The TI

- TI Published By The International Civil Aviation Organization (ICAO)
- A UN Body, Meets In Montreal On Biennium Basis
- Code Revised Every 2 Years
- Latest Edition:
OTHER REGULATIONS

- DGR Published By The International Air Transport Association (IATA)
- AIR Shipper – Labelmaster Field Manual
- Published Yearly
- Extras – Operator Variations, Guidance, IATA Requirements
ICAO VS. 49 CFR

- TI Applies
- ORM-D, NA #'s – Not Valid
- Ammunition Reverts To 1.4S
- State Variations
Old System

1.4S AIR VS. 1.4S SURFACE

- Extra Markings
  - 1.4S Label
  - 25kg Net Package Max
  - Consignee Address

- No Physical Difference
  - No Redundant Closures
  - No Leak Testing

Still Applies To Primers

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Air Is More Strict
Spec Packaging Is Only Exception
Air Combination Package Max Typically Equals Surface Inner Package Max
ID 8000 More Like Surface LQ, e.g. 30 Kg, But Products Are Few
# LQ Exceptions

<table>
<thead>
<tr>
<th>LQ Exception</th>
<th>ICAO</th>
<th>IMO</th>
<th>US Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Paper</td>
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<tr>
<td>UN &amp; PSN</td>
<td>-</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Hazard Label</td>
<td>-</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Placards</td>
<td>N/A</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Spec Packaging</td>
<td>X*</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

* LQ weight limits do not align between air and surface

- **UN requires Spec Package for LQ Ammo**
- **No advantage by air except harmonization**
- **Ammo is not LQ in ICAO**
ICAO DECISION ON LQ AMMO

- Ammo Requires Spec Package In UN
- Spec Packaging Is Only Exception
- No Sense To Give LQ
- Allow And Ignore
- Practical Harmonization Issues
5;2.4.13 Markings Required By Other Modes of Transport

Markings required by other international or national transport regulations are permitted in addition to markings required by these Instructions, provided that they cannot be confused or conflict with any markings prescribed by these Instructions, because of their colour, design or shape.
Air Carriers Individually Refused To Allow & Ignore

EU Road Inspectors Objected To Hazard Label With Surface LQ Mark

Labor Cost To Obliterate LQ

LABOR TO OBLITERATE SURFACE LQ MARK
SAAMI GOES BACK TO ICAO

- ICAO REAFFIRMS NO LQ
- Not Just An Ammo Issue
- ICAO Commits To Web Site Guidance
- IATA Members Begin To Accept Surface LQ Mark
- IATA Will Include Guidance In 2014 DGR
NEW ICAO GUIDANCE (draft)

Limited Quantity for Air
– Acceptable for Road and Sea as per UN 3.4.9

Shipper:
ADVANCE CHEMICAL CO.
345 MAIN STREET
REIGATE, SURREY
ENGLAND

Consignee:
IMCOCHEM
14 RUE ST.JOSEPH
MONTREAL, QC
CANADA

UN 1090
Acetone
net qty: 1L

Hazard Label

Name and Address of Shipper and Consignee

Package Orientation Labels (2x)

Proper Shipping Name, UN number and Net Quantity
Limited Quantity Road and SEA
– Not acceptable for AIR

Shipper:
ADVANCE CHEMICAL CO.
345 MAIN STREET
REIGATE, SURREY
ENGLAND

Consignee:
IMCOCHEM
14 RUE ST.JOSEPH
MONTREAL, QC
CANADA

NOT ALLOWED FOR AIR TRANSPORT
Limited Quantity Road and SEA – Fully Regulated for AIR – Proposed new UNMR 3.4.10

Acetone Limits

- Air: 1L Max Package
- Surface: 30Kg Max By Surface, 1L Max Inner
Limited Quantity Road and SEA – Fully Regulated for AIR – Proposed new UNMR 3.4.10

ICAO GUIDANCE (CONT’D)

Name and Address of Shipper and Consignee

Shipper: Mecar
Rue Grinfaux 50
B-7181 Nivelles
BELGIUM

Consignee: IMCOCHEM
14 RUE ST. JOSEPH
MONTREAL, QC
CANADA

Proper Shipping Name, UN number

UN 0012 Cartridges, small arms

UN Package Specification Number

Hazard Label

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Ammo Is Never LQ Air in ICAO
IATA GUIDANCE

2014 IATA Will Contain Similar Guidance Per Dangerous Goods Board Decision Sept 2012

FROM: ABC COMPANY
123 ANY STREET
JACKSON, WY 12345 USA

TO: DEFG COMPANY
123 QUELS RUE
PARIS 12345 FRANCE

NET WEIGHT: 14.5 KG

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3.4.10 Packages containing dangerous goods in limited quantities bearing the marking shown in 3.4.7 and conforming with the provisions of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air, including all necessary marks and labels specified in Parts 5 and 6, shall be deemed to meet the provisions of section 3.4.1 as appropriate and of sections 3.4.2 to 3.4.4 when transported by land or by sea.

**SAAMI GOES BACK TO UN**

- UNMR 18th Edition Will Contain New 3.4.10 And Include Previous Pictures In Guiding Principles
- ADR Expected To Follow in 2015
MEANWHILE IN THE USA

- HM215K Specified Y Mark For US Air
- ICAO Forbids Y-Mark
USA 175.75 ACCESSIBILITY

- 25 Kg Shipment Limit
- Doesn’t Apply To LQ/ORM-D, Applies To 1.4S
- Prevents Cargo On Most Passenger Aircraft
- Prevents Containerization On Cargo Aircraft
- Requires Cargo Aircraft Out Of US
- Some Countries May Only Practically Be Reached By Passenger Aircraft
- ITAR Ammo Chain of Custody Requirements Prevent Interlining
- Some Carriers Charge Extra For Accessible
§ 173.27(f)(2) Limited Quantities
Materials or articles not authorized as limited quantity by aircraft are:
… (B) Class 1 (explosive) material (see § 173.63(b) of this part for exceptions provided to certain articles of Division 1.4S) …

Table 3
Class 1… Forbidden (See Note)
Note: See § 173.63(b) of this part for exceptions provided to certain articles of Division 1.4S

Clarification to 173.27
SAAMI PETITION FOR RULEMAKING

- HM215K Appeal Results Inadequate
- Petition Requested Additional Clarity That Surface Mark Eliminates 175.75
- Notes Issues Caused For Exports By Accessibility
- Incorporated Into HM215L
§ 173.63 Packaging Exceptions Cont’d

Packages containing such articles may be marked with either the marking prescribed in § 172.315(a) or (b) of this subchapter and offered for transportation and transported by any mode.

- HM215L: Either the Surface or Y-Mark Is Acceptable By Air
- Accessibility Doesn’t Apply With Surface Mark
- PHMSA Plans To Phase Out The Y-Mark For Ammo
IMPACTS

- LQ Surface Mark Good For All Modes Everywhere
- Eliminates US Accessibility Requirements
- No Interlining For Remote Destinations
  - Chain of Custody Requirements Prevent Interlining
  - Use The Appropriate National Passenger Carrier
§ 173.63 Packaging Exceptions Cont’d

In addition, packages containing such articles offered for transportation by aircraft must be marked with the proper shipping name as prescribed in the § 172.101 Hazardous Materials Table of this subchapter.
Some Carriers Stop 1.4S Labeled Boxes
BY THE WAY

• TI 2013-2014 Includes “Cartridges for tools, blank” Proper Shipping Name for UN 0014
2013 LOGISTICS SEMINAR
“POWER LOADS”

Used In:
- Nail Guns For Concrete And Metal
- Other Tools
- Electric Circuit Breakers
FOR NAIL GUNS

Available In:
- 22 Caliber (Home Use)
- 25 Caliber
- 27 Caliber
NAILS

Nails In Strips Also
FASTENING STEEL TO STEEL

- Powerful
- Quick
- Dependable
HIGH QUALITY CONTROL

- 1/100 Function Tested
- Speed
- Power
- Loading
Power device cartridges used to project fastening devices are sold at retail for home improvement.
STATISTICS

- Annual production in North America & Europe: 3.3 Billion
- Used by 200,000 construction companies in the EU
- EU tools made/sold by 400 companies = 4 -4.5K employees

Source: Business Plan of CEN-TC213
MANUFACTURING STEP 1: PRIMED CASES

- Power Device Cartridges Are Similar To Blank Ammunition, and Begin With Primed Rim-fire Cases
STEP 2: SMOKELESS POWDER

- Smokeless Propellant is Placed In Primed Rim-Fire Cases
STEP 3: CRIMP

- Cartridges Are Crimped
STEP 4: LACQUER

- Lacquer Seals
- The Cartridges
- Color Coded Power Level
STEP 5: STRIP

- Cartridges Inserted In Strips For Efficient Use In Tools
INNER / INTERMEDIATE PACKAGING

Typical Inner Configuration:
- 100/Inner And 1K/Intermediate; or -
- 1K/Inner

Typical Outer Config:
- 10K/Combination Packaging

100 Inners, 10/Intermed.
1,000
100 Loose
LONG STRIP VARIANT

- 40 Power Loads / Strip
- 20K Per Package
OLD:
- UN 0323, Cartridges, power device, 1.4S. (ORM-D Until 12/31/20). Requires 6(d) Test.

NEW:
- UN 0014, Cartridges for tools, blank, 1.4S, PG II, Ltd Qty No 6(d) Test
READY TO SHIP

- Can Be >1 Million Per Pallet
- North America / Europe
- Annual Production: 3.3 Billion
6(D) TEST ON POWER LOADS

- Pass The Test Easily
- Required For UN 0323
### HM215L REGULATORY CHANGES

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Hazardous materials descriptions and proper shipping names</th>
<th>Hazard class or division</th>
<th>Identification Numbers</th>
<th>PG</th>
<th>Label Codes</th>
<th>Special Provisions (§ 172.102)</th>
<th>(8) Packaging (§ 173, ***)</th>
<th>(9) Quantity limitations (see §§ 173.27 and 175.75)</th>
<th>(10) Vessel stowage</th>
</tr>
</thead>
<tbody>
<tr>
<td>[REMOVE]</td>
<td>Cartridges for weapons, blank or Cartridges, small arms, blank</td>
<td>1.4S</td>
<td>UN0014</td>
<td>II</td>
<td>None</td>
<td>63</td>
<td>62</td>
<td>None</td>
<td>25 kg</td>
</tr>
<tr>
<td>[ADD]</td>
<td>Cartridges for weapons, blank or Cartridges, small arms, blank or Cartridges for tools, blank</td>
<td>1.4S</td>
<td>UN0014</td>
<td>II</td>
<td>1.4S</td>
<td>63</td>
<td>62</td>
<td>None</td>
<td>25 kg</td>
</tr>
<tr>
<td>[REVISE]</td>
<td>Cartridges, power device</td>
<td>1.4S</td>
<td>UN0323</td>
<td>II</td>
<td>1.4S</td>
<td>110, 347</td>
<td>None</td>
<td>62</td>
<td>62</td>
</tr>
</tbody>
</table>

- **New Proper Shipping Name** “Cartridges for tools, blank”
- **Typo** 1.4S Label Should be “None”
- **Stowage Changed** Like All Class 1
- **UN 0323 OK** For ORM-D Not LQ
In § 173.56 paragraph (h)(2) is revised to read as follows:

(h) The requirements of this section do not apply to cartridges, small arms which are:
(1) Not a forbidden explosive under § 173.54 of this subchapter;
(2) Ammunition for rifle, pistol, or shotgun, or tools;
(3) Ammunition with inert projectile or blank ammunition; and
(4) Ammunition not exceeding 50 caliber for rifle or pistol cartridges or 8 gauge for shotgun shells.
Definition of Cartridges, Blank in 173.59 Amended:

* * * * *

Cartridges, blank. Articles that consist of a cartridge case with a center or rim fire primer and a confined charge of smokeless or black powder, but no projectile. Used in training, saluting, or in starter pistols, tools, etc.

* * * * *
§ 173.63 Packaging exceptions.

(b) Limited quantities of Cartridges, small arms, Cartridges, power devices, Cartridges for tools, blank, and Cases, cartridge, empty with primer.

• 173.63(b) Assigns Small Arms Cartridges To ORM-D and LQ
• Modified Throughout For New PSN “Cartridges for tools, blank”
• ORM-D Extended Until December 31, 2020
173.63(b)(2)(v)
Cartridges for tools, blank, Cases, cartridge, empty with primer, and 22 caliber rim-fire cartridges may be packaged loose in strong outside packagings.
OLD VS. NEW MARKINGS

UN # & Proper Shipping Name Are Optional
SHIPPING PAPERS

- Not Required For Ground Shipments In US or Europe
- Use Equivalency Certificate in Canada
- For Ocean & US Air Shipments, Basic Shipping Description Is:
  “UN 0014, Cartridges for tools, blank, 1.4S, PG II, LTD QTY”
- For International Air Shipments, No LQ; Basic Shipping Description Is:
  “UN 0014, Cartridges for tools, blank, 1.4S, PG II”
49 CFR

2013 LOGISTICS SEMINAR

- Ammunition & Components –
An explosive means any substance or article, including a device, which is designed to function by explosion (i.e., an extremely rapid release of gas and heat) or which, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion, unless the substance or article is otherwise classed under the provisions of this subchapter.
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Hazardous materials description and proper shipping names</th>
<th>Hazard class or division</th>
<th>Identification Numbers</th>
<th>PG</th>
<th>Label Codes</th>
<th>Special provisions</th>
<th>(8) Packaging (§173.***)</th>
<th>(9) Quantity limitations</th>
<th>(10) Vessel stowage</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Cartridges for weapons, blank</td>
<td>1.4S</td>
<td>UN0014</td>
<td>II</td>
<td>None</td>
<td>-</td>
<td>63 62 None</td>
<td>25 kg 100 kg</td>
<td>01 25</td>
</tr>
<tr>
<td></td>
<td>or Cartridges, small arms, blank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>or Cartridges for tools, blank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cartridges for weapons, inert projectile or Cartridges,</td>
<td>1.4S</td>
<td>UN0012</td>
<td>II</td>
<td>None</td>
<td>-</td>
<td>63 62 None</td>
<td>25 kg 100 kg</td>
<td>01 25</td>
</tr>
<tr>
<td></td>
<td>small arms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Cartridges, small arms</td>
<td>ORM-D</td>
<td>-</td>
<td>None</td>
<td>222</td>
<td>63 None None</td>
<td>30 kg gross</td>
<td>A -</td>
<td></td>
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<tr>
<td>D</td>
<td>Cartridges, power device (used to project fastening</td>
<td>ORM-D</td>
<td>-</td>
<td>None</td>
<td>222</td>
<td>63 None None</td>
<td>30 kg gross</td>
<td>A -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>devices)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cases, cartridge, empty with primer</td>
<td>1.4S</td>
<td>UN0055</td>
<td>II</td>
<td>1.4S 50</td>
<td>63 62 None</td>
<td>25 kg 100 kg</td>
<td>01 25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Powder, smokeless</td>
<td>1.3C</td>
<td>UN0161</td>
<td>II</td>
<td>1.3C</td>
<td>None 62 None</td>
<td>Forbidden 75 kg</td>
<td>04 25, 26E</td>
<td></td>
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<td></td>
<td>Powder, smokeless (used to project fastening devices)</td>
<td>1.4C</td>
<td>UN0509</td>
<td>II</td>
<td>1.4C</td>
<td>None 62 None</td>
<td>Forbidden 75 kg</td>
<td>02 25</td>
<td></td>
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<td></td>
<td>Primers, cap type</td>
<td>1.4S</td>
<td>UN0044</td>
<td>II</td>
<td>None</td>
<td>None 62 None</td>
<td>25 kg 100 kg</td>
<td>01 25</td>
<td></td>
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<tr>
<td></td>
<td>Primers, cap type</td>
<td>1.4B</td>
<td>UN0378</td>
<td>II</td>
<td>1.4B</td>
<td>None 62 None</td>
<td>75 kg A -</td>
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<tr>
<td></td>
<td>Propellant, solid</td>
<td>1.3C</td>
<td>UN0499</td>
<td>II</td>
<td>1.3C</td>
<td>None 62 None</td>
<td>Forbidden 7.3 kg A -</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Propellant, solid (used to project fastening devices)</td>
<td>1.4C</td>
<td>UN0501</td>
<td>II</td>
<td>1.4C</td>
<td>None 62 None</td>
<td>Forbidden 7.3 kg A -</td>
<td></td>
<td></td>
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<tr>
<td>D</td>
<td>Smokeless powder for small arms</td>
<td>4.1</td>
<td>NA3178</td>
<td>II</td>
<td>4.1 16</td>
<td>None 171 None</td>
<td>Forbidden 7.3 kg A -</td>
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### 1.3 CLASSIFICATIONS

<table>
<thead>
<tr>
<th>UN</th>
<th>Description</th>
<th>Code</th>
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<tbody>
<tr>
<td>UN 0488</td>
<td>Ammunition, practice</td>
<td>1.3G</td>
</tr>
<tr>
<td>UN 0335</td>
<td>Fireworks</td>
<td>1.3G</td>
</tr>
<tr>
<td>UN 0161</td>
<td>Powder, smokeless</td>
<td>1.3C</td>
</tr>
<tr>
<td>UN 0499</td>
<td>Propellant, solid</td>
<td>1.3C</td>
</tr>
<tr>
<td>UN 0093</td>
<td>Flares, aerial</td>
<td>1.3G</td>
</tr>
<tr>
<td>UN 0359</td>
<td>Substances, explosive, n.o.s</td>
<td>1.3L</td>
</tr>
</tbody>
</table>

Division 1.3 consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.
**1.4 CLASSIFICATIONS**

Division 1.4 consists of explosives that present a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

<table>
<thead>
<tr>
<th>UN</th>
<th>Description</th>
<th>Classification</th>
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</thead>
<tbody>
<tr>
<td>UN 0378</td>
<td>Primers, cap type</td>
<td>1.4B</td>
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<tr>
<td>UN 0509</td>
<td>Powder, smokeless</td>
<td>1.4C</td>
</tr>
<tr>
<td>UN 0012</td>
<td>Cartridges, small arms</td>
<td>1.4S</td>
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<tr>
<td>UN 0494</td>
<td>Jet perforating guns, charged, <em>oil well, without detonator</em></td>
<td>1.4D</td>
</tr>
<tr>
<td>UN 0055</td>
<td>Cases, cartridge, empty with primer</td>
<td>1.4S</td>
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<tr>
<td>UN Code</td>
<td>Description</td>
<td>Compatibility Group</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>UN 0441</td>
<td>Charges, shaped, <em>without detonator</em></td>
<td>1.4S</td>
</tr>
<tr>
<td>UN 0456</td>
<td>Detonators, electric <em>for blasting</em></td>
<td>1.4S</td>
</tr>
<tr>
<td>UN 0012</td>
<td>Cartridges, small arms</td>
<td>1.4S</td>
</tr>
<tr>
<td>UN 0014</td>
<td>Cartridges, small arms, blank</td>
<td>1.4S</td>
</tr>
<tr>
<td>UN 0055</td>
<td>Cases, cartridge, empty with primer</td>
<td>1.4S</td>
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</tbody>
</table>

Compatibility Group S consists of substances or articles so packed or designed that any hazardous effects arising from accidental functioning are limited to the extent that they do not significantly hinder or prohibit fire fighting or other emergency response efforts in the immediate vicinity of the package.
## CLASSIFICATION CONSEQUENCES

<table>
<thead>
<tr>
<th></th>
<th>1.3C Powder</th>
<th>1.4 Other Than S</th>
<th>1.4S Ammo or Primers</th>
<th>4.1 Powder (100# MAX)</th>
<th>ORM-D Ammunition</th>
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</thead>
<tbody>
<tr>
<td>Burn Testing</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Shipping Paper</td>
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<td>X</td>
<td>Air Only</td>
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<tr>
<td>Marking</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Labels</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Placards</td>
<td>X</td>
<td>(over 1000#)</td>
<td>-</td>
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<tr>
<td>Emergency Response</td>
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<tr>
<td>Training</td>
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<td>Security Plan</td>
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<td>CDL</td>
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<td>Package Testing</td>
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<tr>
<td>HazMat Fee</td>
<td>N/A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Air Only</td>
</tr>
<tr>
<td>Air Transport</td>
<td>Forbidden</td>
<td>For./ C. Only</td>
<td>Passenger</td>
<td>Cargo Only</td>
<td>Passenger</td>
</tr>
</tbody>
</table>

Only ammunition may be shipped or taken as checked baggage on passenger aircraft.
“Unless otherwise provided in this subpart, no person may offer for transportation or transport an explosive, unless it has been tested and classed and approved ...”

- Self-Classification Is Usually Not Allowed – Written Approval Required
- Packaging May Be Limited To the Approved
DEFINITIONS

Cartridges, small arms – Ammunition consisting of a cartridge case fitted with a center or rim fire primer and containing both a propelling charge and solid projectile(s). They are designed to be fired in weapons of caliber not larger than 19.1 mm. Shotgun cartridges of any caliber are included in this description. The term excludes: Cartridges, small arms, blank, and some military small arms cartridges listed under Cartridges for weapons, inert projectile. 19.1 mm = 75 Cal.
1.4S AMMUNITION

SELF-CLASSIFICATION

Max 19.1mm (3/4”), Except:

• 49 CFR 173.56(h): In the US, small arms ammunition may be self classified as 1.4S when:
  * For rifle, pistol or shotgun
  * <= 50 cal (12.7mm) or 8 gauge
  * Inert or blank (no incendiary, exploding projectiles, etc.)
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Hazardous materials description and proper shipping names</th>
<th>Hazard class or division</th>
<th>Identification Numbers</th>
<th>PG</th>
<th>Label Codes</th>
<th>Special provisions</th>
<th>(8) Packaging (§173.***</th>
<th>(9) Quantity limitations</th>
<th>(10) Vessel stowage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Cartridges for weapons, blank</td>
<td>1.4S</td>
<td>UN0014</td>
<td>II</td>
<td>None</td>
<td>-</td>
<td>63</td>
<td>62</td>
<td>None</td>
</tr>
<tr>
<td>(2)</td>
<td>Cartridges, small arms .projectile or Cartridges, small arms</td>
<td>ORM-D</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>63</td>
<td>None</td>
<td>None</td>
<td>30 kg gross</td>
</tr>
<tr>
<td>(3)</td>
<td>Cartridges, power device (used to project fastening devices)</td>
<td>ORM-D</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>63</td>
<td>None</td>
<td>None</td>
<td>30 kg gross</td>
</tr>
<tr>
<td>(4)</td>
<td>Cases, cartridge, empty with primer</td>
<td>1.4S</td>
<td>UN0055</td>
<td>II</td>
<td>1.4S</td>
<td>50</td>
<td>None</td>
<td>62</td>
<td>None</td>
</tr>
<tr>
<td>(5)</td>
<td>Powder, smokeless</td>
<td>1.3C</td>
<td>UN0161</td>
<td>II</td>
<td>1.3C</td>
<td>-</td>
<td>None</td>
<td>62</td>
<td>Forbidden</td>
</tr>
<tr>
<td>(6)</td>
<td>Primers, cap type</td>
<td>1.4S</td>
<td>UN0044</td>
<td>II</td>
<td>None</td>
<td>-</td>
<td>None</td>
<td>62</td>
<td>None</td>
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<tr>
<td>(7)</td>
<td>Primers, cap type</td>
<td>1.4B</td>
<td>UN0378</td>
<td>II</td>
<td>1.4B</td>
<td>-</td>
<td>None</td>
<td>62</td>
<td>Forbidden</td>
</tr>
<tr>
<td>(8)</td>
<td>Smokeless powder for small arms</td>
<td>4.1</td>
<td>NA3178</td>
<td>II</td>
<td>4.1</td>
<td>16</td>
<td>None</td>
<td>171</td>
<td>None</td>
</tr>
</tbody>
</table>
173.62 PACKING INSTRUCTIONS

- Non-bulk explosives packaging is limited to prescribed types and combinations
- Each UN number is assigned to a packing instruction
- Each packing instruction lists the permitted types of inner, intermediate and outer packagings which are allowed
UN 0012 requires no inner packagings. No “Particular Packing Requirements” apply.
PACKING INSTRUCTIONS

Various inners & outers are allowed. UN 0161 may skip inner packaging when in a drum.
FLAMMABLE SOLID POWDER

• 49 CFR 173.171:
  • In the US, 1.3C smokeless powder may be re-classed to 4.1 when:
    * Burn tested to 4.1 criteria
    * 8 lb net max inner
    * 100 lb net max shipment
    * 16 lb net max mixed brands

• Used for economic shipment of smaller

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**Packing Instructions**

§ 173.62

49 CFR Ch. I (10-1-07 Edition)

### Table of Packing Methods—Continued

<table>
<thead>
<tr>
<th>Packing instruction</th>
<th>Inner packagings</th>
<th>Intermediate packagings</th>
<th>Outer packagings</th>
</tr>
</thead>
<tbody>
<tr>
<td>133</td>
<td>Receptacles</td>
<td>Receptacles</td>
<td>Boxes.</td>
</tr>
<tr>
<td></td>
<td>Intermediate pack-</td>
<td>fibreboard metal plastic wood</td>
<td>steel (4A).</td>
</tr>
<tr>
<td></td>
<td>agings are only re-</td>
<td>metal plastics wood</td>
<td>aluminium (4B).</td>
</tr>
<tr>
<td></td>
<td>quired when trays</td>
<td></td>
<td>wood, natural,</td>
</tr>
<tr>
<td></td>
<td>are used as inner</td>
<td></td>
<td>ordinary (4C1).</td>
</tr>
<tr>
<td></td>
<td>packagings.</td>
<td></td>
<td>wood, natural,</td>
</tr>
<tr>
<td></td>
<td>fibreboard</td>
<td></td>
<td>silt proof walls</td>
</tr>
<tr>
<td></td>
<td>metal</td>
<td></td>
<td>(4C2).</td>
</tr>
<tr>
<td></td>
<td>plastics</td>
<td></td>
<td>plywood (4D).</td>
</tr>
<tr>
<td></td>
<td>wood</td>
<td></td>
<td>reconstituted wood</td>
</tr>
<tr>
<td></td>
<td>Trays, fitted with</td>
<td></td>
<td>(4F).</td>
</tr>
<tr>
<td></td>
<td>dividing.</td>
<td></td>
<td>fibreboard</td>
</tr>
<tr>
<td></td>
<td>partitions</td>
<td></td>
<td>(4G).</td>
</tr>
<tr>
<td></td>
<td>fibreboard</td>
<td></td>
<td>plastics, solid</td>
</tr>
<tr>
<td></td>
<td>plastics</td>
<td></td>
<td>(4H2).</td>
</tr>
<tr>
<td></td>
<td>wood</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:**

1. For UN 0043, 0212, 0225, 0268 and 0306 trays are not authorized as inner packagings.

**UN 0044 & UN 0378 use PI 133**

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### PACKING INSTRUCTIONS

Pipeline and Hazardous Materials Safety Admin., DOT

#### TABLE OF PACKING METHODS—Continued

<table>
<thead>
<tr>
<th>Packing instruction</th>
<th>Inner packagings</th>
<th>Intermediate packagings</th>
<th>Outer packagings</th>
</tr>
</thead>
<tbody>
<tr>
<td>136</td>
<td>Bags</td>
<td>Not necessary</td>
<td>Boxes</td>
</tr>
<tr>
<td></td>
<td>plastics</td>
<td></td>
<td>steel (4A).</td>
</tr>
<tr>
<td></td>
<td>textile</td>
<td></td>
<td>aluminium (4B).</td>
</tr>
<tr>
<td></td>
<td>Boxes.</td>
<td></td>
<td>wood, natural,</td>
</tr>
<tr>
<td></td>
<td>fibreboard</td>
<td></td>
<td>ordinary (4C1).</td>
</tr>
<tr>
<td></td>
<td>plastics</td>
<td></td>
<td>wood, natural,</td>
</tr>
<tr>
<td></td>
<td>wood</td>
<td></td>
<td>sifting walls (4C2).</td>
</tr>
<tr>
<td></td>
<td>Dividing partitions in the.</td>
<td></td>
<td>plywood (4D).</td>
</tr>
<tr>
<td></td>
<td>outer packagings</td>
<td></td>
<td>reconstituted wood (4F).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>fibreboard (4G).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>plastics, solid (4H2).</td>
</tr>
</tbody>
</table>

UN 0055 uses PI 136
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Hazardous materials description and proper shipping names</th>
<th>Hazard class or division</th>
<th>Identification Numbers</th>
<th>PG</th>
<th>Label Codes</th>
<th>Special provisions</th>
<th>(8) Packaging</th>
<th>(9) Quantity limitations</th>
<th>(10) Vessel storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Cartridges for weapons, blank or Cartridges, small arms, blank</td>
<td>1.4S</td>
<td>UN0014</td>
<td>II</td>
<td>None</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td>Cartridges for weapons, inert projectile or Cartridges, small arms</td>
<td>1.4S</td>
<td>UN0012</td>
<td>II</td>
<td>None</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Cartridges, small arms</td>
<td>ORM-D</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Cartridges, power device (used to project fastening devices)</td>
<td>ORM-D</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cases, cartridge, empty with primer</td>
<td>1.4S</td>
<td>UN0055</td>
<td>II</td>
<td>1.4S</td>
<td>50</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Powder, smokeless</td>
<td>1.3C</td>
<td>UN0161</td>
<td>II</td>
<td>1.3C</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primers, cap type</td>
<td>1.4S</td>
<td>UN0044</td>
<td>II</td>
<td>None</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primers, cap type</td>
<td>1.4B</td>
<td>UN0378</td>
<td>II</td>
<td>1.4B</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Smokeless powder for small arms</td>
<td>4.1</td>
<td>NA3178</td>
<td>II</td>
<td>4.1</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pipeline and Hazardous Materials Safety Administration (PHMSA) may be transported under this entry without first applying the classification criteria of Class 8, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level.

50 Cases, cartridge, empty with primer which are made of metallic or plastic casings and meeting the classification criteria of Division 1.4 are not regulated for domestic transportation.

51 This description applies to items previously described as “Toy propellant devices, Class C” and includes reloadable kits. Model rocket motors containing 30 grams or less propellant are classed as Division 1.4S and items containing more than 30 grams of propellant but not more than 62.5 grams of propellant are classed as Division 1.4C.
APPROVED PACKAGING

U.N. PROPER SHIPPING NAME AND NUMBER:
Primers, cap type, UN0044

U.N. CLASSIFICATION CODE: 1.4S

REFERENCE NUMBER
EX2007020114

PRODUCT DESIGNATION/PART NUMBER
Wolf Bulletin 19/8 (EC/DA/13/15293/N KV 209)

NOTES:
This classification is only valid when the primers are packaged as follows: Inner Packaging - Trays, plastic with recessed cavities, each containing not more than one hundred (100) primers uniformly segregated apart in up to a 10x10 array covered with slip-over cardboard or paperboard sleeve enclosures. Intermediate Packaging - Box, cardboard or paperboard, each containing not more than ten (10) inner packagings in up to five (5) layers. Outer Packaging - UN 4G fiberboard box, each containing not more than five (5) intermediate packagings.

• Pick A Packaging, But Then You’re Locked In
• N/A For Self-Classified Ammo
UN MANUAL OF
TESTS & CRITERIA

- Presents the UN classification schemes and test methods for competent authorities
- Will not unerringly lead to proper classification
- Assumes competence of the testing authority and leaves them responsibility for classification.
- The competent authority has discretion to add, delete or vary tests for a reliable and realistic hazard assessment.

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Test Series 4: "Is the article, packaged article or packaged substance too dangerous for transport?"

- Type 4 (a): a test of thermal stability for articles; and
- Type 4 (b): a test to determine the ignition hazard from dropping.

FAILURE = FORBIDDEN
A Test On A Single Package To Determine If There Is Mass Explosion Of The Contents.

Mass explosion indicates Division 1.1:
(a) A crater at the test site;
(b) Damage to the witness plate beneath the package;
(c) Measurement of a blast; and
(d) Disruption and scattering of the confining material.
TEST 6(a) UN 0044
TEST 6(a) UN 0044
## TEST 6(c)

<table>
<thead>
<tr>
<th>Mass Explosion</th>
<th>Witness Screen</th>
<th>Metal Projectile</th>
<th>Flame Ball or Jet</th>
<th>Fiery projection</th>
<th>Burn Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perforation</td>
<td>Dent &gt;4mm</td>
<td>8J &gt; x &gt;=20J</td>
<td>Beyond witness (4m)</td>
<td>1m &gt; x &gt;= 4m</td>
</tr>
<tr>
<td>1.1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
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<td>X</td>
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<td></td>
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<td>1.3</td>
<td></td>
<td></td>
<td></td>
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<td>X</td>
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<tr>
<td>1.4 (other than S)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>1.4S</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Otherwise 1.4S if it would not significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity.
APPROVED PACKAGING

U.N. PROPER SHIPPING NAME AND NUMBER:
Primers, cap type, UN0044

U.N. CLASSIFICATION CODE: 1.4S

REFERENCE NUMBER
EX2007020114

PRODUCT DESIGNATION/PART NUMBER
Wolf B

NOTES:
This classification is only valid when the primers are packaged as follows: Inner Packaging - Trays, plastic with recessed cavities, each containing not more than one hundred (100) primers uniformly segregated apart in up to a 10x10 array covered with slip-over cardboard or paperboard sleeve enclosures. Intermediate Packaging - Box, cardboard or paperboard, each containing not more than ten (10) inner packagings in up to five (5) layers. Outer Packaging - UN 4G fiberboard box, each containing not more than five (5) intermediate packagings.

• Pick A Packaging, But Then You’re Locked In
• N/A For Self-Classified Ammo
CERTIFICATION TESTING

DROP TEST

VIBRATION TEST

STACK TEST

X = PG I, II, or III
Y = PG II or III
Z = PG III ONLY

X = 5.9’
Y = 3.9’
Z = 2.6’

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MARKINGS
PSN, UN#, ORM-D, 1.4S

- Proper Shipping Name & ID Number / ORM-D (Which Certifies The Package is ORM-D)
- “ORM-D-Air” for Air
- ORM-D Rectangle 0.25” Larger Each Side Than Text (172.316)
- International Vessel: “1.4S” is Required in Lieu of a Label
EX# MARKINGS

• “Explosive Number” (Not “Exemption”)
• File # Of The DOT
• Required Marking On Package
• Alternatively On Shipping Paper
• Or May Be Replaced With Alternative Code If It Appears On DOT Approval
• Not applicable for US cartridges, small arms <= 50 cal / 8 gauge
EX# MARKINGS

U.N. PROPER SHIPPING NAME AND NUMBER:
Primers, cap type, UN0044

U.N. CLASSIFICATION CODE: 1.4S

REFERENCE NUMBER       PRODUCT DESIGNATION/PART NUMBER
EX2007020114            Wolf Brand Shot Shell Primers (D/N KV 209)

EX# AND ALTERNATIVE CODE

NOTES:
This classification is only valid when the primers are packaged as follows: Inner Packaging - Trays, plastic with recessed cavities, each containing not more than one hundred (100) primers uniformly segregated apart in up to a 10x10 array covered with slip-over cardboard or paperboard sleeve enclosures. Intermediate Packaging - Box, cardboard or paperboard, each containing not more than ten (10) inner packagings in up to five (5) layers. Outer Packaging - UN 4G fiberboard box, each containing not more than five (5) intermediate packagings.
### 1.4S Ammo and Primers

1.4S ammo and primers don’t require a label.

### ORM-D Ammo

ORM-D ammo has no label.

### 1.4B Label

1.4B label applies.

---

**Sec. 172.101 Hazardous Materials Table**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Hazardous Materials Description and Proper Shipping Names</th>
<th>Hazard Class or Division</th>
<th>Identification Numbers</th>
<th>PG</th>
<th>Label Codes</th>
<th>Special Provisions</th>
<th>Package $173.***</th>
<th>Exceptions (8A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
<td>(8A)</td>
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<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cartridges for weapons, blank or Cartridges, small arms, blank</td>
<td>1.4S</td>
<td>UN0014</td>
<td>I</td>
<td>None</td>
<td>-</td>
<td>63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cartridges for weapons, inert projectile or Cartridges, small arms</td>
<td>1.4S</td>
<td>UN0012</td>
<td>I</td>
<td>None</td>
<td>-</td>
<td>63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D Cartridges, small arms</td>
<td>ORM-D</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D Cartridges, power device (used to project fastening devices)</td>
<td>ORM-D</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cases, cartridge, empty with primer</td>
<td>1.4S</td>
<td>UN0055</td>
<td>II</td>
<td>1.4S</td>
<td>50</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Powder, smokeless</td>
<td>1.3C</td>
<td>UN0161</td>
<td>II</td>
<td>1.3C</td>
<td>-</td>
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</tr>
<tr>
<td>Primers, cap type</td>
<td>1.4S</td>
<td>UN0044</td>
<td>I</td>
<td>None</td>
<td>-</td>
<td>None</td>
<td></td>
<td></td>
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<tr>
<td>Primers, cap type</td>
<td>1.4B</td>
<td>UN0378</td>
<td>I</td>
<td>1.4B</td>
<td>-</td>
<td>None</td>
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<td></td>
</tr>
<tr>
<td>D Smokeless powder for small arms</td>
<td>4.1</td>
<td>NA3178</td>
<td>II</td>
<td>4.1</td>
<td>16</td>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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PLACARDING EXCEPTIONS

• No Placards For 1.4 Below 1,001 Pounds (E.G.1.4B)
  49 CFR 172.504(c)

• No Placards For 1.4S That Don’t Require A Label
  49 CFR 172.504(f)

• No Placards For ORM-D

• No Placards For LQ Identified On Shipping Paper OR Marked On Package
CDL HAZMAT ENDORSEMENT

• FMCSA defines Hazmat as only placarded hazmat
• No requirement for CDL hazmat endorsement for unplacarded loads
• CDL required based on truck size – 26,000 pound Gross Vehicle Weight Rating (GVWR)
### HMT Basic Description

**Sec. 172.101 Hazardous Materials Table**

<table>
<thead>
<tr>
<th>Hazardous materials description and proper shipping names</th>
<th>Hazard class or division</th>
<th>Hazardous materials description and proper shipping names</th>
<th>Special provisions</th>
<th>(8) Packaging</th>
<th>(9) Quantity limitations</th>
<th>(10) Vessel stowage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cartridges for weapons, blank or Cartridges, small arms, blank or Cartridges for tools, blank</td>
<td>1.4S</td>
<td>UN0014</td>
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<td>UN0012</td>
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<td>Cartridges, small arms</td>
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<td>Cartridges, power device (used to project fastening devices)</td>
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<td>-</td>
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<td>Cases, cartridge, empty with primer</td>
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<td>Powder, smokeless</td>
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**SHIPPING PAPER**

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HM ELEMENTS

<table>
<thead>
<tr>
<th>QTY</th>
<th>TYPE</th>
<th>WEIGHT (In lbs)</th>
<th>H. M.</th>
<th>COMMODITY DESCRIPTION</th>
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<tr>
<td>3</td>
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<td>UN0044, PRIMERS, CAP TYPE, 1.4S, PGII</td>
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<tr>
<td>338</td>
<td>CASES</td>
<td>7,732</td>
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<td>CARTRIDGES, SMALL ARMS, ORM-D</td>
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- **Qty & Type**: QTY: 3, TYPE: CASES, QTY: 338, TYPE: CASES
- **HM**: X
- **“Basic Description”**: UN0044, PRIMERS, CAP TYPE, 1.4S, PGII, CARTRIDGES, SMALL ARMS, ORM-D
- **NEQ**: NET EXPLOSIVE WT: 1 lbs

**Shipper’s Cert**

- Note: Liability limitations for loss of damage in this shipment may be applicable. See 49 U.S.C. \( \sim 14700(\text{c})(1)(A) \) and (B).
- If received, subject to individually determined rates or contracts that have been agreed upon in writing between carrier and shipper, if applicable to the rates, classifications and rules that have been established by the carrier and are available to the shipper on request, and to all applicable state and federal regulations.

**Emergency Phone**

- Net explosive wt: 1 lbs
- Call CHEMTREC, TOLL FREE DAY OR NIGHT: 1-800-424-9300
**Shipping Description**

The Shipping Description Must Be:

- Entered first, or
- Printed or highlighted in contrasting color, or
- Marked with an X in a Column marked “HM”

---

<table>
<thead>
<tr>
<th>Package Type</th>
<th>Weight (In lbs)</th>
<th>H. M. (X)</th>
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</thead>
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**Basic Description**

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## ADDITIONAL DESCRIPTION

### CARRIER INFORMATION

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### "Additional Description"

- Special Permit Number DOT-SP XXXX
- "Limited Quantity" If Applicable
- Empty Packagings: "RESIDUE: Last Contained***"
- UN 0012, Cartridges, small arms, 1.4S, PG II, LTD QTY, EX#
PACKAGE QUANTITY & TYPE

- Weight & Unit of Measurement
- For Class 1, Use The Net Explosive Mass; For Articles This Means The NEQ OR The Net Weight
- For Salvage Packagings, Estimate Total Quantity
- By Aircraft: Total Net Mass Is Required (Unless HM Table Is Gross Limit)
- Qty & Type, e.g. “12 Boxes” or “12 4G Boxes”, Not “12 4G”
LIMITED QUANTITIES

For air or vessel, the description of a “limited quantity,” must include the words “Limited Quantity” or “Ltd Qty” following the basic description.

- LQ exempted from shipping paper for ground shipments

UN 0012, Cartridges, small arms, 1.4S, PG II, Ltd Qty
Or, when not required: Cartridges, small arms
ATTENDANCE REQUIRED

A motor vehicle which contains a Division 1.1, 1.2, or 1.3 (explosive) material must be attended at all times by its driver or a qualified representative of the motor carrier, with some exceptions.

IMPACT: 2 DRIVERS REQUIRED OUTSIDE 10 HOUR SHIFT RADIUS

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HIGHWAY ROUTE PLAN

• 1.1, 1.2 And 1.3 Explosives Require A Written Route Plan
• The Route Plan Should Be Kept With The Shipping Paper

ROUTING INSTRUCTIONS

OUTBOUND

From the magazine entrance gate, Turn Left (South) on County Road 100, go 11 miles.
Turn Left (North) on State Highway 66, go 22 miles.
Take the Exit 66 off ramp and take Turn Left (West) on County Road 222, go 3 miles.
Turn Right at the main entrance gate to John A. Doe’s facility.

RETURN

From John A. Doe’s main entrance gate, Turn Left on County Road 22, go 3 miles,
Turn South (Right) on to State Highway 66, go 22 miles.
Take Exit 44 off ramp, Turn Right (North) on County Road 100, go 11 miles.
Arrive at the magazine entrance gate on Left.

Prepared by: Mike Fink
Location Manager: Mark American
Date: January 1, 2008
The Federal Motor Carrier Safety Administration Requires A HM Safety Permit To Transport Hazardous Materials

A Shipment Over 55 Pounds Of 1.1, 1.2 Or 1.3; Or Placarded 1.5 Requires A Permit

Every Truck Must Have:
- A Copy Or The Permit #
- Route Plan (1.1 – 1.3 Explosives)
- Phone # Of Employee Who Can Verify The Route Plan
$5 MILLION INSURANCE

- $750,000 Non-Hazmat Commerce
- $1 Million Hazmat Commerce
- $5 Million 1.3C Commerce

PROHIBITIVE COST
FEW CARRIERS HAVE
1.4C PROPELLANT BENEFITS

- Use Regular Common Carriers
- Because
  - No Dual Drivers
  - No Route Plan
  - No Haz Mat Safety Permit
  - No Prohibitive Insurance
- No 100# Limit That Applies To Flammable Solid
- Up To 1000 Lbs Without Placard
# ROAD SEGREGATION

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<th>Notes</th>
<th>1.1</th>
<th>1.2</th>
<th>1.3</th>
<th>1.4</th>
<th>1.5</th>
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<th>2.2</th>
<th>2.3 gas zone A</th>
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<th>4.1</th>
<th>4.2</th>
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</table>

- **BLANK** = ALLOWED ON SAME TRUCK
- **O** = ALLOWED WITH PRECAUTIONS
- **X** = PROHIBITED ON SAME TRUCK
# ROAD COMPATIBILITY

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</tbody>
</table>

**BLANK = ALLOWED ON SAME TRUCK**

**O = ALLOWED WITH PRECAUTIONS**, **X = PROHIBITED**

**2 = C + D = E**

**4/5 = LIMITATIONS FOR FIREWORKS & BLASTING CAPS**