

**"Este documento contiene texto en mal estado"**

**A GUIDE FOR THE INSPECTION OF  
HAZARDOUS WASTE SHIPMENTS  
(OTHER THAN RADIOACTIVE MATERIAL)**

**BY MOTOR VEHICLE OR  
AT FREIGHT FACILITIES**

**PREPARED FOR:**

**U.S. DEPARTMENT OF TRANSPORTATION  
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION  
WASHINGTON, D.C.**

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## GENERAL PRECAUTIONS WHEN INSPECTING VEHICLES

- All vehicles should be approached with caution from the up wind side even though they may not be placarded because they may contain substantial quantities of hazardous materials and be in violation of placarding requirements. Vehicles transporting hazardous waste which are classified as "other regulated material" do not require placarding
- Use of the senses should be relied upon when approaching any vehicle. Visible leakage, detectable odors, or audible sounds help identify the presence of problems relating to hazardous materials. Some products may be carcinogenic or toxic; therefore, special care should be taken to prevent absorption through the skin and air passages
- If leakage is found, avoid contact of any type and initiate immediate action to mitigate the situation by isolating the vehicle and by notifying emergency response personnel and appropriate carrier and shipper personnel who have the capability to resolve the problem. Immediate assistance may be obtained by contacting CHEMTREC, the Chemical Transportation Emergency Center, which is operated by the Chemical Manufacturers Association [TOLL-FREE TELEPHONE (800) 424-9300 or (202) 887-1255]
- If no problems are apparent, the inspection procedure outlined in this guide may be followed

## GENERAL PURPOSE OF THIS GUIDE

This document was produced to provide a uniform procedure to apply the Federal Hazardous Materials Regulations contained in Parts 171-179 of 49 CFR. It is designed to serve as a basis for vehicle inspection and may be modified by the states to fit their regulations. The procedure may be used for training purposes or as an aid to the actual inspection process.

This specific guide is designed to provide a procedure for the inspection of hazardous waste shipments and to ensure that:

- A sequence is followed that makes the most efficient use of the inspector's time; and
- Critical items receive coverage in the inspection.

## USE OF THIS GUIDE

The procedure is designed in a six-step format that sets forth the sequence and critical items that should receive coverage. Color-coded to each step is a guide containing the specifics of each area. It is intended that the user will conduct an inspection one step at a time, consulting the applicable guide. This will prevent the user from being faced with a large number of specifics at one time, reducing confusion. Pictorials, graphics, and indicators of interrelationships are used throughout the guides to increase understanding of the total inspection coverage. The document is top-bound and indexed to facilitate use with a clipboard. The information contained in this document is current as of September 1, 1988, however, due to changes that are made in the regulations, current provisions must be consulted.

<p><b>Note</b> This procedure is designed to be used in conjunction with the Federal Hazardous Materials Regulations, 49 CFR—Parts 171-179, and the Federal Motor Carrier Safety Regulations, 49 CFR-Parts 390-397</p>
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## DEFINITIONS AND HAZARDOUS WASTE TERMS

EPA — U.S. Environmental Protection Agency

**Hazardous Material** — means a substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. (§171.8)

**Hazardous Substance** — a material, including its mixtures and solutions that is listed in the Appendix to the Table (§172.101); is in a quantity in one package which equals or exceeds the reportable quantity (RQ) listed in the Appendix to §172.101, and when in a mixture or solution, is in a concentration by weight which equals or exceeds the concentration corresponding to the RQ of the material, as shown in the following table. This definition does not apply to petroleum products that are lubricants or fuels [(see 40 CFR 300.6)] (49 CFR 171.8)

60 poudres hilogrants	Concentration by weight	
	Percent	
5000.2270	10	100 000
1000.4541	2	20 000
100.4541	0.2	2 000
10.4541	0.02	200
10.4551	0.002	20

**Hazardous Waste** — material subject to the hazardous waste manifest requirements of 40 CFR 262.23 (EPA) (§171.8)

**Mixture** — a material composed of more than one chemical compound or element (§171.8)

**ORM** — other regulated material. (§171.8)

**Reportable Quantity (RQ)** — the quantity specified in Column 3 of the Appendix to § 172.101 for any material identified in Column 1 of the Appendix (§171.8)

**Shipping Paper** — Shipping document containing the information required by §172.200-202-203-204. (§171.8)

**Solution** — liquid mixture of two or more chemical compounds or elements that will not undergo segregation during normal transportation. (§171.8)

**Uniform Hazardous Waste Manifest** — document utilized for shipment and control of hazardous waste and prepared in accordance with §172.205 and 40 CFR §262.20

**Bulk Packaging** — a packaging other than a vessel or barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment and which has:

1. an internal volume greater than 450 liters (118.9 gallons) as a receptacle for a liquid;
2. a capacity greater than 400 kilograms (881.8 pounds) as a receptacle for a solid;
3. a water capacity greater than 1000 pounds (453.6 kilograms) as a receptacle for a gas as defined in §173.300. (§171.8)

**Non Bulk Packaging** — a packaging which has:

1. an internal volume of 450 liters (118.9 gallons) or less as a receptacle for liquid,
2. a capacity of 400 kilograms (881.8 pounds) or less as a container for a solid;
3. a water capacity of 1000 pounds (453.6 kilograms) or less as a receptacle for a gas as defined in §173.300. (§171.8)

### Sequential Inspection Format

		LOCATION OF SHIPMENT	
		FREIGHT DOCK	TRANSPORT VEHICLE
Check Shipping Paper <ul style="list-style-type: none"> <li>• Determine if hazardous waste is present</li> <li>• Determine if hazardous waste manifest is correct</li> </ul>		X	X
STEP 2	Determine Package Condition and Suitability for Shipment <ul style="list-style-type: none"> <li>• No leakage</li> <li>• Good condition</li> <li>• Type of container required</li> </ul>	X	X
Determine Marking Compliance — Package and Vehicle		X	X
Determine Labeling Compliance — Package		X	X
STEP 5	Determine Placarding Requirements and Check Vehicle for Appropriate Placard		X
Determine Compliance with Highway Requirements		X	X

APPENDIX A — VIOLATION CITATION APPENDIX: See Page 22.

APPENDIX B — COMPARISON OF HAZARDOUS WASTE REGULATIONS OF EPA AND USDOT:  
See Page 28

APPENDIX C — INSTRUCTIONS FOR COMPLETING UNIFORM HAZARDOUS WASTE MANIFEST:  
See Page 33 and 34.

APPENDIX D — COPY OF HAZARDOUS WASTE MANIFEST AND CONTINUATION SHEET:  
See Page 35 and 36.

## STEP 1 — SHIPPING PAPERS

### Freight Facilities

Obtain shipping paper from administrative personnel.

### Transport Vehicle

Obtain shipping paper from the driver. The shipping paper must be (§177.817):

Where Found?

- In pocket on left door, or
- Readily visible to a person entering the driver's compartment, and
- In arm's reach of the driver.

### Shipping description must include (§172.202)

Note: Shipments of materials which are classified as hazardous waste must be accompanied by a "Uniform Hazardous Waste Manifest" in the format required by 40 CFR 262 (EPA Regulations) (see §172.205).

What it must contain

- The proper shipping name prescribed in the Hazardous Materials Table (the proper shipping name for a hazardous waste must include the word "waste" preceding the shipping name of the material), and
- The hazard class prescribed in the Hazardous Materials Table, and
- The identification number (preceded by "UN" or "NA" as appropriate) prescribed in the Hazardous Materials Table, and
- Except for empty packagings and cylinders of compressed gas and packaging of greater than 110 gallons capacity, the total quantity by weight, volume, or otherwise appropriate unit of measure.
- Only authorized abbreviations or codes may be used.
- Additional information concerning the material may be included, provided the information is not inconsistent with the required description.

Waste Manifest

DOT Requirements

Generators Certification

UNIFORM HAZARDOUS WASTE MANIFEST

1. Shipper's Name and Address		2. Receiver's Name and Address	
3. Date of Shipment		4. Mode of Transport	
5. Material Name (as labeled)		6. Hazard Class	
7. Identification Number		8. Quantity (Weight or Volume)	
9. Proper Shipping Name		10. Hazard Label	
11. Packing Group		12. Container Type and Size	
13. Manifest Number		14. Signature of Shipper	
15. Signature of Receiver		16. Date of Receipt	
17. Additional Information		18. Remarks	

Additional State Requirements (not required by Federal law) Shaded Area

Continuation  
Sheet If  
Required

UNIFORM HAZARDOUS WASTE MANIFEST		EPA FORM 354 (Rev. 10-19-90)	
1. Generator's Name and Address U. S. Chemical Co. 21 Northside Drive Chicago, IL 60624		2. Manifest Number 123456789	
3. Waste Management Company Name and Address Waste Management, Inc. 12345 Main St. Chicago, IL 60624		4. Date of Shipment 12/15/90	
5. Description of Waste Waste: "Hazardous", Flammable liquid, UN 1203		6. Quantity of Waste 3 TC, 500 G	
7. Signature of Generator <i>John Doe</i>		8. Signature of Waste Management Company <i>John Doe</i>	

Note: Additional description or information is required on shipping papers for the following (see §172.203)

- Shipments made under DOT exemption. [§172.203(a)]
- Materials shipped in a limited quantity. [§172.203(b)]
- Hazardous substances. If the proper shipping name for a material that is a hazardous substance does not identify the hazardous substance by name, one of the following descriptions should be entered, in parentheses, in association with the basic description:
  - The name of the hazardous substance as shown in the Appendix to §172.101; or
  - For waste streams, the waste stream number; or
  - For wastes which exhibit an EPA characteristic of ignitability, corrosivity, reactivity or EP Toxicity, the letters, "EPA" followed by the word "Ignitability" or "Corrosivity" or "Reactivity" or "EP Toxicity" as appropriate or the corresponding "D" number.

The letters "RQ" shall be entered on the shipping paper either before or after the basic description required by §172.202 for each hazardous substance

Note: Always check the Appendix to the Table (§172.101).

**Additional description continued**

- Empty packaging. [§172.203(e)]
- Materials required to be labeled "Dangerous When Wet." [§172.203(j)]
- Poisonous materials including poison inhalation hazard. [§172.203(k)]

Note: Materials which have been determined to be hazardous waste, [see the criteria in 40 CFR] must be described and classified on the manifest in accordance with 49 CFR Parts 172 and 173. Waste materials for which there is *no appropriate specific entry* in the Hazardous Materials Table and which do not meet a specific DOT hazard classification, may be described by the entry Hazardous Waste, Liquid or Solid, N.O.S., ORM-E NA9189. *If specifically excluded* by 40 CFR Part 261, the material is *not* a hazardous waste.

**Generators Certification (§172.204)**

- Generators of hazardous waste must certify that the waste is properly and accurately described by the proper shipping name, packaged, marked and labeled in accordance with applicable DOT regulations and are in proper condition for transport by highway (40 CFR 262.23), (49 CFR 172.204)

<b>16. GENERATOR'S CERTIFICATION:</b> I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.		
If I am a large quantity generator, I certify that I have a program in place to reduce the volume 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. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.		
Printed/Typed Name John T. Smith	Signature On behalf of <i>John T. Smith</i>	Month Day Year 11/01/85

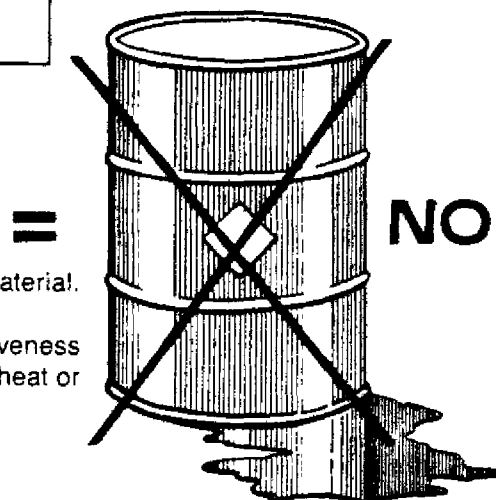
Note: Generators may preprint the words, "On behalf of" in the signature block or may hand write this statement in the signature block prior to signing the generator certifications.



## STEP 2 — PACKAGING

### General Requirements (§173.24)

- Strong tight containment
- Contents must be compatible with the packaging material.
- No significant release of contents
- No mixture of materials that may reduce the effectiveness of the packaging through spontaneous increase of heat or pressure or through an explosion



**Specific Requirements (See §172.101 for applicable material and packaging requirements)**

- Determine proper shipping name of material.

Proper Shipping Name
----------------------

Shipping Paper

Hazardous Materials Table	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
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94	94
95	95
96	96
97	97
98	98
99	99
100	100

What Kind of Material?

- Consult  
\$172.101

[illegible]

## Appendix

221-0210

LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Majorious Substance	Synonyms	Representative Quartern # Pounds (approx)
1. Heavy hazardous waste characterized by ignitability, DQ, in that hazardous waste is the chemical of Reaction DQ.		100, 450
2. Butyltin compound		100, 450
3. Butyltin compound	Unsub. Butyltin	100, 450
4. Butyltin compound	Unsub. 3-butoxy-2-chloroethylamine	100, 450
5. Butyltin compound		100, 450
6. Butyltin compound		100, 450

- Consult  
\$172 101

APPENDIX — list of hazardous substances and reportable quantities.  
**NOTE** that Flammable Liquid N.O.S. UN1993 is a hazardous substance and will require additional description on the Uniform Waste Manifest.

- Read across to column 5a packaging.

**§173.101 Hazardous Materials Table (cont'd)**

A ID	B Hazardous materials descriptions and proper shipping names	C Hazard class	D Hazard label number	E Label 1 required (Part 172.101)	F Packaging				G Maximum net quantity per inner package		H Special provisions	
					1 Exception	2 Solid for liquids	3 Passenger carrying aircraft	4 Cargo aircraft	5 Cargo vessel	6 Permit required	7 Other requirements	
	Flammable gas, n.e.s. - Compressed gas, n.e.s.											
	Flammable liquid, corrosive, n.e.s.	Flammable liquid	UN1974	Flammable liquid and Corrosive	None	73.1-9	1-9	1-9	1			
	Flammable liquid, n.e.s.	Flammable liquid	UN1974	Flammable liquid and Corrosive	73.1-15	73.1-19	1-9	1-9	1			

- Check column 5a for exceptions available (§173.118).

### Exceptions

- **Small Quantity** small quantities of flammable liquids, flammable solids, oxidizers, organic peroxides, corrosive material, Poison B, ORM A, B, C, and Radioactive Materials that also meet the definition of one or more of these hazard classes are not subject to the requirements of this subchapter if certain quantitative limitations and packaging requirements are met (§173.4)
- **Limited Quantity**, when specified as such in a section applicable to a particular material with the exception of Poison B materials, means the maximum amount of a hazardous material for which there is a specific labeling and packaging exception (§171.8)

Poison B materials can be limited quantities. They do not require specification packaging but they require labels.

### Special Packaging Exceptions for Hazardous Waste §173.3, §173.12, and §173.28

#### Packaging and Exceptions (§173.3)

Packages of hazardous materials that are damaged or found leaking and hazardous materials that have been spilled or leaked may be placed in a metal removable head salvage drum that is compatible with the lading and shipped for repackaging or disposal under the following conditions:

1. The drum utilized may be either a DOT specification or a non-DOT specification drum as long as the drum has equal or greater structural integrity than a package that is authorized for the respective material in this subchapter. Maximum capacity shall not exceed 110 gallons.
2. Each drum must be provided with adequate closure and, when necessary, provided with sufficient cushioning and absorption material to prevent excessive movement of the damaged package and to absorb all free liquid. All cushioning and absorbent material used in the drum must be compatible with the hazardous material.
3. Each drum must be marked with the proper shipping name of the material inside the defective packaging and the name and address of the consignee. In addition, the drum must be marked "salvage drum."
4. The shipper shall prepare shipping papers in accordance with Subpart C of Part 172 of this subchapter.
5. Packages must meet the requirements of §173.24.
6. The overpack requirements of §173.25, and the reuse provisions of §173.28(h) and §173.28(m) do not apply to drums used in accordance with §173.3(c).

#### Exception for shipments of waste material (§173.12)

Waste material meeting the hazard class definition of a flammable liquid, flammable solid, oxidizer, corrosive material, Poison B or ORM-A, B, C, and E are excepted from the specification packaging requirements if packaged in combination packagings and transported for disposal or recovery by private or contract motor carrier by highway only.

- The outside packaging must be a DOT specification metal or fiber drum. It may also be a polyethylene drum capable of withstanding:
  1. The vibration and compression test specified in §178.19(c) and (2)
  2. A four foot drop test as specified in §178.224-2(b)

#### Reuse of packagings (containers) (§173.28)

- A packaging marked as STC or NRC according to the specification requirements of Part 178 may be reused for the shipment of any corrosive solid, ORM-A, ORM-B, ORM-C, ORM-E or any material not required to be shipped in a DOT specification packaging. Paragraph (m) of this section does not apply to these materials. [§173.28(n)]
- A packaging marked NRC or STC according to the specification requirements of Part 178 may be reused for the shipment of hazardous waste to designated facilities subject to the following conditions: [§173.28(p)].
  - (1) Except as authorized by this paragraph, the waste must be packaged in accordance with this part and offered for transportation in accordance with the requirements of this subchapter.
  - (2) Transportation is performed by highway only.
  - (3) A package is not offered for transportation less than 24 hours after it is finally closed for transportation and each package is inspected for leakage immediately prior to being offered for transportation.
  - (4) Each package is loaded by the shipper and unloaded by the consignee unless the motor carrier is a private or contract carrier.
  - (5) The packaging may be used only once under this paragraph and may not be used again for shipment of hazardous materials except in accordance with paragraph (m) or (n) of this section.

**Note:** Inspection of packages is a requisite to determining packaging, labeling, and marking compliance.

Inspection of packages loaded in motor vehicles is sometimes difficult due to problems encountered in:

- Opening sealed units,
- Falling freight when units are opened — exercise appropriate caution, and
- Loading that precludes observation because freight is "buried".

Inspection of packages at freight facilities is more easily accomplished because packages are more accessible and handling equipment, such as drum hand trucks, is usually available to move and lift packages.

**Note:** All packagings must meet the requirements of §173.24

- If packaging configuration does not meet the requirements contained in the exception section for the material - read across to column 5(b).

§172.101 Hazardous Materials Table (cont'd)

A ID	B Hazardous materials description and proper shipping names	C Hazard class	D Ident. (Proper) Number	E Label (Required) or Code	F Packaging		G Max. net weight or volume per inner receptacle		H Markings		
					1 Excepted	2 Special provisions	3 Passenger aircraft only	4 Cargo aircraft only	5 Large pack	6 Ret. temp. code	7 Other requirements
	Flammable gas, n.e.c. - Compressed gas - 100										
	Flammable solid - 100	Flammable solid	UN 1993	Flammable solids (Cargo only)	None	70 10	yes	yes	1		
	Flammable solid - 100	Flammable solid	UN 1993	Flammable solid	11 8	70 5	yes	yes	2		

Example  
# 2

You Observe — 55 Gallon Steel Drum

- Read the various parts of the section (§173.119)
- Does any provision of §173.119 coincide with the packaging configuration you observed?

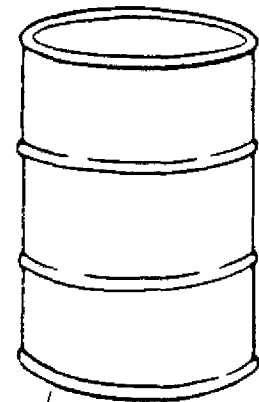
§173.119 Flammable liquids not specifically provided for

(b) Flammable liquids with flash points above 20°F to 73°F Flammable liquids with flash points above 20°F to 73°F and having vapor pressure (Reid' test) not over 16 pounds per square inch, absolute, at 100°F other than those for which special requirements are prescribed in this Part must be packaged in packagings of a design and constructed of materials that will not react dangerously with or be decomposed by the chemical packed therein as follows (see paragraphs (c) through (i) of this section for high-pressure liquids and paragraph (m) of this section for flammable liquids which are also oxidizers, poison B liquids, organic peroxides or corrosive liquids)

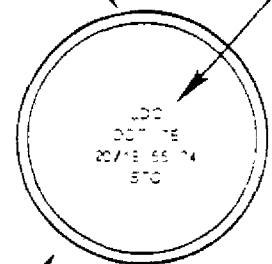
(1) Containers as specified in paragraph (a) of this section except that openings greater than 2.3 inches in diameter in barrels and drums are authorized when permitted by the specification

(2) Spec. 17E or 17H (§§ 178.116 or 178.118 or this subchapter) Metal drums (single-trip)

- Section 178.116 refers you to the section listing the specification requirements for DOT specification 17-E steel drums
- The following specification markings are required for DOT 17-E drums (§178.116-10):



EXPLANATION OF MARKINGS  
 100 Symbol of Manufacturer  
 DOT 17E Specification Number  
 20715 Gauge of Body  
 18 Gauge of Top and Bottom  
 55 Capacity in Gallons  
 14 Reid Vapor Pressure  
 5TC Single Trip Container



Bottom Head  
Markings

STEP 2  
GUIDE

## STEP 3 — MARKING

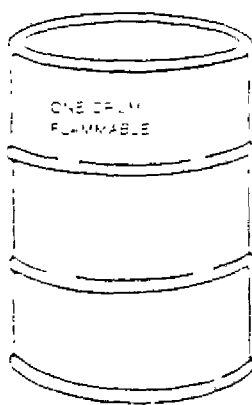
### General Requirements (§172.301)

- Proper shipping name
- Identification number.
- Inhalation Hazard §172.301(a) if required, and
- Consignee's or consignor's name and address (§172.306).

Note. The name and address is not required when the package is

- Not transferred from one motor carrier to another
- Part of a full load from one consignor to one consignee or
- A portable tank.

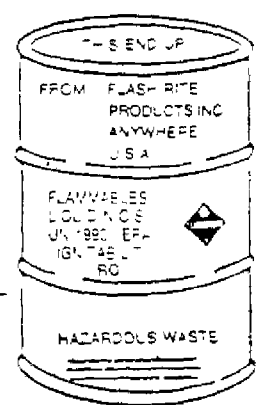
INCORRECT



- Compare proper shipping name and the identification number on the shipping paper to the markings on the package
- The word "waste" is not required to precede the Proper Shipping Name if the package bears the EPA marking specified in 40 CFR 262.32 [§172.301 (a)(1)]

Note: Hazardous waste in containers of 110 gallons or less must be marked in accordance with EPA requirements 40 CFR 262.32

CORRECT



### Specific Requirements

- Liquid hazardous material (§172.312) - must have "THIS SIDE UP" or "THIS END UP" orientation markings and may have orientation arrows when the package has inner containers filled with a liquid. This requirement does not apply to limited quantities of flammable liquids under certain conditions [see §172.312(d) and (e)].
- Hazardous substances (§172.324) - if the proper shipping name for a mixture or solution that is a hazardous substance does not identify the constituents making it a hazardous substance, the name or names of such hazardous substance constituents as shown in the Appendix to §172.101 must be marked in parentheses in association with the proper shipping name on each packaging having a capacity of 110 gallons or less. This requirement also applies when descriptions from the Optional Table in §172.102 are used. Those packages with a capacity of 110 gallons or less which contain waste streams or waste which exhibit EPA designated characteristics of ignitability, corrosivity, reactivity, or EP toxicity, must be marked in parentheses in association with the proper shipping

name with the applicable waste stream number or the letters "EPA" and the word "ignitibility," or "corrosivity," or "reactivity," or "EP toxicity" as appropriate, or the corresponding "D" numbers.

The letters RQ shall be displayed in-association with the proper shipping name on a packaging having a capacity of 110 gallons or less that contains a hazardous substance.

- ORM - must be marked with the appropriate ORM designation within a rectangle or on an attached tag if designation cannot be affixed on the package surface (§172.316). This requirement does not apply to containers over 110 gallons.
- Packages - must be marked with specification number from Part 178 or 179 and the manufacturer's name and address, or symbol (§173.24)
- DOT exemption packaging — must be marked with "DOT-E" followed by the assigned four (4) digit number (e.g., DOT E-1234) (Part 107, Appendix B).

**Portable Tanks, Cargo Tanks, Multi-Unit Tank Car  
Tanks and Bulk Packagings-Markings**

1. Portable tanks must be marked with identification numbers, proper shipping names and the name of the owner, or when appropriate, of the lessee. If the I.D. number is not visible because it is inside the vehicle or freight container, the transport vehicle or freight container must be marked on each side and each end with the appropriate I.D. number. (§172.326)
2. Cargo tanks must be marked on each side and each end with the proper I.D. numbers. Cargo tanks transporting flammable or nonflammable gas (including a cryogenic liquid) must also be marked on each side and each end with the proper shipping name of the gas, or an appropriate "common" name. [§172.328 (a) and (b)]
3. Multi-unit tank car tanks (106 and 110 series tanks) must be marked on each side with a proper shipping name of the material and marked on each side and each end with the appropriate I.D. Number. [§172.330(c)]
4. A motor vehicle transporting multi-unit tank car tanks must be marked on each side and each end with the I.D. number required by §172.101 or 172.102 (§172.330).
5. Bulk packaging must be marked with the identification number required
  - a. on two opposing sides if the capacity of the packaging is less than 1000 gallons
  - b. on each side and each end if the packaging has greater than 1000 gallons capacity (§172.331)

**Note** For hazardous materials in hazard classes for which placards are not required, identification numbers may be displayed on a plain white square-on-point configuration having the same outside dimensions as those prescribed for placards (See Step 5). An identification number displayed as authorized by this provision is not considered a placard. This configuration is utilized to meet the marking requirement of ORM-E Materials in containers of more than 110 gallons (portable tanks and cargo tanks). Orange panels may also be used. [§172.336(b)]

9189

**Special Marking Requirement [§171.3(b)(1)]**

Each vehicle transporting hazardous waste for which a manifest is required must be marked in accordance with §390.21 or §1058.2 of 49 CFR, even though placards may not be required.

- Name of carrier operating vehicle.
- Principle business address.
- The motor carrier identification number, if issued by the FHWA preceded by the letters "USDOT."
- The marking must appear on both sides of the vehicle.

Private  
Carrier

ICC  
Carrier

- Company name
- ICC Docket number

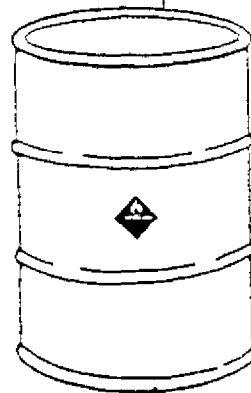
## STEP 4 — LABELING

### General Requirements (§172.400)

- Packages containing a hazardous material must bear the label(s) specified in Column 4 of Hazardous Materials Table. There may be exceptions to labeling under limited quantity provisions.
- Labels are prohibited on packages that do not contain a hazardous material (§172.401)
- Labels must be printed or affixed near the marked proper shipping name (§172.406)
- Multiple labels must be placed next to each other (§172.406(c))

§ 172.101 Hazardous Materials Table

1 Hazard Class	2 Proper Shipping Name	3 Hazard Class	4 Ident. No. or Number	5 Labels required (if not accepted)	6 Maximum net quantity in one package					
					7 Exception	8 Specific requirements	9 Packaging	10 Casing	11 Casing	12 Pkg. design
1	Flammable gas, compressed	2.1	NA 2.1	Flammable gas	None	2.1.1	Forbidden	Forbidden	1	1.2
2	Flammable liquid, not more than 24% water	2.3	NA 2.3	Flammable liquid	None	2.3.1	Forbidden	Forbidden	2	2
3	Flammable solid	2.4	NA 2.4	Flammable solid	None	2.4.1	Forbidden	Forbidden	2	2
4	Flammable gas, not more than 24% water	2.1	NA 2.1	Flammable gas	None	2.1.1	Forbidden	Forbidden	1	1.2
5	Flammable liquid, not more than 24% water	2.3	NA 2.3	Flammable liquid	None	2.3.1	Forbidden	Forbidden	2	2
6	Flammable solid	2.4	NA 2.4	Flammable solid	None	2.4.1	Forbidden	Forbidden	2	2



**Note** A label is not required on a package that contains an ORM-A, B, C, D, or E if that package does not contain any other material that requires labeling (§172.400(b)(8))

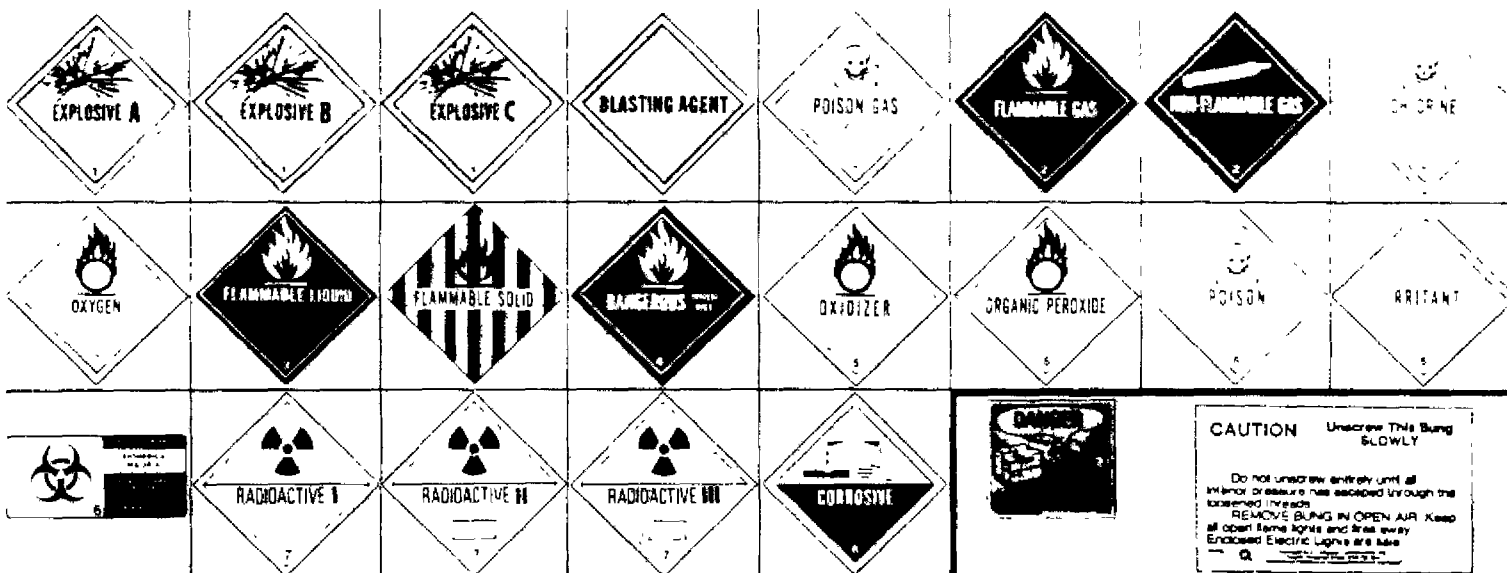
**Note** Packages containing samples for which a reasonable doubt exists as to its hazard class may be assigned a tentative class assignment and labeled in accordance with the criteria in (§172.402h) (§172.101(c)(12))

### Additional Labeling Requirements (§172.402)

- Multiple labels — Packages containing a hazardous material that meets the definition of more than one hazard class must be labeled for each class [See §172.402(a)(1) through (9) for specific requirements.]
- Poison Inhalation Hazard [See §172.402(a)(10)].
- "Cargo Aircraft Only" — Required for packages authorized only for cargo aircraft [§172.402(b)].
- "Dangerous When Wet" — Required for water-reactive materials [§172.402(c)] [§172.420(d)].
- "Bung" — Required for metal drums or barrels of flammable liquids having vapor pressure between 16 and 40 psia at 100°F [§172.402(e)]
- Samples for Analysis — [See §172.402(h)]
- Etiologic Agents — [See §§172.444 and 173.388]

Figure 4-A

### DOT HAZARDOUS MATERIALS WARNING LABELS





## STEP 5 — PLACARDING

### Exceptions (§172.500)

Placarding is not required for:

- Etiologic agents
- ORM — A, B, C, D, or E
- Limited quantities of hazardous materials that are properly identified on the shipping papers
- Less than 1000 pounds gross weight of all materials listed in Table 2 of §172.504. (Except Poison Inhalation Hazard Material) (§172.504(c)).

### Placard Requirements

- Placards are selected based on the hazard present and the quantity on the transport vehicle
- Each motor vehicle containing any quantity of a hazardous material listed in Table 1 of §172.504 must be placarded as required in that table (See Figure 5-A).

Figure 5-A

TABLE 1	
The transport vehicle or freight container contains a material classified as—	The transport vehicle or freight container must be placarded on each side and each end—
Class A explosives	EXPLOSIVES A
Class B explosives	EXPLOSIVES B
Poison B	POISON GAS
Flammable solid DANGEROUS WHEN WET label only	FLAMMABLE SOLID WET
Radioactive material	RADIOACTIVE
Quantities of Class B explosives containing more than 1,000 lbs.	RADIOACTIVE and CORROSIVE
Quantities of Class B explosives containing 1,000 lbs. or less	RADIOACTIVE and CORROSIVE

1 See § 172.504.  
 2 EXPLOSIVES B placard is required if the transport vehicle or freight container contains Class A explosives and is placarded EXPLOSIVES A as required.  
 3 FLAMMABLE SOLID WET placard is required only when the DANGEROUS WHEN WET label is specified in § 172.504 for a material classified as a Flammable Solid.  
 4 Applied only to quantities of packages bearing the RADIOACTIVE YELLOW III label. See § 172.403.  
 5 For exclusive use of shipments of RADIOACTIVE YELLOW III actual net material transported in accordance with § 172.403 or 172.404.  
 6 CORROSIVE placard is required for shipments of less than 1,000 pounds gross weight.

- Each motor vehicle containing 1,000 pounds or more gross weight of all hazardous material listed in Table 2 of §172.504 must be placarded as required in that Table (see Figure 5-B).
- A motor vehicle containing two or more classes of materials requiring different placards specified in Table 2 may be placarded "Dangerous" in lieu of the specified placards. However, whenever 5,000 pounds or more of one class of material is loaded at one facility, the placard specified for that class in Table 2 must be applied in addition to other placarding requirements.

Figure 5-B

TABLE 2	
If the transport vehicle or freight container contains a material classified as—	The transport vehicle or freight container must be placarded on each side and each end—
Class C explosives	DANGEROUS 19
Blasting agents	BLASTING
Non-flammable gas	AGENTS 19
Non-flammable gas (toxic)	NONFLAMMABLE GAS 1
Non-flammable gas (fluorine)	CHLORINE 2
Non-flammable gas (oxygen, cryogenic liquid)	POISON
Flammable gas	OXYGEN
Combustible liquid	FLAMMABLE GAS 1
Flammable liquid	COMBUSTIBLE 1
Flammable solid	FLAMMABLE
Oxidizer	FLAMMABLE SOLID 1
Organic peroxide	OXIDIZER 1
Poison B	ORGANIC PEROXIDE
Corrosive material	POISON
Irritant material	CORROSIVE 1
	DANGEROUS



- <sup>1</sup> Applies only to a class C explosive required to be labeled with an EXPLOSIVE C label
- <sup>2</sup> Reserved
- <sup>3</sup> COMBUSTIBLE placard required only when a material is classed as a combustible liquid is transported in a packaging having a rated capacity of more than 110 gallons, a cargo tank, or a tank car.
- <sup>4</sup> A FLAMMABLE placard may be used on a cargo tank or portable tank during transportation by highway, rail, or water, and on a compartmented tank car containing materials classed as Flammable liquid and Combustible liquid. However, no EMPTY placard may be displayed on an empty Combustible liquid tank car.
- <sup>5</sup> Except when offered for transportation by water, a FLAMMABLE placard may be displayed in place of a FLAMMABLE SOLID placard except when a DANGEROUS WHEN WET label is specified for the material in sec. 172.101. (See Table 1, this section.)
- <sup>6</sup> See § 173.245(b) of this subchapter for authorized exemptions.
- <sup>7</sup> CHLORINE placard required only for a packaging having a rated capacity of more than 110 gallons, the NON-FLAMMABLE GAS placard for packagings having a rated capacity of 110 gallons or less.
- <sup>8</sup> NON-FLAMMABLE GAS placard is not required on a motor vehicle displaying a FLAMMABLE GAS placard or an OXYGEN placard.
- <sup>9</sup> BLASTING AGENTS, OXIDIZER and DANGEROUS placards need not be displayed if a transport vehicle or freight container also contains Class A or Class B explosives and is placarded EXPLOSIVES A or EXPLOSIVES B as required.
- <sup>10</sup> Except for shipments by water, OXIDIZER placards need not be displayed if a freight container, motor vehicle or rail car also contains blasting agents and is placarded BLASTING AGENT as required.

### Identification Numbers Display on Placards (§172.503)

For procedures and limitations pertaining to the display of identification numbers on placards, see §172.503. I.D. numbers are *not* a placarding requirement.

### Placarding Requirements (§172.504)

- Placards must be affixed on each side and each end of the vehicle (see Figure 5-C)

