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Pipeline and  
Hazardous Materials  
Safety Administration



# How to Use the Hazardous Materials Regulations



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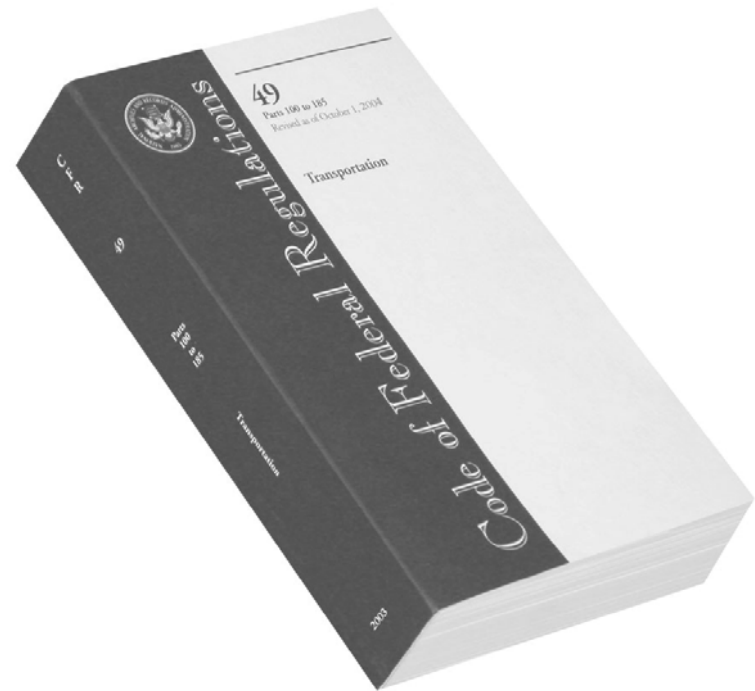
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How to Use  
the HMR

# *Primary Goal of the Hazardous Materials Regulations (HMR)*

# Safety





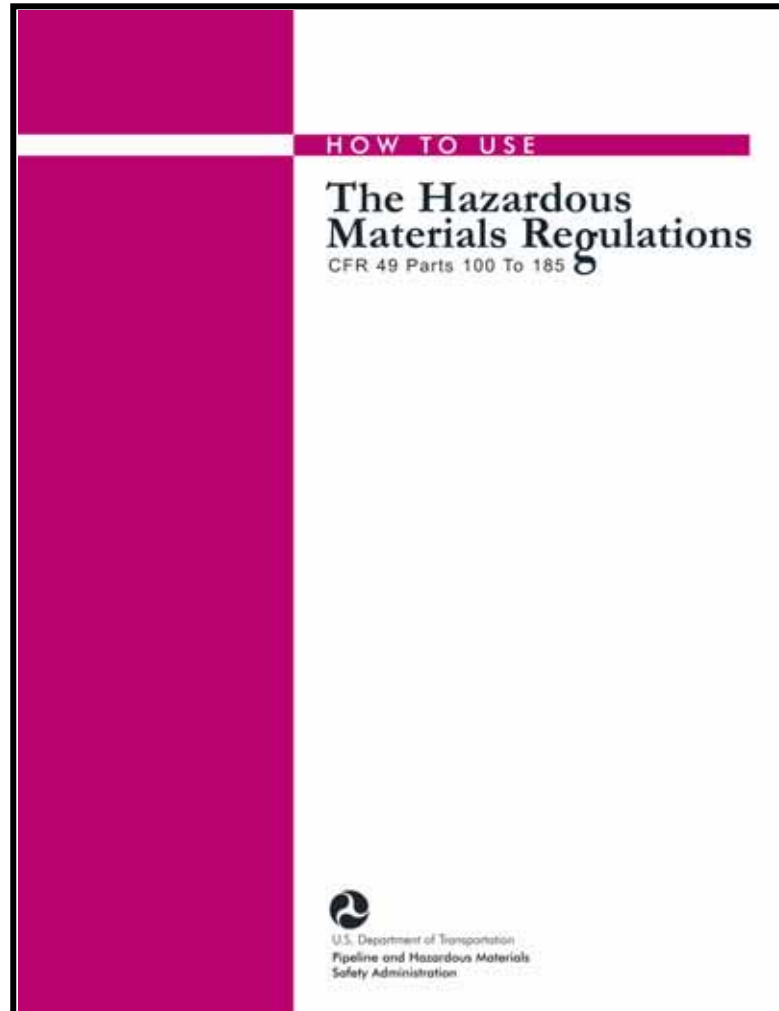
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How to Use  
the HMR

## Reference Material





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## *HMR is Divided into Four General Areas*

- Identification and Classification
- Hazard Communication
- Packaging Requirements
- Operational Rules



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# *Structure of the HMR*

Title 49  
Transportation

Subtitle B – Other  
Regulations  
Relating to Transportation

Chapter I – Research and Special  
Programs Administration

Subchapter C – Hazardous Materials  
Regulations

Parts 171-180

Subparts

Section

Paragraph

Subparagraph



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## *Structure of the HMR*

# 173.120(c)(1)(i)

Section

Paragraph

Subparagraph

Sub-subparagraph



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## *Rules of Construction*

- Singular words include the plural and plural words include the singular
- Masculine words include the feminine
- “Must” and “shall” mean required
- “Should” means recommended, but not required
- “May” means permitted, but not required
- “No person may” means no person is required, authorized, or permitted to...
- “Includes” means includes, but not limited to

# The Hazardous Material Table

- DOT compliance centers around understanding the Hazardous Materials Table (HMT; 49 CFR §172.101)

Symbols (1)	Hazardous Materials Descriptions and Proper Shipping Names (2)	Hazard Class or Division (3)	I.D. Numbers (4)	PG (5)	Label Codes (if not excepted) (6)	Special Provisions (7)	Packaging		
							Except. (8A)	Non Bulk (8B)	Bulk (8C)
	Acetaldehyde	3	UN1089	I	3	A3, B16, T20, T26, T29	None	201	243
D	Calcium Arsenite, Solid	6.1	NA1574	II	6.1		None	212	242
	Environmentally Hazardous Substances, Liquid, NOS	9	UN3082	III	9	8, T1, N50	155	203	241
	Flammable Liquid, NOS	3	UN1993	I II III	3 3 3	T42, T8, T31, B1, B52, T7, T30	150 150 150	201 202 203	243 242 242
	Fluorine, Compressed	2.3	UN1045		2.3 5.1 3	1	None	302	None
	Methylhydrazine	6.1	UN1244	I	6.1 3 8	1, B9, B14, B30, B72, B77, N34, T38, T43, T44	None	226	244



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## Column 1

### Symbols

- + —————> Affixes Proper Shipping Name, Hazard Class & Packing Group (Pure Materials Only)
- A —————> Air Transportation
- D —————> Domestic Transportation
- I —————> International Transportation
- W —————> Vessel (Water) Transportation
- G —————> Generic & Hazard Class, n.o.s. PSN Requiring Constituent Identification

§172.101(b)



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## *Column 2*

Hazardous Materials  
Descriptions and Proper  
Shipping Names

- Alphabetical listing of hazardous materials descriptions and proper shipping names
- Proper shipping names
  - Are in Roman type
  - Can be singular or plural
- Words in *italic* are not part of the proper shipping name

§172.101(c)



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## Column 3

Hazard Class  
or Division

- Designation of hazard class or division or “Forbidden”
- A basic description of each hazard class can be found in § 173.2
- Examples:
  - 1.2 —→ Explosives (with a projection hazard)
  - 2.3 —→ Poisonous gas
  - 3 —→ Flammable and combustible liquid
  - 4.1 —→ Flammable Solid
  - 7 —→ Radioactive material

§172.101(d)



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## Column 4

Identification  
Numbers

- Identification number is assigned to each proper shipping name
- “UN” - United Nations
  - Considered appropriate for domestic and international transportation
- “NA” – North America
  - Appropriate for domestic transportation
  - Not recognized for international transportation, except Canada

§172.101(e)



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## Column 5

PG

- Specifies one or more packing groups assigned to a material

Packing Group I	PG I	Great Danger
Packing Group II	PG II	Medium Danger
Packing Group III	PG III	Minor Danger

§172.101(f)



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## Column 6

Label  
Codes

- Specifies codes which represent hazard warning labels
  - See “Label Substitution Table” in § 172.101(g)
- If more than one code is present:
  - The first indicates the primary hazard
  - Additional codes indicates subsidiary hazards

§172.101(g)



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## Column 7

### Special Provisions

- **Specifies codes for special provisions**
  - see § 172.102 for the meaning of the provisions
- **Code descriptions**
  - Numbers Only = All Applications
  - A = Air Transport Only
  - B = Bulk Transport Only
  - H = Highway Transport Only
  - N = Non-Bulk Transport Only
  - R = Rail Transport Only
  - T = IM Tanks Only
  - W = Water Transport Only

§172.101(h); §172.102



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## Column 8

Packaging (173.***)		
Exceptions (8A)	Non-Bulk (8B)	Bulk (8C)

- Identifies the applicable packaging reference
- Example: Proper shipping name: “Acetal”
  - Column 8A - Packaging Exceptions are found in §173.150
  - Column 8B - Non-Bulk Packaging requirements are found in §173.202
  - Column 8C - Bulk Packaging requirements are found in §173.242

§172.101(i)



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## Column 9

Quantity Limitations	
Passenger aircraft/rail (9A)	Cargo air- craft only (9B)

- Columns 9A and 9B specify the maximum quantities that may be offered to passenger-carrying aircraft or passenger-carrying rail car (9A) or by cargo aircraft only (9B)
- Cannot be offered for transportation or transported if “Forbidden”
- Quantity limitation is “net” unless otherwise specified
- If “Forbidden” on passenger-carrying aircraft, but permitted on cargo aircraft, it must be labeled with the CARGO AIRCRAFT ONLY label (§172.448)



§172.101(j)



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## Column 10

Vessel stowage	
Location (10A)	Other (10B)

- Column 10A specifies authorized stowage locations on board cargo and passenger vessels
- Column 10B specifies codes for stowage requirements – see §176.84 for code meanings

§172.101(k)



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# Step-wise Compliance Process

STEP 2 SYMBOL	STEP 1 CLASSIFY	STEP 4 LABELING	STEP 3 DETERMINE PACKAGING	STEP 5 AIR/RAIL	STEP 6 WATER										
Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions	5172.101 Hazardous Materials Table			(8) Packaging (§173.***)		(9) Quantity limitations		(10) Vessel stowage	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	Exceptions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo aircraft only (9B)	Location (10A)	Other (10B)		
	Sodium peroxide.....	5.1	UN1504	I	5.1.....	A20, N34.....	None....	211....	None...	Forbidden	15 kg.....	B	13, 75, 106		
	Sodium peroxoborate, anhydrous	5.1	UN3247	II	5.1.....	.....	152.....	212....	240.....	5 kg.....	25 kg.....	A	13, 25, 106		
	Sodium Persulfate.....	5.1	UN1505	III	5.1.....	A1.....	152.....	213....	240.....	25 kg.....	100 kg...	A	.....		

STEP	TASK	HMT COLUMN	STEP	TASK	HMT COLUMN
1	Determine proper shipping name*	2	4	Determine labels	6
	Hazard class or division	3	5	Determine air/rail quantity limits	9A & 9B
	Identification number	4			
	Packing group (PG)	5	6	Determine water requirements	10A & 10B
2	Determine symbol	1	*Note: Check the Appendices. The material may also be a hazardous substance (Appendix A) or a marine pollutant (Appendix B).		
3	Determine Packaging	8			
	Exceptions	8A			
	Non-Bulk Packaging	8B			
	Bulk Packaging	8C			
	Determine if any special provisions for the material apply	7			



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## *Step 1: Identify the Material*

- Proper Shipping Name (**Col. 2**)
- Hazard Class or Division (**Col. 3**)
- Identification Number (**Col. 4**)
- Packing Group, (**Col. 5**)  
(if appropriate)

**DON'T FORGET TO CHECK THE APPENDICES TO THE HMT (172.101)**

Appendix A – The hazardous material may also be a **hazardous substance**

Appendix B – The hazardous material may also be a **marine pollutant**



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## *Step 2: Check Symbols*

- Determine if restrictions (+, A, D, G, I or W) apply (**Col. 1**)

## *Step 3: Determine Packaging*

- Check special provisions (**Col. 7**)
- Determine authorized packaging (**Col. 8A, 8B, 8C**)



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## *Step 4: Label the Package*

- Determine the required hazard warning label(s) (**Col. 6**)
- Also,
  - Mark the package (§172.300)
  - Determine placarding requirements (§172.500)



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## *Step 5: Check Air or Rail Limitations*

- If transporting by air and/or rail, determine packaging limitations **(Col. 9A, 9B)**

## *Step 6: Check Water Limitations*

- If transporting by water, determine vessel shipment requirements **(Col. 10A, 10B)**



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## *Additional Requirements*

- Shipper's Certification
- Other hazard communication
  - Shipping papers
  - Additional labeling
  - Emergency Response Information
  - Emergency Telephone Number



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HMR Training Requirements

# Where to Find More Information . . .

PHMSA Office of Hazardous Materials Safety - Microsoft Internet Explorer

Address: <http://hazmat.dot.gov/>

PHMSA Pipeline and Hazardous Materials Safety Administration

Office of Hazardous Materials Safety

Navigation Menu: RULES AND REGULATIONS | SPECIAL PERMITS & APPROVALS | TRAINING INFORMATION | PUBLICATIONS & REPORTS | E-HAZMAT ON-LINE PURCHASES & PAYMENTS | RISK MANAGEMENT | ENFORCEMENT

Central Grid:

- e-Hazmat Electronic Services
- Who & Where We Are
- Got a Question?
- Rules & Regulations
- New Additions & Updates
- What's Hot in OHM
- Special Permits & Approvals
- Training Information
- Publications & Reports
- NTSB Recommendations
- Available Files & Documents
- Incidents
- Hazmat Registration
- HMT State & Local Education
- Emergency Response Guidebook
- HMEP Grants
- Other Transportation Links
- International Standards
- Enforcement
- Risk Management
- News & Discussion
- HMT Security
- FOIA

Links at the bottom:

- [Hurricane Katrina Emergency Exemptions](#)
- [Hurricane Rita Emergency Exemptions](#)

<http://hazmat.dot.gov>



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HMR Training  
Requirements

*How Can You Reach Us?*

**Hazardous Materials**

**INFO-LINE**

**1-800-HMR49-22**

**(1-800-467-4922)**

**Hours of Operation: 9 am – 5 pm ET**



- Obtain answers to HMR questions
- Request copies of Federal Register, exemptions (special permits) or training materials
- Report HMR violations
- Fax on Demand

**E-mail: [infocntr@dot.gov](mailto:infocntr@dot.gov)**



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Requirements

Got A  
Question?



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HMR Training Requirements

# CRITIQUE

## Multimodal Hazardous Materials Transportation Training Seminar

Please take a few minutes to share your thoughts and ideas on this seminar.

Please complete this form and return it to the registration table at the conclusion of the seminar.

Please check all that apply:

<input type="checkbox"/> Shipper	<input type="checkbox"/> Supervisor	<input type="checkbox"/> Enforcement	<input type="checkbox"/> Other _____
<input type="checkbox"/> Carrier	<input type="checkbox"/> Local Government	<input type="checkbox"/> Preparedness	_____
<input type="checkbox"/> Association	<input type="checkbox"/> State Government	<input type="checkbox"/> Response	
<input type="checkbox"/> Non-Supervisor	<input type="checkbox"/> Federal Government	<input type="checkbox"/> Packaging Manufacturer	

Tuesday, December 6, 2005

**RATING**  
(Interest Level ● 5 = Highest; ● 1 = Lowest)

8:30 - 10:00 am **GENERAL SESSION / TRAINING REQUIREMENTS** ○5 ○4 ○3 ○2 ○1

Comments

10:15-11:45 am **GROUP A SESSIONS**

How to Use the Hazardous Materials Regulations (HMR)	○5 ○4 ○3 ○2 ○1
Transporting Hazmat by Air	○5 ○4 ○3 ○2 ○1
State Hazmat Enforcement	○5 ○4 ○3 ○2 ○1
Regulatory Process and Update	○5 ○4 ○3 ○2 ○1
Hazmat Transportation Security Requirements	○5 ○4 ○3 ○2 ○1

Comments

1:15-2:45 pm **GROUP B SESSIONS**

Package Selection, Marking, and Labeling Requirements	○5 ○4 ○3 ○2 ○1
Transporting Hazmat by Highway	○5 ○4 ○3 ○2 ○1
State Hazmat Enforcement	○5 ○4 ○3 ○2 ○1
Legal Review and Update	○5 ○4 ○3 ○2 ○1
Infectious Substances	○5 ○4 ○3 ○2 ○1

Comments

3:00-4:30 pm **GROUP C SESSIONS**

Shipping Papers and Emergency Response Information	○5 ○4 ○3 ○2 ○1
Transporting Hazmat by Water	○5 ○4 ○3 ○2 ○1
Special Permits and Approvals	○5 ○4 ○3 ○2 ○1
How to Use the Emergency Response Guidebook	○5 ○4 ○3 ○2 ○1
Applicability of the HMR to Loading, Unloading and Storage (HM-223) and Incident Reporting (HM-229)	○5 ○4 ○3 ○2 ○1

Comments

Over ↗