



**Bill of Lading  
404  
EDI Mapping**

***Radioactive Material***

Customer eBusiness

(800)361-0198

eBusiness@cn.ca

## **Canadian National Railway - Electronic Commerce**

The enclosed documentation covers information required to handle Radioactive material.

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

CN is currently using the X12 Standard Version/Release 6020/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  
\*120809\*1409\*U\*00602\*00000012\*0\*P\*  
GS\*SR\*GENERIC\*CN\*20120809\*1406\*00000012\*X\*006020  
ST\*404\*736645001  
BX\*00\*X\*PP\*EF1-12-011-008\*CN\*L\*B\*N\*\*\*\*N\*2  
BNX\*M\*\*S  
N9\*BM\*EF1-12-011-008\*\*20120809\*11020700\*ET  
N7\*ESUU\*100255\*36925\*N\*5000\*\*\*\*\*CN\*\*\*\*2000\*M\*\*\*\*102  
N8\*799151\*20120919  
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\*\*\*\*\*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  
\*120809\*1409\*U\*00602\*00000012\*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	I04	AN	10/10
ISA05	Interchange ID Qualifier	I05	ID	2/2
ISA06	Interchange Sender ID (fill out with spaces)	I06	AN	15/15
ISA07	Interchange ID Qualifier (If RR SCAC use 02)	I05	ID	2/2
ISA08	Interchange Receiver ID (RR SCAC- 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 00602)	I11	ID	5/5
ISA13	Interchange Control Number (number assigned by sender)	I12	N0	9/9
ISA14	Acknowledgment Requested (0 = none required, 1= required)	I13	ID	1/1
ISA15	Usage Indicator (P = Production, T = Test)	I14	ID	1/1
ISA16	Component Element Separator	I15		1/1

**GS Segment: Functional Group Header**

**GS\*SR\*GENERIC\*CN\*20120809\*1406\*00000012\*X\*006020**

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 006040 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 (X = Intermodal)	91	ID	1/2
BX03	Shipment Method Of Payment (PP = Prepaid, CC = Collect)	146	ID	2/2
BX04	Shipment Identification Number	145	AN	1/30
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

**BNX Segment: Rail Shipment Information**

***BNX\*M\*\*S***

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
BNX01	Shipment Weight Code (A = Wgt Agreement Number) (N = Per Car Charge)	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\*20120207\*0728***

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\*EF1-12-011-008\*\*20120809\*11020700\*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	2/2
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)	337	TM	4/6

**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	1/10
N703	Weight	81	R	1/8
N704	Weight Qualifier (E = Estimated Weight) (N = Net Weight)	187	ID	1/2
N705	Tare Weight of the equipment	167	N0	3/8
N711	Equipment Description Code (CN = Container)	40	ID	2/2

**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.

***F9\*\*MONROE\*MI***

<u>Data Seq</u>	<u>Element Name</u>	<u>Data Element</u>	<u>Data Type</u>	<u>Characters Min/Max</u>
F902	Origin Station	101	AN	2/19
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.

***D9\*\*CLIVE\*UT***

<u>Element Seq</u>	<u>Element Name</u>	<u>Data Element</u>	<u>Data Type</u>	<u>Characters Min/Max</u>
D902	Destination Station	300	AN	2/19
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 (CN = Consignee) (SH = Shipper) (C1 = Care of Party)	98	ID	2/2
N102	Name	93	AN	1/27

**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	2/19
N402	State Or Province Code	156	ID	2/2
N403	Postal Code	116	ID	3/9



**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 the Origin carrier)	133	ID	1/2
R203	Rule 260 junction abbreviation (CHGO = Chicago)	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	1/3
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	1/16
L504	Commodity Code Qualifier (T = Standard Transportation Commodity Code (STCC))	23	ID	1/1

**L0 Segment: Line Item, Quantity and Weight**

***L0\*1\*\*\*\*\*1\*CNT***

Element Seq	Element Name	Data Element	Data Type	Characters Min/Max
L001	Lading Line Item Number	213	N0	1/3
L004	Weight	81	R	1/8
L005	Weight Qualifier (E = Estimated Weight) (N = Net Weight)	187	ID	1/2
L008	Lading Quantity	80	N0	1/7
L009	Packaging Form Code (CLD = Carload)	211	ID	3/3
L011	Weight Unit Code (L = Pounds) (K = Kilograms)	188	ID	1/1

**LS Segment: Loop Header**

***LS\*LH1***

Element Seg	Element Description	Data Element	Data Type	Characters Min/Max
LS01	Loop Identifier Code	447	AN	1/4

**LH1 Segment: Hazardous Identification Information**

***LH1\*CH\*1\*UN3321\*\*4929137\*KG\*16749***

Element Seg	Element Description	Data Element	Data Type	Characters Min/Max
LH101	Unit or Basis For Measurement Code (CH = Container)	355	ID	2/2
LH102	Lading Quantity	80	NO	1/7
LH103	UN or NA Identification Code	277	ID	6/6
LH105	Commodity Code	22	AN	1/16
LH106	Unit or Basis for Measurement Code (LB=Pound      KG = Kilogram)	355	ID	2/2
LH107	Quantity	380	R	1/15
LH110	Packing Group Code	254	ID	1/3

**LH2 Segment: Hazardous Classification Information**

***LH2\*7\*P***

Element Seg	Element Description	Data Element	Data Type	Characters Min/Max
LH201	Hazardous Classification	215	ID	2/30
LH202	Hazardous Class Qualifier (P=Primary)	983	ID	1/1
LH203	Hazardous Placard Notation	218	ID	14/40
LH204	Hazardous Endorsement	222	ID	4/25
LH205	Reportable Quantity Code	759	ID	2/2

**LH3 Segment: Hazardous Material Shipping Name**

***LH3\*RADIOACTIVE MATERIAL, LOW\*D***

***LH3\*SPECIFIC ACTIVITY\*D***

***LH3\*(LSA-II)\*D***

Element Seg	Element Description Characters	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 Seg	Element Description	Data Element	Data Type	Characters Min/Max
LFH01	Hazardous Material Shipping Information 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	380	R	1/15

Activity of Radioactive Material (Numeric value of quantity)

**PER Segment: Hazardous Communications Contact**

***PER\*HM\*\*TE\*(888) 586-5263***

Element Seg	Element Description	Data Element	Data Type	Characters Min/Max
PER01	Contact Function Code (HM= Primary Hazardous Material Contact Qualifier) (CN= Secondary Hazardous Material Contact Qualifier (if Primary contact is not applicable for both USA and Canada. PER*CN will be the Canadian))	366	ID	2/2
PER03	Communication Number Qualifier (TE=Telephone)	365	ID	2/2
PER04	Communication Number	364	AN	1/25

**LE Segments: Loop Trailer**

***LE\*LHI***

Element Seg	Element Description	Data Element	Data Type	Characters Min/Max
LE01	Loop Identifier Code	447	AN	1/4

**LH6 Segments: Hazardous Certification**

***LH6\*SHPR CERT JOE Q. SHIPPER***

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

**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

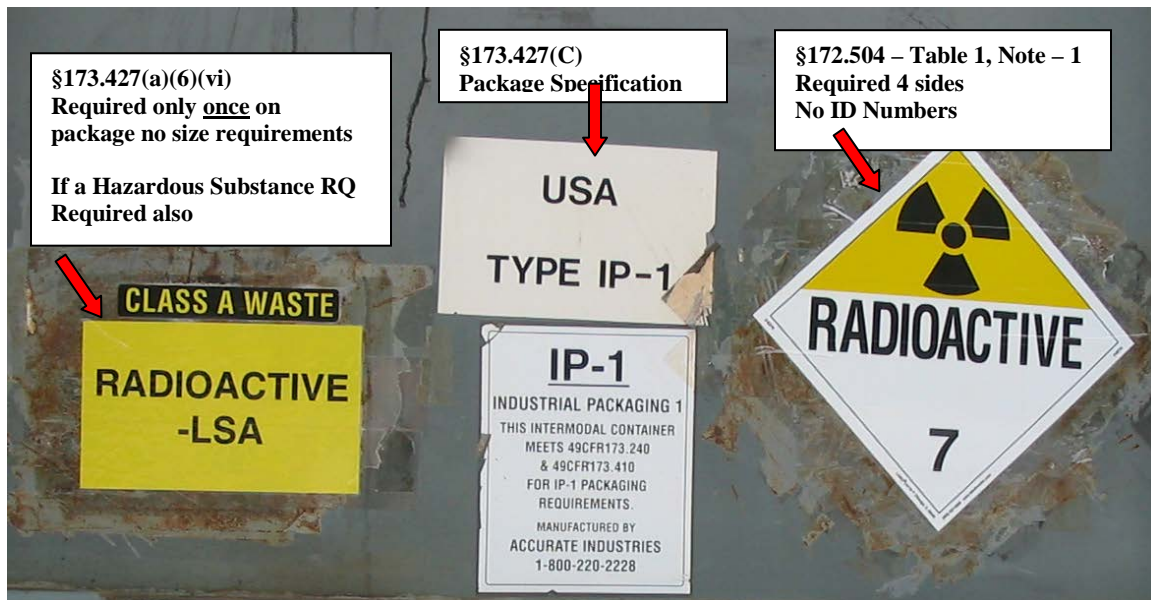
**ALWAYS REQUIRED** §172.202 (a)(1) Identification Number  
**ALWAYS REQUIRED** §172.202 (a)(2) Proper Shipping Name  
**ALWAYS REQUIRED** §172.202 (a)(3) Hazard Class  
 (above must be in sequence)  
**ALWAYS REQUIRED** §172.202 (a)(5) Total Activity or Weight  
**ALWAYS REQUIRED** §172.202 (a)(7) Number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

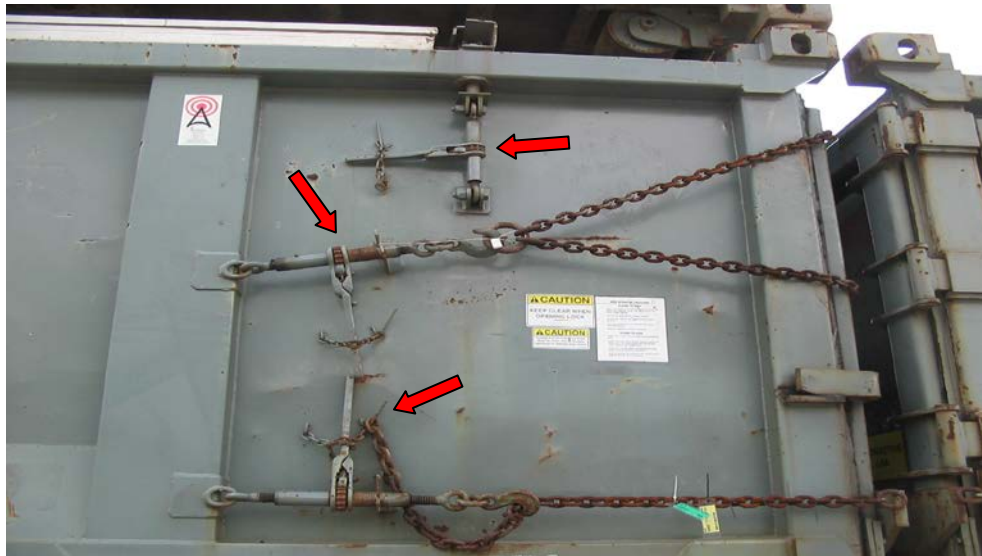
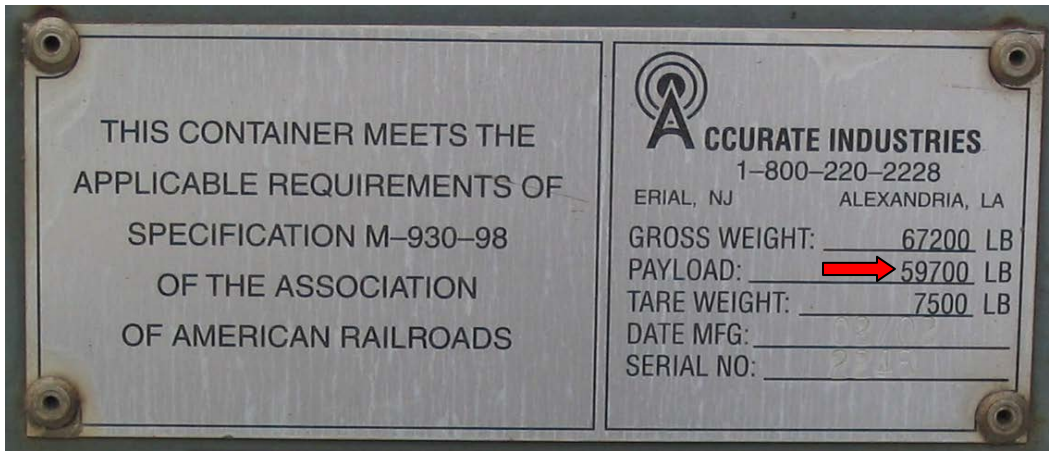
**WHEN APPLICABLE** §172.203 (c) Hazardous Substance “RQ”

**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