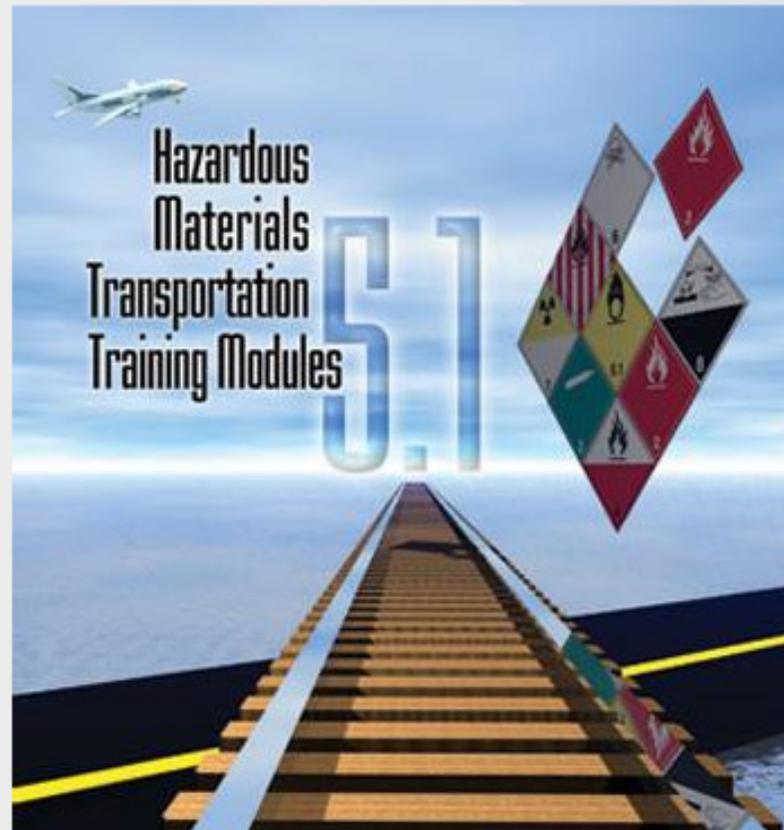


## Introduction



U.S. Department of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**



Four Billion Tons Transported Each Year



## Definition of Hazardous Materials

A hazardous material is defined as a substance or material, that when transported in commerce, is capable of posing an unreasonable risk to:

- health
- safety
- property



[§171.8](#)

## The Hazardous Materials Regulations

Title 49, Code of Federal Regulations governs the transportation of hazardous materials. The Hazardous Materials Regulations or HMR are found in Parts 171 through 180 of Title 49, CFR. The contents of Parts 171 through 180 include:

- Part 171 – General information, regulations, and definitions
- Part 172 – Hazardous materials table, special provisions, hazardous materials communications, emergency response information, and training requirements
- Part 173 – Shippers – General requirements for shipments and packagings
- Part 174 – Carriage by rail
- Part 175 – Carriage by aircraft
- Part 176 – Carriage by vessel
- Part 177 – Carriage by public highway
- Part 178 – Specifications for packaging
- Part 179 – Specifications for tank cars
- Part 180 – Continuing qualification and maintenance of packagings



U.S. Department  
of Transportation  
**Federal Railroad  
Administration**



## Hazardous Materials Standards

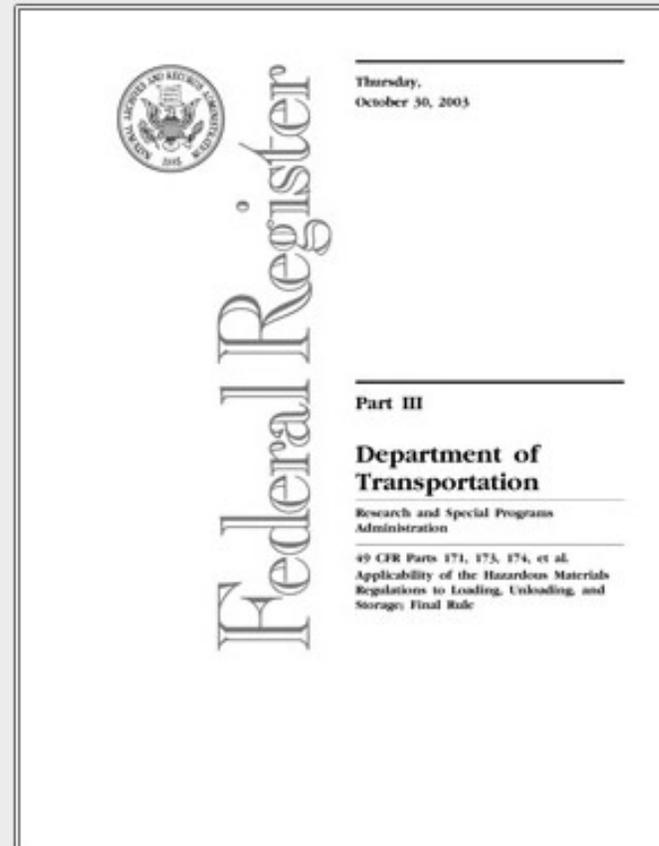
The Hazardous Materials Regulations set forth standards for:

- Classification
- Packaging
- Hazard communication
- Emergency response information
- Hazmat employee training
- Hazmat transportation
- Incident reporting
- Security



## For Training Purposes Only

These modules are for training purposes only; they are not a substitute for the Hazardous Materials Regulations. In order to be sure you're in compliance with the regulations, refer to a current copy of the Hazardous Materials Regulations and the final rules published in the Federal Register. In the event of a discrepancy between these training modules and the current HMR, the HMR is the authoritative source.



## Who Must Comply With the HMR?

No person may offer or accept a hazardous material for transportation in commerce unless ...

(c) Each person who performs a function covered by or having an effect on a specification or activity prescribed in part 178, 179, or 180 of this subchapter, an approval issued under this subchapter, or an exemption or special permit issued under subchapter A of this chapter, must perform the function in accordance with that specification, approval, or special permit, as appropriate.

(d) No person may offer or accept a hazardous material for transportation in commerce or transport a hazardous material in commerce unless that person is registered in conformance with subpart G of part 107

**(e) No person may offer or accept a hazardous material for transportation in commerce unless**

**(e) No person may offer or accept a hazardous material for transportation in commerce unless the hazardous material is properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements of this subchapter or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter.**

... as required or authorized by applicable requirements of this subchapter or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter.



[§171.2](#)  
[§171.2\(e\)](#)

## Misrepresenting Packaging or Containers

Section 171.2(g) – No person may represent, mark, certify, sell, or offer a packaging or container as meeting the requirements...

(g) No person may represent, mark, certify, sell, or offer a packaging or container as meeting the requirements of this subchapter governing its use in the transportation of a hazardous material in commerce unless the packaging or container is manufactured, fabricated, marked, maintained, reconditioned, repaired, and retested in accordance with the applicable requirements of this subchapter. No person may represent,

**(g) No person may represent, mark, certify, sell, or offer a packaging or container as meeting the requirements**

approval, or registration issued under this subchapter or subchapter A of this chapter unless the packaging or container is manufactured, fabricated, marked, maintained, reconditioned, repaired, and retested in accordance with the applicable requirements of the exemption, special permit, approval, or registration issued under this subchapter or subchapter A of this chapter. The requirements of this paragraph apply whether or not the packaging or container is used or to be used for the transportation of a hazardous material.



[§171.2\(g\)](#)

## Required Hazmat Training

The Hazardous Materials Regulations require hazmat employers to certify the training of those employees who perform functions covered in the HMR, such as loading, unloading, or handling shipments of hazardous material incidental to their movement; preparing shipping papers; preparing hazardous material for transport; and operating a vehicle used to transport hazardous material. Training must include:

- General awareness/familiarization training
- Function-specific training (including modal-specific training)
- Safety training
- Security awareness training
- In-depth security training (some employers; see §172.800)

You can get additional information about Hazardous Materials Transportation Security Training at <http://hazmat.dot.gov>.



[§172.704](#)

[§172.700](#)

## Penalties for Violating HMR

Violations of the Hazardous Materials Regulations may result in:

- Civil penalties: \$250 to \$100,000
- Criminal penalties: \$250,000 to \$500,000, plus up to ten years in prison

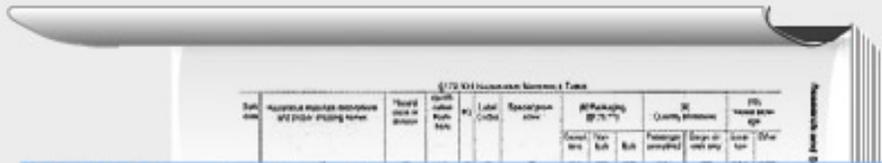
Hazardous Materials Training – It's the Law!

II.—LIST OF FREQUENTLY CITED VIOLATIONS—Continued		
Violation description	Section or cite	Baseline assessment
13. Failure to condemn a cylinder when required (e.g., permanent expansion of 10% [5% for certain exemption cylinders], internal or external corrosion, denting, bulging, evidence of rough usage).	180.205(i) .....	\$6,000 to \$10,800.
14. Failure to properly mark a condemned cylinder or render it incapable of holding pressure.	180.205(i)(2) .....	\$800.
15. Failure to notify the cylinder owner in writing when a cylinder has been condemned.	180.205(i)(2) .....	\$1,000.
16. Failure to perform hydrostatic retesting at the minimum specified test pressure.	180.209(a)(1) .....	\$2,100 to \$5,200.
17. Marking a star on a cylinder that does not qualify for that mark .....	180.209(b) .....	\$2,000 to \$4,000.
18. Marking a "+" sign on a cylinder without determining the average or minimum wall stress by calculation or reference to CGA Pamphlet C-5.	173.302a(b) .....	\$2,000 to \$4,000.
19. Marking a cylinder in or on the sidewall when not permitted by the applicable specification.	180.213(b) .....	\$6,000 to \$10,800.



[§171.1](#)  
[§171.3](#)

# The Hazardous Materials Table



§172.101 Hazardous Materials Table

Sym- bols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identifica- tion Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Acetaldehyde .....	3	UN1089	I	3 .....	A3, B16, T11, TP2, TP7	None .	201 ..	243 ..	Forbidden	30 L	E	
A	Acetaldehyde ammonia .....	9	UN1841	III	9 .....	IP8, IP6	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	



U.S. Department of Transportation  
**Pipeline and Hazardous Materials  
 Safety Administration**

## Purpose and Scope

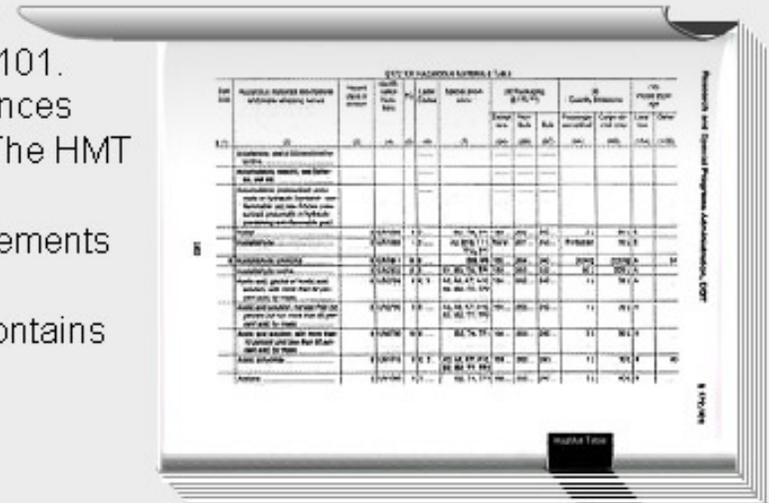
The Hazardous Materials Table (HMT) lists alphabetically, by proper shipping name, those materials that the U.S. Department of Transportation has designated as hazardous materials for the purpose of transportation. The Table provides required information used in shipping papers, package marking, and labeling, and prescribes quantity limits on aircraft and railcars, stowage of hazardous materials aboard vessels, and transport vehicle placarding applicable to the shipment and transportation of those hazardous materials. This module assumes that the manufacturer or shipper has already identified the hazardous material.



[§172.1](#)

## HM Table

The Hazardous Materials Table is located in 49 CFR, §172.101. It contains more than 3,000 proper shipping names of substances most commonly shipped or carried as hazardous materials. The HMT specifies or references requirements pertaining to labeling, packaging, quantity limits aboard aircraft and stowage requirements for vessels based on proper shipping name, hazard class, identification number, and packing group. The table format contains 14 columns in 10 major headings, numbered 1 thru 10.



§172.101 Hazardous Materials Table

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identifica-tion Numbers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Acetaldehyde .....	3	UN1089	I	3 .....	A3, B16, T11, TP2, TP7	None .	201 ..	243 ..	Forbidden	30 L	E	
A	Acetaldehyde ammonia .....	9	UN1841	III	9 .....	IP8, IP6	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	



[§172.101\(a\)](#)

## Hazardous Materials Table Columns 1-5

Columns 1-5 of the Hazardous Materials Table contain the information required for the basic description that is a key part of the shipping paper. The Table covers the transportation of hazardous materials in all modes - air, water, rail and highway. It provides the proper shipping name of the material or directs the user to the preferred proper shipping name.

The image shows a small, partially visible version of the Hazardous Materials Table. It is a grid with multiple columns and rows, containing technical information such as hazard class, identification numbers, and shipping names. The text is too small to read clearly, but it represents the full table referenced in the text.

### §172.101 Hazardous Materials Table

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Numbers	PG
(1)	(2)	(3)	(4)	(5)
	Acetaldehyde .....	3	UN1089	I
A	Acetaldehyde ammonia .....	9	UN1841	III
	Acetaldehyde oxime .....	3	UN2332	III
	Acetic acid, glacial or Acetic acid solution, with more than 80 percent acid, by mass .....	8	UN2789	II
	Acetic acid solution, not less than 50 percent but not more than 80 percent acid, by mass .....	8	UN2790	II



[§172.101\(a\)](#)

## HMT – Column 1: Symbols

Column 1 is labeled "Symbols" and will contain one of six symbols or be blank. These symbols designate groups of hazardous materials with specific transportation requirements. Those six symbols are: "+", "A", "D", "G", "I", or "W".

- +
- A
- D
- G
- I
- W

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division
(1)	(2)	(3)
	<i>Anhydrous hydrofluoric acid, see Hydrogen fluoride, anhydrous.....</i>	
+	Aniline .....	6.1
	<i>Aniline hydrochloride .....</i>	6.1



## HMT – Column 2: Hazardous materials descriptions and proper shipping names

Column 2 is labeled Hazardous materials descriptions and proper shipping names. It lists the proper shipping name of each hazardous material in the table, along with any accompanying descriptive information. Proper shipping names are limited to those shown in Roman type (not italics). Proper shipping names are written in Roman type only. Names in italics may not be used to describe hazardous materials.

- Form and Case
- Italics
- Poison/Poisonous
- Qualifying words
- See

§172.101 Hazardous Materials Table

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division
(1)	(2)	(3)
	Aerosols, flammable, n.o.s. ( <i>engine starting fluid</i> ) ( <i>each not exceeding 1 L capacity</i> ). .....	2.1
	Aerosols, <i>non-flammable</i> , ( <i>each not exceeding 1 L capacity</i> ). .....	2.2
	Aerosols, <i>poison</i> , <i>each not exceeding 1 L capacity</i> .....	2.2

## HMT – Column 2 Exceptions

While Column 2 lists the proper shipping name of each hazardous material in the HMT, there are some entries that receive special consideration with regards to the proper shipping names allowed and required to be used on package marking and shipping paper descriptions.

- Concentration ranges
- Prefix "mono"
- Liquids and solids
- Hazardous wastes
- Mixtures and solutions

§172.101 Hazardous Materials Table

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division
(1)	(2)	(3)
	Hydrogen peroxide, aqueous solutions with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary) .....	5.1
	Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary) .....	5.1
	Hydrogen peroxide, aqueous solutions with not less than 8 percent but less	5.1



[§172.101\(c\)](#)

## HMT – Column 3: Hazard Class or Division

Column 3 is labeled Hazard class or division, and contains a designation of the hazard class or division corresponding to each proper shipping name, or the word "Forbidden." Select each of these buttons to learn more about the five types of cases, and view an example of each:

- Normal (regular) entries
- Forbidden entries
- ORM-D entries
- Reevaluation of data
- Flammable liquid entries

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Numbers	PG	Label Codes
(1)	(2)	(3)	(4)	(5)	(6)
	Acetaldehyde .....	3	UN1089	I	3 .....
A	Acetaldehyde ammonia .....	9	UN1841	III	9 .....
	Acetaldehyde oxime .....	3	UN2332	III	3 .....
	Acetic acid, glacial or Acetic acid solution, with more than 80 percent acid, by mass .....	8	UN2789	II	8, 3 ....
	Acetic acid solution, not less than 50 percent but not more than 80 percent acid, by mass .....	8	UN2790	II	8 .....



[§172.101\(d\)](#)

[§173.2](#)

[§173.150](#)

## HMT – Column 3: Hazard Class or Division

Column 3 is labeled Hazard class or division, and contains a designation of the hazard class or division corresponding to each proper shipping name, or the word "Forbidden." Select each of these buttons to learn more about the five types of cases, and view an example of each:

- Normal (regular) entries
- Forbidden entries
- ORM-D entries
- Reevaluation of data
- Flammable liquid entries

Class No.	Division No. (if any)	Name of class or division	49 CFR reference for definitions
None	.....	Forbidden materials .....	173.21
None	.....	Forbidden explosives .....	173.54
1	1.1	Explosives (with a mass explosion hazard).....	173.50
1	1.2	Explosives (with a mass projection hazard).....	173.50
1	1.3	Explosives (with predominately a fire hazard)...	173.50
1	1.4	Explosives (with no significant blast hazard).....	173.50
1	1.5	Very insensitive explosives; blasting agents.....	173.50
1	1.6	Extremely insensitive detonating substances....	173.50
2	2.1	Flammable gas.....	173.115
2	2.2	Non-flammable compressed gas.....	173.115
2	2.3	Poisonous gas.....	173.115

The table contained in §173.2 lists the class numbers, division numbers, class or division names and those sections of the subchapter that contain definitions for classifying hazardous materials, including forbidden materials. The normal entries include those that contain a Class No. from 1 through 9 or a Division No. 1.1 through 6.2.



[§172.101\(d\)](#)

[§173.2](#)

[§173.150](#)

## HMT – Column 3: Hazard Class or Division

Column 3 is labeled Hazard class or division, and contains a designation of the hazard class or division corresponding to each proper shipping name, or the word "Forbidden." Select each of these buttons to learn more about the five types of cases, and view an example of each:

- Normal (regular) entries
- Forbidden entries
- ORM-D entries
- Reevaluation of data
- Flammable liquid entries

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Numbers	PG	Label Codes
(1)	(2)	(3)	(4)	(5)	(6)
	Acetyl bromide .....	8	UN1716	II 8 .....	
	Acetyl chloride .....	3	UN1717	II 3.8 .....	
	Acetylene, dissolved .....	2.1	UN1001		2.1 .....
	Acetylene, (liquefied) .....	Forbidden			

A material for which the entry in this column is "Forbidden" may not be offered for transportation or transported. This prohibition does not apply if the material is diluted, stabilized or incorporated in a device and it is classified in accordance with the definitions of hazardous materials contained in Part 173 of the HMR.



[§172.101\(d\)](#)

[§173.2](#)

[§173.150](#)

## HMT – Column 3: Hazard Class or Division

Column 3 is labeled Hazard class or division, and contains a designation of the hazard class or division corresponding to each proper shipping name, or the word "Forbidden." Select each of these buttons to learn more about the five types of cases, and view an example of each:

- Normal (regular) entries
- Forbidden entries
- ORM-D entries
- Reevaluation of data
- Flammable liquid entries

§172.101 Hazardous Materials Table					
Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identifica-tion Numbers	PG	Label Codes
(1)	(2)	(3)	(4)	(5)	(6)
D	Diesel fuel.....	3	NA1993	III	5.1.....
DG	Combustible liquid, n.o.s.....	Combusti-ble liquid	NA1993	III	.....

When the entry references a Class 3 material, each reference to a Class 3 material is modified to read "Combustible liquid" when that material is reclassified in accordance with §173.150(e) or (f), or has a flash point above 60.5°C (141°F) but below 93°C (200°F).



[§172.101\(d\)](#)

[§173.2](#)

[§173.150](#)

## HMT – Column 4: Identification Numbers

Column 4 is labeled Identification Numbers and lists the 4-digit identification number assigned to each proper shipping name. These 4 digit numbers provide quick identification of all hazardous materials. It is critical to emergency responders that the numbers are accurate and that they are correctly written and legibly displayed. Those preceded by the letters "UN" are associated with proper shipping names considered appropriate for international transportation as well as domestic transportation. Those preceded by the letters "NA" are associated with proper shipping names only recognized for domestic transportation; Canada no longer recognizes "NA" identification numbers.

§172.101 Hazardous Materials Table

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Numbers	PG
(1)	(2)	(3)	(4)	(5)
D	Sulfur.....	9	NA1350	III
I	Sulfur.....	4.1	UN1350	III
	<i>Sulfur and chlorate, loose mixtures of.....</i>	<i>Forbidden</i>		



[§172.101\(e\)](#)

## Domestic or International Shipments

A light blue world map is centered in the background of the slide. The map shows the outlines of continents and major landmasses.

**UN + 4-digit ID Number: used for domestic and/or international hazardous materials shipments.**

**NA + 4-digit ID Number: used for certain hazardous materials shipments only within the United States.**



[§172.101\(e\)](#)

## HMT – Column 5: Packing Group (PG)

The packing group number is assigned according to the relative degree of danger presented by the hazardous material while in transportation:

- PGI = Indicates the greatest level of danger
- PGII = Indicates a medium level of danger
- PGIII = Indicates a minor level of danger

§172.101 Hazardous Materials Table

Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Numbers	PG	Label Codes
(2)	(3)	(4)	(5)	(6)
Amines, liquid, corrosive, n.o.s. or Polyamines, liquid, corrosive, n.o.s. ....	8	UN2735	I	8 .....
.....	.....	.....	II	.....
.....	.....	.....	III	.....



## Basic Description

The basic description for a hazardous material must include:

- Proper shipping name
- Hazard class or division number
- Identification number
- Packing group

***Diamond Vogel Paint***

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**

HM	No. of Units	Shipping Description	Total Quantity
		<b>Aluminum powder, coated</b>	
		<b>4.1, UN1309, PGIII</b>	
This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of			
Signed			
Date			

**SAFETY BEGINS WITH YOU!**



[§172.101](#)

[§172.202](#)

## Hazardous Materials Table Columns 6-10

Columns 6 -10 of the Hazardous Materials Table contains specialized information necessary for packaging, marking, labeling, placarding, and other shipping mode specific requirements. The Table covers the transportation of hazardous materials in all modes - air, water, rail and highway.

§172.101 Hazardous Materials Table

Label Codes (6)	Special provisions (§172.102) (7)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
		Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Location (10A)	Other (10B)
3 .....	A3, B16, T11, TP2, TP7	None .	201 ..	243 ..	Forbidden	30 L	E	
9 .....	IB8, IP6	155 ...	204 ..	240 ..	200 kg	200 kg	A	34
3 .....	B1, IB3, T4, TP1	150 ...	203 ..	242 ..	60 L	220 L	A	



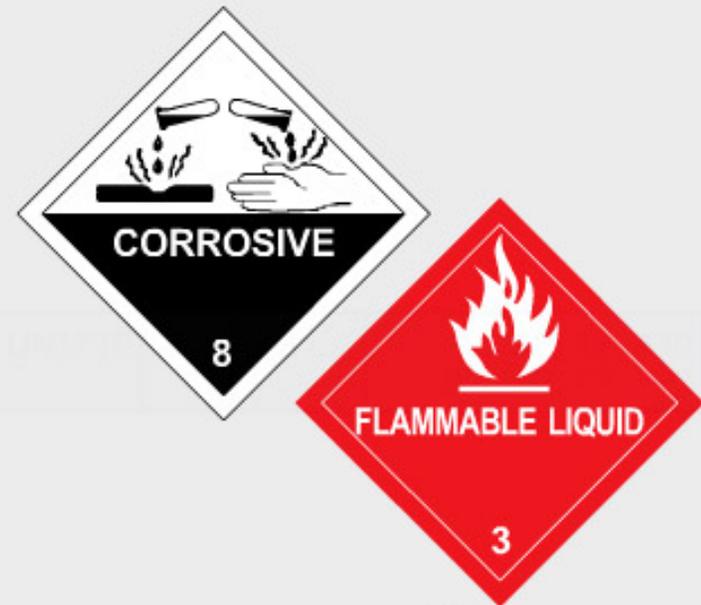
[§172.101\(a\)](#)

## HMT – Column 6: Label Codes

Column 6, Label Codes, specifies the hazard warning labels that must be applied to each package filled with a material conforming to the associated hazard class and proper shipping name, unless excepted. The codes contained in Column 6 are defined according to the Label Substitution Table found in §172.101(g). Additional labeling requirements are found in §172.402.

Label Substitution Table

Label code	Label name
3 .....	Flammable Liquid.
4.1 .....	Flammable Solid.
4.2 .....	Spontaneously Combustible.
4.3 .....	Dangerous When Wet.
5.1 .....	Oxidizer.
5.2 .....	Organic Peroxide.
6.1 (inhalation hazard, Zone A or B).	Poison Inhalation Hazard
6.1 (other than inhalation hazard, Zone A or B)	Poison.
6.2 .....	Infectious Substance.
7 .....	Radioactive.
8 .....	Corrosive.
9 .....	Class 9.



[§172.101\(g\)](#)

## HMT – Column 7: Special provisions

Column 7 is labeled Special provisions and specifies codes for special provisions applicable to hazardous materials. These special provisions are in addition to the standard requirements.

§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)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Acetic anhydride .....	8	UN1715	II	8, 3 ....	A3, A6,A7, A10, BP2, IB2, T7, TP2
	Acetone .....	3	UN1090	II	3 .....	IB2, T4, TP1



[§172.101\(h\)](#)

[§172.102](#)

## Special Provision Codes

Special provisions are coded with numbers and/or letters and numbers. Numeric-only codes are multi-modal in application and may apply to both bulk and non-bulk packaging. Alpha/numeric codes are specific to a particular transportation mode or a particular type of packaging.

Hazard class or division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)
(3)	(4)	(5)	(6)	(7)
8	UN1715	II	8, 3 ....	A3, A6,A7, A10, BP2, IB2, T7, TP2
3	UN1090	II	3 .....	IB2, T4, TP1

**Transported By:**  
A – Air  
H – Highway  
R – Rail  
W – Water

**Transported In:**  
B – Bulk Packaging  
N – Non-Bulk Packaging  
T – Intermodal (IM) Portable Tanks  
TP – Portable Tanks



[§172.101\(h\)](#)

[§172.102](#)

## HMT – Column 8: Packaging (§173.\*\*\*)

Col. 8 is labeled Packaging (§173.\*\*\*). The numbers in Col. 8A, 8B, and 8C complete cites from the HMR beginning with "§173." For example, if Col. 8A (Exceptions) contains the entry "306," read §173.306 to determine what exceptions apply. Col. 8A, 8B, and 8C specify the applicable sections for exceptions, non-bulk packaging, and bulk packaging requirements, respectively.

- Col. 8A lists the section in the regulations that covers exceptions to packaging requirements. When Col. 8A shows "None", there are no exceptions, and Col. 8B or 8C must be used.
- Col. 8B lists the packaging section(s) that must be used to prepare hazardous materials for non-bulk shipments.
- Col. 8C lists the packaging section(s) that must be used to prepare hazardous materials for bulk shipments.

§172.101 Hazardous Materials Table

Hazardous materials descriptions and proper shipping names	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)		
				Excep-tions	Non-bulk	Bulk
(2)	(5)	(6)	(7)	(8A)	(8B)	(8C)
Carbon dioxide, refrigerated liquid .....		2.2 .....	T75, TP5	306 ...	304 ..	314, 315 ..
Carbon dioxide, solid or Dry ice .....	III	None .		217 ...	217 ..	240 ..
Carbon disulfide .....	I	3, 6.1 .	B16, T14, TP2, TP7, TP13	None .	201 ..	243 ..



[§172.101\(0\)](#)

## Reference Location

The sections cited under Columns 8A, 8B, or 8C are located in Part 173. Using gasoline as the example, the number "150" in column 8A indicates that the packaging exceptions allowed for gasoline are found in §173.150. The number "202" in column 8B indicates that the non-bulk packaging requirements for gasoline are found in §173.202, and finally, the number "242" in Column 8C indicates that the bulk packaging requirements for gasoline are found in §173.242. When the packaging reference is not applicable to the state (solid or liquid) of the material being transported, use the Solid/Liquid Table in §172.101(i) (4) to determine the correct packaging requirements.

Packaging section reference for solid materials	Corresponding packaging section for liquid materials
173.187.....	173.181
173.211.....	173.201
173.212.....	173.202
173.213.....	173.203
173.240.....	173.241
173.242.....	173.243



[§172.101 HM Table](#)

[§172.101\(i\)](#)

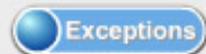
## HMT – Column 9: Quantity limitations

Column 9 is labeled Quantity Limitations and is divided into two parts:

- Column 9A – For passenger carrying aircraft or passenger carrying rail car
- Column 9B – For cargo aircraft, only

§172.101 Hazardous Materials Table

Hazardous materials descriptions and proper shipping names	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations	
				Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only
(2)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)
Acetic anhydride .....	II	8,3 .....	A3, A6, A7, A10, B2, IB2, T7, TP2	154 ...	202 ..	243 ..	1 L	30 L
Acetone .....	II	3 .....	IB2, T4, TP1	150 ...	202 ..	242 ..	5 L	60 L
Acetone cyanohydrin, stabilized .....	I	6.1 .....	2, A3, B9, B14, B32, B76, B77, N34, T20, TP2, TP13, TP38, TP45	None .	277 ..	244 ..	Forbidden	Forbidden



## Categories of Hazardous Substances

A hazardous substance is a material that is:

- listed in Table 1 - Appendix A to the HMT.
- shipped in one package, in a quantity which equals or exceeds the Reportable Quantity or RQ, also found in Table 1 – Appendix A to the HMT.
- a mixture or solution in a concentration by weight, which equals or exceeds the concentration shown in the Table found within the definition of a hazardous substance in §171.8.

§172.101 Hazardous Materials Table

TABLE 1 TO APPENDIX A.—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES	
Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Acetic acid, lead (2+) salt .....	10 (4.54)
Acetic acid, thallium (I+) salt .....	1000 (454)
Acetic anhydride .....	5000 (2270)
Acetone .....	5000 (2270)
Acetone cyanohydrin .....	10 (4.54)
Acetonitrile .....	5000 (2270)
Acetophenone .....	5000 (2270)
2-Acetylaminofluorene .....	1 (0.454)

(9) Limitations	(10) Vessel stowage		
	Cargo aircraft only	Location	Other
(9B)	(10A)	(10B)	
30 L	A	40	
60 L	B		



[§171.8](#)

[Table 1, App A to §172.101](#)

## Reportable Quantities for Hazardous Substances

Appendix A of the HMT (§172.101) contains two tables:

- Table 1 lists the names of those elements and compounds that are hazardous substances, other than Radionuclides, and their respective reportable quantities in units of pounds and kilograms.
- Table 2 lists the names of those Radionuclides that are hazardous substances and their respective reportable quantities in units of curies and terabecquerels.

TABLE 1 TO APPENDIX A.—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES

TABLE 2.— RADIONUCLIDES		
(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci(TBq)
Actinium - 224 .....	89	100 (3.7)
Actinium - 225 .....	89	1 (.037)
Actinium - 226 .....	89	10 (.37)
Actinium - 227 .....	89	0.001 (.000037)
Actinium - 228 .....	89	10 (.37)
Aluminum-26 .....	13	10 (.37)
Americum - 237 .....	95	1000 (37)
Americum - 238 .....	95	100 (3.7)



[Table 1, App A to §172.101](#)

[Table 2, App A to §172.101](#)

## Determine if a Material is a Hazardous Substance

To determine if a material is a hazardous substance, you must use Table 1 and Table 2 - Appendix A of the HMT. To determine whether a particular package of hazardous material is regulated as a hazardous substance, you must determine:

- What is the specific name of the material?
- Is the material listed as a hazardous substance in either Table 1 or Table 2 to Appendix A?
- What is the RQ for the material, as listed in Table 1 or 2 of Appendix A?
- Does the amount of the hazardous substance contained in one package meet or exceed the RQ for that substance?
- Is the hazardous substance name found in the HMT and thus a proper shipping name?

TABLE 1 TO APPENDIX A.—HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES		TABLE 2.— RADIONUCLIDES		
Hazardous substance	Reportable quantity (RQ) pounds (kilo grams)	(1)—Radionuclide	(2)—Atomic Number	(3)—Reportable Quantity (RQ) Ci(TBq)
Acetic acid, lead (2+) salt .....	10 (4.54)	Actinium - 224 .....	89	100 (3.7)
Acetic acid, thallium (1+) salt .....	1000 (454)	Actinium - 225 .....	89	1 (.037)
Acetic anhydride .....	5000 (2270)	Actinium - 226 .....	89	10 (.37)
Acetone .....	5000 (2270)	Actinium - 227 .....	89	0.001 (.000037)
Acetone cyanohydrin .....	10 (4.54)	Actinium - 228 .....	89	10 (.37)
Acetonitrile .....	5000 (2270)			
Acetophenone .....	5000 (2270)			
2-Acetylaminofluorene .....	1 (0.454)			



[§171.8](#)

[Table 1, App A to §172.101](#)

[Table 2, App A to §172.101](#)

## If a Hazardous Substance is Not a Proper Shipping Name

If a hazardous substance is not listed as a proper shipping name in the HMT, use "Environmentally hazardous substance, n.o.s., liquid" or "Environmentally hazardous substance, n.o.s., solid," as appropriate.

§172.101 Hazardous Materials Table

Hazardous materials descriptions and proper shipping names	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
		Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Location	Other
(2)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
Environmentally hazardous substances, liquid, n.o.s.	8, 146, IB3, T4, TP1, TP29	155 ...	203 ..	241 ..	No limit	No limit	A	
Environmentally hazardous substances, solid, n.o.s.	8, 146, B54, IB8, N20	155 ...	213 ..	240 ..	No limit	No limit	A	

## Determining Whether a Hazardous Substance is Regulated in Transportation



**Material:** Ethylene dichloride

**Reportable Quantity:** 100 pounds or 45.4 kilograms

**Package Size:** 5,500 lbs. in one package

✓ Is the material listed in Appendix A?

✓ Does the amount of material equal or exceed the RQ for "Ethylene dichloride"?

**Hazardous Substance:** Yes

**Proper Shipping Name:** Ethylene dichloride

Hazardous substance	Reportable quantity (RQ) pounds (kilograms)
Ethyl chloride @ .....	100 (45.4)
Ethyl cyanide .....	10 (4.54)
Ethylene dibromide .....	1 (0.454)
Ethylene dichloride .....	100 (45.4)
Ethylene glycol .....	5000 (2270)
Ethylene glycol monoethyl ether.....	1000 (454)
Ethylene oxide .....	10 (4.54)

§172.101 Hazardous Materials Table

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division
(1)	(2)	(3)
	Ethylene dibromide and methyl bromide liquid mixtures, see Methyl bromide and ethylene dibromide, liquid mixtures .....	
	Ethylene dichloride.....	3
	Ethylene glycol diethyl ether .....	3



[§171.8](#)

[Table 1, App. A to §172.101](#)

[Table 2, App. A to §172.101](#)

[§172.101 HM Table](#)

## Shipping Papers



U.S. Department of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

### *Diamond Vogel Paint*

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**

HM	No. of Units	Shipping Description	Total Quantity
X	1 box	Aluminum powder, coated,	5 kg
		4.1, UN1309, PGIII	

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

Signed *Andrew Landers*

Date *5/25/2005*

**SAFETY BEGINS WITH YOU!**

## Definition of Shipping Papers

As used in the HMR, a shipping paper for hazardous materials transportation is any document that contains the information required to describe the hazardous material being transported. It may include:

- a shipping order
- a bill of lading
- a manifest
- or other type shipping documents

**Diamond Vogel Paint**

Delivery Address: \_\_\_\_\_

Billing Address: same as delivery

ATTENTION SHIPPERS: FREIGHT CHARGES ARE PRINTED ON THIS BILL OF LADING UNLESS MARKED COLLECT.

**STRAIGHT BILL OF LADING**  
ORIGINAL NOT NEGOTIABLE

Shipper No. \_\_\_\_\_  
Consignee No. \_\_\_\_\_  
Date \_\_\_\_\_

**ABC Motor Freight**  
Freight terms \_\_\_\_\_ (CODE) \_\_\_\_\_

Description	Total Quantity
<b>PGII</b>	<b>225 kg</b>

Materials are properly classified, packaged, labeled and in proper condition for transportation in accordance with the regulations of the Department of Transportation.

Prepared by **J.S. Doe**

Date **6-25-05**

**SHIPPING WITH YOU!**

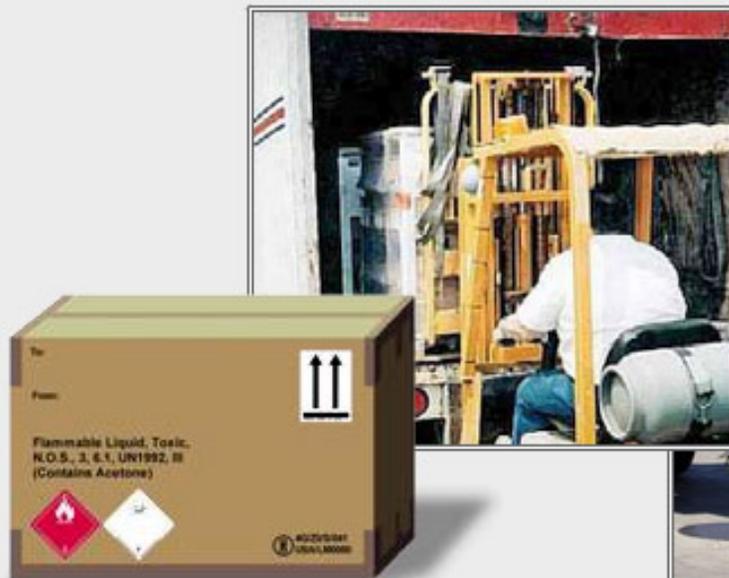
[\\$172.202](#)

[\\$172.203](#)

[\\$172.204](#)

## Basic Rules for Shipping Papers

The basic rule for shipping papers is that if you transport any quantity of a hazardous material, a properly prepared shipping paper must accompany the shipment. This includes materials identified as hazardous substances, hazardous wastes, and marine pollutants. Unless excepted, each person who offers a hazardous material for transportation must accurately describe the hazardous material on the shipping paper in the manner required by the HMR.



HM	No. of Units	Shipping Description	Total Quantity
X	6 bottles	Flammable liquids, toxic, n.o.s., 3, UN1992, PG III (contains Acetone)	6 liters
555-1234			
n ed materials are properly classified, described, d are in proper condition for transportation acco			

## Mixed Shipments on the same Shipping Paper

When hazardous materials and non-hazardous materials are entered on a shipping paper, the hazardous materials entries must:

- Be entered first, before the non-hazardous material; or
- Be either highlighted or entered in a contrasting color that clearly contrasts with any description for non-hazardous materials; or
- Be identified with the letter 'X' in the column captioned 'HM' before the proper shipping name. In the case of a hazardous substance, the letter 'X' may be replaced with the letters 'RQ' for Reportable Quantity.

Even if the hazardous material is entered first or in a contrasting color, you may still place an X or, where appropriate, RQ, in the HM column.

HM	No. of Units	Shipping Description	Total Quantity
RQ	20 Boxes	RQ, Ammonium dichromate, 5.1, UN1439, PGII	170 kg
X	10 Boxes	Butyric Acid, 8, UN2820, PGIII	205 kg
X	4 Drums	Flammable Liquids, n.o.s., UN1993, PGI (Furan & Acetone)	200 gal
	25 Boxes	Newspaper Supplements	300 kg



## General Preparation of Shipping Papers

When a description of a hazardous material is required to be included on a shipping paper, that description must conform to these following requirements. They include:

- Legibility
- Codes and Abbreviations
- Additional Information
- Multiple-Page Shipping Papers
- Emergency Response Telephone Number
- Documents and Forms

1 of 1 pages

***Diamond Vogel Paint***

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**  
same as delivery

HM	No. of Units	Shipping Description	Total Quantity
X	10 Ctns	Paint, 3, UN1263, PGII	225 kg

**Emergency Contact: (202) 555-1234**

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

Signed *Jack Doe*  
Date *6-25-05*

**SAFETY BEGINS WITH YOU!**



[\\$172.201](#)

[\\$172.604](#)

## General Preparation of Shipping Papers

When a description of a hazardous material is required to be included on a shipping paper, that description must conform to these following requirements. They include:

- Legibility
- Codes and Abbreviations
- Additional Information
- Multiple-Page Shipping Papers
- Emergency Response Telephone Number
- Documents and Forms

All shipping paper entries must be legible and printed in English.

1 of 1 pages

***Diamond Vogel Paint***

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**  
same as delivery

HM	No. of Units	Shipping Description	Total Quantity
X	10 Ctns	Paint, 3, UN1263, PGI1	225 kg

**Emergency Contact: (202) 555-1234**

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

Signed **JACK DOE**  
Date **6-25-05**

**SAFETY BEGINS WITH YOU!**



[\\$172.201](#)

[\\$172.604](#)

## General Preparation of Shipping Papers

When a description of a hazardous material is required to be included on a shipping paper, that description must conform to these following requirements. They include:

- Legibility
- Codes and Abbreviations
- Additional Information
- Multiple-Page Shipping Papers
- Emergency Response Telephone Number
- Documents and Forms

There are no codes or abbreviations allowed in the required shipping descriptions, unless the HMR specifically allow their use.

1 of 1 pages

***Diamond Vogel Paint***

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**  
same as delivery

HM	No. of Units	Shipping Description	Total Quantity
X	10 Ctns	Paint, 3, UN1263, PGI1	225 kg

**Emergency Contact: (202) 555-1234**

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

Signed *Jack Doe*  
Date *6-25-05*

**SAFETY BEGINS WITH YOU!**



[\\$172.201](#)

[\\$172.604](#)

## General Preparation of Shipping Papers

When a description of a hazardous material is required to be included on a shipping paper, that description must conform to these following requirements. They include:

- Legibility
- Codes and Abbreviations
- Additional Information
- Multiple-Page Shipping Papers
- Emergency Response Telephone Number
- Documents and Forms

Any additional information entries must appear after the basic description.

1 of 1 pages

***Diamond Vogel Paint***

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**  
same as delivery

HM	No. of Units	Shipping Description	Total Quantity
X	10 Ctns	Paint, 3, UN1263, PGI1	225 kg

**Emergency Contact: (202) 555-1234**

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

Signed *Jack Doe*  
Date *6-25-05*

**SAFETY BEGINS WITH YOU!**



[\\$172.201](#)

[\\$172.604](#)

## General Preparation of Shipping Papers

When a description of a hazardous material is required to be included on a shipping paper, that description must conform to these following requirements. They include:

- Legibility
- Codes and Abbreviations
- Additional Information
- Multiple-Page Shipping Papers
- Emergency Response Telephone Number
- Documents and Forms

When shipping papers have more than one page, the pages need to be consecutively numbered (e.g., 1, 2, 3) and only the first page must specify the total number of pages (e.g., 1 of 3 pages).

1 of 1 pages

***Diamond Vogel Paint***

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**  
same as delivery

HM	No. of Units	Shipping Description	Total Quantity
X	10 Ctns	Paint, 3, UN1263, PGI1	225 kg

**Emergency Contact: (202) 555-1234**

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

Signed *Jack Doe*  
Date *6-25-05*

**SAFETY BEGINS WITH YOU!**



[\\$172.201](#)  
[\\$172.604](#)

## General Preparation of Shipping Papers

When a description of a hazardous material is required to be included on a shipping paper, that description must conform to these following requirements. They include:

- Legibility
- Codes and Abbreviations
- Additional Information
- Multiple-Page Shipping Papers
- Emergency Response Telephone Number
- Documents and Forms

Except as provided in §172.604(c), a shipping paper must contain an emergency response telephone number, including the area code or international access code, for use in the event of an emergency involving the hazardous material.

1 of 1 pages

***Diamond Vogel Paint***

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**  
same as delivery

HM	No. of Units	Shipping Description	Total Quantity
X	10 Ctns	Paint, 3, UN1263, PGI1	225 kg

**Emergency Contact: (202) 555-1234**

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

Signed *Jack Doe*  
Date *6-25-05*

**SAFETY BEGINS WITH YOU!**



[§172.201](#)  
[§172.604](#)

## General Preparation of Shipping Papers

When a description of a hazardous material is required to be included on a shipping paper, that description must conform to these following requirements. They include:

- Legibility
- Codes and Abbreviations
- Additional Information
- Multiple-Page Shipping Papers
- Emergency Response Telephone Number
- Documents and Forms

Except for hazardous wastes, there is no specific shipping paper 'form' required for a hazardous material shipment. A shipper may use a shipping paper appropriate to its operation.

1 of 1 pages

***Diamond Vogel Paint***

**Delivery Address:**  
McCoy & Hatfield Paints  
123 Fighting Lane  
Mason-Dixon, VA 23231

**Billing Address:**  
same as delivery

HM	No. of Units	Shipping Description	Total Quantity
X	10 Ctns	Paint, 3, UN1263, PGII	225 kg

**Emergency Contact: (202) 555-1234**

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

Signed *Jack Doe*  
Date *6-25-05*

**SAFETY BEGINS WITH YOU!**



[§172.201](#)

[§172.604](#)

## Emergency Response Telephone Number

The emergency response telephone number must be:

- Monitored at all times the hazardous material is in transportation, including storage incidental to transportation.
- The number of someone who is knowledgeable about the hazardous material being shipped and has comprehensive emergency response and incident mitigation information.
- Entered on a shipping paper immediately following the description of the hazardous material or entered once on the shipping paper in a clearly visible location, Emergency Contact: XXX-XXX-XXXX.

NEGOTIABLE		Shipper No. _____		
		Carrier No. _____		
		Date _____		
( SCAC)				
FROM: Shipper _____				
Street _____				
City _____	State _____	Zip Code _____		
24 hr. Emergency Contact Tel. No. _____		<b>(202) 555-1234</b>		
		Vehicle Number _____		
Shipping Name, g Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
		<b>600 lbs</b>		
	<b>240 gal</b>			



[\\$172.201](#)

[\\$172.604](#)

## Retention of shipping papers:

The shipper must keep a copy of the shipping paper, either electronic or paper, for 2 years after the material is accepted by the initial carrier. The carrier must keep a copy of the shipping paper for 1 year after initial acceptance. However, both the shipper and the carrier must keep a copy of a Hazardous Waste Manifest (HWM) for 3 years after it is accepted by the initial carrier.

In all cases, a copy must be accessible at or available through the principal place of business of the shipper and the carrier, respectively, and must be made available if requested by an authorized Federal, State, or local agency at reasonable times and locations.



UNIFORM HAZARDOUS WASTE MANIFEST  
 U.S. DEPARTMENT OF TRANSPORTATION  
 JACOB'S PRINTING CO.  
 1224 Main St.  
 Arlington, VA 22202

**Diamond Vogel Paint**

**Delivery Address:**  
 McCoy & Hatfield Paints  
 123 Fighting Lane  
 Mason-Dixon, VA 23231

**Billing Address:**  
 same as delivery

HM	No. of Units	Shipping Description	Total Quantity
X	10 Ctns.	Paint, 3, UN1263, PGI	225 kg

**Emergency Contact: (202) 555-1234**

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

Signed *Matt Brown*  
 Date *5/24/2005*

**SAFETY BEGINS WITH YOU!**



[§172.201\(e\)](#)

## Shipping Description of the Hazardous Material

The shipping description for a hazardous material must include these six items in the proper order. These items include:

- The basic description, in one of these two orders:
  - Proper shipping name, Hazard class/division number, ID number, and Packing group; or
  - ID number, Proper shipping name, Hazard class/division number, and Packing group
- Total quantity of material
- Number and type of package(s)

HM	No. of Units	Shipping Description	Total Quantity
X	20 drums	Benzene, 9, UN1114, PGII	1100 gal
	▲	▲ ▲ ▲ ▲	▲
	6	1 2 3 4	5



## Multiple Basic Description Sequences

The basic description is the primary building block for the shipping description displayed on each shipping paper document. There are two acceptable sequences for the basic description:

- The first can be remembered using the mnemonic: S.H.I.P.
- The alternative sequence can be remembered using the mnemonic I.S.H.P.

HM	No. of Units	Shipping Description	Total Quantity
X	10 bottles	Cyclobutyl chloroformate, 6.1 (8,3)	10 L
		UN2744, PGII	
X	10 bottles	UN2744, Cyclobutyl chloroformate	10 L
		6.1 (8,3), PGII	



## Shipping Description Shuffle

The shipping description sequence can be represented by these six blocks, but they must be displayed in the correct order. The letter on each block represents:

"S" stands for Proper Shipping name

"H" stands for Hazard class or division number

"I" stands for I.D. number

"P" stands for Packing group

"T" stands for Total quantity of material

"N" stands for Number and type of package(s)

HM	Total Quantity	Shipping Description	No. of Units Total Quantity
X	3000 L	Isopropanol, 3, UN1219, PGII	1 Tank Truck 3000 L
X	3000 L	UN1219, Isopropanol, 3, PGII	1 Tank Truck 3000 L



## Technical Names

Technical and chemical group names must be entered in parentheses between the proper shipping name and the hazard class or division number or following the basic description. An appropriate modifier, such as 'contains' or 'containing', and/or the percentage of the technical constituent may also be used.

Flammable liquids, n.o.s., contains Xylene and Benzene, thus, the proper basic description is --

HM	No. of Units	Shipping Description	Total Quantity
X	1 drum	Flammable liquids, n.o.s.,	5L
		(contains Xylene and Benzene),	
		3, UN1993, PGII	

**OR**

HM	No. of Units	Shipping Description	Total Quantity
X	1 drum	Flammable liquids, n.o.s.,	5L
		3, UN1993, PGII	
		(contains Xylene and Benzene)	



## Limited Quantities

The notation 'Limited Quantity' or 'Ltd Qty' must immediately follow the basic description of a hazardous material offered and transported as a limited quantity shipment.

HM	No. of Units	Shipping Description	Total Quantity
X	1 ctn	Acetone, 3, UN1090, PGII Ltd Qty	4 Liters



[§172.203](#)

[§171.8](#)

## Hazardous Substances

Except for Class 7 (radioactive) materials, if the proper shipping name for a material that is a hazardous substance does not identify the hazardous substance by name, the name of the hazardous substance must be entered in parenthesis in association with the basic description. If the material contains two or more hazardous substances, at least the two hazardous substances with the lowest reportable quantities must be entered. For hazardous wastes, the waste code may be used in lieu of the name of the hazardous substance. The letters 'RQ' must be entered on the shipping paper either before or after the basic description. Finally, in a mixture, the reportable quantity only refers to the quantity of the hazardous substance without regard to other substances in the mixture. For example, 200 pounds of a mixture with 10% allyl alcohol, would be a quantity of 20 pounds of allyl alcohol – less than the 100-pound RQ for that substance.

HM	No. of Units	Shipping Description	Total Quantity
X	100 btl	RQ, Allyl alcohol, 6.1, UN1098, PGI	110 lbs
X	1 ctn	Environmentally hazardous sub- stances, solid, n.o.s., 9, UN3077, PGIII, RQ (Aldrin)	2 lbs



### Additional Description Requirements – Group 3

In certain instances, additional entries are required on the shipping paper to help clearly communicate the dangers or special precautions necessary to properly handle and transport hazardous materials in accordance with the HMR. The third group of additional description requirements deals with specific types of hazardous materials and includes:

- Technical names for n.o.s. and other generic descriptions
- Marine pollutants
- Poisonous materials
- Elevated temperature materials
- Organic peroxides and self-reactive materials

HM	No. of Units	Shipping Description	Total Quantity
X	1 drum	Corrosive liquid, n.o.s., 8, UN1760, PGII (contains Caprylyl chloride)	5 L



4.1, UN1352, PGII
STATEMENT OF APPROVAL OF THE CLASSIFICATION AND CONDITION OF TRANSPORT:
I hereby approve and certify the classification of the contents herein described.
<i>John Doe</i> Signature Date 2-18
Control/ Emergency Temperature
1660°C



## Technical Names for N.O.S. and Other Generic Descriptions

Unless otherwise excepted, if a material is described on a shipping paper by one of the proper shipping names identified by the letter 'G' in Column 1 of the HMT (§172.101), the technical name of the hazardous material must be entered in parentheses in association with the basic description. For Division 5.2, organic peroxides, which may qualify for more than one generic listing depending on concentration, the technical name must include the actual concentration being shipped or the concentration range for the appropriate generic listing. An n.o.s. entry that describes a mixture or solution of two or more hazardous materials must include the technical names of at least two components most predominantly contributing to the hazards of the mixture or solution and must be entered on the shipping paper in parentheses in association with the basic description. Certain materials are excepted from having to display technical names in association with the basic description. They are discussed in greater detail in §172.203(k) (2).

HM	No. of Units	Shipping Description	Total Quantity
<b>X</b>	<b>1 drum</b>	<b>Corrosive liquid, n.o.s.,</b>	<b>5 L</b>
		<b>(Caprylyl chloride)</b>	
		<b>8, UN1760, PGII</b>	

**OR**

HM	No. of Units	Shipping Description	Total Quantity
<b>X</b>	<b>1 drum</b>	<b>Corrosive liquid, n.o.s.,</b>	<b>5 L</b>
		<b>8, UN1760, PGII</b>	
		<b>(contains Caprylyl chloride)</b>	

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Numbers	PG	Label Codes
(1)	(2)	(3)	(4)	(5)	(6)
G	Corrosive liquids, n.o.s.....	8	UN1760	I 8	.....
	.....	.....		II 8	.....
	.....	.....		III 8	.....



[§172.203](#)

## Marine Pollutants

If the proper shipping name for a material, which is a marine pollutant, does not identify by name the component that makes the material a marine pollutant, the name of that component must appear in association with the basic description. If it is necessary to include an additional entry to identify a hazardous material as a marine pollutant, then:

- The technical name of the components that makes the hazardous material a marine pollutant must be entered in parenthesis in association with the basic description.
- The words 'Marine Pollutant' must be entered in association with the basic description for a material that is a marine pollutant.
- Except for transportation by vessel, marine pollutants that are subject to the Oil Spill Prevention and Response Plan communication requirements in §130.11, are excepted from this requirement if a phrase indicating that the material is an oil is placed in association with the basic description.



HM	No. of Units	Shipping Description	Total Quantity
	<b>5 drums</b>	<b>Polychlorinated biphenyls,</b>	<b>275 lbs</b>
		<b>solid (PCBs), 9, UN2315, PGII</b>	
		<b>Marine Pollutant</b>	



[§172.203](#)

## Poisonous or Toxic Materials

The word 'Poison' or 'Toxic' must be entered in association with the basic description when the material meets the definition of a Division 6.1, Packing Group I or II, and neither the shipping name, nor the hazard class or division, discloses that fact.



[§172.203](#)

## Poisonous materials – Inhalation Hazards

For materials that are poisonous by inhalation the words 'Poisonous-Inhalation Hazard' or 'Toxic-Inhalation Hazard' and the words 'Zone A,' 'Zone B,' 'Zone C,' or 'Zone D' for gases or 'Zone A' or 'Zone B' for liquids shall be entered on the shipping paper immediately following the shipping description. The word 'Poison' or 'Toxic' need not be repeated if it otherwise appears in the shipping description. Special provision 1 represents Zone A, special provision 2 represents Zone B, etc. A complete list of these special provisions may be found at §172.102.

§172.101 Hazardous Materials Table

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification Numbers	PG	Label Codes	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)
+	Nitric acid, red fuming.....	8	UN2032	I	8, 5.1, 6.1.....	2, B9, B32, B74, T20, TP2, TP12, TP13, TP38, TP45

HM	No. of Units	Shipping Description	Total Quantity
<b>X</b>	<b>1 btl</b>	<b>Nitric acid, red fuming, 8 (5.1)</b>	<b>1.5 oz</b>
		<b>(6.1), UN2032, PGI POISON -</b>	
		<b>INHALATION HAZARD, ZONE B</b>	



[§172.203](#)

[§172.102](#)

## Shipper's Certification

The last shipping paper entry is the shipper's certification stating that hazardous materials are being properly offered for transportation according to the HMR. The certification must be legibly signed by a principal, officer, partner, or employee of the shipper or his agent. A legal signature may include signing manually, by typewriter, or by other mechanical means. The regulation provides for four different certifications on the shipping paper, depending on the shipment destination and mode of transportation.

- "Domestic" Certification
- "International" Certification
- Air Transportation Certification
- Certification for Radioactive Material

● Addl. Info. Blackjack

This shipment is within the limitations prescribed for passenger aircraft/cargo aircraft only (delete nonapplicable).

(4) *Radioactive material.* Each person who offers any radioactive material for transportation aboard a passenger-carrying aircraft shall sign (mechanically or manually) a printed certificate stating that the shipment contains radioactive material intended for use in, or incident to, research, or medical diagnosis or treatment.

(d) *Signature.* The certifications required by paragraph (a) or (c) of this section:

(1) Must be legibly signed by a principal, officer, partner, or employee of the shipper or his agent. [§172.204](#)

## Using the "Domestic" Certification

The shipper must enter the selected certification from §172.204 of the HMR on the shipping paper and sign it, manually, by typewriter, or by other mechanical means. This certification is appropriate for domestic shipping only, although §172.204 does not specifically prohibit its use for international shipments. The certification must be printed word for word.

**II. The Standard Bill of Lading Form**  
DOT Standard Form 3500, 5/20/00 for Domestic Use Only. Good for Information

<b>BILL OF LADING</b>		Page _____																									
Shipper: Name, Address, City/State/Zip, SOA, COB		Bill of Lading Number: _____ BAR CODE SPACE																									
Recipient: Name, Address, City/State/Zip, COB		CARRIER NAME, Trailer number, Seal number(s), SOA, Pre-number, BAR CODE SPACE																									
THIRD PARTY FREIGHT CHARGES BILL TO: Name, Address, City/State/Zip, COB		Freight Charge Terms, Freight charges are prepaid or collect (check one), Prepaid, Collect, 3 <sup>rd</sup> Party																									
SPECIAL INSTRUCTIONS:																											
Master Bill of Lading and attached copies are Bill of Lading																											
<b>CUSTOMER ORDER INFORMATION</b>																											
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HANDLING LINE	PACKAGE	WEIGHT	COMMODITY DESCRIPTION	LTL ONLY																							
<b>GRAND TOTAL</b>																											
COG Amount: \$ _____ Fee Funds: Collect <input type="checkbox"/> Prepaid <input type="checkbox"/> Customer check acceptable <input type="checkbox"/>																											

**SHIPPER SIGNATURE / DATE**

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

Matt Brown      5/23/2005

**SHIPPER SIGNATURE / DATE**

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

Matt Brown      5/23/2005

[§172.204](#)



## Shipper's Certification Exceptions

No shipper certification is required when the hazardous material, other than a hazardous waste, is being offered for transportation by motor vehicle and transported:

- In a cargo tank supplied by the carrier.
- By the shipper as a private carrier, except for a hazardous material that is to be reshipped or transferred from one carrier to another.

If the HWM is to be used as a shipping paper, it must contain all information required on any other shipping paper, as specified in §172.205. No shipper certification is required for the transportation of an empty tank car that previously had contained a hazardous material, and which has not been cleaned or purged.



**Cargo Tanks Supplied by Carrier**

[Addl. Info. Blackjack](#)



**Private Shipper Carrier**



**Empty Tank Car Containing HM Residue**

 [§172.204](#)

## Hazardous Waste Manifests

The term manifest or hazardous waste manifest means a shipping paper on which hazardous wastes are described. The hazardous waste manifest must be on EPA Form 8700-22 and prepared in a manner prescribed in the regulations. Hazardous waste manifests must accompany the shipment from pickup to destination, and copies must be given to each carrier involved in the movement of the waste and to the designated disposal facility. Some states require the use of a state-designated manifest. It is recommended that prior to accepting and/or transporting any hazardous wastes, you check with the state agency responsible for regulating those materials.

Form 8700-22 (Rev. 2001-05-01) (EPA Form 8700-22-01)

UNIFORM HAZARDOUS WASTE MANIFEST		EPA Form 8700-22 (Rev. 2001-05-01)		Page 1 of 1	
3. Generator Name and Mailing Address Jack's Printing Co 1234 Main Street Anytown, USA 12345		4. Manifest ID Number US00000000000012345678		5. State Manifest Document Number 1	
6. Transporter Name ABC Trucking		7. EPA ID Number US00000000000012345678		8. Date Received 11/11/2001	
9. Consignee Name and Site Address XYZ Disposal Corp 566 Oak Ave Anytown, USA 12345		10. EPA ID Number US00000000000012345678		11. Date of Receipt 11/11/2001	
12. Hazardous Waste Description Waste Flammable liquids, n.s.s. (Petroleum distillates and Alcohol), 3, UN1993, PC9H		13. Quantity 0.1500 m³		14. Hazardous Waste Code PC9H	
15. Date of Receipt		16. Date of Receipt		17. Date of Receipt	
18. Date of Receipt		19. Date of Receipt		20. Date of Receipt	
21. Date of Receipt		22. Date of Receipt		23. Date of Receipt	
24. Date of Receipt		25. Date of Receipt		26. Date of Receipt	
27. Date of Receipt		28. Date of Receipt		29. Date of Receipt	
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36. Date of Receipt		37. Date of Receipt		38. Date of Receipt	
39. Date of Receipt		40. Date of Receipt		41. Date of Receipt	
42. Date of Receipt		43. Date of Receipt		44. Date of Receipt	
45. Date of Receipt		46. Date of Receipt		47. Date of Receipt	
48. Date of Receipt		49. Date of Receipt		50. Date of Receipt	
51. Date of Receipt		52. Date of Receipt		53. Date of Receipt	
54. Date of Receipt		55. Date of Receipt		56. Date of Receipt	
57. Date of Receipt		58. Date of Receipt		59. Date of Receipt	
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Addl. Info. Blackjack

\$172.205  
40 CFR \$262.20

## Hazardous Waste Manifest (HWM) Preparation

The hazardous waste manifest must be carried during transportation in the same manner as a shipping paper for hazardous material. In addition to the information describing a hazardous material / hazardous waste, 40 CFR Part 262 prescribes the format of the manifest and the information required, including:

- A manifest document number
- The waste shipper/generator's name, mailing address, telephone number, and EPA identification number
- The name and EPA identification number of each waste carrier
- The name, address and EPA identification number of the designated waste disposal facility, or alternate, if any
- Each type and the number of packages
- Handwritten signatures from all parties
- The waste shipper/generator's certification

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page of
		U1S1D10101010101011	210101810	
3. Generator's Name and Mailing Address		Jack's Printing Co 1234 Main Street Anytown, USA 12345		A. State B. State
4. Generator's Phone (313) 555-1212				
5. Transporter 1 Company Name		c	US EPA ID Number	C. State
ABC Trucking		U1S1D1010101010110		D. Tran
7. Transporter 2 Company Name		d	US EPA ID Number	E. State
				F. Tran
9. Designated Facility Name and Site Address		10	US EPA ID Number	G. State
XYZ Disposal Corp 586 Oak Ave Anytown, USA 12345		U1S1D1010101010118		H. Faci
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)			12. Containers	
			No.	Type
G E N E R A T O R	a	Waste Flammable liquids, n.o.s. (Petroleum distillates and Alcohol), 3, UN1993, PGIII	0115	Drum
	b			
	c			

[Addl. Info. Blackjack](#)

 [\\$172.205](#)  
[40 CFR \\$262.20](#)



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration



# Hazardous Materials Transportation Security Requirements



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration



**Hazardous  
Materials  
Transportation  
Security  
Requirements**

## ***Overview of the Security Requirements***

- **Security plan requirements**
- **Security awareness training**
- **In-depth security training**
- **Initial and recurrent training and record keeping**
- **Security plan administration**



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration



**Hazardous  
Materials  
Transportation  
Security  
Requirements**

## ***Security Plan Requirements***

**Each person who offers for transportation in commerce or transports in commerce one or more of the hazmat listed in 172.800(b)(1-7) must develop and implement a security plan**

§172.800



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration



**Hazardous  
Materials  
Transportation  
Security  
Requirements**

## ***Required Components of a Security Plan***

- **Assessment of possible transportation security threats and appropriate measures to address assessed threats**
- **Security plans must include the following elements:**
  - **Personnel security**
  - **Unauthorized access**
  - **En route security**

§172.802



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration



**Hazardous  
Materials  
Transportation  
Security  
Requirements**

## ***Required Components of a Security Plan (cont.)***

- **Security plans must be in writing**
- **Copies must be available to employees**
- **Plans must be revised and updated**
- **All current copies must be maintained**

§172.802



U.S. Department  
of Transportation

Pipeline and  
Hazardous Materials  
Safety Administration



**Hazardous  
Materials  
Transportation  
Security  
Requirements**

## ***Security Awareness Training***

- **Hazmat employees must receive security awareness training at the next recurrent training, but no later than March 24, 2006**
- **New hazmat employees must receive security awareness training within 90 days after employment**

§172.704(a)(4)



U.S. Department  
of Transportation

Pipeline and  
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Safety Administration



**Hazardous  
Materials  
Transportation  
Security  
Requirements**

## ***Security Awareness Training Must Include:***

- **Security risks associated with hazmat transportation**
- **Methods designed to enhance hazmat transportation security**
- **How to recognize and respond to possible security threats**



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## ***In-depth Security Training***

**Each hazmat employee of a person required to have a security plan must be trained concerning the security plan and its implementation**

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## ***In-depth Security Training Must Include:***

- **Company security objectives**
- **Specific security procedures**
- **Employee responsibilities**
- **Actions to take in the event of a security breach**
- **Organizational security structure**

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## ***Hazmat Security Planning***

### **Four step process:**

- **Assess possible security risks**
- **Develop *performance standards* and identify *security measures***
- **Develop and implement a security plan**
- **Administration and training**



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## ***Required Elements of a Security Plan***

- **Personnel security**
- **Unauthorized access**
- **En route security**

§172.802



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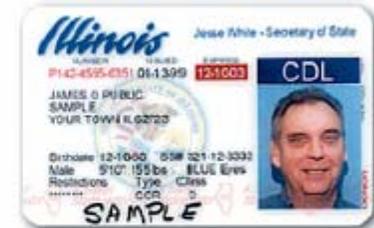
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## ***Personnel Security***

- **Verify information provided on employment applications**
- **Ensure employees are familiar with security plans**
- **Encourage employees to report suspicious incidents or events**
- **Implement routine security inspections**
- **Meet regularly to discuss security measures and improve awareness**
- **Provide information on security issues**
- **Provide awareness and in-depth security training**





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## ***Unauthorized Access***

- **Partner with local law enforcement and emergency responders**
- **Request review of facility**
- **Restrict access to facility activities and procedures**
- **Add security guards/off-hour patrols as needed**
- **Improve fencing and lighting**
- **Limit visitor access**
- **Require identification badges for staff**





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## ***Unauthorized Access (cont)***

- **Improve security procedures for pick-up and deliveries**
- **Secure hazmat in locked buildings or fenced areas**
- **Lock vehicles and secure containers when stored at facilities**
- **Use tamper resistant seals and locks**
- **Inventory on-site hazmat periodically**
- **Keep records of security incidents**
- **Report suspicious activities to local FBI or local law enforcement**





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## ***En Route Security***

- **Shippers know your carrier**
- **Identify preferred routes and alternatives**
- **Minimize stops**
- **If hazmat must be stored during transportation, ensure storage facility is secure**
- **Consider escorts or guards**





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## ***En Route Security (cont)***

- **Consider using advanced technologies**
- **Install tamper-proof seals on valves and package or container openings**
- **Establish communication system**
- **Consignees: alert shipper if shipment is late; check carrier's identity**
- **Report suspicious activities to local FBI or local law enforcement**





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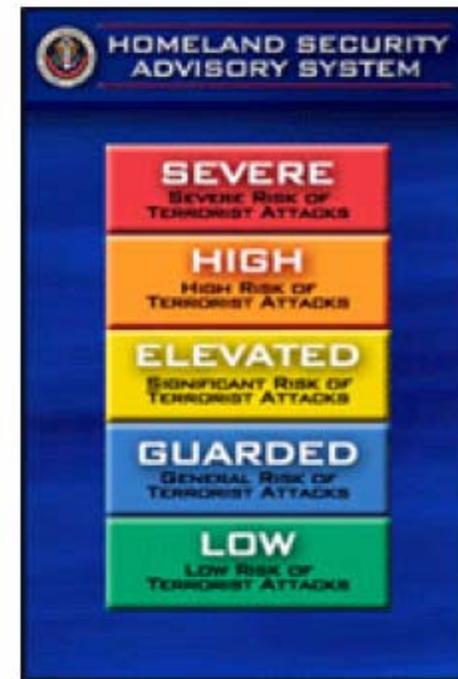
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## ***Graduated Security Planning Using HSAS***

**Specific measures put  
into place by the plan  
may vary commensurate  
with the level of the  
threat at the time**



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## ***Practical Example of Graduated Security Planning***

<b><i>HSAS Level</i></b>	<b><i>Character of Planning</i></b>
<b>Green</b> – Low	Normal operations Planning and preparation
<b>Blue</b> – Guarded	Normal operations Heightened training Heightened security
<b>Yellow</b> – Elevated	Normal operations Heightened communication/awareness Increased security presence
<b>Orange</b> – High	Normal service delivery Essential business backup Modified capital and maintenance activity Maximum sustainable security effort
<b>Red</b> – Severe	Redundant management/control Modified services delivery, essential business only Suspended capital and maintenance Maximum surge security effort



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**Got A  
Question?**

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