



Bill of Lading

404

EDI Mapping

Radioactive Material

Canadian National Railway - Electronic Commerce

The enclosed documentation covers information required to handle Radio active material.

Canadian National Railway - Electronic Commerce Basic 404 (Rail Bill of Lading) Requirements

CN is currently using the X12 Standard Version/Release 7010/RAIL

Sample EDI Transmission with required data for the 404 Transaction Set on Dangerous Goods traffic destined to a domestic destination.

ISA*00* *00* *ZZ*GENERIC *02*CN *180112*145
4*U*00701*000000012*0*P*^
GS*SR*GENERIC*CN*20180112*1454*000000012*X*007010
ST*404*736645001
BX*00*X*PP*EF1-12-011-008*CN*L*B*N****N*2
BNX*M**S
M3*R*20180112*1454
N9*BM*EF1-12-011-008**20180112*145400*ET
N7*ESUU*100255*36925*N*5000*****CN****2000*M****102
F9**MONROE*MI
D9**CLIVE*UT
N1*SH*ABC SHIPPER CO
N3*6400 NORTH DIXIE HIGHWAY
N4*ANYTOWN*MI*48166
N1*CN*MY CONSIGNEE
N3*123 MAIN STREET
N4*ANYTOWN*UT*84029
R2*CN*S*CHGO
R2*UP*1
LX*1
L5*1*RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY*4929137*T
L5*1*UN 3321, RADIOACTIVE MATERIAL,LOW SPECIFIC ACTIVITY
L5*1*(LSA-II)
L0*1***16749*N***1*CNT
LS*LH1
LH1*CH*1*UN3321**4929137*KG*16749
LH2*7*P
LH3*RADIOACTIVE MATERIAL, LOW*D
LH3*SPECIFIC ACTIVITY*D
LH3*(LSA-II)*D
LFH*RAM*RADIONUCLIDES: CO-60,*CS-137, SR-90, NI-63 **4N*165
LFH*RAM*RADIONUCLIDES: C-14, H-3,*I-129, TC-99.
LFH*RAM*SOLID/METALOXIDES.*MARKING: RADIOACTIVE LSA,
LFH*RAM*LABEL:NONE EXCLUSIVE USE*SHIPMENT. CUSTOMER
LFH*RAM*ATTACHMENTS. EXCLUSIVE*USE INSTRUCTIONS. AND ERG
LFH*RAM*162. CONVEYING FLATCAR:*GIMX 516209
PER*HM**TE*(888) 586-5263
LE*LH1
LH6*SHPR CERT JOE Q. SHIPPER
SE*64*736645001
GE*1*4736645
IEA*1*004736645

ISA Segment: Interchange Control Header

**ISA*00* *00* *ZZ*GENERIC *02*CN *180112*145
4*U*00701*000000012*0*P**^**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
ISA01	Authorization Information Qualifier	I01	ID	2/2
ISA02	Authorization Information (ten spaces)	I02	AN	10/10
ISA03	Security Information Qualifier	I03	ID	2/2
ISA04	Security Information (ten spaces)	I04	AN	10/10
ISA05	Interchange ID Qualifier	I05	ID	2/2
ISA06	Interchange Sender ID (GENERIC - fill out field with spaces)	I06	AN	15/15
ISA07	Interchange ID Qualifier (If RR SCAC use 02)	I05	ID	2/2
ISA08	Interchange Receiver ID (CN- fill out field with spaces)	I07	AN	15/15
ISA09	Interchange Date (YYMMDD)	I08	DT	6/6
ISA10	Interchange Time (HHMM)	I09	TM	4/4
ISA11	Repetition Separator (Suggest “^”)	I65		1/1
ISA12	Interchange Control Version Number (Value 00701)	I11	ID	5/5
ISA13	Interchange Control Number (a control number assigned by sender)	I12	N0	9/9
ISA14	Acknowledgment Requested (0 = none requested, 1= requested)	I13	ID	1/1
ISA15	Usage Indicator (P = Production, T = Test)	I14	ID	1/1
ISA16	Component Element Separator (Suggest “:”)	I15		1/1

GS Segment: Functional Group Header

GS*SR*GENERIC*CN*20120809*1406*000000012*X*007010

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
GS01	Functional Identifier Code (SR = Rail Carrier Shipment Information)	479	ID	2/2
GS02	Application Sender's Code (Customer's sender ID)	142	AN	2/15
GS03	Application Receiver's Code (CN = Canadian National)	124	AN	2/15
GS04	Date (CCYYMMDD)	373	DT	8/8
GS05	Time (HHMM)	337	TM	4/6
GS06	Group Control Number (Assigned number originated and maintained by the sender)	28	N0	1/9
GS07	Responsible Agency Code (X = Accredited Standards Committee X12)	455	ID	1/2
GS08	Version / Release / Industry Identity (CN is using version 007010 of the X12 EDI Standards)	480	AN	1/12

ST Segment: Transaction Set Header

To indicate the start of a transaction set and to assign a control number

ST*404*736645001

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
ST01	Transaction Set Identifier Code (404 = Rail Carrier Shipment Information (Bill of Lading))	143	ID	3/3
ST02	Transaction Set Control Number (Sequential control number generated by Customer)	329	AN	4/9

BX Segment: General Shipment Information

BX*00*X*PP*EF1-12-011-008*CN*L*B*N**N*2**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
BX01	Transaction Set Purpose Code (00 = Original)	353	ID	2/2
BX02	Transportation Method/Type Code (R = Rail)	91	ID	1/2
BX03	Shipment Method of Payment (PP = Prepaid, CC = Collect)	146	ID	2/2
BX05	Standard Carrier Alpha Code (CN = CN Rail)	140	ID	2/4
BX06	Weight Unit Code (L = Pounds, K= Kilograms)	188	ID	1/1
BX07	Shipment Qualifier (B = Bill of Lading for Individual Shipment)	147	ID	1/1
BX08	Section Seven Code (N=not in effect)	226	ID	1/1
BX12	Confidential Billing Request Code (N=not applicable)	199	ID	1/1
BX13	Goods and Services Tax Reason Code (2=Outbound goods and services tax declaration)	714	ID	1/1

BNX Segment: Rail Shipment Information

BNX*MS**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
BNX01	Shipment Weight Code (A = Wgt Agreement Number) (M = Manifest Weight) (N = Per Car Charge) (R = Rail Carrier Scale)	460	ID	1/1
BNX03	Billing Code (S = Single Shipment Billing)	11	ID	1/1

M3 Segment: Release

Indicates whether shipment is to be released for movement when the transmission is received or will be released through other means.

M3*R*20180112*1454

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
M301	Release Code (R = Release with Shipment Information)	132	ID	1/1
M302	Release Date (CCYYMMDD)	373	DT	8/8
M303	Release Time (HHMM, 24 hour clock 0001-2359)	337	TM	4/6

N9 Segment: Reference Number

Allows Reference Numbers to be sent to CN. At least one N9 containing a Bill of Lading number must be included. This number will be included on all other documents such as Freight Invoice and Remittance/Payment.

N9*BM*EF1-12-011-00820180112*145400*ET**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
N901	Reference Number Qualifier (BM = Bill of Lading number) (WM = Weight Agreement Number) (PO = Purchase order Number)	128	ID	2/3
N902	Reference Number (Max 15 characters for B/L # (BM))	127	AN	1/30
N904	Date (CCYYMMDD, required for B/L (BM))	373	DT	8/8
N905	Time (HHMM, 24 hour clock 0001-2359 or HHMMSS or HHMMSSD or HHMMSSDD H=hours 00-23 M=minutes 00-59 S=seconds 00-59 DD=decimal seconds in tenths and hundredths 00-99)	337	TM	4/8
N906	Time Code (ET = eastern time)	623	ID	2/2

N7 Segment: Equipment Details

N7*ESUU*100255*36925*N*5000***CN****2000*M****102**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
N701	Equipment Initial	206	AN	1/4
N702	Equipment Number	207	AN	1/15
N703	Weight	81	R	1/10
N704	Weight Qualifier (E = Estimated Weight) (N = Net Weight)	187	ID	1/2
N711	Equipment Description Code (RR = Railcar } (CN = container)	40	ID	2/2
N715	Equipment Length	567	N0	4/5
N716	Tare Qualifier Code (M = marked)	571	ID	1/1
N720	Height	65	R	1/8

F9 Segment: Origin

Indicates the origin of the shipment, the point from which it is shipped. Spelling should be in accordance with that listed in the Standard Point Location Code (SPLC) standard available from the National Motor Freight Tariff Association (USA) or the National Transportation Agency (Canada). CN can provide spellings for your stations.

F9MONROE*MI**

Data Seq	Element Name	Data Element	Data Type	Characters Min/Max
F902	Origin Station	19	AN	2/30
F903	State or Province Code	156	ID	2/2

D9 Segment: Destination

Indicates the destination of the shipment, the point at which it will be unloaded or where the transportation responsibility reverts to the consignee. Spelling should be in accordance with that listed in the Standard Point Location Code (SPLC) standard available from the National Motor Freight Tariff Association (USA) or the National Transportation Agency (Canada). CN can provide spellings for your stations.

D9CLIVE*UT**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
D902	Destination Station	19	AN	2/30
D903	State or Province Code	156	ID	2/2

N1 Segment: Name

Associated to the N3 and N4 segments below. N1, N3 and N4 segments are repeated for the Consignee and any other Additional Parties to the shipment.

**N1*SH*ABC SHIPPER CO
N3*6400 NORTH DIXIE HIGHWAY
N4*ANYTOWN*MI*48166
N1*CN*MY CONSIGNEE
N3*123 MAIN STREET
N4*ANYTOWN*UT*84029**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
N101	Entity Identifier Code (SH = Shipper) (CN = Consignee) (C1 = Care of Party) (PF = Payer of Freight)	98	ID	2/3
N102	Name	93	AN	1/35

N3 Segment: Address

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
N301	Address Information	166	AN	1/30
N302	Address Information	166	AN	1/30

N4 Segment: City

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
N401	City Name	19	AN	2/30
N402	State or Province Code	156	ID	2/2
N403	Postal Code	116	ID	3/15

R2 Segment: Route Information

One R2 segment for each railroad in the route. CN can provide route information for your shipments (ie: Railroad SCAC's and junctions).

**R2*CN*S*CHGO
R2*UP*1**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
R201	Standard Carrier Alpha Code (SCAC) (CN = Canadian National etc)	140	ID	2/4
R202	Routing Sequence Code (S = Origin Carrier, Shipper's Routing (Rail)) (1 = first carrier after origin carrier)	133	ID	1/2
R203	City Name (R260)	19	AN	2/30

LX Segment: Assigned Number

LX*1

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
LX01	Assigned Number (Number assigned for differentiation within a transaction set)	554	N0	1/6

L5 Segment: Commodity Description

CN can provide Standard Transportation Commodity Codes (STCC) for your commodities. The commodity code is required only on the first L5 segment. Additional L5 segments can be used to provide additional description of lading.

L5*1*RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY*4929137*T
L5*1*UN 3321, RADIOACTIVE MATERIAL,LOW SPECIFIC ACTIVITY
L5*1*(LSA-II)

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
L501	Line Number	213	N0	1/6
L502	Commodity Description	79	AN	1/50
L503	Commodity Code (7 digit Standard Transportation Commodity Code (STCC)) (ie 4929137 = Radioactive Material, Low Specific Activity (LSA-II))	22	AN	1/30
L504	Commodity Code Qualifier (T = Standard Transportation Commodity Code (STCC))	23	ID	1/1

L0 Segment: Line Item, Quantity and Weight

L0*1*16749*N***1*CNT**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
L001	Lading Line Item Number	213	N0	1/6
L004	Weight	81	R	1/10
L005	Weight Qualifier (E = Estimated Weight) (N = Net Weight)	187	ID	1/2
L008	Lading Quantity	80	N0	1/7
L009	Packaging Form Code (CNT = container))	211	ID	3/3

LS Segment: Loop Header

LS*LH1

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
LS01	Loop Identifier Code	447	AN	1/4

LH1 Segment: Hazardous Identification Information

LH1*CH*1*UN33214929137*KG*16749**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
LH101	Unit or Basis for Measurement Code (TK=Tank CH = container C4=Carload)	355	ID	2/2
LH102	Lading Quantity	80	N0	1/7
LH103	UN or NA Identification Code	277	ID	6/6
LH105	Commodity Code	22	AN	1/30
LH106	Unit or Basis for Measurement Code (LB=Pound KG = kilograms)	355	ID	2/2
LH107	Quantity	380	R	1/15

LH2 Segment: Hazardous Classification Information

LH2*7*P

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
LH201	Hazardous Classification	215	ID	1/30
LH202	Hazardous Class Qualifier (P=Primary)	983	ID	1/1

LH3 Segment: Hazardous Material Shipping Name

LH3*RADIOACTIVE MATERIAL, LOW*D

LH3*SPECIFIC ACTIVITY*D

LH3*(LSA-II)*D

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
LH301	Hazardous Material Shipping Name	224	AN	1/25
LH302	Hazardous Material Shipping Name Qualifier Qualifier indicating the source (regulatory) of the proper shipping name. C = Canadian Shipping Name D = USA Shipping Name	984	ID	1/1

****Note information placed in data element LH301 that exceeds the maximum size of the data element must break on the complete word or number boundaries when placing overflow into following iterations of the data element.**

LFH Segment: Freeform Hazardous Material Information

**LFH*RAM*RADIONUCLIDES: CO-60,*CS-137, SR-90, NI-63 **4N*165
 LFH*RAM*RADIONUCLIDES: C-14, H-3,*I-129, TC-99.
 LFH*RAM*SOLID/METALOXIDES.*MARKING: RADIOACTIVE LSA,
 LFH*RAM*LABEL:NONE EXCLUSIVE USE*SHIPMENT. CUSTOMER
 LFH*RAM*ATTACHMENTS. EXCLUSIVE*USE INSTRUCTIONS. AND ERG
 LFH*RAM*162. CONVEYING FLATCAR:*GIMX 516209**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
LFH01	Hazardous Material Shipping Information Qualifier (RAM= Radioactive Material Data)	808	ID	3/3
LFH02	Hazardous Material Shipment Information	809	AN	1/25
LFH03	Hazardous Material Shipment Information	809	AN	1/25
LFH04	Hazard Zone Code	1023	ID	1/1
LFH05	Unit or Basis for Measurement Code 1T = Terabecquerel 4N = Megabecquerel G4 = Gigabecquerel R2 = Becquerel	355	ID	2/2
LFH06	Quantity Activity of Radioactive Material (Numeric value of quantity)	380	R	1/15

PER Segment: Hazardous Communications Contact

PER*HMTE*(888) 586-5263**

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
PER01	Contact Function Code (CN=Canadian Hazardous Material Contact Qualifier) (HM=USA Hazardous Material Contact Qualifier)	366	ID	2/2
PER02	Name If the emergency response telephone Number shown in PER04 is an emergency provider (e.g Chemtrec) the PER02 must identify the company (offerer) by name or contract number	93	AN	1/60
PER03	Communication Number Qualifier (TE=Telephone)	365	ID	2/2
PER04	Communication Number	364	AN	1/25

LE Segments: Loop Trailer

LE*LH1

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
LE01	Loop Identifier Code	447	AN	1/6

LH6 Segments: Hazardous Certification

Provides the name of the person who prepared, and certifies to its accuracy, the documentation of the regulated commodity.

LH6*SHPR CERT JOE Q. SHIPPER

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
LH601	Free-form name (limited to 35 characters)	93	AN	1/60

SE Segment: Transaction Set Trailer

SE*64*736645001

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
SE01	Number Of Included Segments (Includes ST and SE segments)	96	N0	1/10
SE02	Transaction Set Control Number (Repeated from ST segment ST02)	329	AN	4/9

GE Segment: Functional Group Trailer

GE*1*4736645

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
GE01	Number Of Transaction Sets Included	97	N0	1/6
GE02	Group Control Number (Repeated from GS segment GS06)	28	N0	1/9

IEA Segment: Interchange Control Trailer

IEA*1*004736645

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
IEA01	Number of included Functional Groups	I16	N0	1/5
IEA02	Interchange Control Number (Same number as ISA13)	I12	N0	9/9

RAM LSA/SCO

Required Information Reference Sheet

REVISED – August, 2013



Shipping Paper

GCCX 200010

MHFU 2296

UN2912, Radioactive Material, Low Specific Activity (LSA-I), 7, Fissile Excepted, LSA-I, Solid U/Th Oxides, Am-241, Pu-238, Pu-242, Pu-239/240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, 441.3624 MBq, 50,900 lbs

MHFU 2269

UN2912, Radioactive Material, Low Specific Activity (LSA-I), 7, Fissile Excepted, LSA-I, Solid U/Th Oxides, Am-241, Pu-238, Pu-242, Pu-239/240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, 445.0457 MBq, 50,620 lbs

“Exclusive Use”

Specific Instructions

- No additional material may loaded/off loaded between origination and destination
- If delayed other than incidental to normal transportation notify XXXXXXXXXXXX
- In case of accident or emergency notify XXXXXXXXXXXX
- Do Not Hump

ALWAYS REQUIRED §172.202 (a)(1) Identification Number
ALWAYS REQUIRED §172.202 (a)(2) Proper Shipping Name
ALWAYS REQUIRED §172.202 (a)(3) Hazard Class
 (above must be in sequence)
ALWAYS REQUIRED §172.202 (a)(5) Total Activity or Weight
ALWAYS REQUIRED §172.202 (a)(7) Number & Type Packages

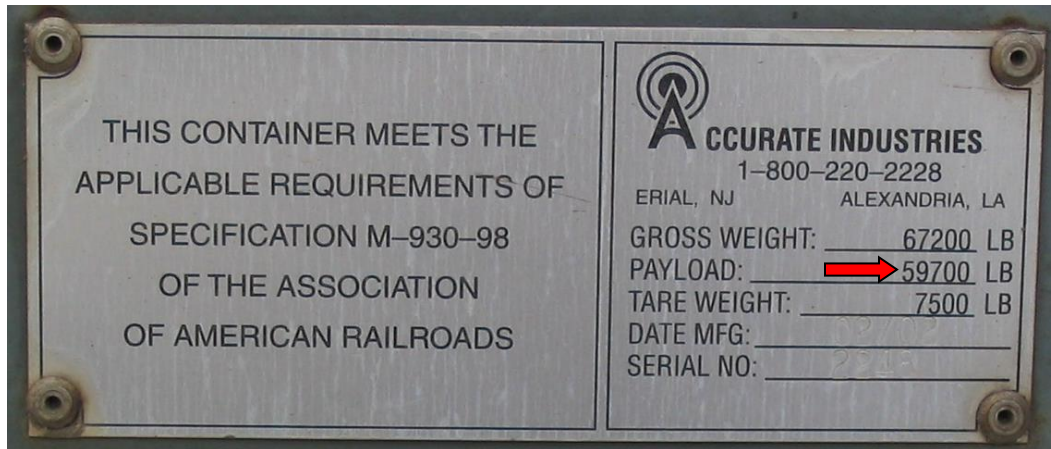
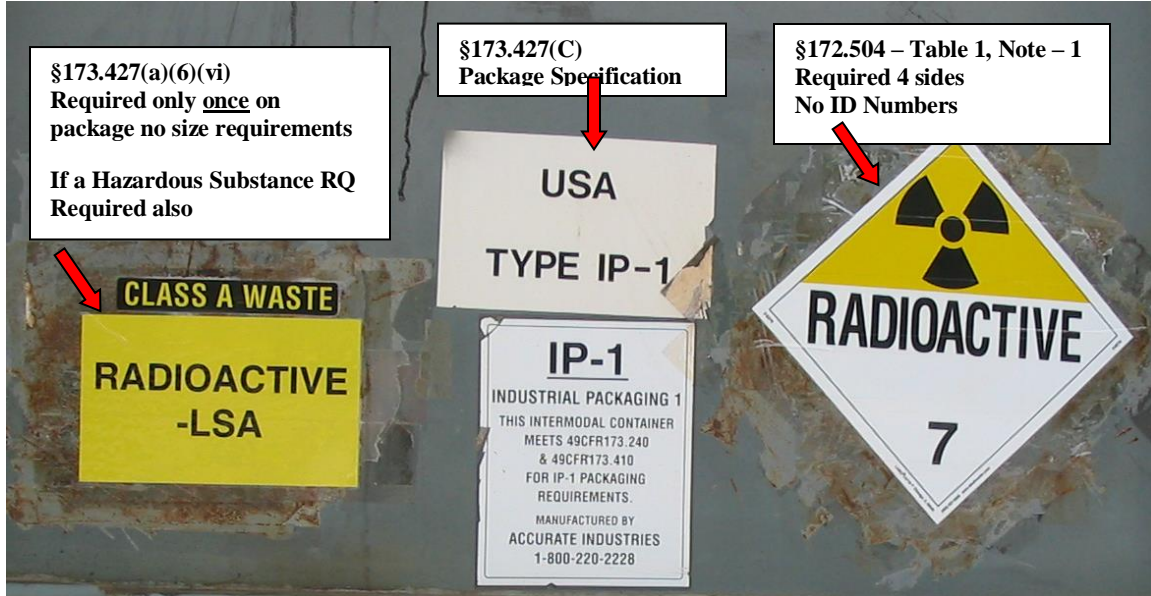
WHEN APPLICABLE §172.203 (c) Hazardous Substance “RQ”

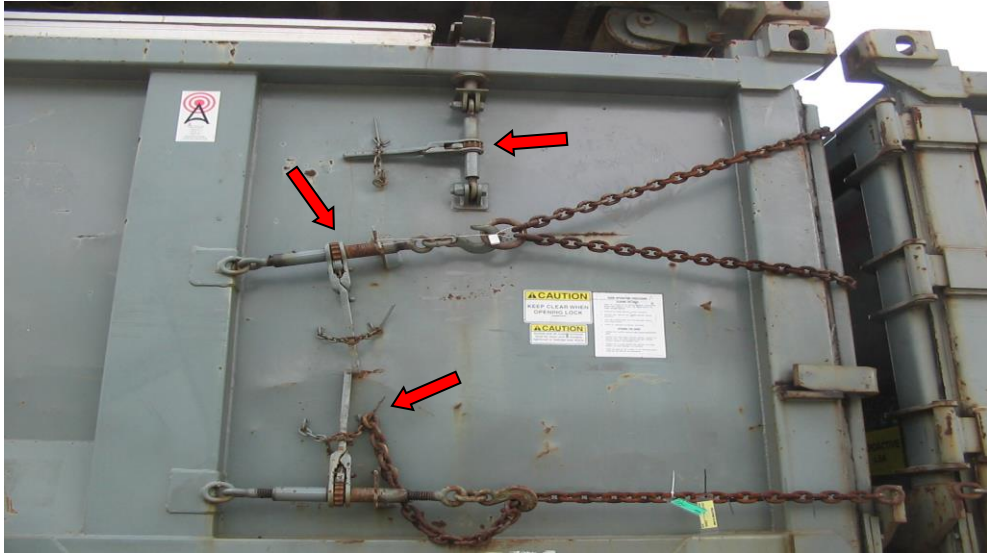
ALWAYS REQUIRED §172.203 (d)(1) Name of Radionuclide
ALWAYS REQUIRED §172.203 (d)(2) Physical and Chemical Form
ALWAYS REQUIRED §172.203 (d)(3) Activity in each Package

WHEN APPLICABLE §172.203 (d)(4) Category of Label
WHEN APPLICABLE §172.203 (d)(5) Transport Index
WHEN APPLICABLE §172.203 (d)(6) “Fissile Excepted” (when required by §173.453), Pu-239, Pu-241, U-233, U-235
WHEN APPLICABLE §172.203 (d)(7) DOE/NRC Package Type (when required)
WHEN APPLICABLE §172.203 (d)(8) IAEA Package Type (when package is in a foreign made package)
WHEN APPLICABLE §172.203 (d)(9) “Exclusive Use” notation (when designated)

WHEN APPLICABLE §172.203 (d)(10) "HRCQ" (Highway Route Controlled Quantity)
WHEN APPLICABLE §173.427 (a)(6)(iv) Specific Instructions for Exclusive Use Shipments

Markings





Note: §173.428 - Empty Class 7 Package, require UN & ID number only once, remove all other labels and apply an Empty label



Federal Railroad Administration - Hazardous Materials Division