPONSE INFORMATION

- Emergency Response Guidebook (ERG)
- Safety Data Sheet (SDS)
- Separate Sheet
- On the shipping papers

## Common Violations:

- None in possession
- Wrong SDS's in possession
- ERG out-dated for hazmat



172.600, 172.604 CFR49

# HAZARDOUS MATERIALS DRIVER TRAINING

TRAINING





# DRIVER TRAINING

- General Awareness Training
- Function Specific Training
- Safety Training
- Security Training
- Initial Training (w/in 90)
- Recurring Training (3 yrs.)



## Common Violations:

- Driver has not received any hazmat training
- Refresher training not received



172.704 CFR49

PHASE 2  
HANDS ON



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- On top or tabbed
- Clearly visible – or in holder on driver's side door
- Must be within reach with driver seat-belted
- Away from vehicle

## Common Violations:

- None in possession
- Not on top or tabbed
- In sleeper or briefcase



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- DOT Identification Number
- Proper shipping name
- Hazard Class (Subsidiary hazard class)
- Packing Group
- N.O.S. listed

Bill of Lading/Shipper Receipt \*\*\* Continued from Previous Page \*\*\* Page 2 of 3 11/05/12 14:28:04

PHONES: 510-970-7540  
FAX: 510-255-4152

Ship To: MISSION LINEN #2100 (RCH)  
315 KERN STREET  
SALINAS, CA 92905

Sold To: MISSION LINEN  
ATTN: COST ACCOUNTING  
PO BOX 1299  
SANTA BARBARA, CA 93102-1299

Req Dates: 11/07/12  
Ship Dates: 11/07/12 0  
Ship From: 11  
Freight: 1 PPS/ADD  
Frt Code: 1 DC  
Taken By: SL195WA  
Slc Per: 745  
Placed By: DOROTHY  
Phone: 800-392-3392  
Dust Pbl: 8700672

Phones: 831-424-1707 Ext: Phones P: Ext:

QUANTITY SHIPPED	PACKAGING	HM	DESCRIPTION	M	ORDERED	QUANTITY BACKORDERED	PRODUCT CODE	CONTAINER DEPOSIT	GROSS WEIGHT
IF LEAK OR SPILL OCCURS DURING TRANSPORTATION: FOR CHEMICAL SPILL EMERGENCY CALL CHEMTREC 800-424-9300									
			RO HYPOCHLORITE SOLUTIONS, B, UN1791, PG III ERG #: 154 A CHEMICAL				DOT-SP 12412		4000
			SODIUM HYPOCHLORITE 12.5% A BLK M		400.0000			472916	4000
			4000.0000 BLK						

**UN1993 WASTE FLAMMABLE LIQUIDS, TOXIC, N.O.S.,  
(ACETONE, DICHLOROMETHANE), J (A, I), II**

Signature of Shipper: \_\_\_\_\_  
 PURCHASER'S ACCEPTANCE OF THE GOODS COVERED BY THIS DOCUMENT SHALL CONSTITUTE ACCEPTANCE BY THE PURCHASER OF ALL TERMS AND CONDITIONS OF SALE STATED ON THE REVERSE SIDE HEREOF. MOREOVER, PURCHASER, HEREBY ACKNOWLEDGES RECEIPT OF ALL REQUIRED MSDS'S.  
 Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Loaded By: \_\_\_\_\_  
 Freight: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Time In: \_\_\_\_\_ Time Out: \_\_\_\_\_  
 Returnable Pallets: \_\_\_\_\_ Container Pick Up #(s): \_\_\_\_\_  
 No Empty Container(s) to Pick Up: \_\_\_\_\_ (Customer)

BRENTAG COPY

## Common Violations:

- PSD incorrect order
- Incorrect UN number
- Missing subsidiary hazard class
- Missing packing group
- No entry for N.O.S. entries

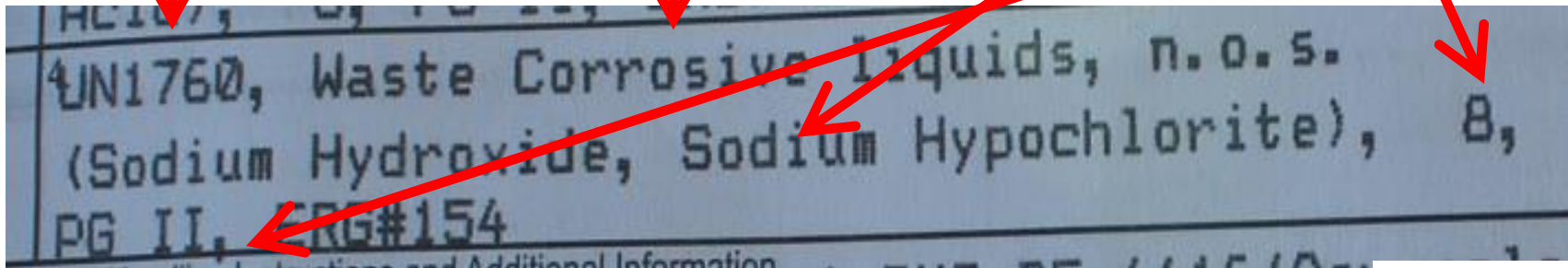


172.202(b) CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

Proper shipping name per the 49 CFR 172.101 Table

UN1760, Corrosive Liquids, n.o.s., 8, II

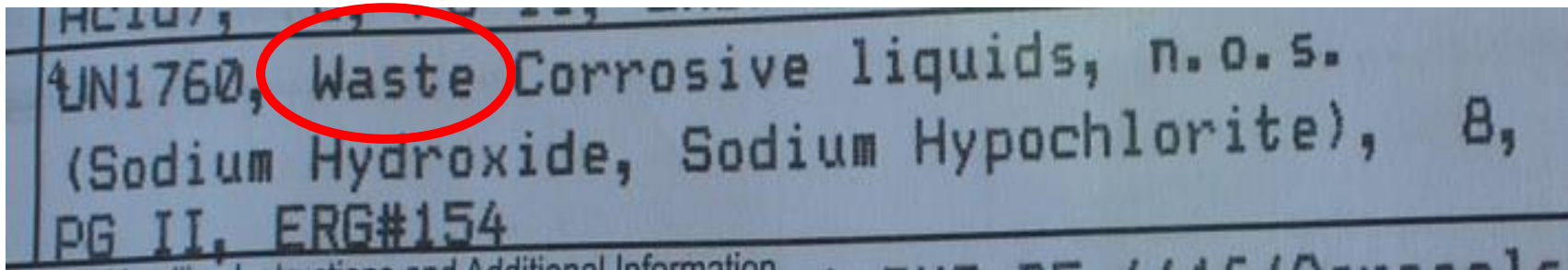


172.202(b) CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

For Hazardous Wastes (RCRA), the word “Waste” must precede the Proper Shipping Name if waste is not included in the name.

## UN1760, Corrosive Liquids, n.o.s., 8, II



### Common Violations:

- “Waste” not included on UHWM when required.



172.101(c)(9) CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

# PCS.	HM	DESCRIPTION OF ARTICLES AND MARKS	WEIGHT (LBS)
1	X	PLT UN1955, COMPRESSED GAS, TOXIC, N.O.S. ((PHOSPHINE, NITROGEN), INHALATION HAZARD ZONE B, 2.3, (1 CYLINDER) 85900-3 CLASS 150	110
	X	CYL UN1956, COMPRESSED GAS, N.O.S., (CYANOGEN CHLORIDE, NITROGEN), 2.2, (1 CYLINDER) 85880-0 CLASS 70	100
		ZHM HAZARDOUS MATERIALS CCS CALIFORNIA COMPLIANCE SURCHARGE OIP ORIG INSIDE PICKUP	

- Total Quantity of packages
- Package Type
- Applicable Units of Measurement (ie. lbs.)
- Reportable Quantity “RQ”
- Emergency Response Telephone Number





# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

# OF BOXES	PKG Type	ID NUMBER	DESCRIPTION OF ARTICLES	HAZARD CLASS	PACKING GROUP	NEM LBS	CLASS OR RATE	LABELS REQUIRED
	4 G	UN0335	FIREWORKS	1.3 G	II			YES 1.3G
	4 G	UN0336	FIREWORKS	1.4 G	II			YES 1.4G

## Common Violations:

- No indication / incorrect indication of number of packages
- No indication / wrong indication of package type
- Total quantity not described with applicable units of measurement



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

## Emergency Response Telephone Numbers:

- Monitored at all times the hazardous material is in transportation, including storage incidental to transportation;
- The telephone number of a person who is either knowledgeable of the hazardous material being shipped and has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information. A telephone number that requires a call back (such as an answering service, answering machine, or beeper device) does not meet these requirements.



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

## Common Violations:

- No Emergency Response telephone number listed on shipping papers
- Emergency Response telephone number out of service
- Emergency Response telephone number a personal cell # / Unable to provide required info.
- No current contract with Emergency Response Company

Emergency Contact #: 1-800-255-3924  
Contract No MIS004709



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

HM listed first or with an “RQ” (Reportable Quantity)

<i>Rogers Chemical Company, Inc. 122 Industrial Park Centralia, MO 65255</i>			
<b>Ship To:</b> Midwest Drug Supply 1304 Addit Way Emporia, KS 75080		<b>Shipped Via:</b> Acme Carriers 9701 N. Hartley Murry, MO 65255	
Units	HM	Description of Contents	Weight
20 cyl		Bromine Pentafluoride, 5.1, UN1745, I, Poison Inhalation Hazard, Zone A	300 lbs
1 can		Paint, 3, UN1263, III, Ltd Qty	10 lbs
1 ctn		Battery fluid acid, 8 UN2796, II, (packaged with electric storage batteries, dry)	55 lbs
1 bx		#16 Nails	
1 drm	RQ	Aldrin, liquid, 6.1, NA2762, II, Poison	75 lbs

NEEDS UPDATE - PSD ORDER



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

HM printed in contrasting color

<i>Rogers Chemical Company, Inc. 122 Industrial Park Centralia, MO 65255</i>			
Ship To:		Shipped Via:	
Midwest Drug Supply 1304 Addit Way Emporia, KS 75080		Acme Carriers 9701 N. Hartley Murry, MO 65255	
Units	HM	Description of Contents	Weight
20 cyl		Bromine Pentafluoride, 5.1, UN1745, I, Poison Inhalation Hazard, Zone A	300 lbs
1 can		Paint, 3, UN1263, III, Ltd Qty	10 lbs
1 ctn		Battery fluid acid, 8 UN2796, II, (packaged with electric storage batteries, dry)	65 lbs
1 bx		#16 Nails	
1 drm		<i>Aldrin, liquid, 6.1, UN 2762, II, Poison</i>	75 lbs



172.201(a) CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

HM highlighted

<i>Rogers Chemical Company, Inc. 122 Industrial Park Centralia, MO 65255</i>					
<i>Units</i>		<i>HM</i>		<i>Description of Contents</i>	
Ship To:		Midwest Drug Supply 1304 Addit Way Emporia, KS 75080		Shipped Via: Acme Carriers 9701 N. Hartley Murry, MO 65255	
20 cyl				Bromine Pentafluoride, 5.1, UN1751, I, Poison-Inhalation Hazard, Zone A	
1 can				Paint, 3, UN1263, III, Ltd Qty	
1 ctn				Battery fluid acid, 8 UN2796, II, (packaged with electric storage batteries, dry)	
1 bx				#16 Nails	
1 drm				Aldrin, liquid, 6.1, UN 2762, II, RQ, Poison	



172.201(a) CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- Special Permits – must be marked with “DOT-SP” and corresponding special permit number

Bill of Lading/Shipping Receipt  
 BRENTNAG PACIFIC, INC.  
 860 MHARF STREET  
 RICHMOND, CA 94804

MISSION LINE# 910-970-7540  
 #8866 - 500-2025-4032

\*\*\* Continued from Previous Page \*\*\* Page 2 of 3  
 11/05/12 14:28:04

**BRENTNAG**

Ship To: MISSION LINE# 2100 (RCH)  
 315 LERN STREET  
 SALINAS, CA 95305

Sold To: MISSION LINE#  
 ATTN: COST ACCOUNTING  
 PO BOX 1299  
 SANTA BARBARA, CA 93102-1299

Req Date: 11/07/12  
 Ship Date: 11/07/12 0  
 Ship From: 11  
 Freight: PPD/ADD  
 Prit Code: CC  
 Taken By: SL19SM6  
 Placed By: DOROTHY  
 Phone#: 800-392-3392  
 Dust PDN: 8700672

Phone: 831-424-1707 Ext: Phone: P Ext:

QUANTITY SHIPPED	PACKAGING	HM	DESCRIPTION	M	ORDERED QUANTITY	PRODUCT CODE	CONTAINER DEPOSIT	GROSS WEIGHT
1.0000	T/T		SODIUM HYPOCHLORITE 12.5%A BLK M		400.0000	472916		4000

**DOT-SP 12412**

HOSE SEAL # \_\_\_\_\_ HOSE SEAL # \_\_\_\_\_  
 HOSE SEAL # \_\_\_\_\_ HOSE SEAL # \_\_\_\_\_

\*\*\* Continued on Next Page \*\*\*

This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature of Shipper: \_\_\_\_\_  
 PURCHASER'S ACCEPTANCE OF THE GOODS COVERED BY THIS DOCUMENT SHALL CONSTITUTE ACCEPTANCE BY THE PURCHASER OF ALL TERMS AND CONDITIONS OF SALE STATED ON THE REVERSE SIDE HEREOF. MOREOVER, PURCHASER, HEREBY ACKNOWLEDGES RECEIPT OF ALL REQUIRED MSDS'S.

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Loaded By: \_\_\_\_\_ Checked By: \_\_\_\_\_ Vehicle: \_\_\_\_\_  
 Freight: \_\_\_\_\_ Floor Load: \_\_\_\_\_ Delivered By: \_\_\_\_\_  
 Time In: \_\_\_\_\_ Time Out: \_\_\_\_\_  
 Returnable Pallets: \_\_\_\_\_ Container Pick Up #(s): \_\_\_\_\_  
 No Empty Container(s) to Pick Up: \_\_\_\_\_ (Customer to Sign)

BRENTNAG COPY

## Common Violations:

- DOT-SP not entered on shipping paper
- Special permit not in possession or expired.



172.203(a) CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- Radioactive materials – Name of each radionuclide, physical/chemical form, category of label, transport index

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			
UN3321, Radioactive material, low specific activity (LSA-II), 7, RQ (Radionuclides) One Each: Shielded cask with Poly HIC (S/N PO-614191-01)	NA	NA	Solid METALLIC OXIDES	Ag-110m	C-14	Co-58	Co-60
				Fe-55	H-3	I-129	Mn-54
				Ni-63	Sb-125	Sr-90	Tc-99

## Common Violations:

- Missing / incorrect label types & TI's.





# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- Radioactive materials – Package types, Activity, Highway Route Controlled Quantities, Exclusive Use consignments, Fissile

RQ, UN3332, RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL, FORM, 7

Radionuclide: Cf-252 Qty Hazardous Mat'l: 2326.68 ug Cf-252 on 3/24/2017  
Physical State: Solid Chemical Form: Metal Oxide  
Package: GE Model 2502; U.S. DOT 7A Type A Container  
Activity: 46.143 GBq (1.2471 Ci)  
Label: Radioactive Yellow III Transport Index: 19  
Placards Required: YES  
Security Seal No(s): VAL 0000795

Exclusive-Use Instructions: N/A

## Common Violations:

- Missing “Exclusive Use” or “HRCQ”

172.203(d) CFR49



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- Technical Names for n.o.s. / PSN identified by “G” column (1) 172.101 Table

UN3129, WATER-REACTIVE LIQUID, CORROSIVE, N.O.S. 4.3(8), I,

## Common Violations:

- No entry for n.o.s.
- Incorrect entry for n.o.s.



172.203(k) CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- PIH / TIH

9a. HM#	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))
K	1. <del>UN1744 WASTE BROMINE</del> <i>UN1744 WASTE BROMINE</i> <i>(Bromine and Water)</i>
2.	

## Common Violations:

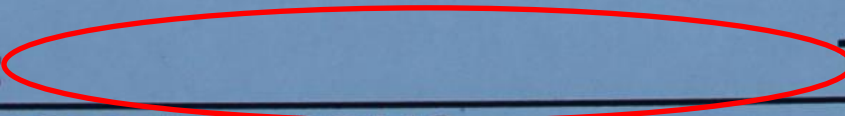
- “Poison Inhalation Hazard” or “Toxic Inhalation Hazard” not entered on shipping papers
- Improper Zone (A,B,C,D) entered on s/p’s



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- Shipper's Certification

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION

**SIGNATURE:**  **TITLE:**

## Common Violations:

- No Certification on shipping papers
- Certification not signed / typed



# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

- Uniform Hazardous Waste Manifests

172.205-17999

Please print or type. (Form designed for use on 8 1/2" x 11" (210x297) paper)

Form Approved: OMB No. 2000-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator ID Number: \_\_\_\_\_ 2. Page 1 of 3 3. Emergency Response Phone: \_\_\_\_\_ 4. Manifest Tracking Number: **JJK**

5. Generator's Name and Mailing Address: \_\_\_\_\_  
Generator's Site Address (if different from mailing address): \_\_\_\_\_

Generator's Phone: \_\_\_\_\_

6. Transporter 1 Company Name: \_\_\_\_\_ U.S. EPA ID Number: \_\_\_\_\_

7. Transporter 2 Company Name: \_\_\_\_\_ U.S. EPA ID Number: \_\_\_\_\_

8. Designated Facility Name and Site Address: \_\_\_\_\_ U.S. EPA ID Number: \_\_\_\_\_

Facility's Phone: \_\_\_\_\_

9a. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	9b. Containers		11. Total Quantity	12. Unit (kg, lbs)	13. Waste Codes
	No.	Type			

10. Special Handling Instructions and Additional Information: \_\_\_\_\_

11. GENERATOR/SUPPORTER'S CERTIFICATION: I hereby declare that the contents of this manifest are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/corrupted, and are in all respects in proper condition for transport according to applicable international and national governmental regulations, if export shipment and/or the Primary Exporter. I certify that the waste characterization statement identified in 40 CFR 261.27(a)(1)-(3) is a large quantity generator and/or (2)-(3) are a small quantity generator's true.

Generator/Officer's Printed/Typed Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Month: \_\_\_\_\_ Day: \_\_\_\_\_ Year: \_\_\_\_\_

12. International Shipment:  Import to U.S.  Export from U.S. Part of entry/exit Date leaving U.S.: \_\_\_\_\_

Transporter signature (for exports only): \_\_\_\_\_

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Month: \_\_\_\_\_ Day: \_\_\_\_\_ Year: \_\_\_\_\_

Transporter 2 Printed/Typed Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Month: \_\_\_\_\_ Day: \_\_\_\_\_ Year: \_\_\_\_\_

18. Discrepancy

18a. Discrepancy Indication (Specify  Quantity  Type  Residue  Partial Rejection  Full Rejection)

18b. Alternate Facility (or Generator): \_\_\_\_\_ Manifest Reference Number: \_\_\_\_\_ U.S. EPA ID Number: \_\_\_\_\_

Facility's Phone: \_\_\_\_\_

18c. Signature of Alternate Facility (or Generator): \_\_\_\_\_ Month: \_\_\_\_\_ Day: \_\_\_\_\_ Year: \_\_\_\_\_

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18b

Printed/Typed Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Month: \_\_\_\_\_ Day: \_\_\_\_\_ Year: \_\_\_\_\_

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. **DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)**

In addition to all CFR 49 requirements, the hazardous waste manifest must be completed as required by the Health & Safety Code and Title 22 of the California Code of Regulations



172.205 CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

## ○ Uniform Hazardous Waste Manifests

Form Approved OMB No. 2050-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator ID Number: **CAD009134438**

2. Page 1 of 2

3. Generator Response Phone: **1-800-424-9300**

4. Manifest Tracking Number: **010832337 JJK**

5. Generator's Name and Mailing Address: [Redacted]

6. Generator's Phone: [Redacted]

7. Generator's Site Address (if different than mailing address): [Redacted]

8. U.S. EPA ID Number: **CAD002413282**

9. U.S. EPA ID Number: **KW000210617**

10. U.S. EPA ID Number: **LLC**

11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)): **UN1744 WASTE BROMINE, 8.8.1 PG-II, I, SOLID, LIQUID, INHALATION HAZARDOUS A (Bromine and Water)**

12. Containers:

No.	Type	Total Qty.	Unit	Wt./Vol.	Waste Codes
1	QDR, DM	015	P	651	D002
2					
3					
4					

14. Special Handling Instructions and Additional Information: **6.1 Profile #10030-00, ERG#154 1X10 Gms Car-101 POH43159**

15. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this commitment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/retailed, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this commitment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste identification statement identified in 40 CFR 262.27(b) (1) is an a) large quantity generator or (b) (1) an a) small quantity generator's list.

16. Generator's Printed/Typed Name: **A. DAVID MONTGOMERY** Signature: [Signature] Month: **4** Day: **24** Year: **13**

17. International Shipments:  Import to U.S.  Export from U.S. Port of entry/exit: [Redacted] Date leaving U.S.: [Redacted]

18. Transporter Acknowledgment of Receipt of Materials: Transporter 1 Printed/Typed Name: **Malcolm Smith** Signature: [Signature] Month: **14** Day: **24** Year: **13**

Transporter 2 Printed/Typed Name: **JESUS Garcia** Signature: [Signature] Month: **05** Day: **10** Year: **13**

19. Discrepancy Indication Space:  Quantity  Type  Residue  Partial Rejection  Full Rejection

20. Alternate Facility (or Generator): Method Reference Number: [Redacted] U.S. EPA ID Number: [Redacted]

21. Facility's Name: [Redacted] Facility's Phone: [Redacted] Signature of Alternate Facility (or Generator): [Redacted] Month: [Redacted] Day: [Redacted] Year: [Redacted]

22. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a: Printed/Typed Name: [Redacted] Signature: [Redacted] Month: [Redacted] Day: [Redacted] Year: [Redacted]

EPA Form 8700-22 (Rev. 3-08) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR STATE (IF REQUIRED)

- ✓ Generator EPA ID Number
- ✓ Page Numbers (all pages)
- ✓ Emergency Response Telephone #
- ✓ Manifest Tracking Number
- ✓ Generator / Transporter Info & EPA #s
- ✓ HW Shipping Descriptions
- ✓ HW – Quantity & Type of Containers
- ✓ HW – Total Quantity
- ✓ HW – Unit of Measurement
- ✓ HW – Waste Codes
- ✓ Signatures / Dates by Generator & Transporter



172.205 CFR49

# HAZARDOUS MATERIALS SHIPPING PAPERS & HAZARDOUS WASTE MANIFESTS

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>CAD009134438</b>	2. Page 1 of <b>12</b>	3. Emergency Response Phone <b>1-800-424-9300</b>	4. Manifest Tracking Number <b>010832337 JJK</b>		
5. Generator's Name and Mailing Address  Generator's Phone:		Generator's Site Address (if different than mailing address)			U.S. EPA ID Number <b>CAD282413282</b>		
6. Transporter 1 Company Name  Generator's Phone:		U.S. EPA ID Number <b>CAD000210617</b>			U.S. EPA ID Number <b>NVD080895338</b>		
7. Transporter 2 Company Name  Generator's Phone:		U.S. EPA ID Number <b>LLC</b>			U.S. EPA ID Number <b>NVD080895338</b>		
8. Designated Facility Name and Site Address  Facility's Phone:		U.S. EPA ID Number <b>LLC</b>			U.S. EPA ID Number <b>NVD080895338</b>		
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes	
		No.	Type				
X	<b>UN1744 WASTE BROMINE, 8.0.1, PG II</b> <i>INHALATION HAZARDOUS A</i> <b>(Bromine and Water)</b>	001	PM	015	P	651	D002
2.							
3.							
4.							
14. Special Handling Instructions and Additional Information  <b>9b1) Profile #18030-00, ERG#154 1X106#1 CAR-101 POH43159</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Director/Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offeror's Printed/Typed Name <b>DAVID MONTIELANO</b>		Signature <i>[Signature]</i>		Title <b>POH43159</b>			
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:					
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name <b>Malcolm Smith</b>		Signature <i>[Signature]</i>		Title <b>Malcolm Smith</b>			
Transporter 2 Printed/Typed Name <b>Jesus Garcia</b>		Signature <i>[Signature]</i>		Title <b>Jesus Garcia</b>			



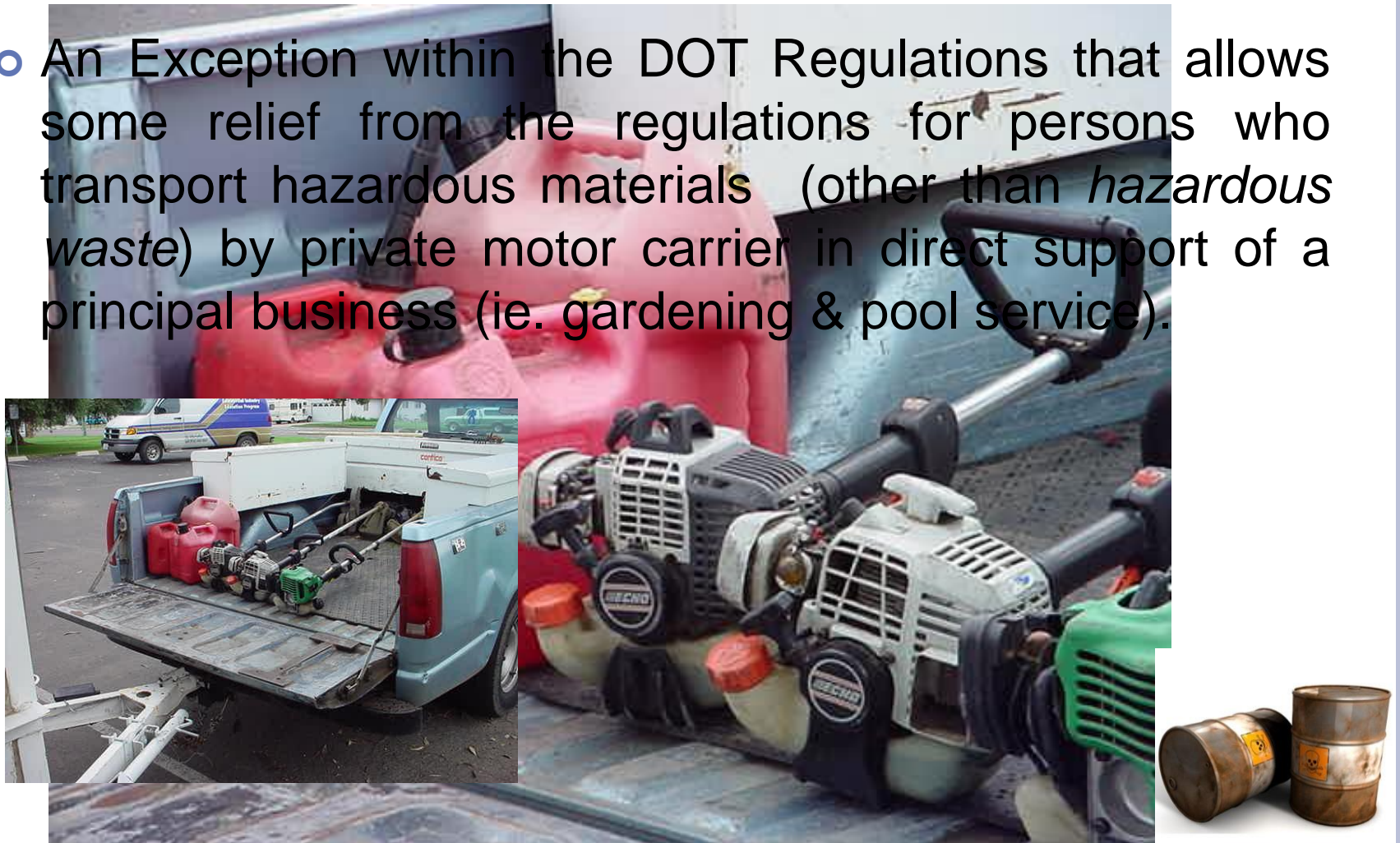
# HAZARDOUS MATERIALS MATERIALS OF TRADE (MOT)





# MATERIALS OF TRADE (MOT)

- An Exception within the DOT Regulations that allows some relief from the regulations for persons who transport hazardous materials (other than *hazardous waste*) by private motor carrier in direct support of a principal business (ie. gardening & pool service).



173.6 CFR49

# MATERIALS OF TRADE (MOT)

Restrictions associated with the MOT are:

- Packaging must be leak tight for liquids & gases and sift proof for solids – must be in the manufacturer's original packaging or a packaging of equal or greater strength and integrity
- Packages must be securely closed and secured against shifting and protected against damage



173.6 CFR49

# MATERIALS OF TRADE (MOT)

Restrictions associated with the MOT are: (continued)



- Outer packaging is not required for receptacles that are secured against shifting in cages, carts, bins, boxes or compartments
- Each package must be marked with a common name or proper shipping name to identify the contents



173.6 CFR49

# MATERIALS OF TRADE (MOT)

Restrictions associated with the MOT are: (continued)

- If a package contains a reportable quantity of a hazardous substance, it must be marked with “RQ”
- Maximum amount of a medium or lower hazardous material (PG II or III) in one package is 66 lbs. or 8 gallons



173.6 CFR49

# MATERIALS OF TRADE (MOT)

Classes 3, 5.1 and 8 or ORM-D

Package Gross Mass:

- PG I            1 pound or 1 pint
- PG II           66 pounds or 8 gallons
- PG III          66 pounds or 8 gallons



173.6 CFR49

# MATERIALS OF TRADE (MOT)

Classes 2.1 or 2.2

Cylinder Gross Mass:

- Not over 220 pounds



173.6 CFR49

# MATERIALS OF TRADE (MOT)

Restrictions associated with the MOT are: (continued)

- Maximum amount of hazardous materials on one vehicle is limited to 440 lbs.
- Operator of vehicle must know the materials are hazardous and be aware of MOT regulations



173.6 CFR49

# MATERIALS OF TRADE (MOT)

- MOT's do not require shipping papers, emergency response information, placarding, formal training, or record keeping
- This exception applies only to DOT-designated hazardous materials



173.6 CFR49



# MATERIALS OF TRADE (MOT)

## Common Violations:

- Hazardous materials packages not secured
- Exceeding maximum allowable aggregate gross weight of 440 pounds
- Hazardous materials packages not properly labeled
- Hazardous materials packages leaking













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1057492

RUAN

WAY PATROL

LIVERMORE



# HAZARDOUS MATERIALS PACKAGING



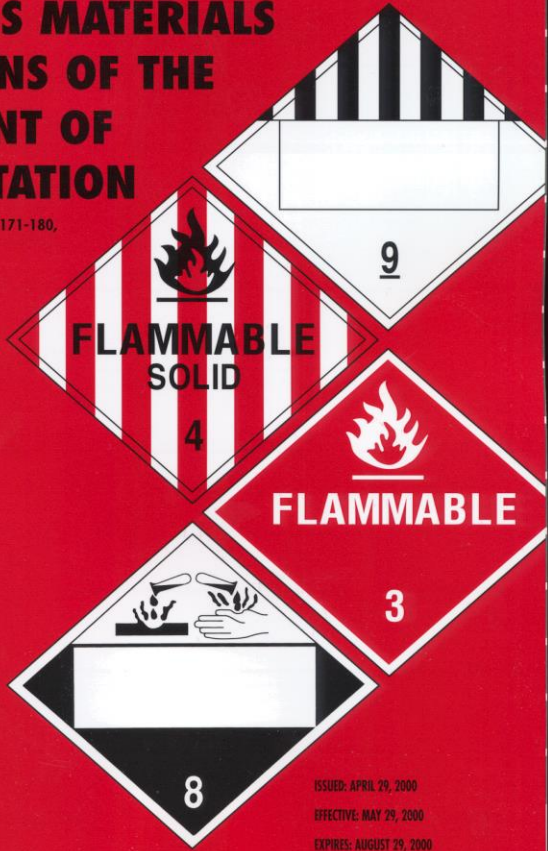


# HAZARDOUS MATERIALS PACKAGING

Bureau of Explosives TARIFF No. BOE-6000

**HAZARDOUS MATERIALS  
REGULATIONS OF THE  
DEPARTMENT OF  
TRANSPORTATION**

(49 CFR - PARTS 106, 107, 110, 130, 171-180,  
209, AND 397)



BY  
**Air, Rail, Highway,  
And Water**

INCLUDING  
**Specifications for  
Shipping Containers**

ISSUED: APRIL 29, 2000  
EFFECTIVE: MAY 29, 2000  
EXPIRES: AUGUST 29, 2000

TITLE 49  
CODE OF FEDERAL  
REGULATIONS  
(49 CFR)  
172.101 Columns 7 & 8



# HAZARDOUS MATERIALS PACKAGING



- Non-Bulk
- Bulk
- Cargo Tanks
- Spec / Non-Spec



# HAZARDOUS MATERIALS PACKAGING

## *Non-Bulk Packaging:*

- A packaging which has:

(1) A maximum capacity of 450 L (119 gallons) or less as a receptacle for a liquid;

(2) A maximum net mass of 400 kg (882 pounds) or less and a maximum capacity of 450 L (119 gallons) or less as a receptacle for a solid; or

(3) A water capacity of 454 kg (1000 pounds) or less as a receptacle for a gas.



# HAZARDOUS MATERIALS PACKAGING

## *Bulk Packaging:*

- A packaging, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment. A bulk packaging has:

(1) A maximum capacity greater than 450 L (119 gallons) as a receptacle for a liquid;

(2) A maximum net mass greater than 400 kg (882) pounds and a maximum capacity greater than 450 L (119 gallons) as a receptacle for a solid; or

(3) A water capacity greater than 454 kg (1000 pounds) as a receptacle for a gas.



# HAZARDOUS MATERIALS PACKAGING

Column 7

Column 8A

Column 8B

Column 8C

Special Provisions

Exceptions

Non-Bulk Packaging

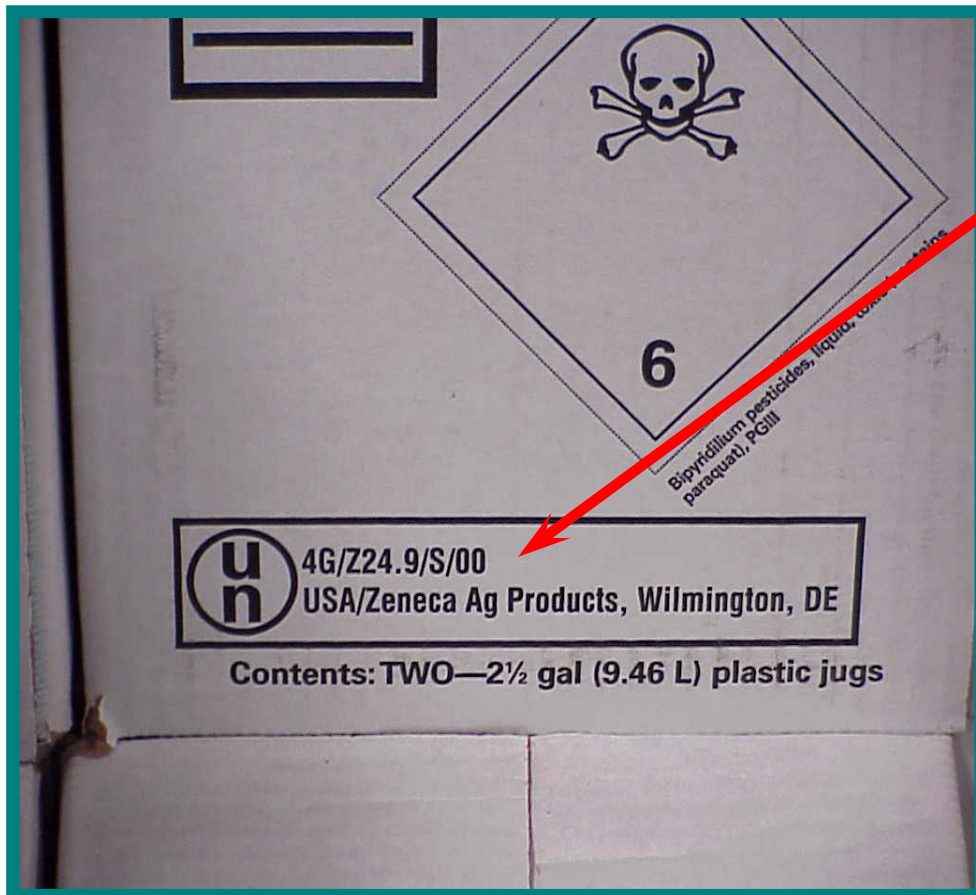
Bulk Packaging



172.101 Table CFR49

# HAZARDOUS MATERIALS PACKAGING

- Package Identification – DOT Spec or UN standard packaging



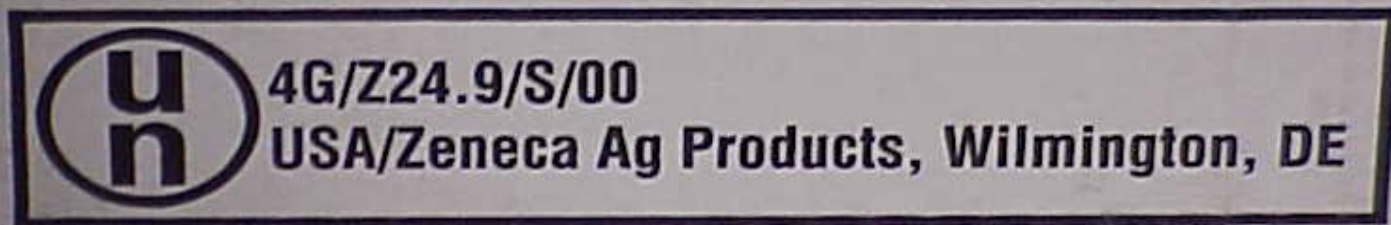
- Package Specification Markings



173.3 CFR49

## Package Specification:

<b>4G</b>	Fiberboard Box
<b>Z</b>	Packing Group III
<b>24.9</b>	Kilograms
<b>S</b>	Solid or Inner Packaging
<b>00</b>	Year Manufactured
<b>USA</b>	Country of Origin
<b>-</b>	Name/Address of Manufacturer



**Contents: TWO—2½ gal (9.46 L) plastic jugs**

# HAZARDOUS MATERIALS PACKAGING

- Non-Bulk Packages

## Common Violations:

- Unauthorized packaging

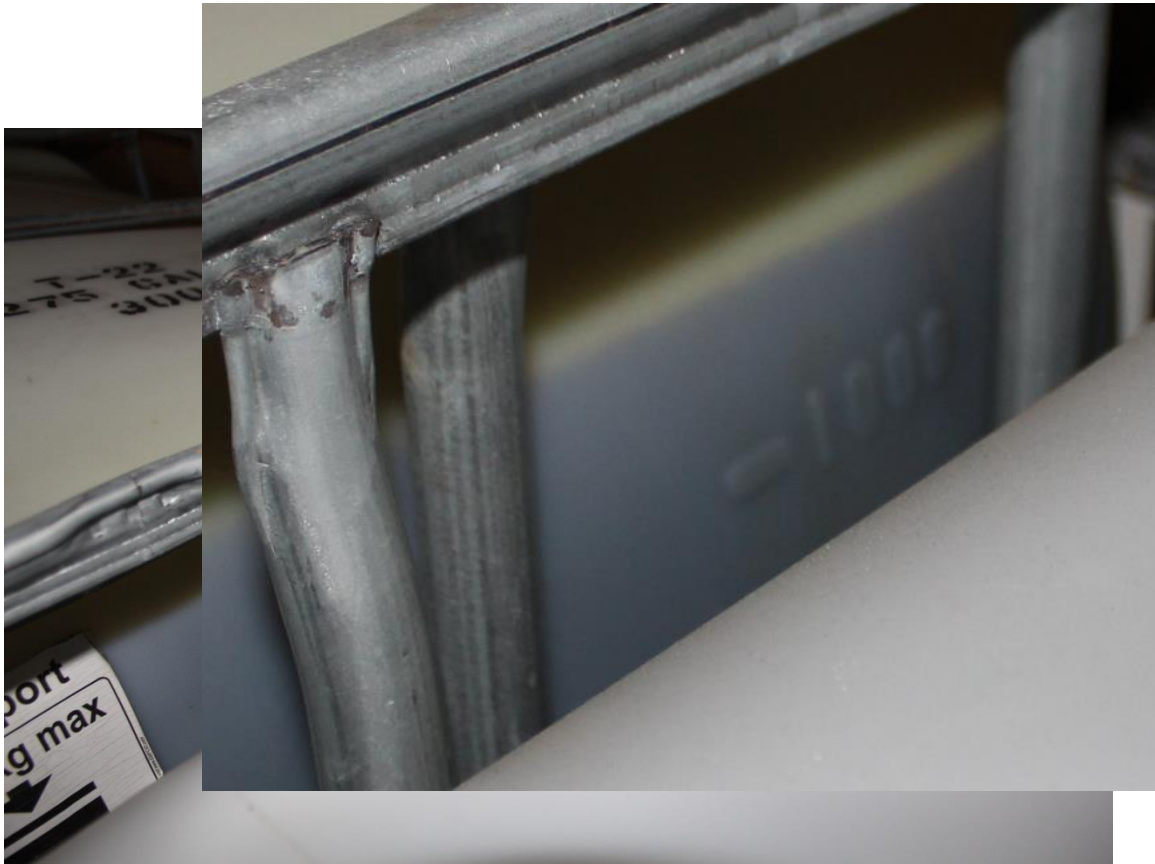


173.24(c) CFR49



# HAZARDOUS MATERIALS PACKAGING

- Bulk Packages



## Common Violations:

- IBC's – Overfilled past maximum fill limits



173.35(I) CFR49

# HAZARDOUS MATERIALS PACKAGING

- Cargo Tank Package Identification & Inspections



- Specification Plate
- Internal Valve
- Emergency Remote
- Fusible Links
- Test Dates
- Venting



# HAZARDOUS MATERIALS PACKAGING

- o Cargo Tank Package Identification – Spec Plates



# HAZARDOUS MATERIALS PACKAGING

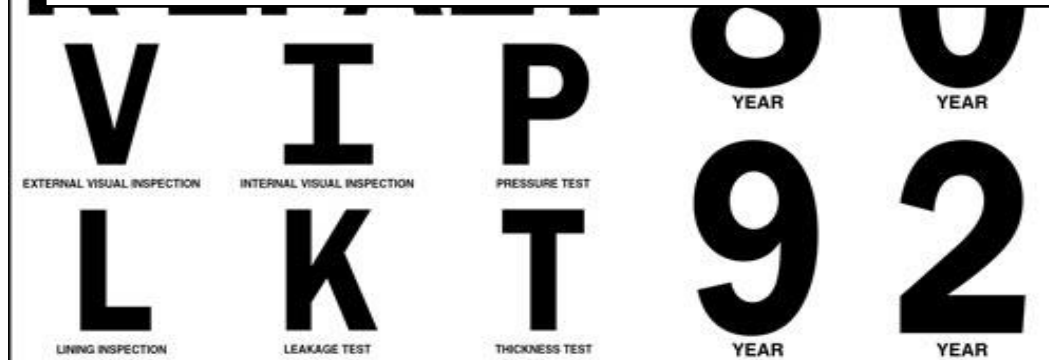
- Cargo Tanks



## Common Violations:

- Test dates displayed expired / Spec Tanks

T – Thickness Test



# HAZARDOUS MATERIALS PACKAGING

- DOT Exemptions (DOT-E) / DOT Special Permits (DOT-SP)
  - May relieve party from packaging, shipping paper, placarding, etc. requirements as specified in the exemption
  - Must comply with all requirements of the exemption
  - Must be party to exemption or authorized by the exemption to use
  - Must make an additional entry on shipping paper & marking on the packaging
  - Must be in possession (and not expired)



# HAZARDOUS MATERIALS SEGREGATION



# HAZARDOUS MATERIALS SEGREGATION

## ○ Segregation Table – 177.848 CFR 49

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or division	Notes	1.1 1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3 gas zone A	2.3 gas Zone B	3	4.1	4.2	4.3	5.1	5.2	6.1 liq- uids PG I zone A	7	8 liquids only	
Explosives .....	1.1 and 1.2	A	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Explosives .....	1.3		*	*	*	*	X		X	X	X		X	X	X	X	X		X	X
Explosives .....	1.4		*	*	*	*	○		○	○	○		○	○	○	○	○		○	○
Very insensitive explo- sives.	1.5	A	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Extremely insensitive explosives.	1.6		*	*	*	*														
Flammable gases .....	2.1		X	X	○	X			X	○							○	○		
Non-toxic, non-flam- mable gases.	2.2		X		X															
Poisonous gas Zone A	2.3		X	X	○	X		X			X	X	X	X	X	X				X
Poisonous gas Zone B	2.3		X	X	○	X		○			○	○	○	○	○	○				○
Flammable liquids .....	3		X	X	○	X			X	○							X			○
Flammable solids .....	4.1		X		X				X	○							X			○
Spontaneously combus- tible materials.	4.2		X	X	○	X			X	○							X			X
Dangerous when wet materials.	4.3		X	X		X			X	○							X			○
Oxidizers .....	5.1	A	X	X		X			X	○	○						X			○
Organic peroxides .....	5.2		X	X		X			X	○							X			○
Poisonous liquids PG I Zone A.	6.1		X	X	○	X		○			X	X	X	X	X	X				X
Radioactive materials ...	7		X		X		○													
Corrosive liquids .....	8		X	X	○	X			X	○		○	X	○	○	○	X			

# HAZARDOUS MATERIALS SEGREGATION

- Segregation Table – 177.848



- Verification of various hazard classes & how they are stored, loaded and transported





# HAZARDOUS MATERIALS SEGREGATION

- Segregation Table – 177.848 CFR 49

**HAZARDOUS MATERIALS LOAD AND SEGREGATION CHART**

CLASS	HAZARD	LIMIT	PACKING	PLACARD	HAZARDOUS MATERIALS LOAD AND SEGREGATION CHART																	
					1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	7	8
1	EXPLOSIVES	1.1	NET 30	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
	EXPLOSIVES	1.2	NET 30	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	
	EXPLOSIVES	1.3	NET 30	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	
	EXPLOSIVES	1.4	1001 Lbs.	A	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0	
	VERY INSENSITIVE EXPLOSIVES	1.5	1001 Lbs.	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	
	EXTREMELY INSENSITIVE EXPLOSIVES	1.6	1001 Lbs.	A	*	*	*	*	*													
2	FLAMMABLE GASES	2.1	1001 Lbs.	B	X	X	0	X			X	0							0	0		
	POISONOUS GAS ZONE A	2.3	NET 30	G	X	X	0	X		X			X	X	X	X	X				X	
	POISONOUS GAS ZONE B	2.3	NET 30	G	X	X	0	X		0			0	0	0	0	0	0			0	
3	FLAMMABLE LIQUIDS	3	1001 Lbs.	B	X	X	0	X			X	0				0			X			
4	FLAMMABLE SOLIDS	4.1	1001 Lbs.	B	X			X			X	0							X		0	
	SPONTANEOUSLY COMBUSTIBLE	4.2	1001 Lbs.	B	X	X	0	X			X	0							X		X	
	DANGEROUS WHEN WET MATERIALS	4.3	NET 30	B	X	X		X			X	0							X		0	
5	OXIDIZERS	5.1	1001 Lbs.	A	X	X		X			X	0	0						X		0	
	ORGANIC PEROXIDES	5.2	1001 Lbs.	F	X	X		X			X	0							X		0	
6	POISONOUS LIQUIDS PG 1 ZONE A	6.1	NET 30	E	X	X	0	X		0			X	X	X	X	X				X	
7	RADIOACTIVE MATERIALS	7	NET 30	H	X			X		0												
8	CORROSIVE LIQUIDS	8	1001 Lbs.	C	X	X	0	X			X	0		0	X	0	0	0	X			

**LEGEND**

**CLASS 3 - COMBUSTIBLE LIQUIDS**

**CLASS 6.1 - POISONOUS LIQUIDS PG 1 ZONE A**

**CLASS 9 - MISCELLANEOUS**

**PLACARDS NOT REQUIRED FOR:**

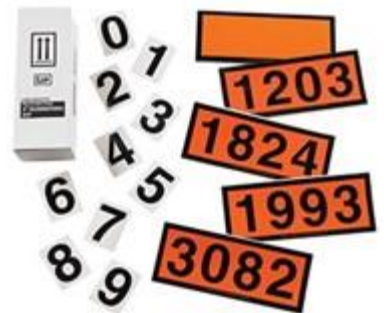
- 1. INERT GASES
- 2. RADIOACTIVE 1 & 2
- 3. ORG-C
- 4. Dry Ice (except for shipping papers as a "limited quantity")

**DANGEROUS PLACARD FOR BEST LOAD**

**HAZARDOUS MATERIALS LOAD AND SEGREGATION CHART**



# HAZARDOUS MATERIALS MARKINGS

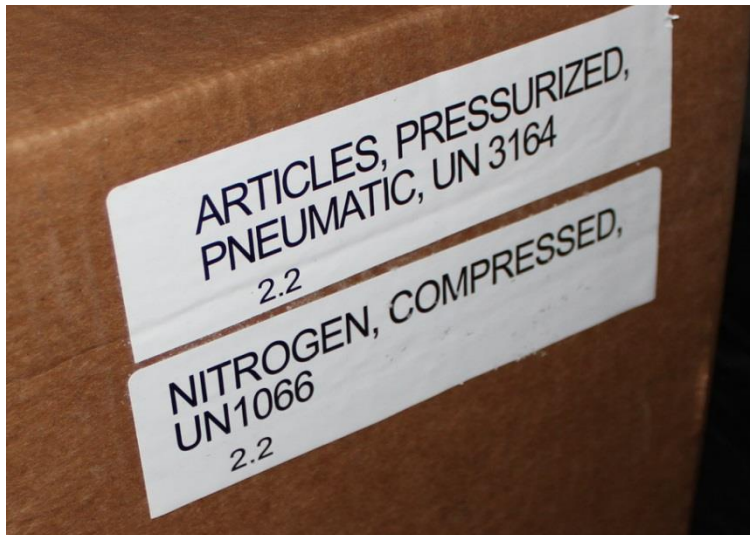


# HAZARDOUS MATERIALS MARKINGS

- Non-Bulk Packages



- Proper shipping name (PSN)
- DOT Identification Number
- Others – depending on circumstances (ie. Inhalation Hazard)



172.301(a) CFR49

# HAZARDOUS MATERIALS MARKINGS

- Non-Bulk Packages



- Package Marked  
**“Inhalation Hazard”**



172.313 CFR49

# HAZARDOUS MATERIALS MARKINGS

- Non-Bulk Packages
  - Package Marked “Inhalation Hazard”
    - Unless Labeled or Placarded PIH



LIQUID



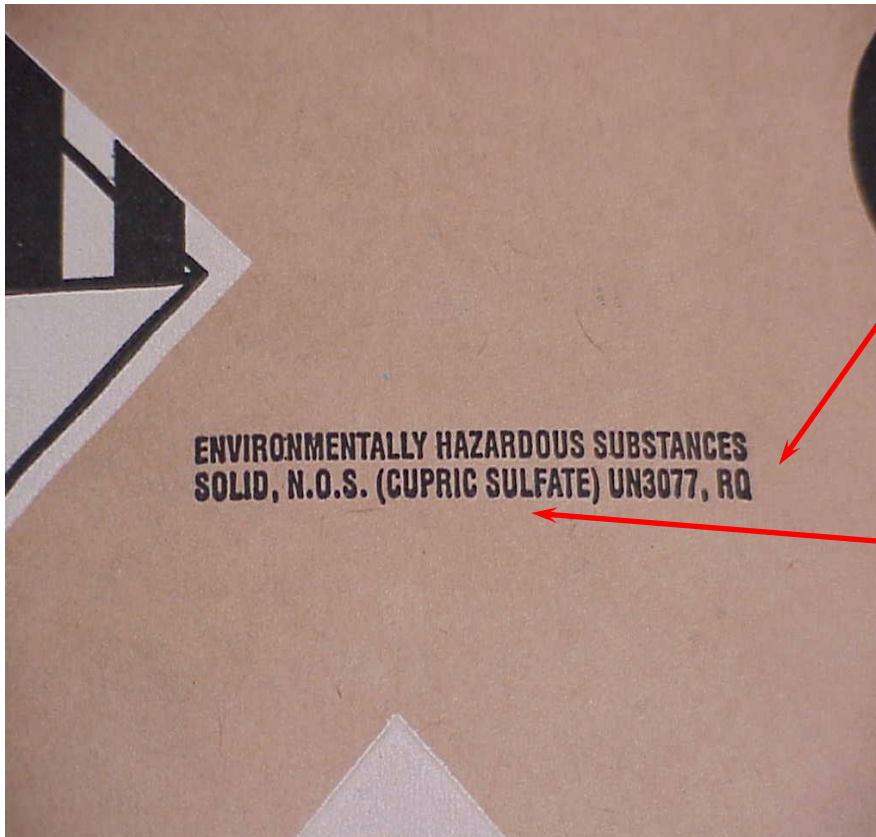
GAS



172.313 CFR49

# HAZARDOUS MATERIALS MARKINGS

- Non-Bulk Packages



- Hazardous Substances and Reportable Quantities "RQ"
- N.O.S. Not otherwise specified description



172.324(b) & 172.301(b) CFR49

# HAZARDOUS MATERIALS MARKINGS

- Non-Bulk Packages

Special Permit  
packagings

- “DOT-SP” and permit  
number

Common Violations:

- Not marked on package



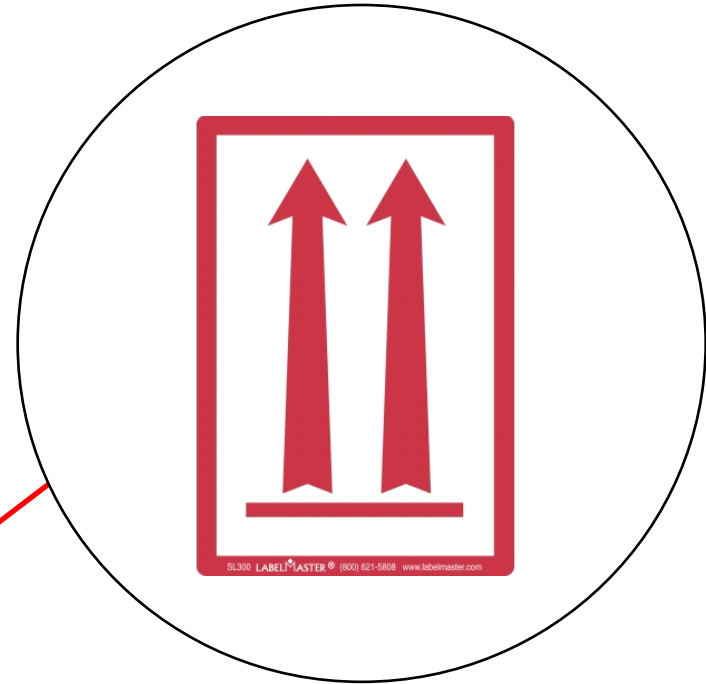
172.301(c) CFR49

# HAZARDOUS MATERIALS MARKINGS

- Non-Bulk Packages

## Orientation Arrows

- Required on two opposing sides
- Inner liquid packagings



## Common Violations:

- Not transported in upright position



172.312(a) / 177.823(b) CFR49



# HAZARDOUS MATERIALS MARKINGS

- Hazardous Waste Packages



In addition to any applicable DOT markings, every non-bulk hazardous waste container ( $\leq 110$  gal.) must have the:

- Hazardous Waste Statement
- Generator's name and address
- Manifest document tracking number



# HAZARDOUS MATERIALS MARKINGS

- Hazardous Waste Packages



**HAZARDOUS WASTE**

Container No: CEE01

**STATE & FEDERAL LAW PROHIBITS IMPROPER DISPOSAL**  
 IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY, OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL.

**GENERATOR INFORMATION:**  
 State of California, Department of General Services

NAME \_\_\_\_\_ PHONE \_\_\_\_\_ 916 327-8416  
 ADDRESS Capital East End Improvement Project, 16th  
 CITY Sacramento STATE CA ZIP \_\_\_\_\_

EPA / MANIFEST ID NO. / DOCUMENT NO. CAL000006140 / 99630009  
 D002

EPA WASTE NO. \_\_\_\_\_ CA WASTE NO. 791 ACCUMULATION START DATE 8/17/00  
 CONTENTS, COMPOSITION: lab pack, see attached inventory sheets

PHYSICAL STATE:  SOLID  LIQUID | HAZARDOUS PROPERTIES:  FLAMMABLE  TOXIC  
 CORROSIVE  REACTIVITY  OTHER

Waste corrosive liquid, acidic, organic, n.o.s. (hydrochloric acid, surfactant), 8, UN3265, PGI1 (ERG#153)

In case of emergency use SCBA, safety goggles, gloves and boots  
 D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

Line # 11d **HANDLE WITH CARE!** Container Wt. (lb) 10 CP-3  
 CONTAINS HAZARDOUS OR TOXIC WASTES

PRINTED BY: MESA LABEL EXPRESS, INC. SAN DIEGO, CA (619) 693-1487 FAX: (619) 693-1458

# HAZARDOUS MATERIALS MARKINGS

- ORM-D Packages



- ORM-D designation w/  
PSN of material



172.316 CFR49

# HAZARDOUS MATERIALS MARKINGS

- Explosive Hazardous Materials

- Each package containing Class 1 materials must be marked with the **EX-number** for each substance



**EX-208294991**



172.320 CFR49

# HAZARDOUS MATERIALS MARKINGS

- “Large Quantities” and Bulk Packages



# HAZARDOUS MATERIALS MARKINGS

- “Large Quantities”



- “Large Quantities” of a single HM > 8,820 lbs. in non-bulk packages
- Must display UN Number on all four sides of transport vehicle



172.301(a)(3) CFR49

# HAZARDOUS MATERIALS MARKINGS

- Bulk Packages – ID Numbers
- On two opposing sides if < 1,000 gallons
- On each side and each end if > 1,000 gallons



172.302(a) CFR49

# HAZARDOUS MATERIALS MARKINGS

- Bulk Packages



- If transported in transport vehicle or freight container and the UN Number on the bulk packaging is not visible – all four sides of the transport vehicle





# HAZARDOUS MATERIALS MARKINGS

- Bulk Packages



**INHALATION  
HAZARD**

- Poisonous by Inhalation: “***Inhalation Hazard***” on two opposing sides of the bulk package



# HAZARDOUS MATERIALS MARKINGS

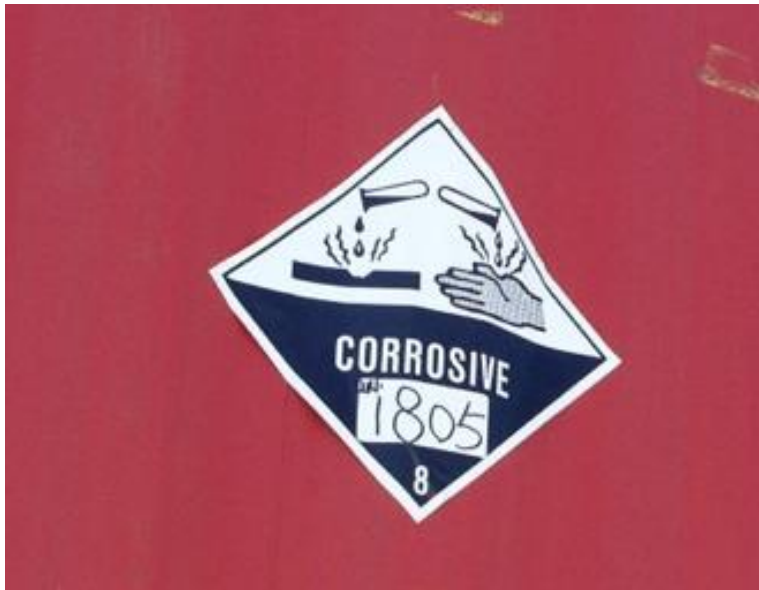


## Common Violations:

- No UN Numbers displayed
- UN Numbers faded
- Wrong UN Numbers displayed



# HAZARDOUS MATERIALS MARKINGS



## Common Violations:

- Hand written UN Numbers

(‘Replacement of ID Numbers’ - if lost, damaged or destroyed during transportation)

- Improper orientation



# HAZARDOUS MATERIALS MARKINGS

- Cargo Tanks

Class 2 materials –

- Proper Shipping Name (Nitrogen Refrigerated Liquid)



172.328(b) CFR49

# HAZARDOUS MATERIALS MARKINGS

- Radioactive Non-Bulk Packages



Class 7 materials –

- Gross mass marked if > 110 lbs.
- Type of Package
- Country of Origin
- Radiation Symbol / Trefoil



# HAZARDOUS MATERIALS MARKINGS

- Radioactive Bulk Packages



Class 7 materials –

- Gross mass marked if > 110 lbs.
- Type of Package
- Country of Origin
- Radiation Symbol / Trefoil



# HAZARDOUS MATERIALS LABELS



# HAZARDOUS MATERIALS LABELING

- Non-Bulk Packages



- Display the label(s) specified in column 6 of 172.101 Table.
- Labels are required to be on same surface as the PSN and ID #



172.400 CFR49



# HAZARDOUS MATERIALS LABELING

- Non-Bulk Packages



## Common Violations:

- Durability (faded, torn, etc.)
- Labels missing
- Not displayed near PSN / ID Number



172.407 CFR49

# HAZARDOUS MATERIALS LABELING

- Bulk Packages



- Display the label specified in column 6 of 172.101 Table unless placarded in accordance with Subpart F.



172.400 CFR49

# HAZARDOUS MATERIALS LABELING

## o Bulk Packages



### Common Violations:

- o Faded
- o Torn / Durability
- o Missing



172.407CFR49

# HAZARDOUS MATERIALS LABELING

- Subsidiary Hazard Labeling – Non-Bulk Packages



- Within 6 inches of each other
- Displayed near PSN / ID Number



172.402 CFR49

# HAZARDOUS MATERIALS LABELING

- Subsidiary Hazard Labeling - Bulk Packages



- Within 6 inches of each other
- Displayed near PSN / ID Number



172.406 CFR49

# HAZARDOUS MATERIALS LABELING

- Subsidiary Hazard Labeling



## Common Violations:

- Not displayed on same surface
- Not displayed near PSN/ID Number



172.406 CFR49

# HAZARDOUS MATERIALS LABELING

- “Overpack” – *defined...*

An enclosure that is used by a single consignor to provide protection or convenience in handling of a package or to consolidate two or more packages:

- Placed or stacked onto a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping, or other suitable means, or
- Placed in a protective outer packaging such as a box or crate



# HAZARDOUS MATERIALS LABELING

- Overpacks



- (ie.) Placed or stacked onto a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping, or other suitable means.



171.8 CFR49



# HAZARDOUS MATERIALS LABELING

- Overpacks
- (ie.) Placed in a protective outer packaging such as a box or crate



171.8 CFR49

# HAZARDOUS MATERIALS LABELING

- Labeling Overpacks



- Must be labeled on exterior unless the labels representative of each hazardous material in the overpack are visible



171.8 CFR49

# HAZARDOUS MATERIALS LABELING

- Overpacks



## Common Violations:

- No labeling on exterior of the overpack  
(No labels visible through shrink wrap)



172.400a CFR49

# HAZARDOUS MATERIALS LABELING

- Overpacks



## Common Violations:

- No labeling for packages contained within overpack bin / crate



172.400a CFR49

# HAZARDOUS MATERIALS LABELING

- Class 7 Radioactive Material Labeling



# HAZARDOUS MATERIALS LABELING

- Class 7 Radioactive Material Labeling

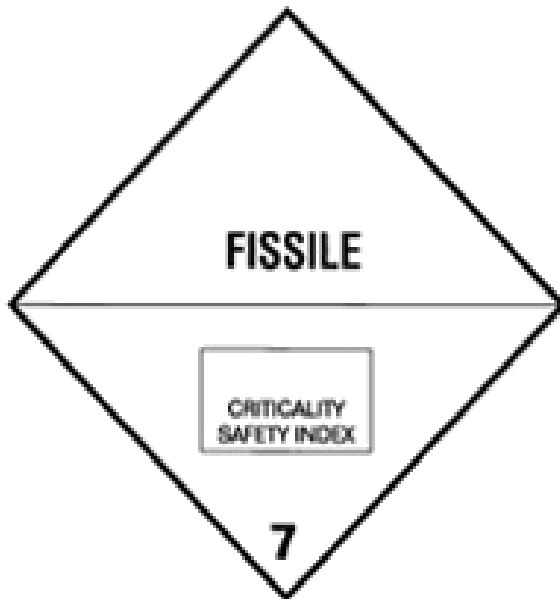


- Category or label, Contents, Activity, Transport Index

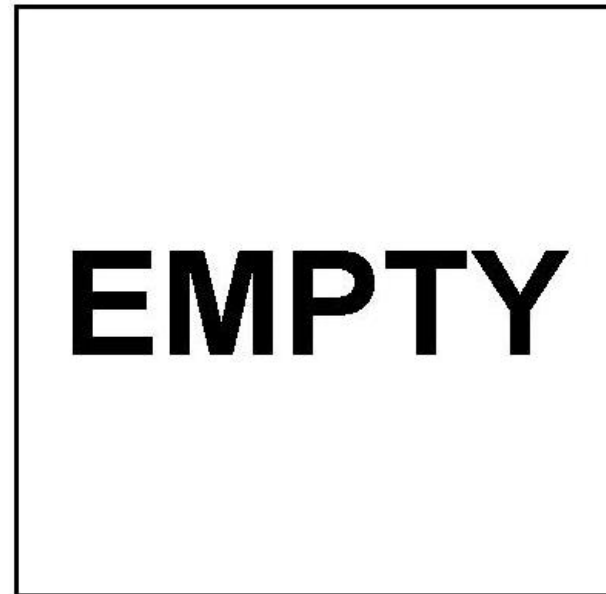


# HAZARDOUS MATERIALS LABELING

- Class 7 Radioactive Material Labeling



Fissile



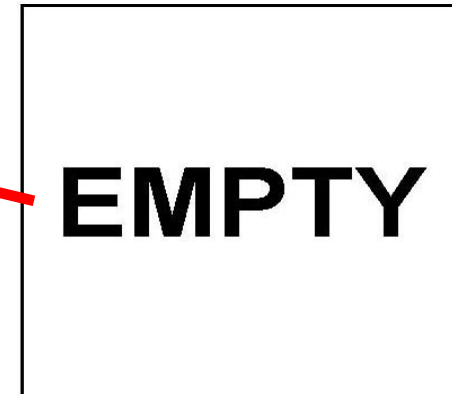
EMPTY



172.406 CFR49

# HAZARDOUS MATERIALS LABELING

- Class 7 Radioactive Material Labeling



EMPTY



172.406 CFR49



# HAZARDOUS MATERIALS LABELING

- Class 7 Radioactive Material Labeling



## Common Violations:

- Faded & torn labels
- Illegible Contents, Activity, TI



172.406 CFR49

# HAZARDOUS MATERIALS LABELING

- Class 7 Radioactive Material Labeling



## Common Violations:

- Package TI or Surface Readings exceed maximum allowable limits



# HAZARDOUS MATERIALS PLACARDS



# HAZARDOUS MATERIALS PLACARDING

- Placards



- *“Each bulk packaging, freight container, transport vehicle containing any quantity of a hazardous material must be placarded on each side and each end with the type of placards specified in Table 1 and 2 and in accordance with other placarding requirements of this subpart”*



# HAZARDOUS MATERIALS PLACARDING

- Placards
  - ALL hazardous materials must be placarded while in transportation!
  - **However** – there are *exceptions* and *exemptions* . . . .



# HAZARDOUS MATERIALS PLACARDING

- Placarding - Table 1
  - 1.1 Explosives
  - 1.2 Explosives
  - 1.3 Explosives
  - 2.3 Poison Gas
  - 4.3 Dangerous When Wet
  - 5.2 (Organic peroxide Type B, temp controlled)
  - 6.1 PIH
  - 7 Radioactive (Yellow III)



# HAZARDOUS MATERIALS PLACARDING

- Placarding – Table 2
  - 1.4/1.5/1.6 Explosives
  - 2.1 Flammable Gas
  - 2.2 Non-Flammable Gas
  - 3 Flammable-Combustible Liquid
  - 4.1 Flammable Solid
  - 4.2 Spontaneously Combustible
  - 5.1 Oxidizer
  - 5.2 Organic Peroxide
  - 6.1 Poison / Toxic
  - 8 Corrosive
  - 9 Miscellaneous



# HAZARDOUS MATERIALS PLACARDING

- Exception for less than 454 kg (1,001 pounds):
- *Except for bulk packagings and hazardous materials subject to 172.505, when hazardous materials covered by Table 2 of this section are transported by highway, placards are not required on –*

A transport vehicle or freight container which contains less than 454 kg (1,001 pounds) **aggregate** gross weight of hazardous materials covered by Table 2.





# HAZARDOUS MATERIALS PLACARDING

- Placarding Requirements

## Placards Required if.....

- Table One → Any Amount
- Bulk Package → Any Amount
- Table Two → Gross **Aggregate** Wt. (Non-Bulk Packaging) over 1,001 pounds



# HAZARDOUS MATERIALS PLACARDING

## ○ Placarding QUIZ

UN1206, Heptanes, 3, PGII

30 pails @ 900 lbs.



What placards are required to be displayed on each side and each end of the transport vehicle?

**NONE**



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

## ○ Placarding QUIZ

UN1206, Heptanes, 3, PGII  
30 pails @ 900 lbs.



What placards are required to be displayed on each side and each end of the transport vehicle?

UN1866, Resin Solution, 3,  
PGIII  
4 boxes @ 220 lbs.



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

## ○ Placarding QUIZ

UN1206, Heptanes, 3, PGII  
30 pails @ 900 lbs.



What placards are required to be displayed on each side and each end of the transport vehicle?



UN3260, Corrosive Solid,  
Acidic, Inorganic, n.o.s.  
(Monopersulfate  
Compound), 8, PGIII  
6 pails @ 150 lbs.



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

## Placarding QUIZ

UN1206, Heptanes, 3, PGII  
300 pails @ 27,000 lbs.



UN3260, Corrosive Solid,  
Acidic, Inorganic, n.o.s.  
(Monopersulfate  
Compound), 8, PGIII  
72 pails @ 1,800 lbs.



UN2468,  
Trichloroisocyanuric Acid,  
Mixture, Dry, 5.1, PGII  
1 box @ 10 lbs.



What placards are required to be displayed on each side and each end of the transport vehicle?



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

## Placarding QUIZ

UN1206, Heptanes, 3, PGII  
30 pails @ 900 lbs.



What placards are required to be displayed on each side and each end of the transport vehicle?

UN1866, Resin Solution, 3,  
PGIII  
1 IBC @ 2,700 lbs.



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

- Prohibited Placards
  - Can not display hazardous materials placards unless transporting HM
  - The placard must represent the hazardous material offered for transportation
  - No sign, advertisement, or slogan (such as “Drive Safely”) that could be confused with any placard



# HAZARDOUS MATERIALS PLACARDING

- Permissive Placarding
- Placards may be displayed for a hazardous material (even if not required) as long as the placarding conforms to all other placarding requirements.
- Each side and each end, durability, color, placement, etc.

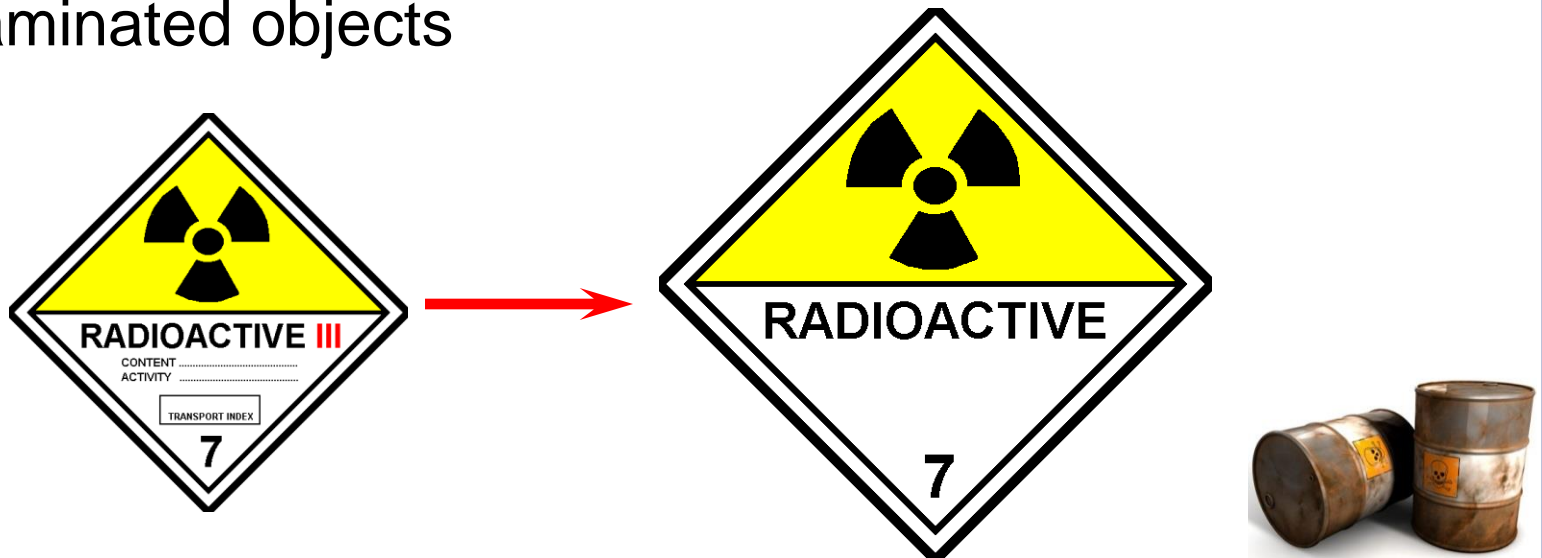


172.502 CFR49



# HAZARDOUS MATERIALS PLACARDING

- Class 7 - Radioactive Materials Placards
- Radioactive Placards: **REQUIRED** when Yellow-III labels are affixed to packages – also required for exclusive-use shipments of low specific activity materials and surface contaminated objects



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

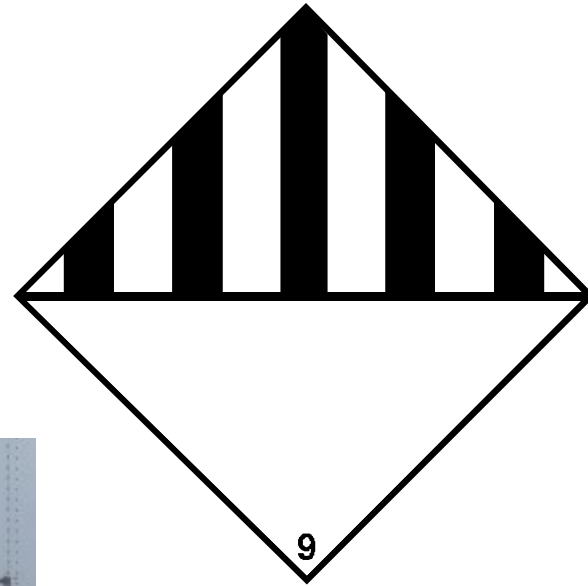
- Class 7 - Radioactive Materials Placards



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

- Class 9 Materials - Exception
- Class 9 Placard Not Required for Domestic Transportation (unless Bulk)



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

- Subsidiary Hazards
- Poison Inhalation Hazard
- Radioactive Materials
- Dangerous When Wet Materials



# HAZARDOUS MATERIALS PLACARDING

- “*Dangerous*” Placards
- HM must be in Non-Bulk Packages
- Two or more categories of HM that require different placards in Table 2
- May be placarded with a “DANGEROUS” placard instead of the separate placards for the Table 2 materials



172.504(b) CFR49

# HAZARDOUS MATERIALS PLACARDING

- “*Dangerous*” Placards



However.....

- When 1,000 kg (2,205 pounds) aggregate gross weight or more of one category of material is loaded therein at one loading facility, the placard specified in Table 2 for that category must be applied.



172.504(b) CFR49

# HAZARDOUS MATERIALS PLACARDING

## ○ Placarding QUIZ

UN1206, Heptanes, 3, PGII  
30 pails @ 900 lbs.



UN3260, Corrosive Solid,  
Acidic, Inorganic, n.o.s.  
(Monopersulfate  
Compound), 8, PGIII  
6 pails @ 150 lbs.



What placards are required to be displayed on each side and each end of the transport vehicle?



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

## Placarding QUIZ

UN1206, Heptanes, 3, PGII  
300 pails @ 27,000 lbs.



How many placards are required on each side of the pail?

UN3260, Corrosive Solid, Acidic, Inorganic, n.o.s. (Monopersulfate Compound), 8, PGIII  
72 pails @ 1,800 lbs.



UN2468, Trichloroisocyanuric Acid, Mixture, Dry, 5.1, PGII  
1 box @ 10 lbs.



172.504 CFR49



# HAZARDOUS MATERIALS PLACARDING

## Placards

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))
X	1. <b>UN1415, Waste Lithium, 4.3, DGT</b>
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))
X	1. <b>UN1744, WASTE BROMINE, D.O.1, PG II</b> <i>Inhalation Hazard Zone A</i> <b>(Bromine and Water)</b>
	2.



## Common Violations:

- Table 1 hazardous materials NOT placarded

# HAZARDOUS MATERIALS PLACARDING

- Placards



## Common Violations:

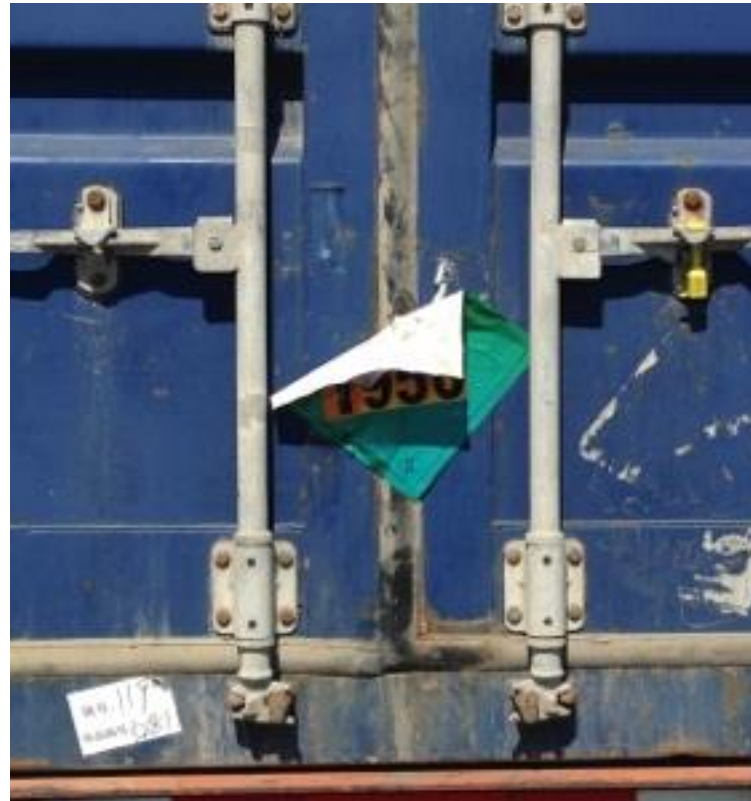
- Missing placards – required to be displayed on each end and each side



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

- Placards



## Common Violations:

- Durability and attachment of placards



172.516, 172.519 CFR49

# HAZARDOUS MATERIALS PLACARDING

- Placards



## Common Violations:

- Over 1,001 lbs. aggregate gross weight
  - Missing placards



172.504 CFR49

# HAZARDOUS MATERIALS PLACARDING

- Placards



## Common Violations:

- Placard orientation - horizontally



# HAZARDOUS MATERIALS PLACARDING

- Placards



## Common Violations:

- Faded placards



# HAZARDOUS MATERIALS PLACARDING

- Placards

UN3394. ORGANOMETALLIC SUBSTANCE  
LIQUID, PYROPHORIC,  
WATER-REACTIVE (N-BUYLLITHIUM IN  
HEXANES), 4.2 (4.3,  
3), PGI



## Common Violations:

- Subsidiary Hazard Placards NOT displayed



172.505 CFR49

# HAZARDOUS MATERIALS PLACARDING

- Placards



## Common Violations:

- Covering / taping over the inner border of placards



172.519 CFR49



# HAZARDOUS MATERIALS TWO-WAY COMMUNICATION



# HAZARDOUS MATERIALS TWO-WAY COMMUNICATION

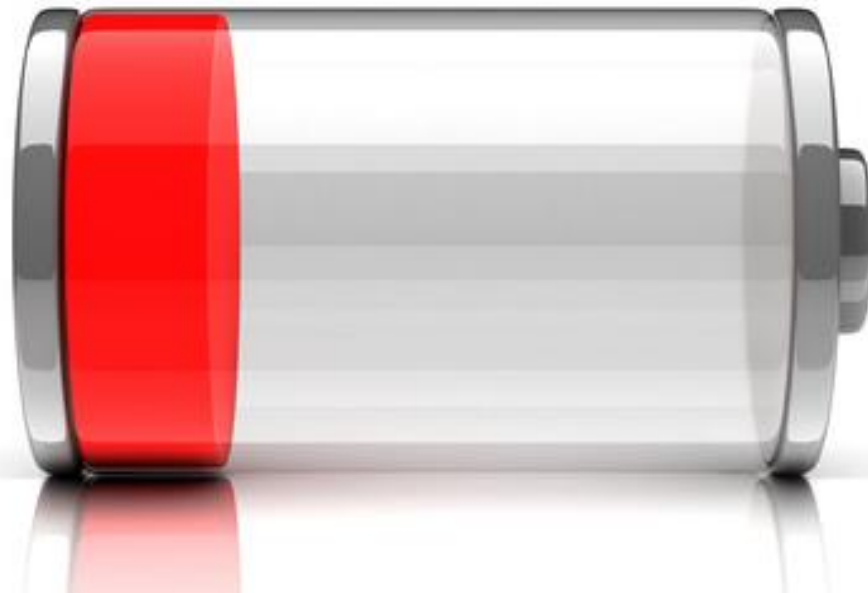


If placards required:

- Two-Way Communication-
- maintained in good working order,
- enables driver to contact personnel responsible for the safety operations of the motor carrier in the event of an emergency



# HAZARDOUS MATERIALS TWO-WAY COMMUNICATION



## Common Violations:

- Dead battery – phone not functional
- No phone, nextel, etc. in possession



# HAZARDOUS MATERIALS SAFETY EQUIPMENT



# HAZARDOUS MATERIALS SAFETY EQUIPMENT



Fire Extinguishers:

## 10 B:C

- Every motor vehicle... transporting cargo requiring placards

## 20 B:C

- Every tank vehicle... used to transport flammable or combustible liquids

Class B - Flammable liquids  
Class C - Electrical fires



# HAZARDOUS MATERIALS SAFETY EQUIPMENT

Each fire extinguisher shall be securely mounted... clearly marked compartment... readily accessible

Fire extinguishers shall be maintained... efficient operating condition... means to determine if they are fully charged



## Common Violations:

- Not charged or securely mounted
- Not in possession



# HAZARDOUS MATERIALS LOCKING DEVICES



# HAZARDOUS MATERIALS LOCKING DEVICES

## Locking Devices

- The enclosed cargo body, when the display of placards is required, shall be locked and remain locked during transit of the hazardous materials so as to prevent any unauthorized entry and shall be opened only during loading, unloading, or at the direction of a peace officer, an authorized employee of the department.
- “*Enclosed cargo body*”- meaning a fully enclosed area that is an integral part of the vehicle and designed to encapsulate the entire load, such as a van body or an intermodal freight container.





# HAZARDOUS MATERIALS LOCKING DEVICES

## Locking Devices

- A *locking device* includes a properly fastened pad lock, bolt seal, cable lock, 3/16 inch pig tail twist lock or similar devices that can only be removed by the use of bolt cutters. The intent of section 32001(c)(5)(A) VC is to ensure that an effective form of locking device is used to secure the doors. A plastic, thin gauge metal or wire 'seal', does not qualify as a lock, nor do devices that could be removed using a standard pair of pliers or wire cutters.



# HAZARDOUS MATERIALS LOCKING DEVICES

## Locking Devices



### Common Violations:

- Not equipped with locking device
- Lock in possession, not attached



32001(c)(5)(A) VC

# HAZARDOUS MATERIALS SECUREMENT



# HAZARDOUS MATERIALS SECUREMENT

- Securement



- Required!!

- Most prevalent violation!!

- Highest accident causing problem for hazardous materials while in transportation!!



# HAZARDOUS MATERIALS SECUREMENT

- Securement

**“relative motion between shifting”**

- “Any packer or packager of hazardous material, not limited to a person performing such operations, shall ensure that the material is secured against shifting within the container or packaging, and that the container or packaging is secured against shifting within the vehicle, aircraft, vessel, or other mode of transportation, under the conditions normally incident to transportation.”



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
  
- **No. 1:** Hazardous materials packages, while in transport, may shift as long as the shifting of the hazardous materials packages is not “significant”.



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .

- **No. 1:** Hazardous materials packages, while in transport, may shift as long as the shifting of the hazardous materials packages is not “significant”.

FAULSE



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
  
- **No. 2:** Shrink-wrapping hazardous materials packages to a wooden pallet (“*overpack*”) is a compliant method for securing the hazmat load.





# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
- **No. 2:** Shrink-wrapping hazardous materials packages to a wooden pallet (“overpack”) is a compliant method for securing the hazmat load.

FALSE



# HAZARDOUS MATERIALS SECUREMENT

- “Overpacks”



- An overpack means an enclosure that is used by a single consignor to provide protection or convenience in handling of a package or to consolidate two or more packages. An example of an overpack is one or more packages placed or stacked onto a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping, or other suitable means.



# HAZARDOUS MATERIALS SECUREMENT

- “Overpacks”
- Although this consensus and industry standard for securement is suitable and permitted for non-hazardous materials packages, by shrink-wrapping hazardous materials packages to the pallet, the pallet is defined by the US DOT as an “overpack” and subsequently subject to the strict guidelines set forth in the Federal Motor Carrier Safety Regulations and Hazardous Materials Regulations, Title 49, Code of Federal Regulations.



# HAZARDOUS MATERIALS SECUREMENT

- 2002 US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) *Interpretation*

- “The requirements in 177.834(a) and (g) are met when the packages of hazardous materials are secured in a manner that precludes their movement within the transport vehicle, and between the packages themselves, under conditions normally incident to transportation.”



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

Ref. No. 02-0044



# HAZARDOUS MATERIALS SECUREMENT

- 2002 US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) *Interpretation*

- “These conditions most often include vehicle starting, stopping, cornering, accident avoidance, and varied road conditions. **If the packages are overpacked, the overpack itself must also be secured within the transport vehicle.**”



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

Ref. No. 02-0044



# HAZARDOUS MATERIALS SECUREMENT

- 2002 US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) *Interpretation*
- “Specific methods for securing packages in a motor vehicle are not defined in the HMR. However, general requirements which address protection of shifting cargo are found in the Federal Motor Carrier Safety Regulations (49 CFR Parts 300-399).”



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

Ref. No. 02-0044



# HAZARDOUS MATERIALS SECUREMENT

- 2016 US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) *Interpretation*

## Scenario w/ photos:

- Four drums are loaded on one pallet,
- Drums on the pallet are shrink-wrapped to the pallet,
- Heavy cardboard is placed on top of each set of four drums & banded to a pallet,
- An even number of these pallets are loaded side-by-side in a freight trailer,



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

Reference No. 16-0088



# HAZARDOUS MATERIALS SECUREMENT

- 2016 US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) *Interpretation*

## Scenario w/ photos:

- Pallets are loaded in the freight container with approximately 3-4 inches of void area between them,
- Pallets closest to the freight container door are secured with two straps.



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

Reference No. 16-0088





# HAZARDOUS MATERIALS SECUREMENT

- 2016 US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) *Interpretation*



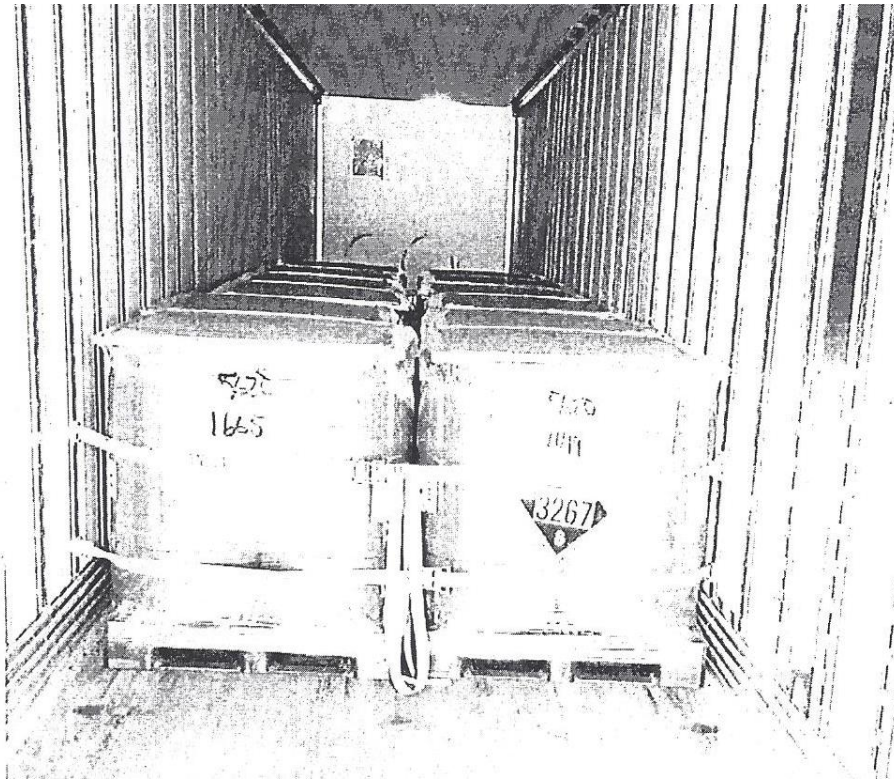
U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

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# HAZARDOUS MATERIALS SECUREMENT

- 2016 US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) *Interpretation*



U.S. Department  
of Transportation  
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Special Programs  
Administration**

Reference No. 16-0088



# HAZARDOUS MATERIALS SECUREMENT

- 2016 US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) *Interpretation*

## US DOT's OPINION:

- The scenario provided does not comply with the intent of 177.834(a) CFR 49.
- The void space between pallets provides space in which the pallets can shift during transportation.



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

Reference No. 16-0088



# HAZARDOUS MATERIALS SECUREMENT

- Securement - Overpacks



- To reiterate, US DOT has taken an *extremely conservative* interpretation on this regulation - by simply shrink-wrapping hazardous materials packages onto a pallet does not meet the load securement requirements unless the entire unit is secured within the vehicle.



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
  
- **No. 3:** Hazardous materials packages and hazardous materials overpacks are too heavy to shift while in transport. The friction of the packages or pallets on the floor of the trailer along with the pallets being placed against each other is more than enough to prevent shifting.



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
- **No. 3:** Hazardous materials packages and hazardous materials overpacks are too heavy to shift while in transport. The friction of the packages or pallets on the floor of the trailer along with the pallets being placed against each other is more than enough to prevent shifting.



# HAZARDOUS MATERIALS SECUREMENT

- Securement
- **Gravity**, a common excuse for unsecured loads, is NOT recognized by the US DOT and is not an acceptable means of securing cargo.
- Packages and overpacks shift constantly while in transport!



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
  
- **No. 4:** The term “conditions normally incident to transportation” refers only to the forward and rearward direction of a transport vehicle.





# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
- **No. 4:** The term “conditions normally incident to transportation” refers only to the forward and rearward direction of a transport vehicle.

FALSE



# HAZARDOUS MATERIALS SECUREMENT

- “*Conditions normally incident to transportation*”
- Curiously, US DOT never defines the term “*conditions normally incident to transportation*”.
- US DOT has routinely described this term as “vehicle starting, stopping, and cornering; accident avoidance, and varied road conditions” –



# HAZARDOUS MATERIALS SECUREMENT

- *“Conditions normally incident to transportation”*
- Although the HMR do not actually define the phrase “conditions normally incident to transportation”, PHMSA has interpreted it, through various rulemakings and letters of clarification.
- Thus, hazardous materials packages are required to be secured in a manner to ensure the packages **DO NOT** shift in any way while experiencing these conditions.



# HAZARDOUS MATERIALS SECUREMENT

- “*Conditions normally incident to transportation*”
- It is important to note, when hazmat packages or overpacks shift, damage to the package or package containment device may occur which may result in the spilling or release of the hazardous materials or even a catastrophic package failure.



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
- **No. 5:** A shoring bar / load bar can be utilized at the back of a trailer to secure an entire trailer of hazardous materials.



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .

- **No. 5:** A shoring bar / load bar can be utilized at the back of a trailer to secure an entire trailer of hazardous materials.

FALSE



# HAZARDOUS MATERIALS SECUREMENT

- Securement – Load Bars

- E-Tracking Steel / Aluminum Load Bars – On average a Working Load Limit of only 3,000 - 6,000 lbs.



# HAZARDOUS MATERIALS SECUREMENT

- Securement – Load Bars



- Steel / Aluminum Adjustable Load Bars –  
have on average a Working Load Limit (WLL) of only 3,000 lbs.





# HAZARDOUS MATERIALS SECUREMENT

- Securement – Load Bars

Keep in mind:

- Quantity / Weight of hazardous materials



# HAZARDOUS MATERIALS SECUREMENT

- Securement – Load Bars

Keep in mind:

- Type of trailer (sidewalls, e-tracking systems, refer, etc.)



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
  
- **No. 6:** 1 synthetic web strap can be utilized to secure an entire load of hazardous materials.



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .

- **No. 6:** 1 synthetic web strap can be utilized to secure an entire load of hazardous materials.

FALSE



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .

Federal Motor Carrier Safety Regulations §393.106 requires that:

- The aggregate working load limit (WLL) for tie downs used to secure an article or group of articles against movement must be at least one-half times the weight of that article or group of articles.



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .



- *Working Load Limit (WLL)* is the maximum load a component or assembly should be subjected to during routine use. These values apply to new products in normal working conditions and are marked by the manufacturer on the synthetic web tie down assembly or other cargo securement system.

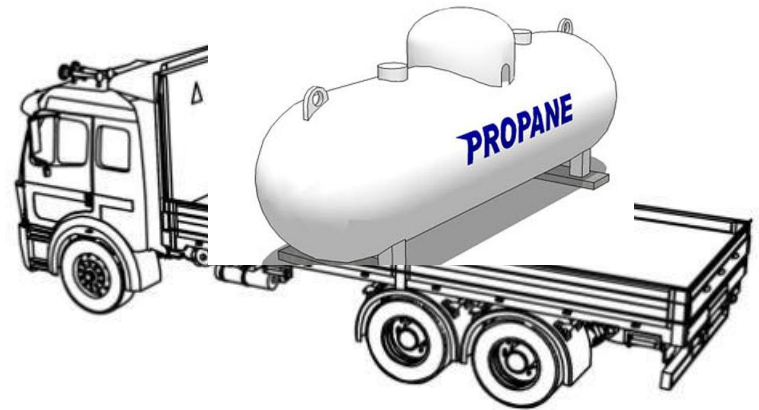


# HAZARDOUS MATERIALS SECUREMENT

## ○ Securement Misconceptions . . . . .

### **Example of Working Load Limit and Determining Tie Downs Needed**

- Weight of article being secured is 24,000 LB
- Working Load Limit of the synthetic web tie down is 3,333 LB
- Required aggregate Working Load Limit is:  $1/2 \times 24,000 \text{ LB} = 12,000 \text{ LB}$
- Minimum number of tie downs:  $12,000 \text{ LB} / 3,333 \text{ LB} = 4 \text{ tie downs}$



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .

**Tie Downs cannot be damaged or knotted**





# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
  
- **No. 7:** Bungee cords and tarp straps with WLL's are suitable methods of primary securement for loads of hazardous materials.



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .

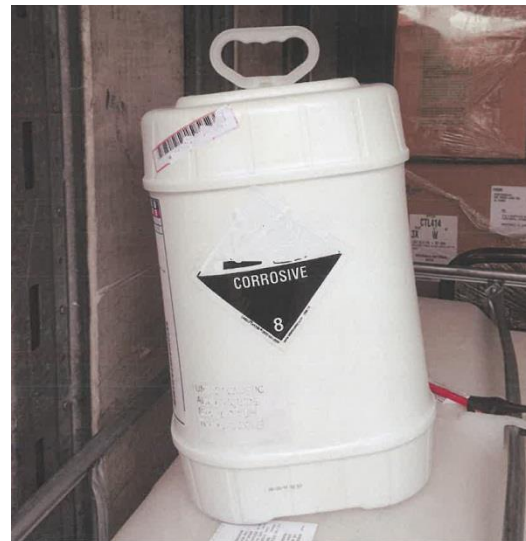
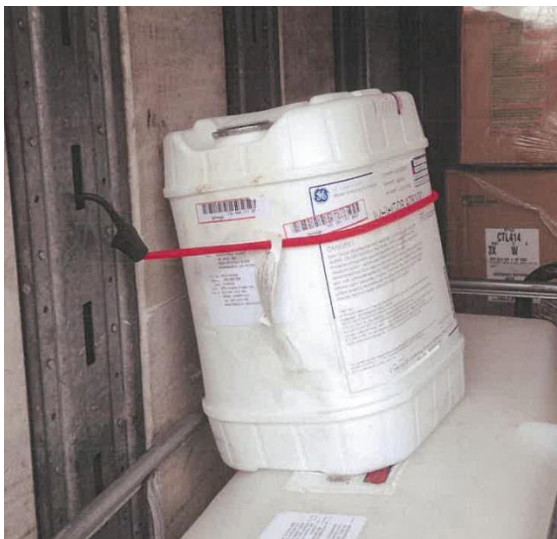
- **No. 7:** Bungee cords and tarp straps with WLL's are suitable methods of primary securement for loads of hazardous materials.

FALSE



# HAZARDOUS MATERIALS SECUREMENT

- Securement Misconceptions . . . . .
  - US DOT has also made an *Interpretation* and clarified that “bungee cords and tarp straps are not suitable for use as tie downs, and are equally unsuited to having an assigned WLL. There is no intention to prohibit the use of these devices as supplementary restraints.



# HAZARDOUS MATERIALS SECUREMENT

## **Federal Motor Carrier Safety Regulations**

**49 CFR Parts 300-399**



# HAZARDOUS MATERIALS SECUREMENT

Federal Motor Carrier Safety Regulations , Subpart I  
§393.100+ CFR 49

Describes :

- **General requirements for the protection against shifting and falling cargo**
- Minimum performance criteria for cargo securement devices & systems (ie. Chain, rope, steel strapping, synthetic webbing, cordage and friction mats)
- Working Load Limits (WWL) for tie downs
- Requirements for front end structures used as part of a cargo securement system



# HAZARDOUS MATERIALS SECUREMENT

Federal Motor Carrier Safety Regulations , Subpart I  
§393.100+ CFR 49

Also describes specific requirements by commodity types:

- Logs
- Lumber / Building products
- Metal Coils
- Paper Rolls
- Intermodal Containers
- Automobiles
- Heavy vehicles & equipment
- Flattened / crushed vehicles
- Large boulders



# HAZARDOUS MATERIALS SECUREMENT

- Federal Motor Carrier Safety Regulations §393.104 CFR 49:
  - When devices or systems are utilized to secure cargo to or within a vehicle, they must conform to the applicable requirements of §393.104 through § 393.136.
  - Prohibits the use of damaged securement devices.
  - If utilizing tie downs, each tie down must be attached and secured in a manner that prevents it from becoming loose, unfastening, opening, or releasing while the vehicle is in transit.





HAZARDOUS WASTE  
CORROSIVE LIQUID

HAZARDOUS WASTE  
CORROSIVE LIQUID

2711726Z  
SEMI PERMANENT



# HAZARDOUS MATERIALS SECUREMENT

- Federal Motor Carrier Safety Regulations §393.104 CFR 49:
  - Vehicle structures, floors, walls, decks, tie down anchor points, headboards, bulkheads, stakes, posts must be strong enough to meet certain performance standards and can not be damaged or have weakened components.
  - Materials utilized for dunnage, chocks, cradles, shoring bars, blocking and bracing must not have damage or defects which would compromise the effectiveness of the securement system.





# HAZARDOUS MATERIALS SECUREMENT

- Federal Motor Carrier Safety Regulations §393.106 CFR 49:
  - Covers general securement requirements which are applicable to the transportation of all types of articles of cargo.
  - Cargo must be firmly immobilized or secured on or within a vehicle by structures of adequate strength, dunnage (*loose materials used to support or protect cargo*) or dunnage bags (*inflatable bags intended to fill space between articles of cargo or between cargo and the wall of the vehicle*), shoring bars, tie-downs or a combination of these.





ATTENTION

# HAZARDOUS MATERIALS SECUREMENT

- Securement
- The chosen securement methods must protect the packages / overpacks and ensure they are secured against shifting, including “relative motion” between packages / overpacks under circumstances normally incident to transportation.
- Again, with respect to the term “relative motion between packages”, US DOT only provides a basic characterization that “packages must not shift during normal transportation conditions”.



# HAZARDOUS MATERIALS SECUREMENT

- Securement
- With that said, one can interpret that to mean hazardous materials packages are not allowed to shift at any point within the vehicle while in transport.



# HAZARDOUS MATERIALS PACKAGE INTEGRITY / LEAKING PACKAGES



# HAZARDOUS MATERIALS PACKAGE INTEGRITY/ LEAKING PACKAGES

- Package Integrity



- Each package used for the shipment of hazardous materials shall be designed, constructed, maintained, filled, its contents so limited, and closed, so that *under conditions normally incident to transportation* –
- There will be no identifiable release of hazardous materials to the environment.





# HAZARDOUS MATERIALS PACKAGE INTEGRITY/ LEAKING PACKAGES

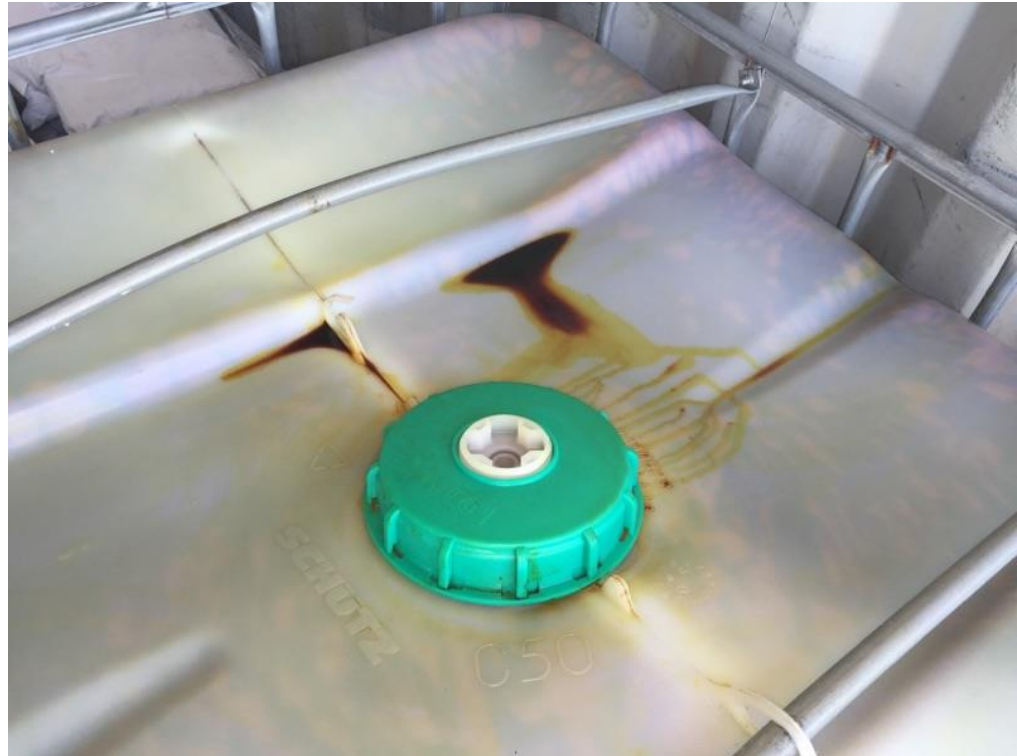
- Package Integrity
  - There will be no hazardous material residue adhering to the outside of the package during transport.



173.24 CFR49

# HAZARDOUS MATERIALS PACKAGE INTEGRITY/ LEAKING PACKAGES

- IBC Integrity
- No hazardous material may remain on the outside of an IBC



173.35(f) CFR49

# HAZARDOUS MATERIALS PACKAGE INTEGRITY/ LEAKING PACKAGES

- Package Integrity

Some examples of leaking packages



173.35(f) CFR49



# HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL.  
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY  
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY  
OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

## GENERATOR INFORMATION:

AKI America, Inc. Profile# 392032  
NAME 3101 Scott Blvd. PHONE (408) 563-3820  
ADDRESS Santa Clara STATE CA ZIP 95054  
CITY

EPA ID NO. / MANIFEST TRACKING NO. CA0 001009448 / 005337444FLE

EPA WASTE NO. None CA WASTE NO. 133 ACCUMULATION START DATE

## CONTENTS

### COMPOSITION

PHYSICAL STATE:  
SOLID  LIQUID

HAZARDOUS PROPERTIES:  
CORROSIVE  REACTIVITY  FLAMMABLE  TOXIC  OTHER

Non-RCRA Hazardous Waste Liquid (Ethylene Glycol and Water)

D.O.T. PROPER SHIPPING NAME AND OR UN OR NA NO. WITH PREFIX

## HANDLE WITH CARE!

HCL@1800 421-6710

WWW.HCLCO.COM

HZW-2PF







OX  
US...com  
AR...NC.  
570  
NEVER  
OVER 2 HIGH  
IS CONTAINING FREE LIQUIDS





Handwritten red text, possibly "Area A", is visible on the tray.





SECRET - 111-111-111



STATE AND FEDERAL  
IF FOUND CONTACT  
AUTHORITY OR THE U.S.  
OR THE CALIFORNIA DEPARTMENT  
UN 3088. HAZ  
(Spent Gasoline)  
Clean Harbor (Bunker Road)  
240 W. Lakemo Road  
Redwood City, CA 94066  
UN 3088. HAZ  
Spent Gasoline  
Total Weight  
35  
C

UN 3088. HAZ  
Spent Gasoline  
Total Weight  
35  
C

Federal Manifest Document No.  
Profile: 1455591-TC0502

UN 3088. HAZ



# SAFETY CONSIDERATIONS FOR THE FIRST RESPONDER

*with regards to hazmat transportation regulations*



# SAFETY CONSIDERATIONS

- Hazardous Materials Incidents

- Between 2014 and 2015, there were 16,711 hazardous materials incidents
- Between 2011 and 2015, there were 2,593 serious incidents attributable to hazardous materials
- Between 2011 and 2015, 87.1% of all hazardous materials serious incidents occurred in the highway mode



# SAFETY CONSIDERATIONS

- Hazardous Materials Incidents

- When an incident occurs involving a release, or threatened release, of a hazardous material -

- First Responders are dispatched to the scene





# SAFETY CONSIDERATIONS

- Hazardous Materials Incidents
- Our Hazmat response is governed by laws, regulations, plans and policies.
- All of these laws, and the regulations issued under their authority, have shaped our hazmat response to safeguard life, environment and property.



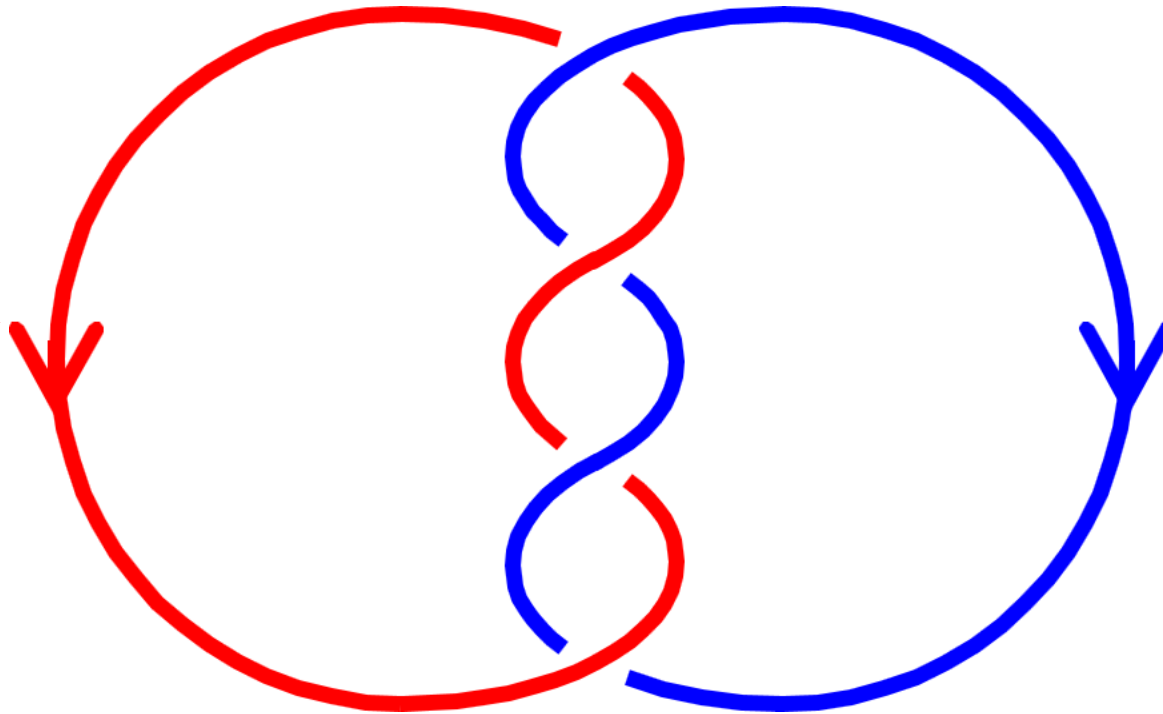
# SAFETY CONSIDERATIONS

- Hazardous Materials Incidents
- Hazardous materials response and training is outlined in Title 8 California Code of Regulations §5192(q) and Title 29 Code of Federal Regulations §1910.120(q).



# SAFETY CONSIDERATIONS

**State and  
Federal Laws,  
Regulations, &  
Training  
governing  
HAZARDOUS  
MATERIALS  
EMERGENCY  
RESPONSE**



**HMR  
governing  
hazmat  
vehicles,  
packages,  
labels,  
markings,  
S/P's, etc.**



# SAFETY CONSIDERATIONS



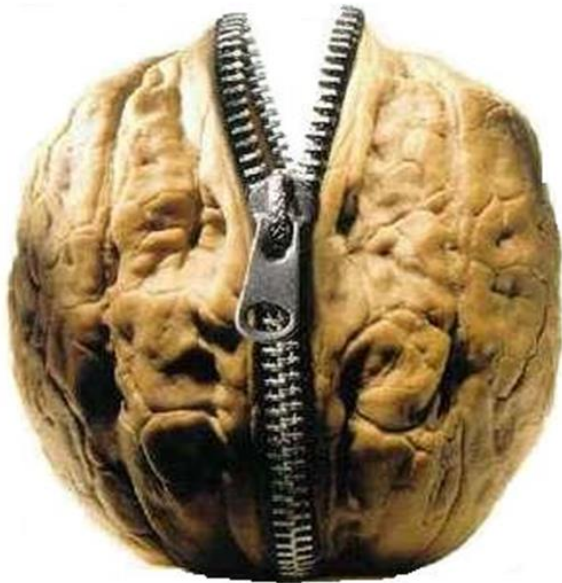
**A different  
PERSPECTIVE**



# SAFETY CONSIDERATIONS

- Hazardous Materials Incidents

*In a...*



## Incoming First Responders

- Law enforcement, fire departments, hazardous materials response teams, etc.
- Responsibilities when responding to an incident involving the hazardous materials in your transport vehicle...





**DANGER HAZARDOUS MATERIAL  
DO NOT ENTER**

- ARRIVE ON SCENE SAFELY – ACCESSING THE SITE UPWIND, UPHILL AND UPSTREAM.
- ISOLATE AND DENY ENTRY WITH RECOMMENDED INITIAL ISOLATION DISTANCES DESCRIBED IN THE ERG.

- ENSURE ALL MANDATORY NOTIFICATIONS HAVE BEEN MADE.

- INITIALIZE BOTH LOCAL AND STATE EMERGENCY RESPONSE PLANS





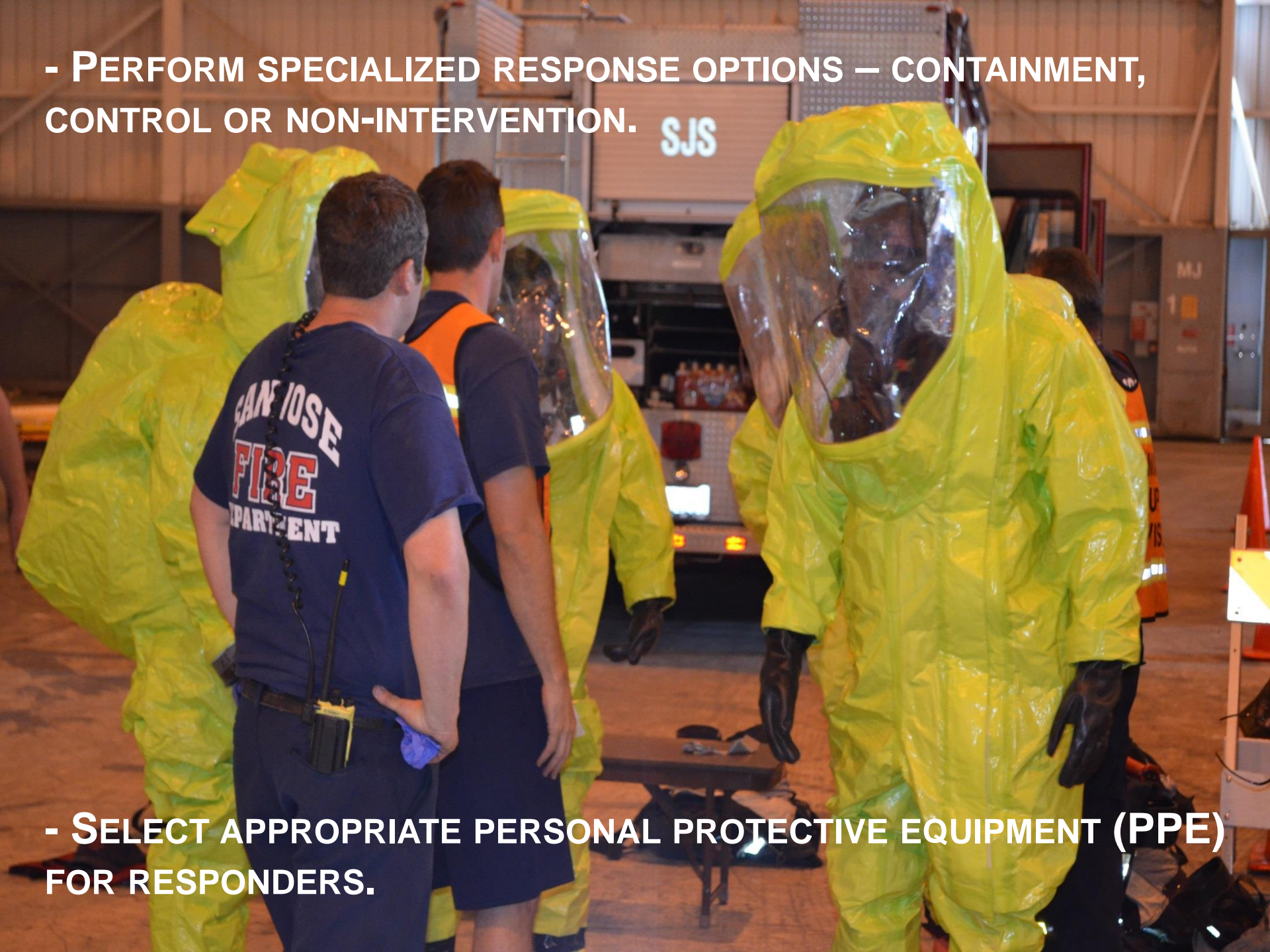


**- DEVELOP A SITE SAFETY AND CONTROL PLAN BASED ON RISK ASSESSMENT, CONTROL MEASURES AND AVAILABLE RESOURCES.**



**- DETERMINE AND IMPLEMENT PROTECTIVE ACTIONS BASED ON SITE AND ENVIRONMENTAL HAZARDS – WITH THE USE OF AIR DISPERSION MODELING.**

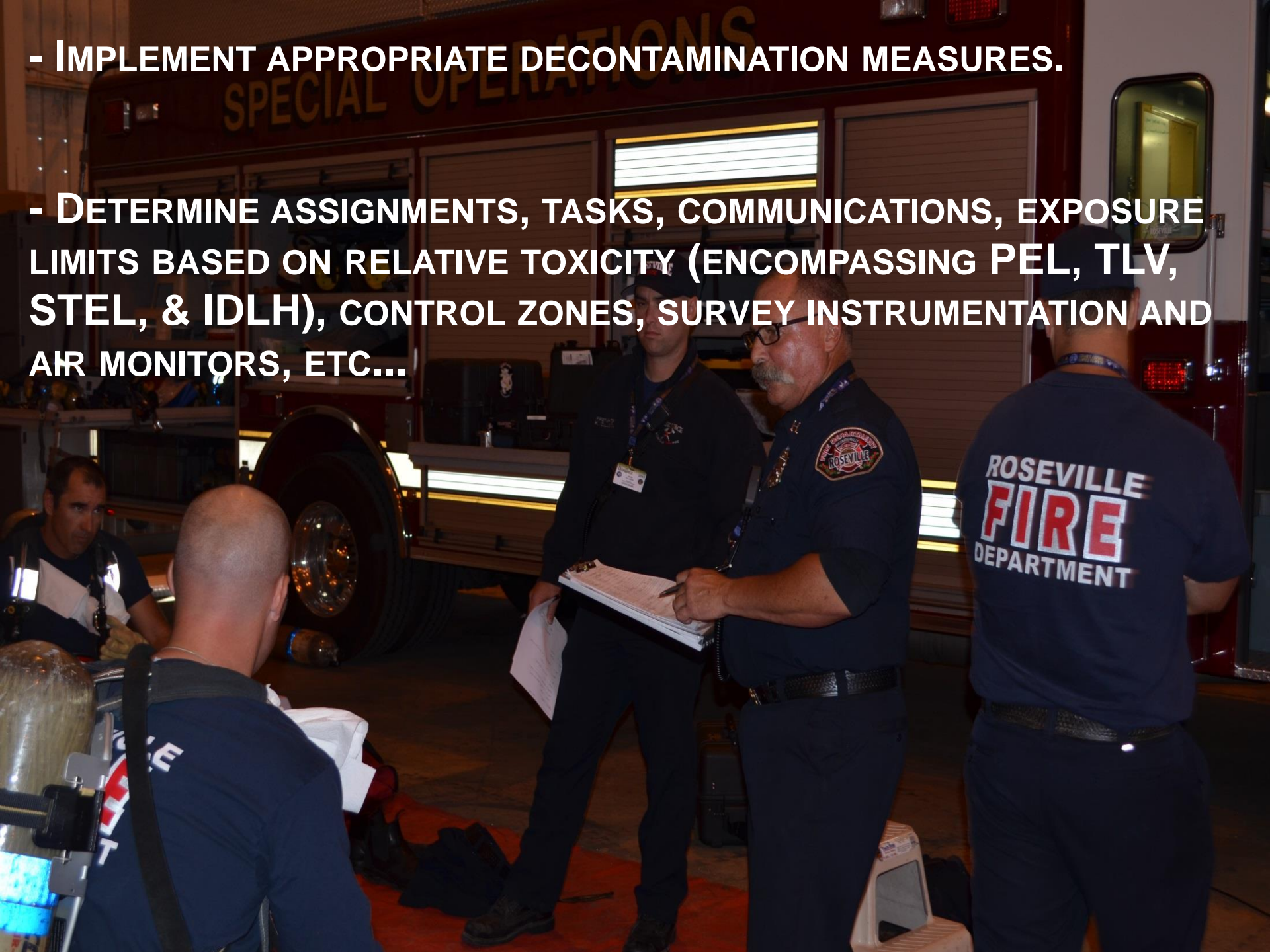
**- PERFORM SPECIALIZED RESPONSE OPTIONS — CONTAINMENT, CONTROL OR NON-INTERVENTION.**



**- SELECT APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) FOR RESPONDERS.**

**- IMPLEMENT APPROPRIATE DECONTAMINATION MEASURES.**

**- DETERMINE ASSIGNMENTS, TASKS, COMMUNICATIONS, EXPOSURE LIMITS BASED ON RELATIVE TOXICITY (ENCOMPASSING PEL, TLV, STEL, & IDLH), CONTROL ZONES, SURVEY INSTRUMENTATION AND AIR MONITORS, ETC...**



# SAFETY CONSIDERATIONS

## ○ Hazard Assessment



- Will something bad happen **now**?
- Where can I get **info** about this?
- What will the stuff **do**?
- How can it **hurt** me?
- What can I **do** about it?

### Fatalities in hazmat

- *90% involve flammables*
- *9% involve toxic gases*

Half of all injuries involve corrosives



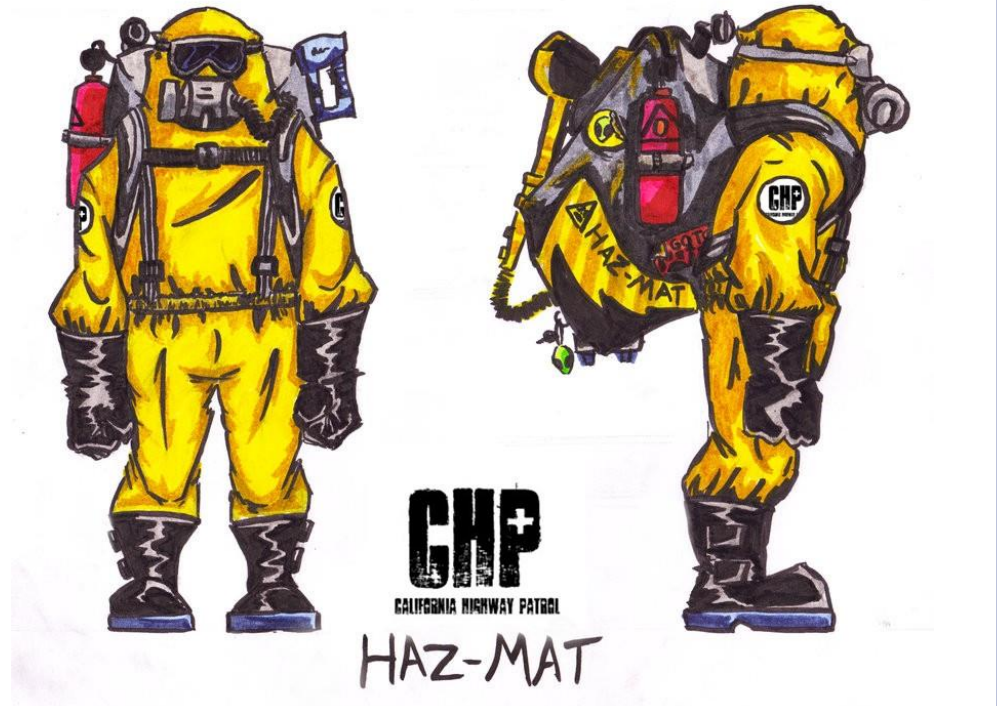
# SAFETY CONSIDERATIONS

- Hazard Assessment

Initially based on HMR:

- HM Shipping Papers
- HM Markings
- HM Labels
- HM Placards
- HM Container types / shapes

Hazmat Transportation Regulations provide numerous recognition clues for incoming First Responders.





**COMPLACENCY**  
skull and crossbones

**WARNING**

**COMPLACENCY**  
skull and crossbones

**IT DOESN'T  
TASTE  
HAZARDOUS**

SAFETY CONSIDERATIONS  
**FOR THE FIRST RESPONDER**

*Scenario 1*



Scenario 1

- Semi-Trailer involved in major traffic collision





Scenario 1

# Emergency Response Guidebook

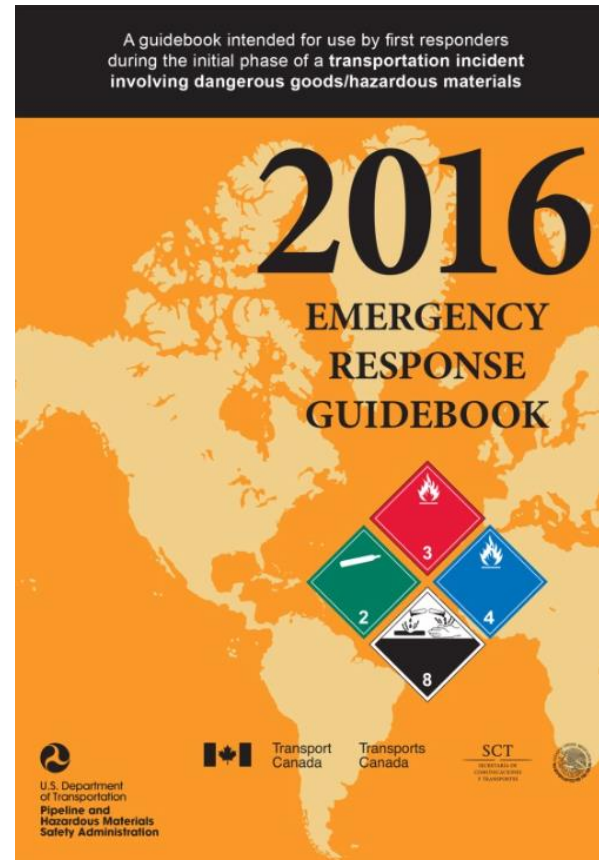
Based off hazardous materials placards:



# Scenario 1

- ERG Book Initial Isolation distance:
- HM 3 Flammable Liquid  
HM 4.1 Flammable Solid  
HM 8 Corrosive Liquid / Solid
- HM 9 - 3077 - Solid

**150 feet in all directions**



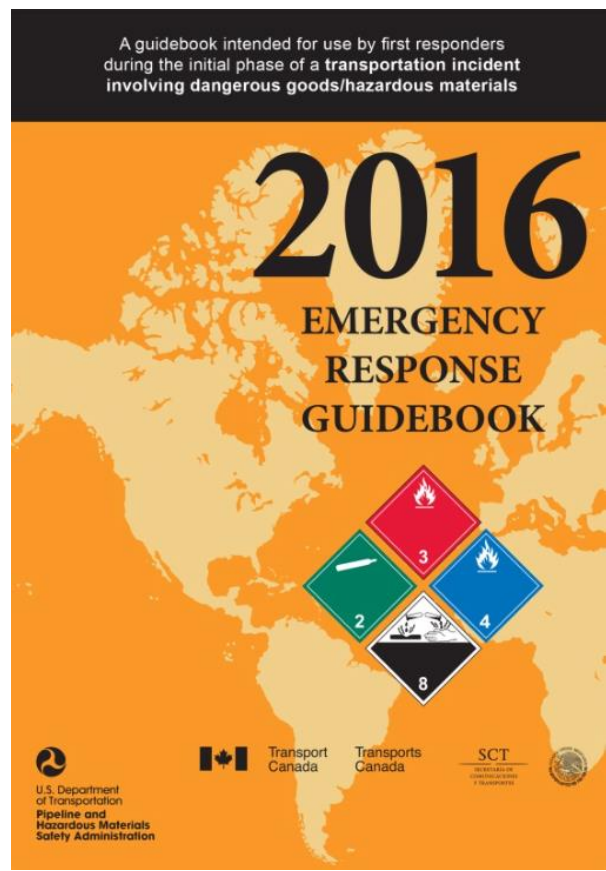
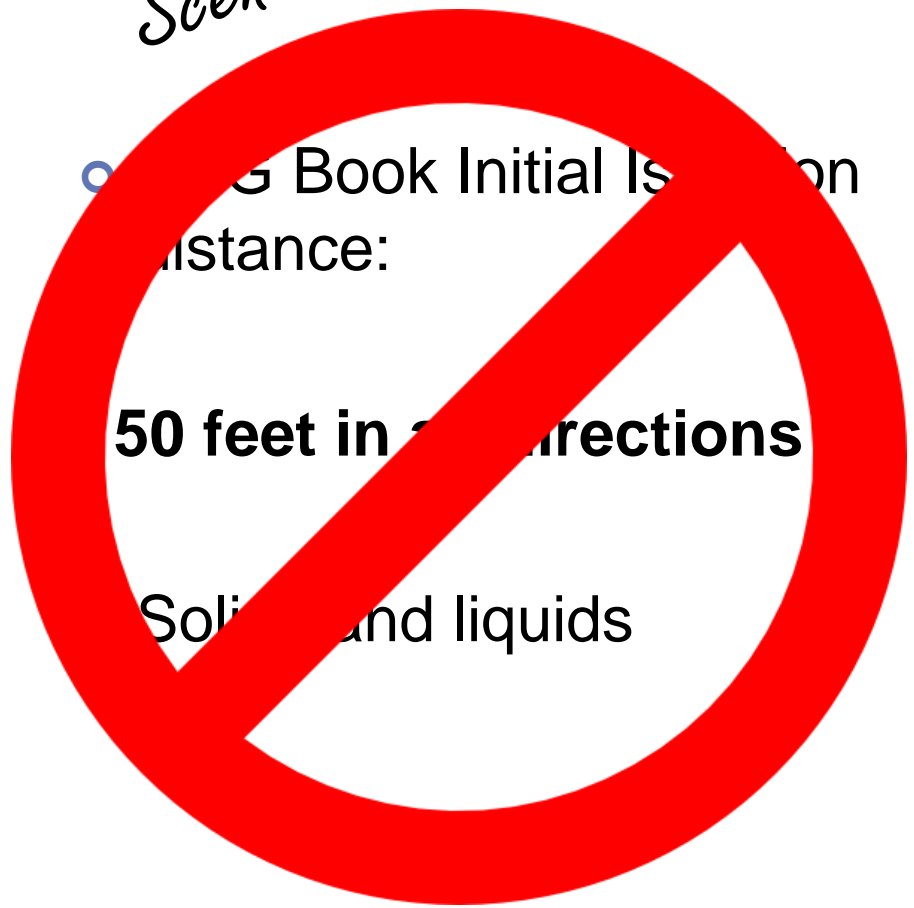


Scenario 1

Book Initial Isolation Distance:

50 feet in all directions

Solids and liquids



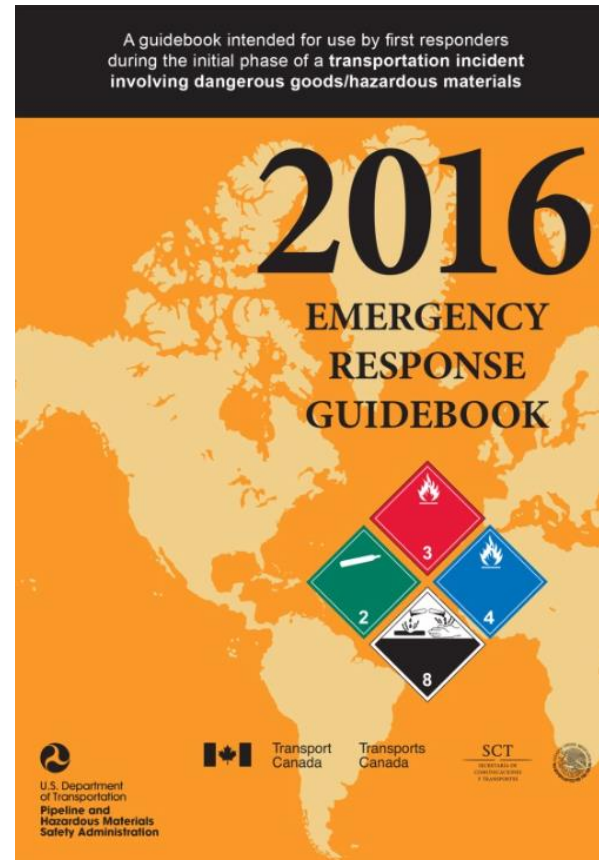
# Scenario 1

- ERG Book Initial Isolation distance:
- Solids and liquids....

and

## Flammable Gas

330 feet in all directions



# Scenario 1



- Hazard Assessment:
- Initial Isolation Distances more than doubled –  
150 feet to 330 feet
- Perimeters, Appropriate PPE, Monitors, Atmospheric Monitoring, Ignition Sources, Vapor Pressures, Vapor Density, Weather Considerations, Wind Directions, etc.



# SAFETY CONSIDERATIONS FOR THE **FIRST RESPONDER**

*Scenario 2*



*Scenario 2*



- Semi-Trailer with “Non-Flammable Gas - 2” placard
- Large white cloud emitting from rear of semi-trailer
- Clear, Sunny, 85 degrees, low wind @ 2 knots



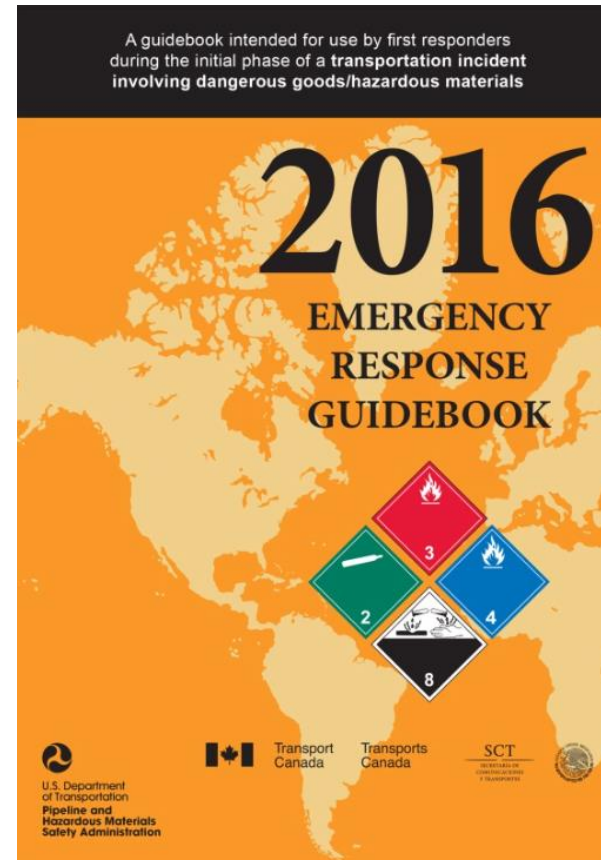




# Scenario 2

- ERG Book Initial Isolation distance:
- HM 2.2 Non-Flammable Gas

**330 feet in all directions**



*Scenario 2*

**INHALATION  
HAZARD**

**ANHYDROUS AMMONIA**

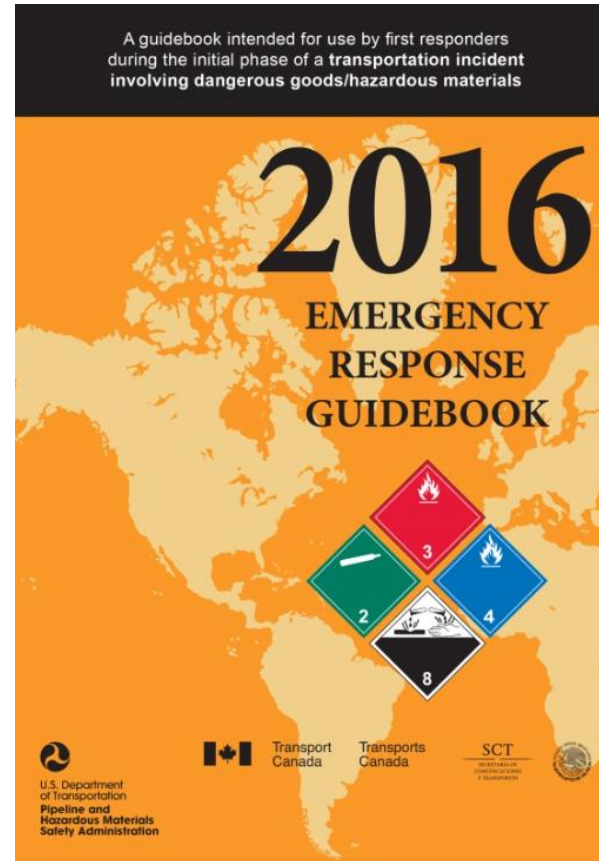


# Scenario 2

o Emergency Response Guidebook Initial Classification  
Resistance:

o HM 2.2 Non-Flammable  
Gas

o Vent in all directions

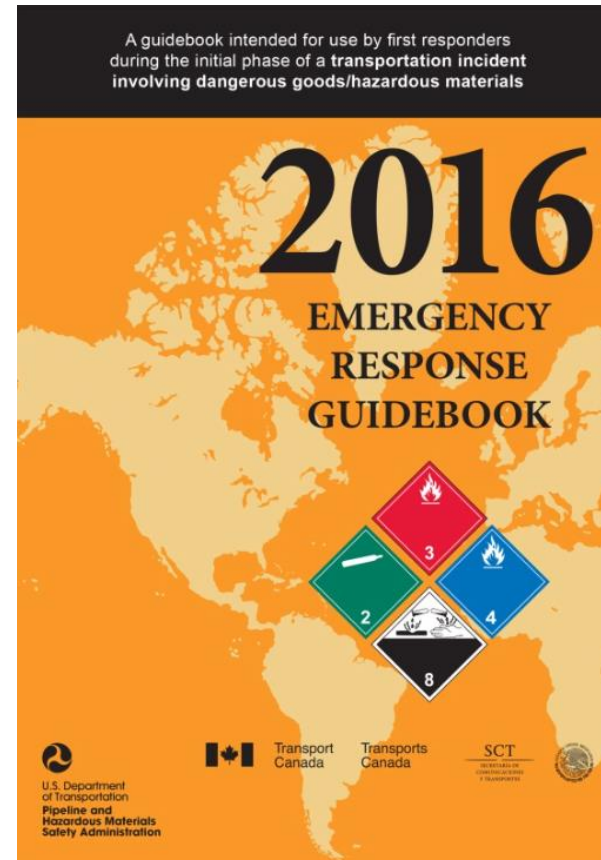


# Scenario 2

- ERG Book Initial Isolation distance:
- HM 2.2 Non-Flammable Gas – BULK PACKAGE of

UN 1005 Anhydrous Ammonia – Toxic Inhalation Hazard

**500 feet in all directions**



Set

- ER dist
- HM - B



.6 m  
1.3 m



## Scenario 2



- Hazard Assessment:
- Initial Isolation Distances increased –  
330 feet to 500 feet
- **Toxic by Inhalation!** – Protection Action Distances in ERG Table 1 and Table 3!
- Protective Actions, Perimeters, Appropriate PPE, Monitors, Atmospheric Monitoring, Ignition Sources, Vapor Pressures, Vapor Density, Weather Considerations, Wind Directions, etc.



SAFETY CONSIDERATIONS  
**FOR THE FIRST RESPONDER**

*Scenario 3*





## Scenario 3

- Box truck with no hazardous materials placards displayed
- Driver states he is transporting (1) non-bulk package of Table 2 hazardous material - *“hazard class 4.2 Spontaneously Combustible material”* - weighing 12 lbs.
- Driver can not find the required hazardous materials shipping papers
- Flames and smoke emitting from within the rear cargo area
- Cloudy, 78 degrees, medium wind @ 8 knots





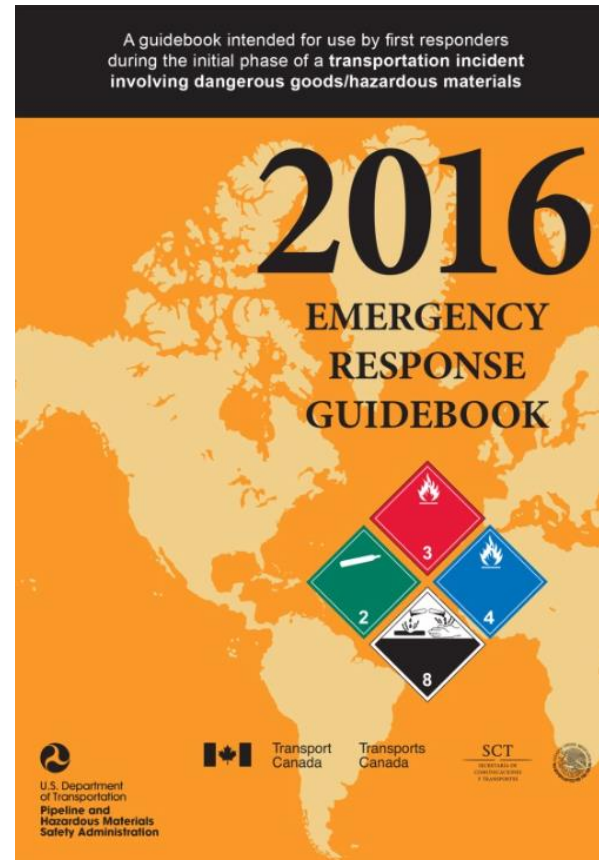
# Scenario 3

- ERG Book Initial Isolation distance:
- Hazard Class 4.2:

ERG Page 136:

- Solid – 75 Feet
- Liquid – 150 Feet

**150 Feet in all Directions**



# Scenario 2

○ Hazard C

ERG Page

**Small Fire**

• Water sp  
wet earth.

**Large Fire**

• Water sp





# Scenario 3

## o Hazard Class 4.3 Placard:

ERG Page 139:

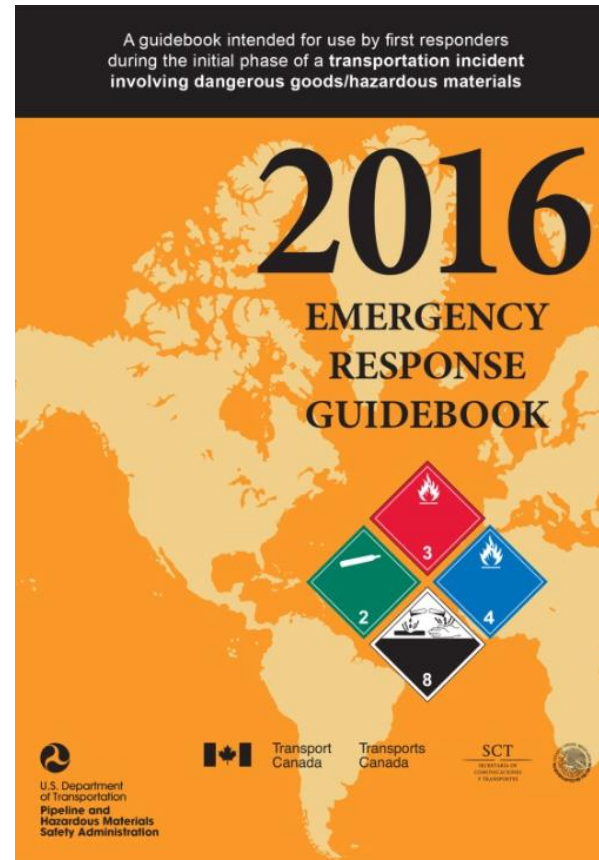
**DO NOT USE WATER OR FOAM.**

**Small Fire:**

**Dry chemical, soda ash, lime or sand.**

**Large Fire:**

**DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn.**



## Scenario 3

- If the driver was in possession of the required hazardous materials shipping papers,
- And the shipping papers were provided to first responders....



UN3394 . ORGANOMETALLIC SUBSTANCE  
LIQUID, PYROPHORIC,  
WATER-REACTIVE (N-BUYLLITHIUM IN  
HEXANES), 4.2 (4.3,  
3), PGI



## Scenario 3

- **UN 3394 – ERG Page 136:**
- **DO NOT USE WATER, CO<sub>2</sub> OR FOAM ON MATERIAL ITSELF.** Some of these materials may react violently with water.



### **Small Fire:**

**Dry chemical, soda ash, lime or DRY sand, EXCEPT for UN1384, UN1923, UN1929 and UN3342.**

### **Large Fire:**

**DRY sand, dry chemical, soda ash or lime EXCEPT for UN1384, UN1923, UN1929 and UN3342, or withdraw from area and let fire burn.**

**CAUTION: UN3342 when flooded with water will continue to evolve flammable Carbon disulfide/Carbon disulphide vapors.**





# Scenario 3

- Hazard Assessment:

## Responding to a vehicle **FIRE!** ERG Page 136:

Hazardous materials involved:

- May ignite on contact with moist air or moisture.
- May burn rapidly with flare-burning effect.
- Some react vigorously or explosively on contact with water.
- Some may decompose explosively when heated or involved in a fire.
- May re-ignite after fire is extinguished.
- Runoff may create fire or explosion hazard.
- Containers may explode when heated.
- Fire will produce irritating, corrosive and/or toxic gases.
- Inhalation of decomposition products may cause severe injury or death.
- Contact with substance may cause severe burns to skin and eyes.
- Runoff from fire control may cause pollution.



# SAFETY CONSIDERATIONS

Hazardous Materials  
Incidents Happen









South SF Exit 1  
Oyster Pt Blvd East 1 1/4  
Grand Avenue 2









SF Exit 1  
Pt Blvd East 1 1/4  
2





Clipboard with papers and a pen.

Dräger  
LPFD



LPFD





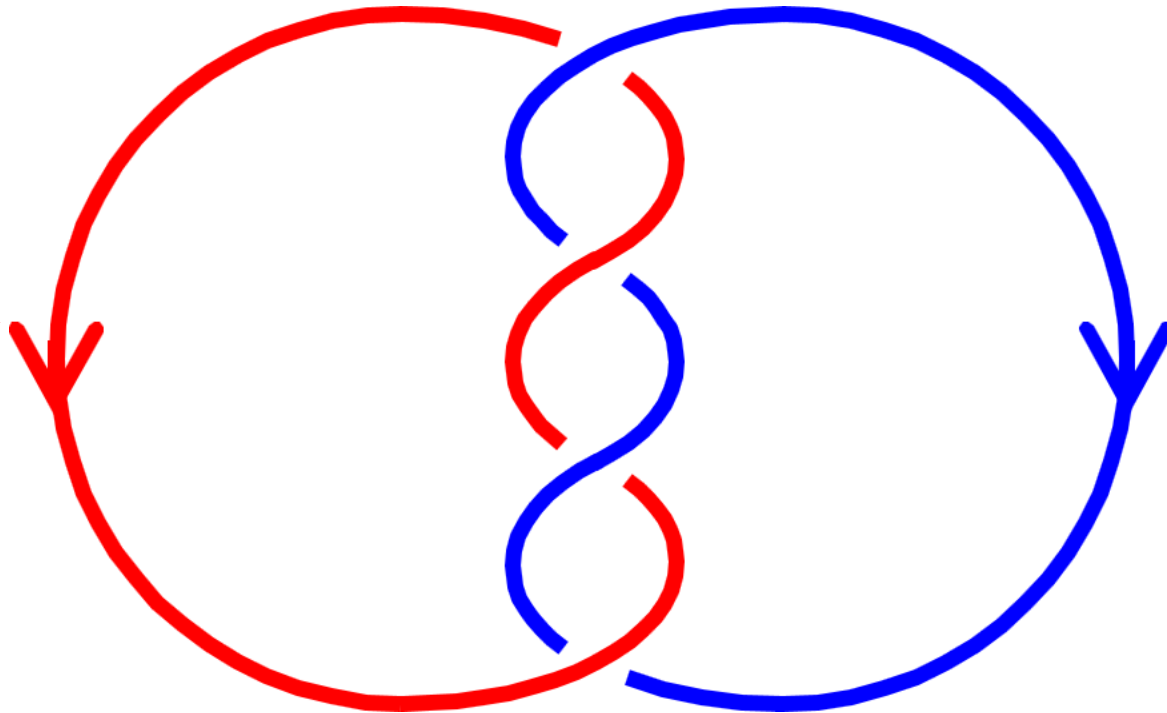




# SAFETY CONSIDERATIONS

## SAFETY FIRST!

State and  
Federal Laws,  
Regulations, &  
Training  
governing  
**HAZARDOUS  
MATERIALS  
EMERGENCY  
RESPONSE**



HMR  
governing  
hazmat  
vehicles,  
packages,  
labels,  
markings,  
S/P's, etc.



SAFETY! SAFETY!  
SAFETY!!

SAFETY! SAFETY!





*Safety First*

**Responding to hazardous materials incidents can be injurious and deadly!**

- First Responder lives are on the line.
- We will follow established protocols, guidelines & training for our Safety!
- We can only hope the transportation industry does the same!





HAZ-MAT  
GROUP  
SUPERVISOR

LEONARDO  
2014  
POLICE

IN CONCLUSION . . .

**GOODBYE**

## IN CONCLUSION . . .

- There is an abundance of strict, State and Federal, regulations concerning hazardous materials & hazardous waste while in transportation.
- And often times they may seem overwhelming and hard to swallow.



## IN CONCLUSION . . .

- The CHP has always been grounded and committed in both the belief and practice of providing the transportation industry training in a myriad of commercial aspects, including hazardous materials transportation regulations, at no cost.



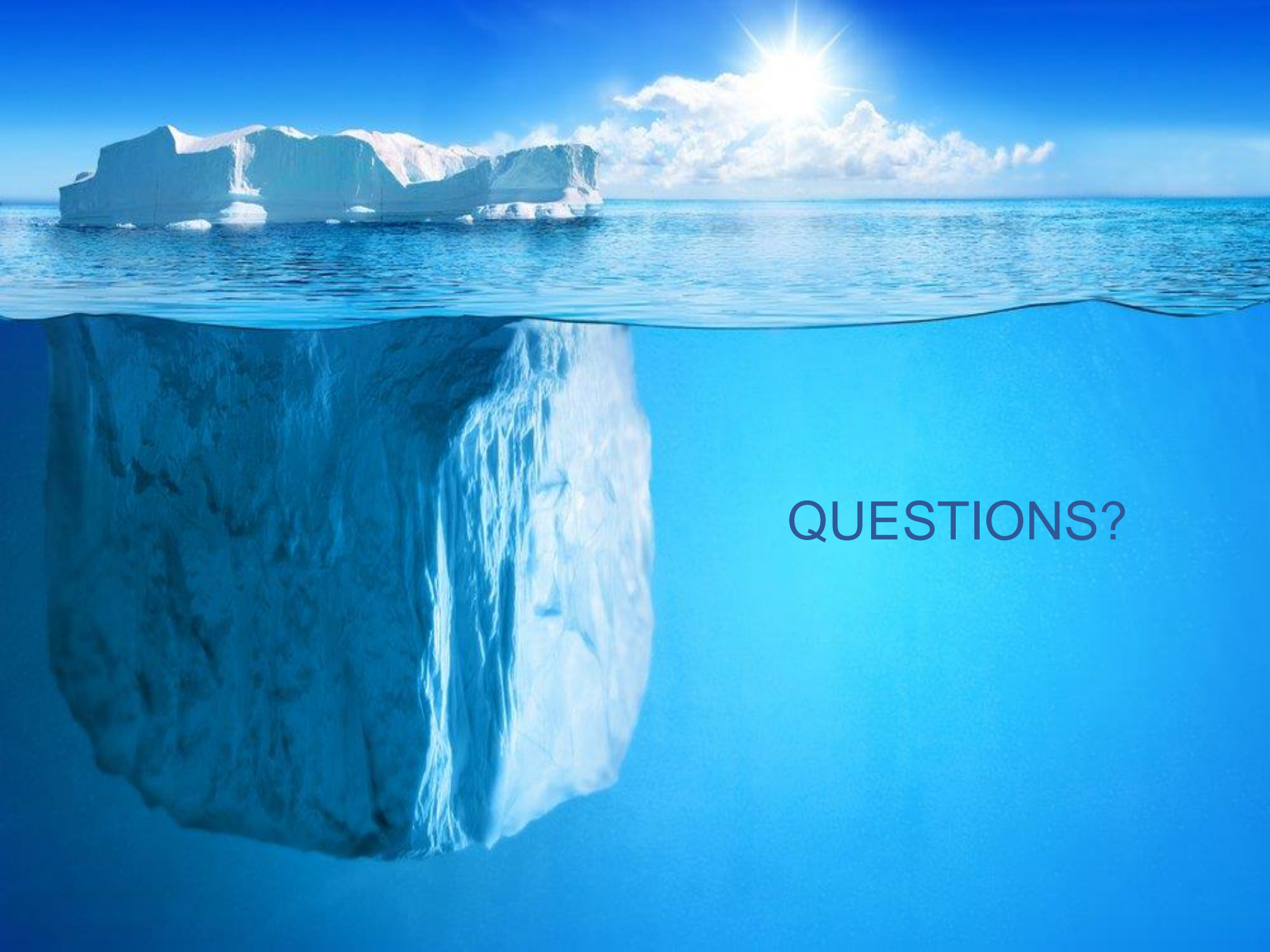
# IN CONCLUSION . . .



## IN CONCLUSION . . .

- Having said that, there needs to be a fair & level playing field for ALL transporters, both small or large.
- Only through education, inspections and enforcement can the CHP help achieve safety, consistency and **compliance**.
- **Compliance** with the HMR's will help ensure the **SAFETY** of truck drivers, the motoring public, **FIRST RESPONDERS**, and our environment!





QUESTIONS?