



DOT Hazardous Waste Manifest Requirements in Transportation

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Session Code Th-J7

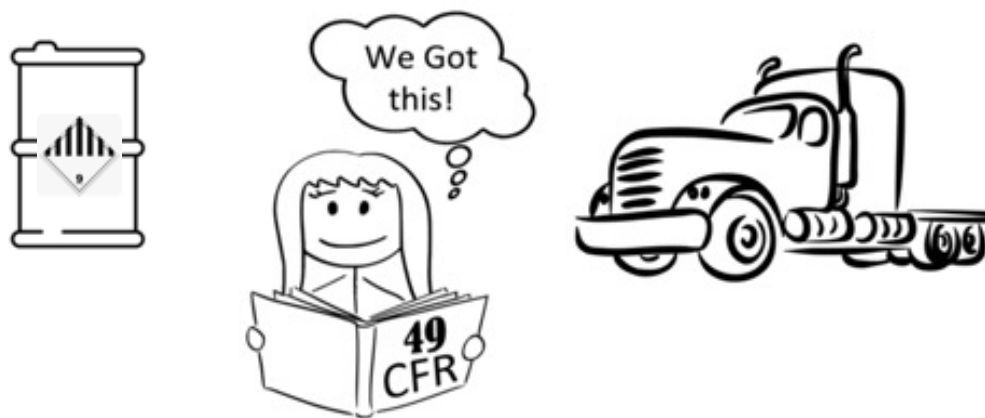
February 29, 2024



**26th California Unified Program
Annual Training Conference
February 26-29, 2024**

Objective

Provide participants with an overview of the 49CFR DOT Hazardous Waste Manifest and Transportation requirements **and what it means to sign/certify a Uniform Hazardous Waste Manifest.**



26th California Unified Program
Annual Training Conference
February 26-29, 2024

Who is here
today?



Generator/Offeror/Shipper

Transporter/Carrier



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The Basics

DOT- United States Department of Transportation

PHMSA- Pipeline and Hazardous Materials Safety Administration

49CFR- Code of Federal Regulations, Title 49

HMR- Hazardous Materials Regulations, 49CFR, Parts 171-178

HMT- Hazardous Materials Table, 49 CFR, Section 172.101

UHWM- Uniform Hazardous Waste Manifest



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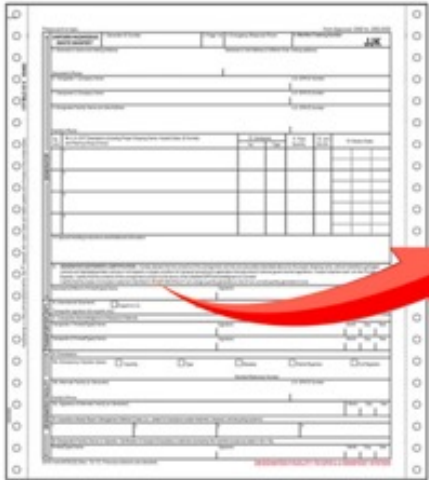
Generators are “shippers” of hazardous material per DOT

The transportation of hazardous waste is regulated jointly under the Resource Conservation Recovery Act (RCRA) and DOT's Hazardous Materials Regulations (HMR) . Therefore, a generator who ships hazardous waste off-site must comply with **both** federal EPA's training requirements for generators and DOT's requirements for training of hazardous materials employees.



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Why are we here?



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 the applicable international and national government regulations. If export shipment and I am the Primary 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.

NOTE:

When we sign the manifest, we “CERTIFY”
it’s accuracy and safety—Title 22 CCR
Chapter 10, part 2 Definitions:

66260.10. “Certification” means a statement
of professional *opinion* based upon
knowledge and *belief*.

List of Frequently Cited Violations & PHMSA's Baseline Penalty Determinations:

Training Requirements:	\$1,000 to \$3,100
Special Permits:	\$1,200 to \$25,000
Offering HM without S/P, markings, labels, etc.:	\$5,000 to \$30,000
Failure to include PSN in PSD:	\$1,000 to \$2,000
Failure to include Hazard Class in PSD:	\$1,000 to \$2,000
Failure to include ID number in PSD:	\$1,200 to \$2,500
Failure to include ER Phone Number:	\$3,200
Packaging Markings:	\$3,000 to \$6,000
Improper Packaging:	\$3,000 to \$13,500
Failure to Segregate HM:	\$9,300 and up
Failure to Secure HM:	\$3,700 and up

A complete listing of these penalties can be found in Appendix A to Subpart D of Part 107 - Guidelines Civil Penalties.



It is vital you uphold your responsibility as a hazardous waste generator and “offeror” to ensure your consignment of hazardous waste is in proper condition prior to leaving your facility. Enforcement actions and penalties have increased significantly over the last few years for violations involving improperly consignments of hazardous wastes. These fines are often assessed to both the offeror and the carrier.



Effective July 31, 2019, US DOT has increased civil penalties for Hazardous Materials Regulations (HMR) violations. With hazmat civil penalties assessed on a per day, per violation basis, even minor increases to these penalty amounts can add up quickly. Civil penalties for hazmat violations – including failure to train employees – are assessed by enforcement agencies and are adjusted annually to keep pace with inflation.

The new civil penalty amounts are as follows:

- The maximum civil penalty for a violation of hazardous materials transportation law (49 USC 5123(a)(1)) increased from \$79,976 to \$81,993 per day, per violation.
- For a violation that results in death, serious illness, severe injury, or substantial property damage, the civil penalty rose from \$186,610 to \$193,316.
- The minimum penalty for a hazmat training violation went up \$493 per employee, per day.

Transitioning from EPA to DOT...

A “hazardous waste” is a “hazardous material”

Objectives

- Identify materials that are hazardous
- Determine who needs training
- Establish the training that is required
- Review the penalties you might incur



Total Hazmat Shipments
> 3 billion tons per year
> 25 billion pounds per day
> 1 million shipments per day



Every person involved in Hazmat Transportation must be trained!

Hazmat employee - anyone who, in the course of his or her employment, directly affects the safety of a hazardous materials shipment



Hazmat Transportation 2022 DOT statistics

Hazmat Incidents- 25,160
Damages- \$49,345,822
Injuries- 34
Fatalities- 1



Hazmat training must include:

- General awareness
- Job-specific instruction
- Safety (if applicable)
- Security awareness
- Security plan (if applicable)



The Hazardous Materials Table 49CFR

§172.101 Hazardous Materials Table

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8)			(9)		(10) Vessel stowage	
							Packaging (§173.***)			Quantity limitations (see §§173.27 and 175.75)		Location	Other
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	<i>Accellerene, see</i> p-Nitrosodimethylaniline												
	<i>Accumulators, electric, see</i> Batteries, wet etc												
	<i>Accumulators, pressurized, pneumatic or hydraulic (containing non-flamable gas), see</i> Articles pressurized, pneumatic or hydraulic (containing non-flamable gas)												
	Acetal	3	UN1088	II	3	IB2, T4, TP1	150	202	242	5 L	60 LE		
	Acetaldehyde	3	UN1089	I	3	A3, B16, T11, TP2, TP7	None	201	243	Forbidden	30 LE		
	A. Acetaldehyde ammonia	9	UN1841	III	9	IB8, IP3, IP7, T1, TP33	155	204	240	200 kg	200 kg A		34
	Acetaldehyde oxime	3	UN2332	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L A		
	Acetic acid, glacial or Acetic acid solution, with more than 80 percent acid, by mass	8	UN2789	II	8, 3	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	243	1 L	30 L A		

Columns in the Hazardous Materials Table

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	(8)			(9)		(10)	
							Packaging (§173.***)			Quantity limitations (see §§173.27 and 175.75)		Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)

COLUMN 1: Symbols

COLUMN 2: Hazardous Materials descriptions and Proper Shipping Names

COLUMN 3: Hazard Class and Division

COLUMN 4: Identification Numbers

COLUMN 5: Packing Groups (PG)

COLUMN 6: Label Codes

COLUMN 7: Special Provisions (for specific materials)

COLUMN 8: Packaging Authorizations

Columns 9 & 10 apply to shipments by air, rail, and water.

Column 1 Symbols

A	Only regulated by air, unless it's a hazardous substance or a hazardous waste
W	Only regulated by water, unless it's a hazardous substance or a hazardous waste
G	Generic name, additional information required on shipping papers and package markings
+	Must be shipped as labeled e.g. Aniline listed as 6.1/PG II with a "+" must be shipped as 6.1/PG II material even if lab data indicates that it is not poisonous or that it is only poisonous at the PGIII level!
I	International transportation, you may choose another name for international transportation if you prefer
D	Domestic transportation, you may choose another name for domestic transportation if you prefer

“G” identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description. (See 172.203(k))

Reportable Quantity (RQ)-Appendix A

Table 1

List of chemicals that have been designated as “hazardous substances” by the US EPA. The Table provides the volume (in pounds and kilograms) at which a hazardous substance becomes a reportable quantity “RQ” in a “single package” under CERCLA. If a material meets this threshold, additional HMR requirements must be adhered to (i.e. shipping papers, markings, etc.).



Table 2

Reportable Quantity

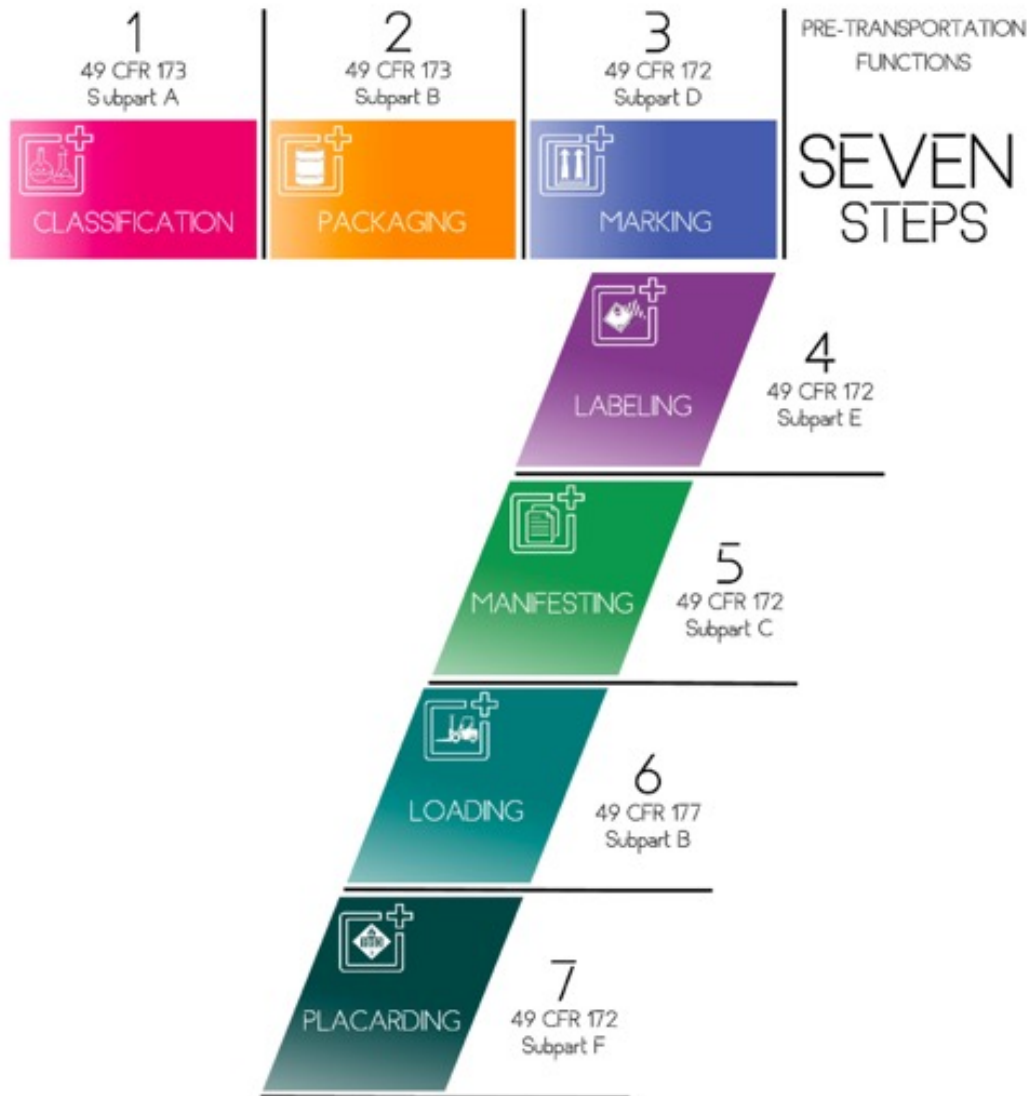
List of radionuclides, that if their activity level surpasses the stated threshold (in curies, ci, and terabecquerel, TBq) become a reportable quantity “RQ” and will also be have additional HMR requirements assigned for the material while in transportation.



Release of the RQ in transit must be reported immediately to the National Response Center.

14 DOT Pre-Transport Functions



(1)	Determining the hazard class of a hazardous material	COLUMNS 1, 2, 3, 4, 5	173+
(2)	Selecting a hazardous materials packaging.	COLUMNS 2, 3, 4, 5, 6, 7, 8	173+
(3)	Filling a hazardous materials packaging, including a bulk packaging.	COLUMNS 7, 8	173+
(4)	Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material.	COLUMNS 7, 8	173+
(5)	Marking a package to indicate that it contains a hazardous material.	COLUMNS 1, 2, 3, 4, 6, 7	172.300+
(6)	Labeling a package to indicate that it contains a hazardous material.	COLUMN 6	172.400+
(7)	Preparing a shipping paper.	COLUMNS 1, 2, 3, 4, 5, 6, 7, 8	172.200+, EPA+
(8)	Providing and maintaining emergency response information.	COLUMNS 1, 2, 3, 4, 5, 6, 7, 8	172.600+
(9)	Reviewing a shipping paper to verify compliance with the HMR or international equivalents.	COLUMNS 1, 2, 3, 4, 5, 6, 7, 8	172.200+, EPA+
(10)	For each person importing a hazardous material into the US, providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the US.	COLUMNS 1, 2, 3, 4, 5, 6, 7, 8
(11)	Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR.	173+
(12)	Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle.	177.834+
(13)	Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo.	177.848+
(14)	Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.	COLUMNS 2, 6, 7	172.500+



1. Classification
2. Packaging
3. Marking
4. Labeling
5. Manifesting
6. Loading
7. Placarding

STEP 1. WASTE CLASSIFICATION



ALL HAZARDOUS WASTES, BOTH STATE AND FEDERAL			
<div> <div>TTLIC mg/kg</div> <div>STLC mg/l</div> </div>		<div>TCLP mg/l</div>	
California State "NON-RCRA"		Federal "RCRA"	
		Characteristics Codes	Listed Codes
1. Exceeds Limits 			
2. Calc. $\div \pm$ LD 50 < 2500ppm, Rat Oral	LD 50	I D001 Ignitable	K From specific
3. Calc. $\div \pm$ LD 50 < 4300ppm, Rabbit, skin	LD 50	C D002 Corrosive	F From non-specific sources
4. Calc. $\div \pm$ LD 50 < 10,000ppm, Rat, Inhalation	LD 50	R D003 Reactive	U Unused Chemicals
5. Fish Bio. Assay  < 500ppm	LD 50	T D004-D0043 Toxic	P Unused acutely Toxic Chem
6. 16 OSHA Carcinogens OSHA "C"			
In addition to the toxicity standards above, California includes all of the Federal codes: I, C, R, T and K.F. , and U.P. too!!		Made In Calif.	Calif. "Codes" 3 digits i.e. 214 Solvents RCRA & Non-RCRA "Calif. ONLY"

EPA/RCRA Waste Codes

CHARACTERISTIC WASTES

D CODE WASTES: Wastes that may or may not be on any of the Code lists above but possesses one or more of the characteristics of a hazardous waste.

Ignitable	D001
Corrosive	D002
Reactive	D003
Toxic	D004 through D043

LISTED HAZARDOUS WASTES

F CODE WASTES: Multiuse or non-specific source wastes.

Example—spent solvents

K CODE WASTES: Industry specific source wastes.

Example—wastewater sludge from the production of creosote

U CODE WASTES: Discarded commercial chemical products.

Example—Acetone

P CODE WASTES: Acutely hazardous commercial chemical products and off specification commercial products.

Example—Aldrin*

If your Haz Waste is generated in California, you will have a 3 digit California Haz Waste code.

i.e. 151—Asbestos

Clues in Column 2- RCRA Proper Shipping Names



Look for the technical chemical name that describes the waste in Column 2. If not found there, THEN.....



Look for name that the waste in Column 2. If not found there, THEN..... the generic describes



Look for class the hazard name that describes the waste in the Column 2.

Primary vs. Subsidiary Hazards-

Precedence of hazard table, 49CFR Section 173.2a

Not Otherwise Specified- N.O.S.

If the chemical name for your waste cannot be found, find the most common generic family name with a matching hazard class, add the word "waste" in front of the generic name, and follow the name with "n.o.s."

DOT Hazard Classes

- Class 1-Explosives
- Class 2-Compressed Gases
- Class 3- Flammable/Combustible Liquids
- Class 4-Flammable Solids, etc.
- Class 5- Oxidizers & Organic Peroxides
- Class 6- Poison/Toxic & Infectious
- Class 7- Radioactive Materials
- Class 8- Corrosives
- Class 9- Miscellaneous

Example- Waste Methyl Ethyl Ketone

For example, you have classified your hazardous waste and designated it with a proper shipping name listed in the 101 Table as **UN1993, FLAMMABLE LIQUIDS, N.O.S.**

G	Flammable liquids, n.o.s.	3	UN1993	1	3
				"	3

If the primary hazardous substance constituent from your waste stream is methyl ethyl ketone, you would simply describe your hazardous waste as **UN1993, FLAMMABLE LIQUID, N.O.S. (Methyl Ethyl Ketone).**

Example- Rags soaked with acetone

49 CFR 172.10					
Symbols	Hazardous materials description and proper shipping names	Hazard class or Division	ID Numbers	PG	Label Codes
(1)	(2)	(3)	(4)	(5)	(6)
G	Flammable solids, organic, n.o.s.	4.1	UN1325	III	4.1

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 Wt./Vol.	13. Waste Codes		
		No.	Type					
X	UN1325, WASTE FLAMMABLE SOLIDS, ORGANIC, N.O.S. (ACETONE), 4.1, PG III	1	CF	1,800	P	D001	F003	352

Example- Waste acidic solution

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or division (3)	Identification Numbers (4)	PG (5)	Label Codes (6)
G	Corrosive liquids, toxic, n.o.s.	8	UN 2922	II	8, 6.1

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 Wt./Vol.	13. Waste Codes		
		No.	Type					
X	UN2922, WASTE CORROSIVE LIQUIDS, N.O.S. (METHANESULFONIC ACID), 8 (6.1), PG II	1	TP	275	G	D002	D003	551

ERATOR

For shipping Non-RCRA, per DTSC...

Manifest Item 9b: How to enter shipping names for non-RCRA hazardous waste (22 CCR section 66262.23(a)(5))

- Describe non-RCRA hazardous wastes which do not have a U.S. DOT description indicating a generic name of the waste and the phrase “Non-RCRA Hazardous Waste, Solid” or “Non-RCRA Hazardous Waste, Liquid” for solid or liquid wastes, respectively. When possible, the generic name shall be obtained from [22 CCR division 4.5, chapter 11, Appendix X, subsection \(b\)](#). If not listed there, the commonly recognized industrial name of the waste shall be used.
- Describe non-RCRA hazardous wastes which have a U.S. DOT description by the U.S. DOT description.

****Remember the HMT is designed for federal (RCRA) hazardous waste.****

Classifying Non-RCRA for transport

Example #1: You determine your waste is hazardous due to California criteria for toxicity (e.g. It failed the aquatic toxicity test). First, find the waste in Appendix X (b) "List of Common Names" or use the common industrial name, "Tank Bottom Sediment". Then, add that name after the words, "Non-RCRA Hazardous Waste Solid" or "Liquid" (depending on the physical state of your waste). So, the proper shipping name for your waste would be: "Non-RCRA Hazardous Waste Solid, Tank Bottom Sediments".

Example #2: Non-RCRA Hazardous Waste Liquid (Test Water)

ERATOR	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 Wt./Vol.	13. Waste Codes	
			No.	Type				
		¹ NON-RCRA HAZARDOUS WASTE, LIQUID (TEST WATER)	2	DM	165	G	135	

STEP 2. PACKAGING

Some Important Packaging Terms

Non-Bulk Packaging

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

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;

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



Bulk Packaging

means a packaging,

other than a vessel or a barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment. Additionally, a bulk packaging exceeds the thresholds described above in the definition of a non-bulk packaging.



Intermediate Bulk Container (IBC) means a rigid or flexible portable packaging, other than a cylinder or portable tank, which is designed for mechanical handling and typically have a capacity between 119 gallons and 1000 gallons.

UN Standards/Mfg Non-Bulk Packaging Marking

You MUST specify the:

- *Type of hazard* = hazard class (numbered 1-9)
- *Degree of hazard* = packing group

There are THREE packing groups:

- PG I (major hazard)
- PG II (moderate hazard)
- PG III (minor hazard)

There are three conditions a material must meet in order to be considered a "hazardous."

1. Specifically named by "DO" with a "+" sign in Column 1 of the 172.101 Hazmat Table

- Ship under given hazard classification
- Unfortunately, not the majority of what most people ship

2. Meets definition of Hazard Class 1-

- Must know the chemical and physical properties of your material

3. Falls under "miscellaneous" Hazard Class 9

Includes:

- "Gifts" from other agencies (e.g. EPA)
- Unique hazards added by DOT

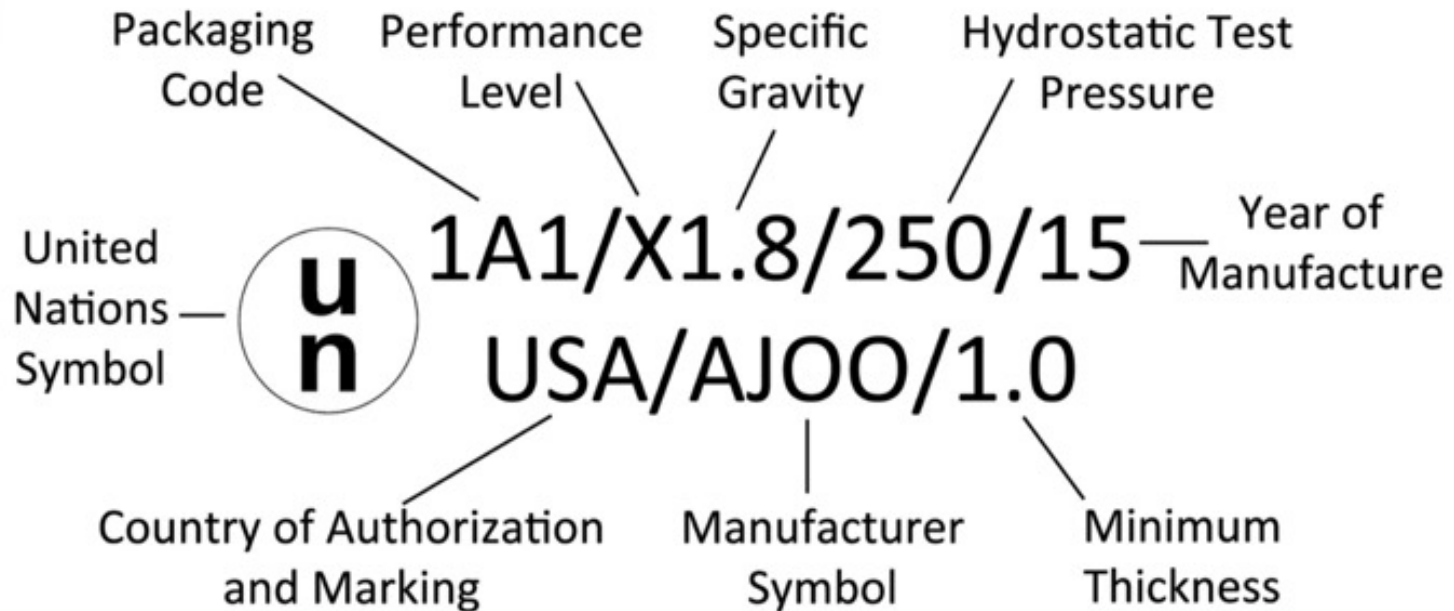
- UN symbol
- Packaging code
- Performance level
- Gross mass or specific gravity
- Solids or inner packagings
- Year of manufacture
- Country of authorization
- Manufacture symbol

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	La Co
(1)	(2)	(3)	(4)	(5)	(6)
+	Benzaldehyde	9	UN1990	III	9
	Benzene	3	UN1114	II	3

Example- Steel Drum



Steel Drum



Determining DOT Packing Group

Liquid/solid corrosive materials causing full thickness skin destruction within a specified period.

Remember, there are three packing groups that define corrosive materials. Packing Group I & II are defined based on skin destruction. Skin destruction is determined by exposure time (how long it is on the skin) and observation time (how long after it was washed off). If the material is only corrosive to steel or aluminum, it belongs to Packing Group III.

Packing Group I	After exposure time of < 3 minutes, followed by < 60 minutes of observation
Packing Group II	After exposure time of > 3 minutes but < 60 minutes, followed by < 14 days of observation
Packing Group III	After exposure time of > 60 minutes but < 4 hours, followed by < 14 days of observation

Note:

Packing groups are NOT assigned to Class 1, 2, 7, Limited Quantity, & some 4.1, 5.2, 6.2, 8, & 9.

STEP 3. MARKING

Package Orientation
(Red/Black)



§172.312(a)

Keep Away from Heat



§172.317

Overpack Mark



§173.25(a)(4)

Fumigant Marking



§172.302(g) and §173.9

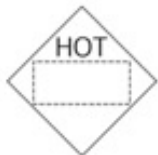
Material Poisonous by Inhalation



§172.313(a)



Elevated Temperature Material



§172.325

UN ID Number Mark



§§172.332 and §172.336

Biological Substances, Category B



§173.199 (a)(5)

Lithium Battery Handling Mark



§173.185

Marine Pollutant



§172.322

Per DOT, a hazardous waste label is considered a "MARKING"

Limited Quantity



§172.315

Biohazard Mark



§172.323

Petroleum Sour Crude Oil



§172.327

Excepted Quantity



§173.4a(g)

General Marking Requirements

Examples of hazmat markings include but are not limited to proper shipping names, identification numbers, technical names, special permit packaging information, environmental handling information, consignment information, and marine pollutants. These markings assist package handlers and first responders to readily identify the hazardous waste. Keep in mind if the markings on your packagings are hard to find or improperly displayed, you may not only be in violation, but you are jeopardizing the safety of facility personnel and first responders.

Markings must be:

- Durable, in English and printed on or affixed to the surface of a package or on a label, tag, or sign;
- Displayed on a background of sharply contrasting color;
- Unobscured by labels or attachments; and
- Located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

Prohibited Markings

No packaging may be marked with a proper shipping name or identification number unless the packaging contains the identified material or its residue.

Marking Requirements- Proper Shipping Name

Hazardous Substances in Non-Bulk Packagings

If the proper shipping name of a material that is a hazardous substance does not identify the hazardous substance by name, the name of the hazardous substance must be marked on the package, in parentheses, in association with the proper shipping name.

If the material contains two or more hazardous substances, at least two hazardous substances, including the two with the lowest reportable quantities (RQs), must be identified. For a hazardous waste, the waste code (i.e. D001), if appropriate, may be used to identify the hazardous substance.

The letters “RQ” must be marked on the package in association with the proper shipping name.

**UN1992, Waste Flammable Liquids,
Toxic, N.O.S. (2-Propanol, Oil), 3 (6.1)**

RQ



EPA/DOT Marking Requirement (49CFR 172.304)

(b) Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 119 gallons or less used in such transportation with the following words and information in accordance with the requirements of 49 CFR 172.304:

(1) HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

(2) Generator's Name and Address ____.

(3) Generator's EPA Identification Number ____.

(4) Manifest Tracking Number ____.

(5) EPA Hazardous Waste Number(s) ____.

vs. What's required by EPA for accumulation:

- (1) The words "hazardous waste"
- (2) Contents, composition, hazardous properties of waste
- (3) Physical state of waste
- (4) Generator's name and address
- (5) Accumulation start date

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:

NAME FERRARIO'S MAINTENANCE & REPAIR PROS

ADDRESS 3090 RIVERS BEND CIRCLE **PHONE** 510-455-7777

CITY HAYWARD **STATE** CA **ZIP** 94544

EPA IDENTIFICATION NO. / **MANIFEST TRACKING NO.** CAT080043733 / 00045877FLE

EPA WASTE NO. D001, F003 **CA WASTE NO.** 352 **ACCUMULATION START DATE** 3/1/21

CONTENTS, COMPOSITION: RAGS SOAKED WITH ACETONE

PHYSICAL STATE:

☒ **SOLID** ☐ **LIQUID**

HAZARDOUS PROPERTIES:

☐ **CORROSIVE** ☐ **REACTIVITY** ☐ **OTHER** _____

☒ **FLAMMABLE** ☐ **TOXIC**

UN1325, WASTE FLAMMABLE SOLIDS, ORGANIC, N.O.S.

(ACETONE), 4.1, PG III

STEP 4. LABELING



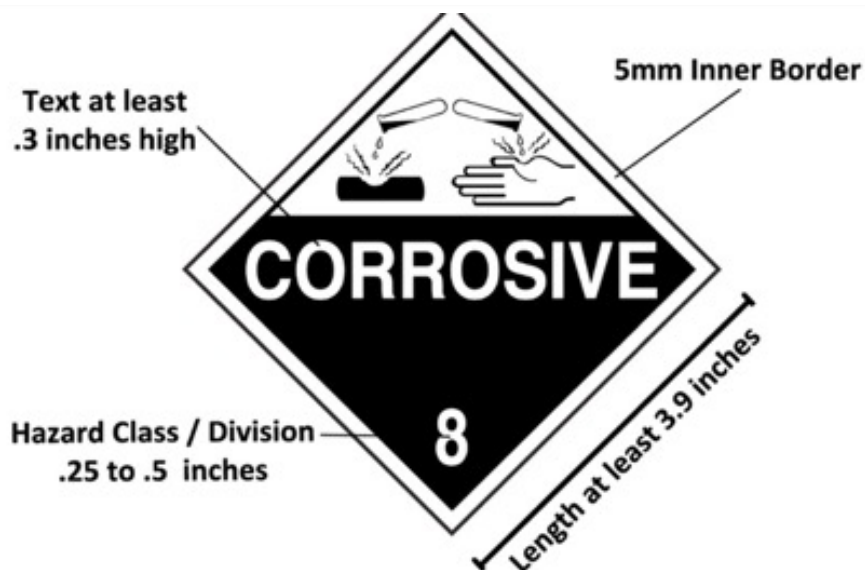
Primary Hazard
6.1 Toxic

Subsidiary Hazards
3 Flammable and
8 Corrosive



Labels- Column 6 of the Hazmat Table

1. Locate the selected proper shipping name in Column 2 of the 101 Table.
2. Refer to Column 6 of the 101 Table for the appropriate label code(s).
3. The first label code listed indicates the material's primary hazard. Any additional label codes indicate subsidiary hazards.
4. Using the label codes from Column 6 in the 101 Table, find the name of the label(s) required to be on the package in the label substitution table in 49 CFR 172.101(g).



STEP 5. MANIFESTING

The UHWM (EPA Form 8700-22) is the shipping document that travels with HW from the point of generation to its final destination-Treatment, Storage, Disposal Facility (TSDF). The generator, transporter, and TSDF retains copies creating a cradle-to-grave tracking of HW.

Please print or type

Form Approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number JJK		
5. Generator's Name and Mailing Address		Generator's Site Address (if different than 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. HWM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
1.							
2.							
3.							
4.							
14. Special Handling Instructions and Additional Information							
15. GENERATOR/SOFFEROR'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 Primary 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/Officer's Printed/Typed Name		Signature			Month	Day	Year

Breaking down the UHWM

- Generator Information (Sections 1-5)
- Transporters (Sections 6-7)
- TSDF (Section 8)
- Hazardous Waste (Sections 9a-13)
- Special Handling Instructions and Add'l Information
- Generator's/Offeror's Certification-Waste Minimization
- Transporters (Section 17)
- Discrepancies (Section 18a-18c)
- Facility Acceptance (Section 19-20)

Manifesting- Instructions 9A and 9B

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 Wt./Vol.	13. Waste Codes
		No.	Type			
1.						

Section 9a HM

If the wastes identified in Section 9b consist of both hazardous waste and non hazardous waste materials, then identify the hazardous waste by entering an “X” in this section next to the corresponding hazardous waste identified in Section 9b. If the hazardous waste is a reportable quantity, the letters “RQ” may also be entered in this Section next to the corresponding hazardous waste identified in Section 9b.

Section 9b US DOT Description

Enter the US DOT identification number (UN or NA), proper shipping name, hazard class or division number and packing group for each waste as required in the HMR 172.101 Hazardous Materials Table. Include technical name(s) and reportable quantity references if applicable. The word “waste” must precede the proper shipping name unless the material is not DOT regulated. If more than one Emergency Response phone number applies to the various wastes described in Section 9b, enter the applicable Emergency Response phone number immediately following the shipping description.

I.S.H.P.— The “Basic Shipping Description”

Each hazardous material that is offered for transport must be clearly described on the shipping paper using the applicable information from the 101 Table. The shipping description must include the material's:

- The **identification number** prescribed for the material as shown in Column 1 of the 101 Table;
- The proper **shipping name** (PSN) prescribed for the material in Column 2 of the 101 Table;
- The **hazard class** or division number prescribed for the material as shown in Column 3 of the 101 Table. The subsidiary hazard class or division number is not required to be entered when a corresponding subsidiary hazard label is not required. Except for combustible liquids, the subsidiary hazard class(es) or subsidiary division number(s) must be entered in parentheses immediately following the primary hazard class or division number;
- The **packing group** in Roman numerals, as designated for the hazardous material in Column 5 of the 101 Table. The packing group may be preceded by the letters “PG”.

I.S.H.P.

Basic Shipping Description Sequence

Mandatory for all Hazmat Transportation

FEDERAL DOT regulations mandate the order of the Basic Description as:

(1) Identification Number, (2) Proper Shipping Name, (3) Hazard Class, (4) Packing Group

However, Item 9b of the UHWM reads:

9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)).

****While the instructions on the manifest seem to indicate a particular sequence, there is no mandate, therefore generators must follow the sequence in the DOT regulations.**

Class Activity #2

You're shipping a 275 gal. tote of waste solution with methane sulfonic acid. Fill out sections 9B, 10, 11, 12, & 13 of a manifest

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or division (3)	Identification Numbers (4)	PG (5)	Label Codes (6)
G	Corrosive liquids, toxic, n.o.s.	8	UN2924	I	8, 6.1

Section 10 Containers

Enter the total number of containers for each waste and the appropriate abbreviation for the type of container.

Type of Containers:

BA: Burlap, cloth, paper, or plastic bags

CF: Fiber or plastic boxes, cartons, cases.

CM: Metal box, carton, case, roll-off

CY: Cylinders

DF: Fiberboard, plastic drums, barrels, keg

DM: Metal drums, barrels, keg

DT: Dump truck

DW: Wooden drums, barrels, kegs

HG: Hopper or gondola cars

TC: Tank cars

TP: Portable tanks

TT: Cargo tank (tank trucks)

Section 12 Units of Measure

Enter the appropriate abbreviation for the unit of measure.

G: Gallons

K: Kilograms

L: Liters

M: Metric Tons

Class Activity #2 Answer:

[illegible]

STEP 6. LOADING



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 liquids PG 1 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
Explosives 1.3		*	*	*	*	*	X		X	X	X		X	X	X	X	X		X
Explosives 1.4		*	*	*	*	*	O		O	O	O		O				O		O
Very insensitive explosives. 1.5	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
Extremely insensitive ex- plosives. 1.6		*	*	*	*	*													
Flammable gases 2.1		X	X	O	X				X	O							O	O	
Non-toxic, non-flammable gases. 2.2		X			X														
Poisonous gas Zone A 2.3		X	X	O	X		X				X	X	X	X	X	X			X
Poisonous gas Zone B 2.3		X	X	O	X		O				O	O	O	O	O	O			O
Flammable liquids 3		X	X	O	X				X	O					O		X		O
Flammable solids 4.1		X			X				X	O							X		O
Spontaneously combustible materials. 4.2		X	X	O	X				X	O							X		X
Dangerous when wet materials. 4.3		X	X		X				X	O							X		O
Oxidizers 5.1	A	X	X		X				X	O	O						X		O
Organic peroxides 5.2		X	X		X				X	O							X		O
Poisonous liquids PG I zone A. 6.1		X	X	O	X		O				X	X	X	X	X	X			X
Radioactive materials 7		X			X		O					O	X	O	O	O	X		
Corrosive liquids 8		X	X	O	X				X	O		O	X	O	O	O	X		

STEP 7. PLACARDING

TABLE 1

Category of material (Hazard Class or division number and additional description, as appropriate)	Placard name
1.1.....	EXPLOSIVES 1.1.....
1.2.....	EXPLOSIVES 1.2.....
1.3.....	EXPLOSIVES 1.3.....
2.3.....	POISON GAS.....
4.3.....	DANGEROUS WHEN WET.....
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).....	ORGANIC PEROXIDE.....
6.1 (Materials poisonous by inhalation (see §171.8)).....	POISON INHALATION HAZARD.....
7 (Radioactive Yellow III label only).....	RADIOACTIVE ¹

Hazardous Materials Placarding Table 2 – 49 CFR 172.504(e)

Category of material (Hazard Class or division number and additional description, as appropriate)	Placard name
1.4.....	EXPLOSIVES 1.4.....
1.5.....	EXPLOSIVES 1.5.....
1.6.....	EXPLOSIVES 1.6.....
2.1.....	FLAMMABLE GAS.....
2.2.....	NON-FLAMMABLE GAS.....
3.....	FLAMMABLE.....
Combustible Liquid.....	COMBUSTIBLE.....
4.1.....	FLAMMABLE SOLID.....
4.2.....	SPONTANEOUSLY COMBUSTIBLE.....
5.1.....	OXIDIZER.....
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled).....	ORGANIC PEROXIDE.....
6.1 (Other than materials poisonous by inhalation).....	POISON.....
6.2.....	(None).....
8.....	CORROSIVE.....
9.....	Class 9 (See §172.504(f)(9)).....
ORM-D.....	(None).....



Why is Placarding Important?

The Importance of Properly Placarding

In the simplest terms, hazardous materials placards are used to communicate potential dangers of the hazardous materials within a transport vehicle and to alert emergency responders in the event of an incident or accidental release while in transit. Placards are frequently the first recognition clues upon arriving to an incident involving hazardous materials. By immediately recognizing hazardous materials are involved, emergency responders can assess the type of hazardous materials placards displayed on the transport vehicle and develop strategic response plans and objectives in order to safely conduct life-saving measures and address mitigation actions for a release if required.



Who is Responsible for Placarding

It is your responsibility as a hazardous waste generator and "offeror" to ensure that the transport vehicle is properly placarded prior to leaving your facility. Your Pre-Transportation Function requires you select, provide or affix placards for your hazardous waste prior to or at the same time the material is offered for transportation, unless the transport vehicle is already placarded for the material.

171.1(b) Pre-transportation functions. (14) Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.

Although the majority of hazardous waste transporters carry a full complement of placards, it is still your responsibility as the "offeror" to ensure the correct placards are properly affixed to the transport vehicle prior to departing your facility. It is important to have a good working relationship with your transporter and have a clear understanding of both of your placarding responsibilities and capabilities to ensure the appropriate display of placards on the transport vehicle.



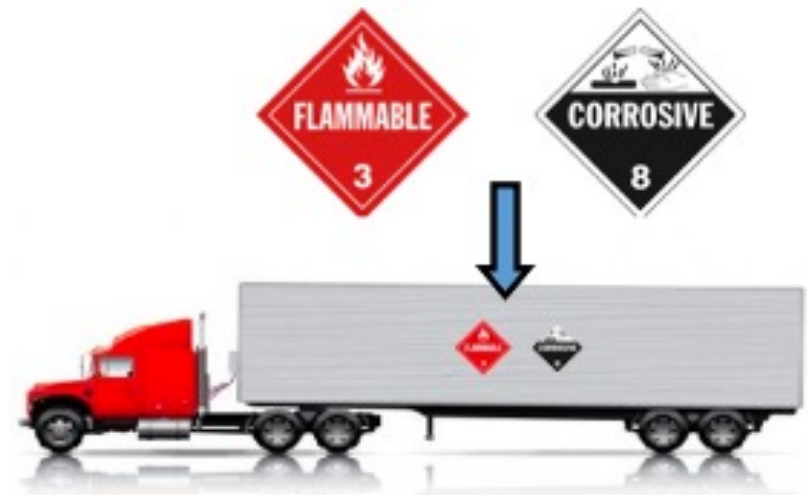
Breaking down placarding requirements

COMPONENT A: The General requirement

(a) General. Except as otherwise provided in this subchapter, each bulk packaging, freight container, unit load device, transport vehicle or rail car containing any quantity of a hazardous material must be placarded on each side and each end with the type of placards specified in tables 1 and 2 of this section and in accordance with other placarding requirements of this subpart, including the specifications for the placards named in the tables and described in detail in §172.519 through §172.560.

The **General requirement** necessitates **ANY** transport vehicle containing **ANY** amount of a hazardous material subject to the HMR to be placarded on each side and each end with the specific placard designated for the hazardous materials category in Table 1 or Table 2. Moreover, there are additional placarding requirements outlined in the HMR (which an offeror and carrier need to be aware of) and that the placards displayed on a transport vehicle must comply with detailed specification requirements as outlined in the HMR (§172.519 through §172.560). This holds true for any hazardous material subject to US DOT regulations, regardless of the materials weight or if the material is packaged in small (non-bulk) or large (bulk) packagings.

EXAMPLE: Transporting one box of category 3 (Flammable) weighing 30 pounds and one drum of class 8 (Corrosive) weighing 550 pounds. The transport vehicle is required under **COMPONENT A: General requirement** to display the following placards on each side and each end.



Breaking down placarding requirements

COMPONENT B: DANGEROUS placard

(b) DANGEROUS placard. A freight container, unit load device, transport vehicle, or rail car which contains non-bulk packages with two or more categories of hazardous materials that require different placards specified in Table 2 of paragraph (e) of this section may be placarded with a DANGEROUS placard instead of the separate placarding specified for each of the materials in Table 2 of paragraph (e) of this section. 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 on a freight container, unit load device, transport vehicle, or rail car, the placard specified in Table 2 of paragraph (e) of this section for that category must be applied.



The **DANGEROUS placard** allowance provides offerors and carriers a placarding option which may reduce the number of placards to be displayed on a transport vehicle. Taking the placards required from COMPONENT A: General requirement, a DANGEROUS placard may be substituted **IF** the transport vehicle contains:

- Two or more categories of hazardous materials requiring different placards listed in Table 2, and
- The hazardous materials are packaged in non-bulk packages.

*NOTE: If the aggregate gross weight of a specific category of material exceeds 2,205 pounds and is loaded at one facility, the placard specified for that category of material described in Table 2 must be displayed.

EXAMPLE: Transporting one box of category 3 (Flammable) weighing 30 pounds and one drum of class 8 (Corrosive) weighing 550 pounds. An offeror or carrier is permitted to substitute a **DANGEROUS** placard instead of the two categories of materials that require different placards.

Breaking down placarding requirements

COMPONENT C: Exception for less than 454 kg (1,001 pounds)

(c) 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 or rail, placards are not required on -

(1) A transport vehicle or freight container which contains less than 454 kg (1001 pounds) aggregate gross weight of hazardous materials covered by table 2 of paragraph (e) of this section.



30 lbs.
+
550 lbs.
= 580 lbs.
Aggregate Gross Weight



The placarding *Exception for less than 1,001 pounds* immediately excludes both “bulk packagings” and hazardous materials subject to §172.505. With “bulk packagings” being excluded, only “non-bulk packagings” are authorized under this Exception. Additionally, only hazardous materials covered by Table 2 are permitted, thus excluding all materials covered by Table 1. In order to be excepted from displaying placards, a transport vehicle must contain less than 1,001 pounds aggregate gross weight of **ALL** of the Table 2 materials combined. Placards would still need to be displayed on a transport vehicle if it contained bulk packagings and/or any category of Table 1 materials.

*NOTE: “Aggregate gross weight” means the sum of all categories of materials (packagings and contents).

EXAMPLE: Transporting one box of category 3 (Flammable) weighing 30 pounds and one drum of class 8 (Corrosive) weighing 550 pounds. An offeror or carrier is excepted from displaying any placards on the transport vehicle because the aggregate gross weight of hazardous materials covered by Table 2 in non-bulk packagings is 580 pounds, well less than the 1,001 pound threshold limit set forth under 172.504(c).

Breaking down placarding requirements

COMPONENT D: Exception for empty non-bulk packages

(d) Exception for empty non-bulk packages. Except for hazardous materials subject to §172.505, a non-bulk packaging that contains only the residue of a hazardous material covered by Table 2 of paragraph (e) of this section need not be included in determining placarding requirements.



All sixty drums -
Empty containing
only residue



Residue means the hazardous materials remaining in a packaging after its contents have been unloaded to the maximum extent practicable and before the packaging is either refilled or cleaned of hazardous materials and purged to remove any hazardous vapors. (49 CFR 171.8 Definitions) Additional pertinent regulations are described in 49 CFR 173.29 **Empty packagings**, in particular 173.29(c)(1)(2): A non-bulk packaging containing only the residue of a hazardous material covered by Table 2 that is not a material poisonous by inhalation or its residue is shipped under the subsidiary placarding provisions of 172.505, do not have to be included in determining the applicability of placards and are not subject to shipping paper requirements when collected and transported by a contract or private carrier for reconditioning, remanufacture or reuse.

The placarding **Exception for empty non-bulk packages** also immediately excludes “bulk packages”. This exception is solely authorized for categories of hazardous materials covered by Table 2 in “non-bulk” packagings.

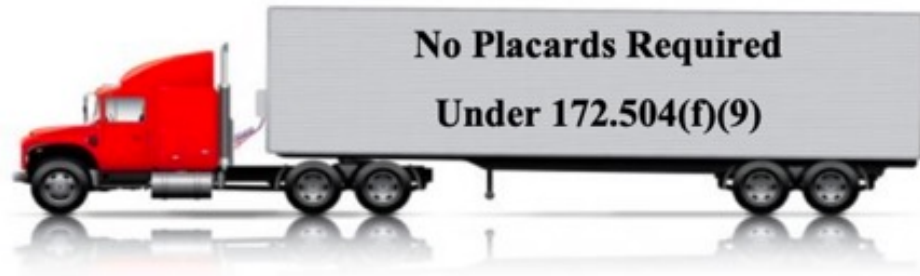
EXAMPLE: Transporting sixty empty 55-gallon drums of a class 8 (CORROSIVE) material containing only residue. An offeror or carrier is excepted from displaying any placards on the transport vehicle.

Additional placarding exceptions

EXAMPLE: Transporting sixty 55-gallon drums of a class 9 (CLASS 9) material within the US. An offeror or carrier is excepted from displaying any placards on the transport vehicle.



**All sixty drums -
Containing
Class 9 materials**



Are you ready to ship your HW?

Let's Review



Take Generator Certification Seriously



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 the applicable international and national government regulations. If export shipment and I am the Primary 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.*

Waste Minimization at EPA's 40 CFR 262.27 says.....

I certify that I have a program in place to reduce the volume, quantity and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

DOT Training Requirements

General Awareness Training: At a minimum, all hazmat employees must be given a general understanding of the entire hazardous materials transportation program, so that they know how their jobs fit into the system.

Function-Specific Training: Each employee (by job function) also must be trained on any requirements that he or she must meet in performing transportation-related duties.

Safety Training: Persons handling or potentially exposed to hazardous materials during the cycle of transportation (e.g., drivers, loaders, loading dock workers, warehousemen, etc.) must be trained in safe handling and emergency response procedures applicable to the hazards to which they may be exposed.

Security Awareness Training: Each hazmat employee must be trained to recognize and protect against potential terrorist threats involving hazardous material shipments.

Security Plan Training: For operations that require a written security plan, each hazmat employee must also be trained in company security objectives, organizational structure and specific procedures, responsibilities or actions required from them.

Driver Training: In addition, specific requirements for training of hazardous materials drivers are found at 49 CFR Part 177 and Parts 350-399.

The first five categories above are generally referred to as "hazmat employee" training.



5. How often must training be updated or repeated?

Hazmat employee training must be updated *any time DOT issues any new or revised rule applicable to the duties of a particular employee* [49 CFR 172.702(b)].

The training must be completed by each employee "prior to performance of a function affected by the new or revised rule" [61 FR 27169, May 30, 1996]. Because most rules have a delayed effective date or a transition period for compliance, *annual update training will meet the needs of most HMT compliance managers or supervisors*. In addition, training must occur within 90 days of employment for new employees. Managers will then need to determine what updates affect which groups of hazmat employees in their operations.



Hazmat employee training must be repeated in its entirety (not just updated or refreshed) at least every three years [49 CFR 172.704(c) (2)]. This "recurrent" training must include testing and formal recordkeeping. If an employee has not been re-trained within the past three years, that employee cannot perform any hazmat employee functions until trained.

Also, 49 CFR 173.1 requires the offeror of a hazardous material to instruct each person involved in preparing and offering the package

Who responds to a call for assistance in the event of a spill, catastrophic leak, or traffic collision involving your hazardous waste? Notifications of the incident will be routed through the appropriate channels. Local or State law enforcement personnel, fire department personnel, emergency medical technicians and paramedics, and hazardous materials response team personnel from both Fire and County Environmental Health (CUPA) will be dispatched to the scene. These incoming First Responders are trained and certified under various State and Federal regulations and statutes governing their response to hazardous materials and hazardous substances incidents. They are obligated to stay within this regulatory response umbrella taking prescribed actions to ensure the safety of all responders, all persons on scene, and potentially persons down range from the incident.



The

fourteen (14) "**pre-transportation**

functions" described for shippers in the

HMR were also created to assist First Responders in the form of **hazard communications**. These hazard communications play a critical role in the actions taken by First Responders at any incident involving a hazardous material or hazardous waste. Often times, the initial caller for assistance through 9-1-1 provides valuable information for First Responders, such as the materials proper shipping name, amount of material spilled, type and size of container involved, labels, markings, if the materials involved are on fire, etc. But this is not always the case.



Any Questions?

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26th California Unified Program
Annual Training Conference
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