

DOT HAZARDOUS MATERIALS INFORMATION

Included in this appendix are three lists. First is the proper DOT information, codes, markings, etc., needed for preparing shipments of ammunition. Second is an alphabetical list of ammunition items under each of the six commodity groups, complete with firefighting advice. Third is an alphabetical list of all the items in the various commodity groups.

DOT SHIPMENT INFORMATION

The chart on the following page contains the elements of DOT information that are required to prepare ammunition for shipment and to fill out the various forms necessary when shipping ammunition (see Chapter 3).

These elements are established by and defined in Title 49, Code of Federal Regulations. There is an explanation of the codes in the current edition of the Ammunition Consolidated Catalog or in the microfiche of that catalog. The DOT proper shipping name and fire fighting group is established by AR 55-355 for transporting hazardous material by motor vehicle.

Appendix F

Code	DOD Marking	Shipping Name	Fire Fighting Group
AB	Ammunition for Cannon w/Explosive Projectiles	Ammunition for cannon with explosive projectile	IV
AC	Ammunition for Cannon w/Gas Projectiles	Ammunition for cannon with gas projectile	VI
AD	Ammunition for Cannon w/Illuminating Projectiles	Ammunition for cannon with illuminating projectile	IV
AF	Ammunition for Cannon w/Inert Loaded Projectiles	Ammunition for cannon with inert projectile	IV
AG	Ammunition for Cannon w/Smoke Projectiles	Ammunition for cannon with smoke projectile	IV
AH	Ammunition for Cannon w/Solid Projectiles	Ammunition for cannon with solid projectile	IV
AI	Ammunition for Cannon w/o Projectile	Ammunition for cannon without projectile	III
AK	Ammunition for Small Arms w/Explosive Projectiles	Ammunition for small arms with explosive projectile	IV
AL	Black Powder	Black powder	V

AN	(QTY) Blasting Caps - Handle Carefully	Blasting caps (show actual number)	II (1,000 or fewer); V (more than 1,000)
AP	Boosters (Explosive)-Handle Carefully	Booster, explosive	IV
AQ	Burstors (Explosive)-Handle Carefully	Burstors, explosive	V
AR	Cannon Primers - Handle Carefully	Cannon primers	II
AU	Combination Fuzes, Handle Carefully	Combination fuzes	II
AV	Combination Primers, Handle Carefully	Combination primers	II
AW	Cordeau Detonating Fuse Handle Carefully	Cordeau detonating fuse	I
AZ	Detonating Fuzes Class A Explosive, Handle Carefully, Do Not Store or Load With any High Explosives	Detonating fuze, class A explosive	IV

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Code	DOD Marking	Shipping Name	Fire Fighting Group
BB	Detonating Fuzes, Class C Explosives, Handle Carefully	Detonating fuze, class C explosive	II
BD	(QTY) Electric Blasting Caps Handle Carefully	Electric blasting caps or blasting caps—electric (show actual number)	II (1,000 or fewer); V (more than 1,000)
BE	Electric Squibs	Electric squib	I
BF	Explosive Bombs	Explosive bomb	V (Non-Fragmentation); IV (Fragmentation)
BG	Explosive Cable Cutters Handle Carefully—Keep Fire Away	Explosive cable cutters	I
BH	Explosive Mines	Explosive mines	V
BI	Explosive Projectiles	Explosive projectile	V
BJ	Explosive Release Devices, Handle Carefully—Keep Fire Away	Explosive release devices	IV

BN	Flammable Liquid, N.O.S.	Flammable liquid, N.O.S.	III
BO	Flammable Solid	Flammable solid	III
BQ	Fuse Lighters	Fuse lighters	I
BS	Hand Grenades	Grenade, hand, explosive	V
BT	High Explosive-Dangerous	High explosive	V
BW	Igniters	Igniters	II (DOT Class C); III (DOT Class B); IV (DOT Class A)
BX	Igniters, Jet Thrust, Class A Explosives	Igniter, jet-thrust (JATO)	IV
BY	Igniter, Jet Thrust, Class B Explosives	Igniter, jet-thrust (JATO)	III
CB	Jet Thrust Unit, Class A Explosives	Jet thrust unit (JATO)	V
CE	Percussion Caps-Handle Carefully	Percussion cap	II
CF	Percussion Fuzes Handle Carefully	Percussion fuzes	II

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Code	DOD Marking	Shipping Name	Fire Fighting Group
CJ	Propellant Explosive, Class A	Propellant explosive	V
CK	Propellant Explosive (Solid) Class B	Propellant explosive, solid	II
CN	Fusees, Handle Carefully-Keep Fire Away	Fusee	I
CP	Rifle Grenades	Grenade, rifle, explosive	V
CQ	Rocket Ammunition w/Empty Projectiles	Rocket ammunition with empty projectile	IV
CR	Rocket Ammunition w/Explosive Projectiles	Rocket ammunition with explosive projectile	IV
CT	Rocket Ammunition w/Gas Projectiles	Rocket ammunition with gas projectile	VI
CU	Rocket Ammunition w/Incendiary Projectiles	Rocket ammunition with incendiary projectile	IV
CV	Rocket Ammunition w/Inert Loaded Projectiles	Rocket ammunition with solid projectile	IV

CW	Rocket Ammunition w/Smoke Projectiles	Rocket ammunition with smoke projectile	IV
CX	Rocket Ammunition w/Solid Projectile	Rocket ammunition with solid projectile	IV
CZ	Safety Fuse	Safety fuse or fuse, safety	I
DA	Safety Squibs	Safety squib	I
DB	Signal Flares, Handle Carefully, Keep Fire Away	Signal flare	I
DC	Small Arms Ammunition	Small arms ammunition	I
DD	Small Arms Ammunition Irritating (Tear Gas) Cartridges	Small arms ammunition, irritating cartridge	VI
DE	Small Arms Primers, Handle Carefully	Small arms primer	II
DF	Smoke Pots, Handle Carefully, Keep Fire Away	Smoke pot	III
DG	Smoke Signals, Handle Carefully, Keep Fire Away	Smoke signal	I
DH	Special Fireworks; Handle Carefully, Keep Fire Away	Fireworks, special	III

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Code	DOD Marking	Shipping Name	Fire Fighting Group
DK	Time Fuzes, Handle Carefully	Fuze, time	II; I (w/o booster)
DR	Common Fireworks, Handle Carefully, Keep Fire Away	Fireworks, common	I
DS	Chloroacetophenone, Solid	Chloroacetophenone, solid	IV
DU	Chloroacetophenone Liquid	Chloroacetophenone, liquid	IV
DX	Grenade, Tear	Grenade, tear gas	IV
DZ	Phosphorus, White	Phosphorus, white, dry	III
EA	Explosive Power Devices, Class C, Handle Carefully, Keep Fire Away	Explosive power devices, class C I	I
ED	Starter Cartridges, Jet Engine, Class C Explosives, Handle Carefully, Keep Fire Away	Starter cartridges	I
EK	Rocket Motors, Class A Explosives	Rocket motor	V
EM	Rocket Motors, Explosives	Rocket motor	III

EN	Ammunition for Small Arms w/Incendiary Projectiles	Ammunition for small arms with incendiary projectile	IV
ET	Explosive Torpedo	Explosive torpedo	V
EQ	Hand Signal Device, Handle Carefully, Keep Fire Away	Hand signal device	I
EW	Cartridges, Practice Ammunition	Cartridge, practice ammunition	I
EX	Tracers, Handle Carefully	Tracer	II
FA	Detonators, Handle Carefully	Detonators, class A explosives	IV
FB	Detonators, Handle Carefully	Detonators, class C explosives	II
FC	Flexible Linear Charge, Metal Clad, Handle Carefully	Flexible linear shaped charge, metal clad	V
FD	Electrolyte (Acid) Battery Fluid	Electrolyte battery fluid	V
FE	Smoke Candles	Smoke candles	III
XA	Oxidizing Material, N.O.S.	Oxidizing material, N.O.S.	VI

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Code	DOD Marking	Shipping Name	Fire Fighting Group
XB	Nitrogen	Nitrogen	
XC	Helium	Helium	
XD	Accumulator, Pressurized	Hydraulic accumulator or accumulator pressurized	
XE	ARGON	Argon	
XF	Rocket Engines (Liquid) Class B Explosives	Rocket engine, liquid	III
XG	Actuating Cartridges, Explosive, Valve, Handle Carefully	Actuating cartridge, explosive	I
XH	Detonating Primers Handle, Carefully	Detonating primer	II
XJ	Empty Cartridge Case, Primed, Handle Carefully	Empty cartridge case, primed	I
XK	Battery, Electric Storage, Wet	Battery, electric, storage, wet	
XL	Jet Thrust Units, Class B Explosives	Jet thrust unit	III

XM	Igniters, Rocket Motors, Class B Explosives	Igniter, rocket motor	II
XN	Smoke Grenades, Handle Carefully, Keep Fire Away	Smoke grenades	II
XS	Poisonous Gas, N.O.S.	Poisonous gas, N.O.S.	VI
XT	Igniter Fuse, Metal Clad	Igniter fuse, metal clad	II
XU	Explosive Power Devices, Class B, Handle Carefully, Keep Fire Away	Explosive power device, class B	II
XV	Actuating Cartridges, Ex- plosive, Fire Extinguisher, Handle Carefully	Actuating cartridge explosive	I
XW	Ammunition For Cannon w/Empty Projectiles	Ammunition for cannon with empty projectile	IV
XX	Ammunition, Nonexplosive*		

*Ammunition, nonexplosive, is technically not a DOD marking, and containers need not be marked as such for transportation. If containers are marked "Ammunition Nonexplosive" they need not be marked again.

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Code	DOD Marking	Shipping Name	Fire Fighting Group
XY	Chemical Ammunition, Non-explosive, Containing Poison A Material	Chemical ammunition, Nonexplosive	VI
XZ	Mild Detonating Fuse, Metal Clad, Handle Carefully	Fuse, mild detonating, metal clad	I
YA	Methylhydrazine	Methylhydrazine	VI
YB	Nitrogen Tetroxide Liquid	Nitrogen tetroxide liquid	VI
YD	Ethylene Oxide	Ethylene oxide	V
YE	Explosive Rivets	Explosive rivet	I
YF	Electrolyte (Acid), Battery Fluid (Not Over 47% Acid)	Electrolyte, battery fluid	
YG	Igniters, Rocket Motor, Class A Explosives	Igniter, rocket motor	IV
YH	Irritating Agent M.O.S.	Irritating agent M.O.S.	VI
YI	Chemical Ammunition Non-explosive (Containing an Irritating Material)	Chemical ammunition, non-explosive (containing an irritating material)	VI

COMMODITY GROUPS WITH FIRE FIGHTING ADVICE AND ITEMS

Group I — Relatively no hazard. Normal operating distance for firefighters.

Actuating Cartridges (Explosives Switches or Actuating Valves)

Adapter Grenade Projection

Ammunition for Cannon Caliber 20mm except HE, HE1, HE-T and AP-1

Blank and Mortar Ignition Cartridges

Cartridges for CAD Items 500 Grains or Less (DOT Class c)

Cartridge Case, Empty, Primed

Cartridge, Explosive Bolt, 500 Grains or Less

Catapult Charges and/or Cartridges

Common Fireworks (Smoke Grenades, Railway and Highway Fuses, Hand Signal Devices, etc.)

Cordeau Detonant Fuze (Primacord)

Explosive Cable or Line Cutter (DOT Class C)

Explosive Power Devices (DOT Class C)

Explosive Release Devices

Explosive Rivets

Fuze Igniters or Lighters

Grenades, Empty, Primed

Perchlorates, Peroxides and Nitrates (DOT Oxidizing Materials)

Phosphorous in Water, White or Yellow (DOT Flammable Solid)

Practice Mines NM, 17 (DOT Class C Common Fireworks)

Practice Rifle Grenades

Pyroforic Solutions and Fuels (DOT Flammable Liquid)

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Safe and Arming Mechanism
Safety Fuse
Signals (DOT Class C Common Fireworks)
Small Arms Ammunition
Squibs, Electric or Delay
Starter Cartridge Jet Engine (DOT Class C)
Starter, Fire, NP3 (DOT Special Fireworks)
Tear Agents CS, CN, CN-DM Burning Mixture in Bulk,
Liquid, Solutions, Capsules, Pellets, and Grenades
Time Fuzes (Mechanical Without Booster)
Zirconium Powder (ES)

Group II— Principally fire and light missile (fragment) hazard. Maintain the following minimum distances:

Firefighters—Operating distance.

Public in Open—500 feet.

Special Precautions—Take available cover to protect against light missiles (fragments).

Antipersonnel Practice Mines, M8
Black Powder Igniters with Empty Cartridge Baga
Blasting Caps, 1,000 or Less (DOT Class C)
Blasting Caps (1,000 or Less) with Metal Clad Mild Detonating Fuze (DOT Class C)
Blasting Caps (1,000 or Less) with Safety Fuse (DOT Class C)
Cartridge Kit, Bomb Ejection
Delay Element for Percussion and/or Detonating Fuzes (DOT Class C)
Detonators
Explosive Power Devices (DOT Class B)

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Flexible Linear Shaped Charges, Metal Clad (DOT Class C)
 Fuzes, All Types (DOT Class C)
 Grenades, Hand, Illuminating
 Initiators, All types (DOT Class C)
 Percussion Caps (DOT Class C)
 Power Actuated Devices, All Types (DOT Class C)
 Primers, All types (DOT Class C)
 Projectiles, Illuminating (DOT Special Fireworks)
 Propellant, Explosives, Solid (DOT Class B)

Group III— Principally a fire hazard with intense heat. Maintain the following minimum distances:
 Firefighters—Operating distance.
 Public in Open—500 feet.
 Special Precautions—Protect against intense heat and other specified hazards.

Ammunition for Cannon Without Projectile Including Cartridge for CAD Items.
 Over 500 Grains (DOT Class B)
 Bombs, Incendiary, TH, PFI in Bombs or Clusters
 Bomb, Photoflash, M122
 Cartridge, Photoflash (DOT Special Fireworks)
 Cartridge, Signal, for Practice Bomb
 Charge, Propelling, Earth Rod
 Chemical Ammunition Group C, When Not Assembled with Explosives Components (DOT Flammable Solid)
 Cryptographic Equipment Destroyer
 Flammable Gas (Hydrogen, Gas or Liquid)
 Flammable Liquid (Ethyl, Methyl and Furfuryl Alcohol, Methylacetylene, Ethylene Oxide, Nitromethane and N-Propyl-Nitrate)

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Appendix F

Flare, Aerial, Infrared (DOT Special Fireworks)
Grenade, Hand, Incendiary, AN-M14
Hydrogen Peroxide (DOT Corrosive Liquid)
Igniters, Jet Thrust, JATO (DOT Class B)
Jet Thrust Unit, JATO (DOT Class B)
Jet Thrust Unit, Rocket Engine (DOT Class B)
Liquid Oxygen (DOT Nonflammable Gas)
Signals (Special Fireworks, DOT Class B)
Simulator (DOT Special Fireworks)
Starter, Cartridge, Jet Engine (DOT Class B)
Tracer, Flare, Tracking
Tracer, Guided Missile

Group IV— Principally a missile (fragment) hazard. Maintain the following minimum distances:

Firefighters- 1,200 feet.

Public in Open—2,000 feet.

Special Precautions—Prepare to fight incipient fires started by the explosion.

Ammunition for Cannon With Explosives Projectiles, Including 20mm HE and HEI

Ammunition for Cannon with Illuminating Projectiles.

Ammunition for Cannon with Incendiary Projectiles.

Ammunition for Cannon with Projectiles 81mm or Less (excluding 81mm, M56)

Ammunition for Cannon with Smoke Projectiles

Ammunition for Cannon with Solid, Inert Loaded, or Empty Projectile

Ammunition for Small Arms with Explosive Bullets

Ammunition for Small Arms with Explosive Projectiles

(Continued)

Booster (DOT Class A)
 Charge, Spotting, Practice, Black Powder (DOT Class A)
 Catapults
 Detonating Fuzes, Including Conversion Set, External Cluster Stowage (DOT Class A)
 Explosive Bombs (Fragmentation)
 Explosive Mines (Antipersonnel Including Cast-Iron Type)
 Cartridge, Explosive Bolt over 500 Grains
 Grenade, Hand and Rifle, Excluding Offensive and Incendiary, AN-M14 and Pentolite Loaded
 Igniters, Jet Thrust, JATO (DOT Class A)
 Rocket Ammunition with Explosive Projectile
 Rocket Ammunition with Illuminating Projectile
 Rocket Ammunition with Incendiary Projectile.
 Rocket Ammunition with Smoke Projectile, Assembled with Explosive Components
 Rocket Ammunition with Solid, Inert, Loaded, or Empty Projectiles or Without Projectiles

Group V— Principally a blast hazard. Maintain the following minimum distances:

Firefighters— 1,200 feet.

Public in Open—2,000 feet.

Special Precautions—Prepare to fight incipient fires started by exploding load.

Cartridge, Heavy Mortar, HE and 81mm including 81mm M56 (DOT Class A)

Black Powder

Blasting Caps (More than 1,000)

(Continued)

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Blasting Caps (More than 1,000) with Metal Clad Mild Detonating Fuze
Blasting Caps (More than 1,000) with Safety Fuse
Bursting (DOT Class A)
Demolition Blocks, All Types, High Explosive
Explosive Bomb (Except Fragmentation)
Explosive Bomb, Photoflash (Except M122 Without Burster)
Explosive Bomb, Simulator, M1 15
Explosive Mine
Explosive Projectile
Explosive Torpedo, Including Bangalore
Firecracker, M80
Grenade, Rifle, AT, Pentolite Loaded
High Explosives in Bulk Containers
High Explosive (Liquid)
Hand Grenade, Offensive (DOT Class A)
Initiating Explosives, Wet (DOT Class A)
Jet Thrust Unit, JATO (DOT Class A)
Propellant Explosives (DOT Class A)
Shaped Charge, HE
Snake, Demolition
Supplementary Charge, HE
Torpedoes, HE (All Types)
Warheads, HE for Guided Missiles and Torpedoes

Group VI— This group is principally a toxic hazard. Items assigned to this group, which have explosive components and a missile (fragment) or severe fire hazard associated with them, are identified by an asterisk(*), with notes below the listing referring to the proper group for the minimum distances to be

observed. Maintain the following minimum distances:

Firefighters—May approach from the direction from which the wind is blowing when protected with a self-contained breathing apparatus and special or protective clothing as specifically prescribed for the particular commodity involved.

Public—Evacuate downwind areas. When poison or nerve gases are involved, 2 miles downwind and 1 mile upwind and sidewind will be evacuated. Personnel will not reenter the area until it is declared safe by decontamination team chief.

Special Precautions—When technical escorts accompany shipments, the minimum distances and additional precautions may be prescribed by escort personnel.

AC, Hydrogen Cyanide

*Alkyl Boranes¹

*Aniline²

BBC, Bromobenzylcyanide

Beryllium Powder (Poison)

CG, Phosgene

Footnotes:

1. These items, in addition, are a fire hazard with intense heat and shall be noted under Other Specific Precautions on the form.
2. When these items contain explosive components, minimum distances shown for group IV shall be noted under Other Specific Precautions on the form to warn against the fragment hazard.

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*Chemical Ammunition Containing Class A Poisons,
Liquid, or Gases²

*Chemical Ammunition Containing Class B Poisons,
Liquid, or Gases²

*Chemical Ammunition Containing Class C Poisons,
Liquid, or Gases²

Chlorine Trifluoride^{1,3}

CK, Cyanogen Chloride

CL, Chlorine

CN, Chloracetophenone (tear gas)

*CNB, Solution of CN in Benzene and Carbon Tetra-
chloride¹

CNC, Solution of CN in Chloroform

CNS, Solution of CN and Chloropicrin in Chloroform

CS, O-chlorobenzylmalononitrile

DA, Diphenylchloroarsine

DC, Diphenylcyanoarsine

*Diborane¹

DM, Adamsite

DP, Diphosgene

Ed, Ethyldichloroarsine

*Fluorine^{1, 3}

FM, Titanium Tetrachloride

FS, Sulphur Trioxide-Chlorosulfonic Acid Solution

G-Agents (Nerve Gas)

HC, Hexachloroethane, Grained Aluminum, and Zinc Oxide
Mixture

HD, Mustard (Distilled)

HL, Mustard Lewisite Mixture

HN-(1,2&3), Nitrogen Mustard

HT, Mustard (T Mixture)

*Hydrazine¹

L, Lewisite

(Continued)

MD, Methylchlorarsine

*Methyl Hydrazine¹

*Monomethylhydrazine¹

Nitric Acid

*Nitrogen Dioxide¹

*Nitrogen Tetroxide¹

PD, Phenylchlorarsine

*Pentaborane¹

*Perchloryl Fluoride¹

Poisonous Liquids, Solids, or Gases (DOT Classes A, B, or C Not Listed Herein)

PS, Chloropicrin

SA, Arsine

*Unsymmetrical Dimethylhydrazine (UDMH)¹

VX, Nerve Gas

Footnotes:

1. These items, in addition, are a fire hazard with intense heat and shall be noted under Other Specific Precautions on the form.
2. When these items contain explosive components, minimum distances shown for group IV shall be noted under Other Specific Precautions on the form to warn against the fragment hazard.
3. Do not use water on this item.

COMMODITY GROUPS, ALPHABETICAL LISTING

Item	Commodity Group
AC, Hydrogen Cyanide	VI
Actuating Cartridges (Explosives Switches or Actuating Valves)	I
Adapter Grenade Projection	I
Alkyl Boranes	VI
Ammunition for Cannon, Caliber 20mm except HE, HEI, HE-T, and AP-1	I
Ammunition for Cannon with Explosives Projectiles, Including 20mm HE and HEI	IV
Ammunition for Cannon with Illuminating Projectiles	IV
Ammunition for Cannon with Incendiary Projectiles	IV
Ammunition for Cannon with Projectile, 81mm or Less Excluding 81mm M56	IV
Ammunition for Cannon Without Projectile, Including Cartridge for CAD Items over 500 Grains (DOT Class B)	III
Ammunition for Cannon with Smoke Projectiles	IV
Ammunition for Cannon with Solid, Inert Loaded, or Empty Projectile	IV
Ammunition for Small Arms with Explosives Bullet	IV
Ammunition for Small Arms with Explosive Projectile	IV
Aniline	VI
Antipersonnel Practice Mines M8	II
BBC, Bromobenzylcyanide	VI
Beryllium Powder (Poison B)	VI
Black Powder	V
Black Powder Igniters with Empty Cartridge Bags	II
Blank and Mortar Ignition Cartridges	I
Blasting Caps, 1,000 or Less, (DOT Class C)	II

(Continued)

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Blasting Caps, 1,000 or Less, with Metal-Clad Mild Detonating Fuse (DOT Class C)	II
Blasting Caps, 1,000 or Less, with Safety Fuse (DOT Class C)	II
Blasting Caps, More than 1,000	V
Blasting Caps, More than 1,000, with Metal-Clad Mild Detonating Fuse	V
Blasting Caps, More than 1,000, with Safety Fuse	V
Bombs, Incendiary, TH PT1, in Bombs or Clusters	III
Bombs, Photoflash M122	III
Boosters (DOT Class A)	IV
Bursters (DOT Class A)	V
Cartridges for CAD Items 500 Grains or Less (DOT Class C)	I
Cartridge Case, Empty, Primed	I
Cartridge, Explosive Bolt, 500 Grains or Less	I
Cartridge, Explosive Bolt over 500 grains	IV
Cartridge, Heavy Mortar HE Over 81mm, Including 81mm M56 (DOT Class A)	V
Cartridge Kit, Bomb Ejection	II
Cartridge, Photoflash (DOT Special Fireworks)	III
Cartridge, Signal, Practical Bomb	III
Catapults	IV
Catapult Changes and/or Cartridges	I
CG, Phosgene	VI
Charges, Propelling, Earth Rod	III
Charge, Spotting, Practice, Black Powder (DOT Class A)	IV
Chemical Ammunition Containing Class A Poisons, Liquid or Gases	VI
Chemical Ammunition Containing Class B Poisons, Liquid or Gases	VI
Chemical Ammunition Containing Class C Poisons, Liquid or Gases	VI
Chemical Ammunition Group C When Not Assembled with Explosives Components (DOT Flammable Solid)	III