## **UN Coding on the outside of UN Rated Boxes**

## HAZMATPAC CAN SIMPLIFY YOUR HAZMAT SHIPPING

OUR 4GV PACKAGES ARE TESTED FOR SHIPPING GLASS, PLASTIC AND MET.
INNER CONTAINER BY AIR, GROUND OR WATER.

4 G V X 5.8 S 07 USA + AC 7777

4 = Box

G = Fiberboard

V = Tested in accordance with 178.601 (g)(2) or Special Packaging which allows variation of the inner receptacles

X = Tested to meet Packaging Group levels of I, II and III.

5.8 = Total Kilograms entire package can weigh

S = Packagings intended to contain inner recepticals or solids.

Two digit year of manufacture =

07

This is not an expiration date.

Country in which the package was manufactured = USA

Tested by a D.O.T. approved third party testing laboratory = +

Code assigned to WYLE Laboratories by the D.O.T. for markings = AC

Report number of tested package in four digit ascending sequence =

7777

### Example of UN Marking: 1H2 / Y1.8 / 100 / YR / USA / +AC

Code	Description
UN	The United Nations Coding System
1	Type of Container:  1 = Drums/Pails  2 = Barrels  3 = Jerricans  4 = Boxes  5 = Bags  6 = Composite Packagings
Н	Material of Construction:  A = Steel  B = Aluminum  C = Wood  D = Fibre  F = Reconstituted wood  G = Fiberboard  H = Plastic
2	Category Within Type: 1 = Closedhead 2 = Openhead
<b>Y</b>	Packaging Group for which container was tested:  X = Packaging Group I, II, III  Y = Packaging Group II and III  Z = Packaging Group III  Packaging Group I: Great Danger - high hazard level  Packaging Group II: Medium Danger - medium hazard level  Packaging Group III: Minor Danger - low hazard level
1.8	Density or specific gravity of material packed OR For packaging intended for Solids (powders, pills, capsules, tablets) or that have inner packaging, this marking will indicate the maximum gross mass (weight) in kilograms.
100	Hydraulic pressure in kilo-pascal (kPa) OR For packaging intended for Solids or that have inner packaging, an "S" in upper case will follow the gross mass.
08	Current Year
USA	Country where container was manufactured
+AC2518	Code for manufacturing plant

#### Hazard Classes and U.N. Markings

- A. Packages containing dangerous goods must be durably marked with the correct technical name and with distinctive labels or stencils of the labels.
- B. The International Maritime Organization (IMO) classifies dangerous goods into nine hazard classes. Diamond labels denote the hazards involved by means of colors and symbols.
- C. Some hazard classes are further subdivided into hazard divisions due to their wide scopes.

#### There are nine (9) hazard classes. Their order does not indicate degree of danger.

- Explosives This class has six divisions; in addition, this class has 13 compatibility groups that identify the kind of explosive articles and substances deemed to be compatible, which is very important when handling this type of cargo.
- 2. Gases This class comprises compressed gases, liquefied gases, gases in solution, and mixtures of one or more gases with one or more vapors of substances of other classes. This class is organized into three subdivisions based on the primary hazards of gases during transport.
- 3. Flammable Liquids This class has no subdivisions and includes liquids or mixtures of liquids, liquids containing solids in solution or in suspension that give off a flammable vapor at a temperature of not more than 60.5° C (150° F) open-cup test, normally referred to as the flash point. For example, paints, varnishing, lacquers, etc.
- 4. Flammable Solids This class is divided into three divisions and includes all flammable solids and substances liable to spontaneous combustion or substances that emit flammable gases in contact with water.
- 5. Oxidizers and Organic Peroxides This class has two divisions:
  - a. Division 5.1 Oxidizing Substances, which themselves are not necessarily combustible, but may generally cause or contribute to the combustion of other material by yielding oxygen.
  - b. Division 5.2 Organic Peroxides, which are substances that are thermally unstable and may undergo exothermic, self-accelerating decomposition. They are sensitive to impact and friction.
- 6. Toxic Materials and Infectious Substances This class has two divisions:
  - a. Division 6.1 Toxic Substances, which are liable to cause death if swallowed, inhaled or contacted by the skin.
  - b. Division 6.2 Infectious Substances, which include all those substances that are infectious to humans and/or animals, and which include microorganisms and organisms, biological products, diagnostic specimens, and medical waste.
- 7. Radioactive Materials Radioactive materials are articles or substances, which spontaneously and continuously emit certain types of radiation that can be harmful to health but which cannot be detected by any of the human senses. In this group, the principal considerations are the article activity and the transport index (TI), which is a single number, assigned to a cargo and is used to provide control of radiation exposure.
- 8. Corrosives Substances that in the event of leakage can cause severe damage by chemical action when in contact with living tissue or that can materially damage other freight or the means of transport.
- 9. Miscellaneous Dangerous Goods Articles and substances that during air transport present a danger not covered by other classes.

#### A Quick Guide Reading U.N. and DOT Hazmat Codes

#### About U.N. Marking System

The U.N. marking system was designed to quickly communicate several characteristics of Hazmat packaging, along with information on the test levels the packaging has successfully passed. Because these test levels are related to the hazard level and physical and chemical characteristics of the substance to be filled, the markings also indicate some of the properties of the materials that may be packed in each container.

#### What is the definition of Dangerous Goods (a.k.a. Hazardous Material or Hazmat)?

A dangerous good is any solid, liquid or gas that can harm people, other living organisms, property, or the environment. An equivalent term, used almost exclusively in the United States, is Hazardous Material (Hazmat). Dangerous goods may be radioactive, flammable, explosive, toxic, corrosive, biohazardous, an oxidizer, asphyxiant, pathogen, allergen, or may have other characteristics that render it hazardous under specific circumstances.

#### Who makes the laws and regulations governing transport of Hazardous Materials?

Laws and regulations governing the use, handling, shipping, and storage of hazardous materials may differ depending on the activity and status of the material. For example, one set of requirements may apply to their use in the workplace while a different set of requirements may apply to spill response, sale for consumer use, or transportation. Most countries regulate some aspect of hazardous materials.

For instance, the International Civil Aviation Organization (ICAO) has developed regulations for air transport of hazardous materials that are based upon the U.N. Model but modified to accommodate unique aspects of air transportation. Individual airline and governmental requirements are incorporated with this by the International Air Transport Association to produce the widely used IATA Dangerous Goods Regulations. Many individual nations have also structured their dangerous goods transportation regulations to harmonize with the U.N. Model in organization as well as in specific requirements.

Following the U.N. Model, the U.S. Department of Transportation (DOT) divides regulated hazardous materials into nine classes, some of which are further divided into divisions. Hazardous materials in transportation must be placarded and have specified packaging and labeling. Some materials must always be placarded, while others may only require placarding in certain circumstances.

Trailers of goods in transport are usually marked with a FOUR DIGIT U.N. code number. This number can be referenced by first responders like firefighters, police officers, ambulance and other EMS personnel who can find critical information about the material in the DOT Emergency Response Guidebook.

# Case and Pallet Quantities for Hazmat Boxes and Bottles

#### MISCELLANEOUS

STOCK#	WEIGHT	QTY PER BOX	TOTAL GROUND	QTY PER PALLET
A900	22	3	9	
C606	22-CASE OF 20	40	120	54
C700	17- CASE OF 200	400	1,200	960
C705	19-CASE OF 450	900	2,700	54 CASES
C671	38.8 CASE OF 120	120	360	54 CASES
C672	34 CASE OF 40	40	120	1,080
C674	28.4 CASE OF 120	120	360	360
CS660	19-CASE OF 48	36	108	1,440
IATA	4.5	10	30	288 (e.c
UN950	25	2	6	<u>&amp;</u>
		-	0	24

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## QUANTITIES FOR BOX GROUND & PALLET SHIPMENTS – READY MADE

CTO 0111				
STOCK#	WEIGHT	QTY PER BOX	TOTAL GROUND	QTY PER PALLET
UNE127	3.95	6	18	36
UNE157	1.67	22	66	120
UNE1427	14.61	1	3	16
UN52	2.5	22	66	120
UN57	1.46	22	66	120
UN107	6.32	6	18	36
UN115	8.5	5	15	36
UN116	8.9	5	15	36
UN127	3.95	6	18	36
UN157	1.67	22	66	120
UN166	4.0	24	72	144
UN171	6.4	6	18	48
UN176	2.0	39	117	234
UN181	2.0	19	57	171
UN183	1.3	38	114	
UN186	1.76	22	66	220
UN191	3.0	2	6	198 72
UN196	1.2	22	66	168
UN199	3.0	6	18	60
UN202	3.58	10	30	60
UN207	3.08	12	36	84
UN227	3.34	12	36	84
UN302	5.56	4	12	48
UN307	4.56	4	12	72
UN337	4.22	4	12	72
UN407	7.5	6	18	
UN417	7.6	6	18	30
UN427	8.1	6	18	30
UN507	2.6	6	18	30
UN602	13	4	12	72
UN607	6.6	4	12	36
UN632	6.7	4	12	48
UN707	2.35	22	66	36
UN1176	4.5	24		120
		<u> </u>	72	144

### QUANTITIES FOR BOX GROUND & PALLET SHIPMENTS-READY MADE

STOCK#         WEIGHT         QTY PER BOX         TOTAL GROUND         QTY PER PALLET           UN1186         2.5         9         27         81           UN1507         7.39         2         6         30           UN1527         7.25         2         6         30           UN1547         6.52         2         6         30           UN1567         8.0         2         6         30           UN1611         1.4         24         72         150           UN1621         2.73         16         48         96           UN1621         2.73         16         38         100           UN23022         1.8         21         63         100           UN2304RS         3.4         21         63         100           <	(				
UN1186         2.5         9         27         81           UN1507         7.39         2         6         30           UN1527         7.25         2         6         30           UN1547         6.52         2         6         30           UN1567         8.0         2         6         30           UN1611         1.4         24         72         150           UN1621         2.73         16         48         96           UN1641         5.32         6         18         48           UN2322         1.8         21         63         100           UN2304RS         3.4         21         63         100           UN2304TS         3.4         21         63         100           UN2304TS         3.4         21         63         100           UN4801         11.45         2         6         36           UN4804         11.45         2         6         36           UN4807         8.45         2         6         36           UN4811         9.45         2         6         36           UN4814         9.45	STOCK#	WEIGHT	QTY PER BOX	TOTAL GROUND	OTV PER PALLET
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UN8401 2.23 8 24 60 UN8601 3.10 4 12 48 PP52 1.4 24 72 105 PP57 .80 48 144 210 PP202 3.5 20 60 105 PP207 1.4 24 72 105 PP302 6.7 12 36 84					
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PP52     1.4     24     72     105       PP57     .80     48     144     210       PP202     3.5     20     60     105       PP207     1.4     24     72     105       PP302     6.7     12     36     84       PP307     3.6     48			······································		60
PP57     .80     48     144     210       PP202     3.5     20     60     105       PP207     1.4     24     72     105       PP302     6.7     12     36     84       PP307     3.6     48     48					48
PP202 3.5 20 60 105 PP207 1.4 24 72 105 PP302 6.7 12 36 84					105
PP207     1.4     24     72     105       PP302     6.7     12     36     84					210
PP302 6.7 12 36 84					105
PP307 2.6 12 36 84				72	105
77307 2.6 12 36 84				36	84
	FF3U/	2.6	12	36	84

## QUANTITIES FOR BOX GROUND & PALLET SHIPMENTS – READY MADE

STOCK#	WEIGHT	QTY PER BOX	TOTAL GROUND	QTY PER PALLET
UN4G435	2.6	30	90	150
UN2X4G435	5.2	12	36	65
UN4X435	10.2	6	18	48
UN4G435EP	2.6	30	90	150
UN2X4G435EP	5.7	12	36	65
UN4X4G435EP	10.2	6	18	48
UN4G440	2.6	30	90	
UN2X4G440	5.2	12	36	150
UN4X4G440	10.2	6	18	<u>.65</u>
UN4G450	2.6	30	90	48
UN2X4G450	5.7	12	36	150
UN4X4G450	10.2	6	18	65
UN4G450EP	2.6	30	90	48
UN2X4G450EP	5.7	12	36	150
UN4X4G450EP	10.2	6	18	65
UN4G455	6.6	4	12	48
UN4G455EP	6.6	4	12	48
UN4G456	6.6	4	12	48
UN4G457	6.6	4		48
UN4G466-B	5.9	2	12	48
UN4G466-N	5.9	2	6	48
UN4G467-N	4.6	2		48
UN4G475	6.8	4	6	48
UN4G475EP	6.8	4	12	48
UN4G480	5.1	2	12	48
UN4G481	5.2		6	48
	J.2	2	6	48
			·	

## QUANTITIES FOR BOX GROUND & PALLET SHIPMENTS – KNOCKDOWN/FLAT BOXES W/OUT PARTITIONS

STOCK#	WEIGHT	QTY PER BOX	TOTAL GROUND	QTY PER PALLET
UN165	1.3	60	180	720
UN170	1.5	50	150	720
UN175	.70	135	405	1,800
UN180	.75	90	225	1,280
UN185	.75	100	300	1,080
UN195	.80	100	300	1,350
UN198	1.3	60	180	1,200
UN700X	.70	100	300	1,080
UN1175	.80	90	270	720
UN1185	1.2	60	180	720
UN1510	2.65	30	90	180
UN4000	1.0	120	360	1,620
UN4500	2.0	40	120	720
UN4600	2.5	30	90	720
UN5100X	1.0	90	270	740
UN5200X	2.05	45	135	660
UN5400X	4.0	30	90	330
PP500	.70	140	420	1,200
PP1200	.80	100	300	900
PP1300	1.1	75	225	600
'IN182			<i>3</i> 00	1280

## QUANTITIES FOR BOX GROUND & PALLET SHIPMENTS – KNOCKDOWN/FLAT BOXES W/PARTITIONS

STOCK#	WEIGHT	QTY PER BOX	TOTAL GROUND	QTY PER PALLET
. UN50X	1.10	60	180	540
UN100X	2.4	25	75	360
UN190X	2.25	35	105	300
UN200X	2.2	25	75	360
UN220X	2.4	25	75	360
UN300X	2.7	25	75 (13	
UN310X	2.95	25	75	360
UN400X	1.85	30	90	360
UN410X	2.35	30	90	360
UN420X	1.9	30	90	
UN600X	2.3	25	75	360
UN1520X	3.25	15	45	360
UN1610	.63	100	300	180
UN1620	1.16	60	180	1,250
UN1630	3.0	40	120	1,250
UN1640	2.41	25	75	450 180
UN2300	2.15	60	180	
UN4400	4.8	40	120	360
UN7100	1.5	50	150	360
UN7200	2.5	25	75	360 360
UN7400	4.5	15	45	
UN8100	.75	100	300	180 945
UN8200	.80	100	300	
UN8400	1.0	60	180	900
O550	.85	100	300	540
O555	2.45	25	75	900
			7.5	360

tille

### QUANTITIES FOR BOX GROUND & PALLET SHIPMENTS – METAL & PLASTIC DRUMS/JERRICANS/PAILS

STOCK#	WEIGHT	QTY PER BOX	TOTAL GROUND	QTY PER PALLET
UN435	2.2	30	90	350
UN435EP	2.4	30	90	350
UN440	2.0	30	90	350
UN450	2.0	30	90	350
UN450EP	2.0	30	90	350
UN455	4.4	5	15	72
UN455EP	4.6	5	15	72
UN456	4.5	5	15	72
UN457	4.5	5	15	72
UN461-B	7.15	2	6	27
UN462-B	13.5	1	3	12
UN464-B	28	1	3	8
UN465	2.25	12	36	125
UN466-B	2.9	10	30	72
UN466-N	2.9	10	30	72
UN467-N	3.0	6	18	60
UN475	4.8	12	36	120
UN475EP	4.8	12	36	120
UN477	4.8	12	36	120
UN477EP	4.8	12	36	120
UN480	. 2.95	12	36	120
UN481	3.0	12	36	120
UN482	14	1	3	120
UN485	50	1	3	8
UN485EP	50	1	3	8
UN492	11.3	3	9	30
Z-A009	1.4	12	36	104
			30	104

PART NO.	CASE 01	CASE 02	PALLET 01	PALLET 02
C637				
C621	6		288	
C624	4		216	
C646	12		864	
C662W	1,000		16,000	
C683W	500		8,000	
C665W	250		4,000	
C667W	125		2,000	
C657	80		1,280	
C655				
C660	48		384	
C670	225		3,600	
C671	120		1,920	4
C672	40		640	
C677	144		1,728	
C677N	96		1,536	
C673	50			
C673.5				
C674	56		2,016	
C675	34		544	
C684	60		960	
C680	30		360	
C699				
C698				
C895				
C690				
C709	1200			
C708	900			
C705	450			
C700	200		9,000	
CBTS1.1	72		1,152	
CBTR1.1	72		1,152	
C621	4			
C624				
C646				

# Outer dimensions for and cell count for flat boxes

\* all slip flat

					, , ,			
	Catal							
	Page	_	Only	IIIN C. II				
	1 11/1	. Joox	Unity	UN-Code	Outer Dimensio	ns # of Ce	ells	Cell Dimensions
	10	UNS	אר	4GV/X3.9/S/14/USA/+AA695				
٠	12	UN7		4GV/X4/S/14/USA/+AC2838				3"x3"x6.5"
	1.1	UN1		4GV/X5.8/S/14/USA/+AA6898	7.5"x7.5"x12"			5.5"x5.5"x9.75"
	16	UN1		4GV/X23/S/14/USA/+AA7118				5.5"x5.5"x9.75"
	18	UN19		4GV/X23/5/14/USA/+AA7118				5:5"x5.5"x9.75"
	20	UN10		4GV/X11.2/S/14/USA/+AA702				5.5"x5.5"x9.75"
	27	UN50				1		6.75"x6.75"x17"
	7.1	UNZO		4GV/X3.9/S/14/USA/+AA6954		1		4.5"x4.5"x11"
	.!6	UN30		4GV/X5.6/S/14/USA/+AA6981		· · · · · · · · · · · · · · · · · · ·		4.5"x4.5"x11"
	.28	UNGO		4GV/X11/S/14/USA/+AA6985	12"x12"x12.5"			4.5"x4.5"x11"
	10	UN22		4GV/X16/S/14/USA/+AA7332	18"x12"x12.5"			4.5"x4.5"x11"
	12	UN31		4GV/X5.6/5/14/USA/+AA6981	12.5"x8.25"x12.5	6		2.5"x2.5"x10.75"
	(.)	UN630		4GV/X11/S/14/USA/+AAG985	12"x12"x12.5"	9	1	2.5"x2.5"x10.75"
	165	UN500		4GV/X16/S/14/USA/+AA7332	18"x12"x12.5"	15		2.5"x2.5"x10.75"
	133	UN150		4GV/X9/S/14/USA/+AA7095	11.75"x10.25"16.	5" 1	7	4.5"x4.5"x11"
	40	UN500		4GV/X23/S/14/USA/+AA7118	16.5"x16.5"x17"		7	4.5"x4.5"x8.25"
	42	UN152		4GV/X9/S/14/USA/+AA7095	11.75"x10.25"16.5	5" 4		.5"x2.5"x10.75"
	-14	UN480		4GV/X23/S/14/USA/+AA7118	16.5"x16.5"x17"	9		1.5"x4.5"x8.75"
ł	.44	UN400		4GV/X12.3/S/14/USA/+AC2844		1	$\top$	11"x11"x13"
t		UN410		4GV/X11/S/14/USA/+AA6908	12.5"x12.5"x7.5"	25	$\top$	1.5"x1.5"x4"
1	45	UN420	- 1	ICU/Van Ic Ia a Isaa I		36	7	
ľ		1311720.	^ -	GV/X11/S/14/USA/+AA6908	1.2.5"x12.5"x7.5"·	72	11	375"x1.375"x3"
ŀ	46	UN230	- 1	E /// 12 / E / 12 / 12 / 12 / 12 / 12 /				
ŀ		UN8100	- 14	G/X11/S/14/USA/+AA6908	8"x8"x11"	4	1	
ı	47	UN8200		ENE CIA AND A		.1.	1	
-	47	UN8400		G/X5/S/14/USA/+AA7096	5.75"x5.75"x10.75'	' 2		
	47	UN8600	4	G/X9/S/14/USA/+AA7114	9.75"x9.75"x6"	4		
	48	UN1610	41	G/X10.3/S/14/USA/+AA7645	14.25"x9.5"x6"	6	1	
	18	UN1620	····	G/Y7.5/S/14/USA/+AA6973	7.5"x7.5"x9"	1		
	48	UN1640		G/Y16/S/14/USA/+AA6869	14.25"x7.25"x8.75"	2	1	
	49	UN7100	140	G/Y29/S/14/USA/+AA6973	14.375"x14.375"x9"	4	1	
	49	UN7200	40	5/X8/S/14/USA/+AA7671	10"x10"x9"	1	1-	
	49	UN7400	40	5/Y19/S/14/USA/+AA7617	18.25"x10"x9"	2	1	
-	1,()	- <del></del>	40	5/Y39/S/14/USA/+AA7646	19.25"x19.25"x9"	4	1	
	50	UN190	46	/Y30/S/14/USA/+AA6937	12.5"x12.5"x13.25"	4	<del>                                     </del>	
_	50	UN195		/Y9/S/14/USA/+AA6955	5.75"x6.75"x13.25"	1	<del>                                     </del>	
		UN2300		/X10/S/14/USA/+AA7128	8"x8"x11"	4		
_	50	UN198		/Y18/5/14/U5A/+AA6980	14"×11"×11"	12		
_	51	UN182	4G	/X6/S/14/USA/+AA6859	4.75"x7.25"x11.5"	1		
	5.1	UN180	4G,	/X12/S/14/USA/+AA6859	9"x7.25"x11.5"	2		
	51	UN165		/Y27/S/14/USA/+AA6861	9"x14"x11.5"			<del></del>
		UN170	4G/	/Y33/S/14/USA/+AA6860	14"×13"×11"	4 v		
	51	UN175	4G/	X6/S/14/USA/+AA7570	8.25"x5.75"x7.5"	6		
								l

Catalog Page	Box Only	UN-Code	Outer Dimensions	# of Cells	Cell Dimensions
51	UN1175	4G/X11.9/S/14/USA/+AA7570	8.25"x11.25"x7.5"	12	cen billiensions
51	UN185	4G/X10.2/S/14/USA/+AA7570	9.675"x7.75"x8.5"	6	
51	UN1185	4G/X22/S/14/USA/+AA7570	9.675"x15.25"x8.5"	12	
52	UN4000	4G/X9/S/14/USA/+AA****	7.75"x10.25"x14.25"	<del></del>	7.25 "x 9.50" X/3,
52	UN4200	4G/X18/S/14/USA/+AA****	7.3/4 × 10.25" × 14.25"		
53	UN4400	4G/X36/S/14/USA/+AA****	14.2"x14.2"x9.625	4-1G	7.25 "x9,50" x 13
54	UN4500	4G/X34/S/14/USA/+AA****	12"x12"x15"	OH-5G	
54	UN4510	4G/X34/S/14/USA/+AA****	12"x12"x15"	TH-5G	
55	UN4600	4G/X36/S/14/USA/+AA****	13"x13"x16"	1H2 &1H1	
55	UN4630	4G/X36/S/14/USA/+AA****	13"x13"x16"	3H1	
VERPACK					
56	0550	N/A			
56	0555	N/A			

## **HM Packaging Glossary**

### Hazardous Materials Packaging Glossary

#### CFR-49 (Code of Federal Regulations - Transportation)

A codified set of regulations formulated by the U.S. Dpartment of Transportation (DOT) governing the packaging and shipping of hazardous materials. Latest revision is October 1, 1996.

#### **COMBINATION PACKAGING**

One or more inner packagings used in combination with a non-bulk outer packaging. This does not include a Composite Packaging.

#### COMPOSITE PACKAGING

A packaging consisting of an outer packaging and an inner receptacle. It is constructed so that the inner receptacle and outer packaging form an integral packaging. Once assembled it remains a single unit and is filled, stored, transported, and emptied as such.

#### D.O.T.

Department of Transportation.

#### HM-181

A set of the proposed new packaging and shipping regulations which since have been incorporated into CFR-49. This document is no longer applicable.

#### HAZARD CLASSIFICATION

Materials are grouped as to the specific hazard they present. The groups are Explosives, Gases, Flammable Liquids, Flammable Solids, Oxidizers, Poisonous Materials, Corrosive Materials and Miscellaneous.

#### HAZARDOUS MATERIAL

A substance having properties capable of having adverse affects on the health or safety of individuals.

#### HAZARDOUS MATERIALS TABLE

An alphabetical listing of the hazardous materials found in CFR-49, section 172.101. It lists the product by proper shipping name, and its UN number. It lists the hazard classification, packing group, and the sections in CFR 49 that apply to the packaging and shipping of a specific product.

#### INNER PACKAGING

A packaging for which an outer packaging is required. This does not include the inner receptacle of a composite packaging.

#### **JERRICANS**

Metal or plastic containers of rectangular or polygonal cross-section.

#### LIMITED QUANTITY

The quantity of hazardous material that may be shipped in packaging that is not UN certified. The quantity will vary depending on the specific product shipped, the mode of transportation, and the country the shipping occurs.

#### **MASS**

The maximum combined mass (weight) of inner packagings, or single packagings intended for solids, and the contents thereof.

#### **MSDS**

Material Safety Data Sheet. It is provided by manufacturers of hazardous materials, and describes the properties and nature of the material.

#### **OUTER PACKAGING**

The outermost packaging or enclosure of a combination or composite packaging along with any other cushioning or absorbent material and other components necessary to protect and contain inner packagings or receptacles.

#### **OVERPACK**

An enclosure used to provide protection or convenience in handling of a package or to consolidate two or more packages. The package being overpacked must be eligible to be transported by itself, and properly prepared for shipment with the proper markings and labeling. The marking and labeling on each of the packages being overpacked must be reproduced on the outside of the overpack unless visible from outside of the overpack.

#### **PACKAGE**

The end result of the packaging process, which includes all of the hazardous contents, and all of the packagings properly closed and prepared for proper marking and labeling.

#### **PACKAGING**

Containers, receptacles and all components necessary for the container or receptacle to perform its containment function and meet the requirements of CFR 49, parts 171-180. In general, these receptacles and components and other requirements are contained within CFR 49, part 173.

#### PACKING GROUP

The degree of hazard. Within each hazard classification there are three packing groups (I, II, and III). Packing Group I represents the greatest hazard, Group II a moderate hazard, and Group III the least hazard. In the marking of packagings, Group I corresponds to "X", Group II corresponds to "Y", and Group III corresponds to "Z".

#### PERFORMANCE ORIENTED PACKAGING

A set of criteria establishing the acceptability of a packaging to be used for hazardous materials based on its performance in established test procedures.

#### SINGLE PACKAGING

A single receptacle into which material is loaded other than a combination or bulk packaging. A drum is an example of a single packaging.

#### **UN MARKING**

The marking applied to a certified packaging indicating the Packing Group, and the severity of the testing performed.

#### UN PACKAGING

A packaging approved and certified for hazardous materials that has passed all required performance tests.

#### **UN RECOMMENDATIONS**

A set of recommendations proposed by the U.N. Panel of Experts regarding the packaging and shipping of hazardous materials. These are only recommendations, but have been incorporated into the regulations of most countries and carrier organizations. They form the basis of HM-181 and the changes to CFR-49.

# Common mistakes made when shipping Hazardous Materials

#### COMMON HAZARDOUS MATERIALS SHIPPING MISTAKES

- MODES OF TRANSPORTATION: Hazardous materials shippers need to understand the different regulatory requirements associated with different modes of transportation (air, highway, water, and rail). For example, consider the scenario in which a laboratory ships samples on dry ice with a ground courier, but now needs to use an express air service to deliver a similar package. The shipper might assume that the requirements for shipping via highway and air are the same, but they would be wrong. Dry ice and many common specimens are not regulated when shipped by highway, but are regulated when shipped by air. The offeror using air transport must meet both applicable U.S DOT and IATA (International Air Transport Association) requirements.
- PRESUMED NON-HAZARDOUS: Common items that are potentially hazardous are often offered for transport by employees that are not considered "hazmat employees." These shipments may be flying under the radar of the environmental, health and safety department and if so, likely have not been examined for compliance implications. Lithium batteries, for example are regulated by the DOT as a hazardous material for both ground and air. Below are some examples of items you may not think are hazardous:

Dry Ice

Devices with fuel cells

Electronic equipment/computer equipment with lithium batteries

Charged capacitors

Devices with fuel cells

Engines with fuel

FAILIURE TO PACKAGE AND LABEL HAZARDOUS MATERIAL FOR SHIPMENT: With millions of
tons of hazardous materials in transportation every day, it is no surprise that many hazmat
packages are found to be packaged and /or labeled incorrectly. It is the requirement of the
shipper to ensure that proper packaging and labels are in place for shipment. If you aren't sure
of your responsibility as a shipper, just read the certification statement near your signature the
next time you sign a shipping paper.

The HAZMATPAC quality statement is as follows:

Quality is achievable only through a team effort of working toward our common goal of excellence in all facets of our business.

We appreciate your inquiry and look forward to supplying your company with high quality products, a broad assortment and excellent service.

#### **CUSTOM BOX DEVELOPMENT**

Hazmatpac has the unique capability to help our customers with problematic and complex hazardous material packaging needs.

We just need a few data points such as, UN ID number, mode of transport, and enough inner packages to develop one prototype. We respond quickly with a prototype design. Upon approval, we will test and have the package certified.

The real advantage to a custom box, is that you can customize the printing. Add you own artwork, logo or exterior notes.

Please call us today to talk about the values of a custom box. We look forward to expediting you solution.

### **HAZMATPAG®**

CERTIFIED PACKAGING
7905 BLANKENSHIP DRIVE
HOUSTON, TEXAS 77055
www.HAZMATPAG.com
713.923.2222
1.800.923.9123
FAX 713.923.1111

January 28, 2021

MS. CINDY DALE HEXION INC 333 NEILS EDDY ROAD RIEGELWOOD, NC 28456

Dear MS. DALE:

Subject: Custom Box Development

Thank you for your inquiry about custom certified packaging. HAZMATPAC is very interested in helping you solve your problem as quickly as we can. We request you furnish:

- a) The UN I.D. Numbers(s) for the materials to be shipped.
- b) Size(s) and number of inner packages per outer box.
- c) UN Packing Group(s) and specific gravity for the materials to be shipped.
- d) Mode of transportation: air passenger or cargo, air cargo only, ground, water.
- e) Estimate of annual volume requirements.
- f) Estimate of typical order quantity.
- g) Enough inner packages to develop one prototype box.
- h) A sample of the current packaging if available.

We will respond quickly with a prototype design. Pending your acceptance we will proceed with testing and certification. Printing will be finalized upon your approval and manufacturing will proceed per your purchase order.

Please fax me the initial information and send the physical samples to my attention. I look forward to expediting your solution.

Respectfully,

ALAN L. MCNAIR ext. 218

#### Why HAZMATPAC?

The world's most rigid testing standards, the highest quality and stellar customer service make HAZMATPAC your best choice for U.N. Certified, DOT Approved containers, packaging and storage.

The HAZMATPAC Team takes great pride in providing unparalleled product quality and highly personalized customer service. Our depth of knowledge and experience in the specialized field of hazardous material packaging is unmatched and our people are focused on nothing else. They don't deal in general shipping containers or everyday storage units. Instead, our dedicated staff concentrates 100% of their time and energy on doing one thing and doing it better than anyone else.

#### SETTING THE STANDARD - Innovation and Industry Leadership for Nearly 30 Years

Using innovative ideas and the most advanced technology available, our designers, product testers, manufacturing pros, sales representatives and shipping crews have been raising the bar for quality and setting new industry standards for nearly twenty years. Their efforts to improve every aspect of our business are ongoing and their total commitment to excellence is perpetual.

#### We Minimize Your Risk by Maximizing Safety

Shipping hazardous material isn't just dangerous, it also carries serious financial and legal risks. At HAZMATPAC, we go to extraordinary lengths to assure that each and every one of our high-quality products is fully tested for regulatory compliance as well as efficiency, convenience and durability - so you have less to worry about.