

**Ministry of Defence
Defence R&D Organisation**



STEC PAMPHLET - 9

**RULES FOR CONVEYANCE OF
MILITARY EXPLOSIVES BY RAIL**

2025

Issued by

Storage & Transport of Explosives Committee
Centre for Fire, Explosive & Environment Safety (CFEES)
Brig. S. K. Mazumdar Marg, Delhi – 110054

CONTENTS

	RULE
UN System of classification of explosives	600
Title and scope	601
Definitions	602
Conveyance	603
Transport under Indemnity	605
Packing of explosives	606
Marking of packages	607
Responsibility of the Officer tendering a consignment of explosives for conveyance	608
Notice to railway administration for despatch of consignment of explosives	609
Forwarding note, certificate & form-C completions	610
Receipt of consignment of explosives by railways for conveyance	611
Precautions to be observed in handling of explosives	612
Place and time of loading and unloading	613
Responsibility of loading and unloading	614
Wagons to be in readiness for loading	615
Repairs to wagons	616
Explosives not be carried across railway bridges	617
Approved types of wagons for transport of explosives	618
Type of wagons prohibited for transport of explosives	619
Stowing of explosives	620

Classification of explosives	621
Carriage of explosives of different compatibility groups in the same wagon	622
Prohibition regarding transport of explosives with dangerous goods	623
Transport of explosives with other ordnance stores	624
Maximum quantity of explosives to be carried in a wagon	625
Calculation of net weight of explosives	626
Maximum weight of freight charges	627
Pad locking of wagons	628
Marking of Railway wagons	629
Marshalling	630
Marshalling conditions	631
Maximum number of wagons containing explosives to be carried in a single train	632
Restriction in shunting of wagons containing explosives	633
Escort parties	634
Intimation of dispatch and receipt of explosive consignment	635
Delivery to and from railway premises	636
Delay in transit or non-receipt of consignments at destinations	637
Seals and pad locks	638
Consignment of mixed explosives	639
Exemptions for explosives falling under 1-48	640
Conveyance of explosives by brake-van of passenger or mixed train	641

Conveyance of explosives in passenger carriages	642
Conveyance of explosives by military train	643
Conveyance of ammunition containing toxic chemicals	644

Conveyance of liquid propellants

Compatibility	645
Prohibition regarding transport of liquid Propellants with explosives	646
Type of packing	647
Maximum quantity to be carried in a wagon/train	648
Types of wagons to be used	649
Marking of packages	650
Identification with labels	651
Loading and unloading	652
Handling	653
Prohibition on smoking, taking or having any fire lights and dangerous substances	654
Protection from elements of weather during transit storage	655
Transport of liquid propellants by passenger or mixed train	656
Marshalling and shunting of wagons	657
Escorts	658

APPENDIX

List of Substance or Articles by UN Serial Number	Appendix VI/1
Forwarding Note for explosives tendered by Defence Services	Appendix VI/2 (Form A)
Guarantee certificate	Appendix VI/2 (Form B)
Authority for modification of Rules	Appendix VI/2 (Form C)
Decontamination Certificate	Appendix VI/2 (Form D)
Wagon Labels	Appendix VI/2 (Form E)
Wagon Labels	Appendix VI/2 (Form F)
Wagon Labels	Appendix VI/2 (Form G)
Specification for Metallic package	Appendix VI/3
Explosive limit for brake-van of Passenger or mixed train	Appendix VI/4
Details of empty steel service Ammunition boxes which are approved for further packing of sensitive explosives	Appendix VI/5
System of classification of explosives	Appendix VI/6

PREFACE

Consequent upon the decision by the Storage and Transport of Explosives Committee to adopt the international system of classification of explosives, it has been necessary to revise the Regulations for the conveyance of Military Explosives and Ammunition by Rail. Regulations have been framed keeping in view the international practices and requirements of the user organizations discussed and approved by the STEC from time to time. The regulations have also been revised and re-written, keeping in view the international practices, the “Rules for Conveyance of Military Explosives”, which appear at Chapter VI of Military Tariff No.6 .

These regulations are intended for use of different Services/Organisations under the Ministry of Defence and shall be followed while transporting military explosives/ammunition by rail.

It is hoped that users will find this revised STEC Pamphlet 2025 simpler, easier to understand and implement, thereby promoting the safe storage and transportation of military explosive. This publication supersedes STEC Pamphlet, 2017 on the subject.

RULES FOR CONVEY-ANCE OF MILITARY EXPLOSIVES BY RAIL

(Chapter 6 of Military Tariff No.6)

[Rules framed by the Central Government under Section 14(a)
of the Indian Explosives Act, 1884 (IV of 1884)]

UN SYSTEM OF CLASSIFICATION OF EXPLOSIVES

600 For the conveyance of Military Explosives, UN system of classification of explosives, as given in 'Recommendations on the Transport of Dangerous Goods' issued by United Nation, shall be followed. The salient features of this system are described in Appendix VI/6.

TITLE AND SCOPE

- 601 (1) These rules shall be known as "Rules for the Conveyance of Military Explosives by Rail" (Chapter VI - Military Tariff No.6)
- (2) These rules shall apply to the conveyance by rail in India of Military Explosives of any of the types specified in Appendix VI/1 which are the property of or which are otherwise under the control of the Ministry of Defence. List of explosive substances and articles given in the table at Appendix VI/1 is presented in ascending order of UN serial number. The names of substances and articles in capital letters indicate the Authorized Short Names of items for use on packages and transport documents. The alternative shipping name has been shown in brackets following a proper shipping name. Entries like N.O.S. (Not otherwise specified) marked with an asterisk must be supplemented with the technical name for the purpose of documentation and packaging marking.
- (3) The consignment booked under these rules may be modified in respect of any particular consignment of Military Explosives which is the property of or is otherwise under the control of one of the Defence Services, if an officer of that Service here by authorized in these rules, so directs, subject to the condition that the modifications so directed are agreed to by the Railway Administration.
- (4) The competent authorities under Raksha Mantrayala for the modification shall be as given below:

Service	Officer
Army	Master General of the Ordnance
Navy	Director General of Naval Armament
Air Force	Air Officer-in-Charge, Maintenance
Ordnance Factory Board	Secretary , OFB
Defence R&D Organisation	Chairman, DRDO
Directorate General Quality Assurance	Directorate General, Quality Assurance

- (5) The authority for modification of the consignment shall be given in FORMC of Appendix VI/2 and shall accompany the forwarding note tendered for booking the consignment.
- (6) These rules shall also apply to the conveyance by rail in India of explosives of any of the types specified in Appendix VI/1 which not being under the control of any of Defence Organization, are held for the Defence Organization as certified by the concerned Headquarter or by the Ministry of Defence to be in connection with the execution of a contract with the certifying department.
- (7) These rules shall also apply to explosives, other than those not covered under rules 601 (2) and 601 (6), provided they are accompanied by a Guarantee Certificate on FORM-B of Appendix VI/2 as provided for in Rule 603.

DEFINITIONS

602. The various terms mentioned in these Rules, unless there is anything repugnant in the subject or context shall be defined as:

Ammunition (Articles): Generic term related mainly to articles of military application consisting of all kinds of bombs, grenades, rockets, mines, projectiles and other similar devices or contrivances.

Ammunition Special Train means a goods train exclusively intended for the conveyance of explosives.

Authorized Short Name: The name of all substances and articles, as given in Appendix VI/1, which shall be used in preparing for forwarding notes and other documents connected with the conveyance of explosives by rail. Any other designation is illegal. If necessary, the official Service nomenclature may be inserted in brackets below to facilitate Service accounting and records.

B.L. Cartridges: These cartridges consist of bundles of propellant filled into bag of suitable material and are fired from B.L. gun and howitzers in which obturation is achieved by the breech mechanism.

Charge/Weight Ratio: of a weapon/package containing explosives means the average net percentage of explosives and/or pyrotechnic, smoke, incendiary compositions and toxic chemical in a weapon or a package in relation to its gross weight.

Defence Services or Services: means the Army, Navy, AirForce, DRDO and DGQA under the Ministry of Defence.

Detonator: means a capsule or case which is of such strength and construction and contains initiating explosive or composition in such quantity that the explosion of one capsule or case would communicate the explosion to other capsules or cases when in proximity.

Dummy Wagon: means a covered wagon, empty or otherwise, containing stores of a non-inflammable and/or non-explosive nature used to separate wagons containing explosives and inflammable goods from engine and rear brake-van.

Explosive in Bulk: means explosives, pyrotechnic, smoke and incendiary compositions held in bulk for being in ammunition.

Explosive Van: means a wagon specially designed exclusively for the conveyance of explosives.

Form: means a form set forth in Appendix- VI/2.

Goods train: means a train (other than a ballast train) intended solely or mainly for the carriage of animals or goods.

Gross Weight: is the weight of the article including the weight of the explosives, casing and package.

Military Explosives or Explosives: mean any explosive to which these rules apply by virtue of rule 600.

Military Explosives label: means the label used by the Services departments to indicate that they are military explosives, the service to which they belong and the UN hazard division and compatibility group in which they have been classified for conveyance.

Military Special Train: means a train intended exclusively for the use of the Military which may be run as passenger, mixed or goods train.

Mixed Train : means a train intended for the carriage of passengers and goods or passengers, animals and goods.

Night: means from sunset to sunrise.

Passenger Train: means a train intended solely or mainly for the carriage of passengers and other coaching traffic.

Railway: means a railway or any portion of a railway for the public carriage of passengers, animals or goods and includes all lines of railways, sidings or branches worked over for the purpose of or in connection with railway.

Railway Administration or Administration: in the case of a railway administered by the Government means the manager of the railway and includes the Government; and in the case of a railway administered by a railway company, means the railway company.

Railway Company: includes any persons whether incorporated or not who are owners or lessees of railway or parties to and agreement for working in the railway.

Railway Servant : means any person employed by the railway administration in connection with service of the railway.

Safety Fuse: means a fuse used for igniting an explosive charge for a pre-determined delay. It burns, does not explode and does not contain its own means of ignition.

Station: means any place on a line of railway at which traffic is booked and dealt with.

Substances: a term used for the explosives in bulk or mixture of compounds which may be made to undergo a rapid chemical change with the liberation of large quantity of energy generally accompanied by the evolution of hot gases.

Tranship or Road Van Train: means a train which collects and distributes consignments of goods insufficient in weight to form an authorized minimum wagon load to a particular station.

Vehicle: The term vehicle applies only to coaching stock, irrespective of contents and whether attached stock to passenger or goods trains.

Wagon: The term wagon applies only to Goods stock, i.e. all rolling-stock other than coaching irrespective of the contents and whether attached to passenger or goods train.

Definitions: of charge/weight ratio, dummy wagons, explosives in bulk, gross weight, mixed train, night passenger train, railway, railway company, railway servant, station transship or road van train vehicle, wagon and railway administration as per Military Tariff No. 6.

CONVEYANCE

603. No explosives other than those specified in Appendix VI/1 shall be tendered for conveyance by rail unless accompanied by a guarantee certificate of FORM-B of Appendix VI/2 from any one of the following:-

Army	Director of Quality Assurance (Armaments) Ministry of Defence, New Delhi – 110 011.
Navy	Director General of Naval Armament Integrated Headquarters Ministry of Defence (Navy) West Block– V, RK Puram New Delhi – 110066
Air Force	Director of Armament and Safety Equipment, Air Headquarters, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi – 110 003.

604. (1) Explosives shall be conveyed only under the nomenclature of Authorized Short names given in Appendix VI/1. Therefore, the forwarding note and other relevant documents required to be submitted to the railway authorities under the provisions of these rules shall be filled in with the authorized short name only. The service nomenclature may be inserted below the authorized short name, if required.
- (2) Amendments to the list forming part of these rules can only be issued by the competent authority under Govt. of India.
- (3) For purposes of official documents pertaining to the explosives and for marking on the explosive packages, service nomenclature is used. Inclusion of the service nomenclature in appendix VI/1 is not desirable on account of frequent and extensive amendments to the service nomenclature which necessitate corresponding amendments to be made in the list.

TRANSPORT UNDER INDEMNITY

605. Transport of all military explosive shall be under indemnity.

PACKING OF EXPLOSIVES

606. (1) The explosives shall not be tendered for transport unless they are packed in approved service packages, except the unboxed ammunition items specified below and provisions given in subrule(2):
- a) Large article without propelling charge and without means of ignition or initiation viz.
 - (i) Bombs
 - (ii) Torpedoes, with bursting charge.
 - b) Large articles without their means of initiation or with their means of initiation containing at least two protective features viz.
 - (i) Rockets with bursting charge
 - (ii) Torpedoes, with bursting charge.
- (2) When, however, a nominal package has to be used, the responsible technical officer, who should be an inspecting ordnance officer or an officer of similar technical status, shall satisfy himself that the explosives have been packed in such a manner as to be safe for transit and the nominal package is fit for transport and is duly certified so in the forwarding note as required under Rule 610 (c).

MARKING OF PACKAGES

607. (1) Every package containing explosives shall be marked conspicuously with the following details (either by means of stencilling, paint marking, stamping, branding, embossing or by securely affixed labels):
- a) Authorized Short Name with service nomenclature in the bracket, quantity of explosives and hazard classification code.
 - b) Military explosive label
- (2) Shells and other unboxed ammunition items may be marked with the service nomenclature and quantity only.

RESPONSIBILITY OF THE OFFICER TENDERING A CONSIGNMENT OF EXPLOSIVES FOR CONVEYANCE

608. The officer tendering a consignment of explosive to the railway for purposes of conveyance shall ensure that
- a) All items of the consignment are military explosive,
 - b) The explosives are packed, marked, labeled and addressed correctly and are strictly in accordance with these rules.

NOTICE TO RAILWAY ADMINISTRATION FOR DESPATCH OF CONSIGNMENT OF EXPLOSIVES

609. (1) before tendering a consignment of explosives for transport by the railway, the consigning authority shall give notice in writing to the Station Master of the railway concerned regarding
- a) Of his intention to forward such explosives,
 - b) The proper shipping name/description of store as per Appendix VI/1, hazard classification code, the UN number and the total quantity to be transported, the name, description and quantity of the explosives to be transported,
 - c) Type and number of wagons required,
 - d) The name and the address of the consignee,
 - e) A declaration that the explosives have been packed and marked in accordance with Rules 606 and 607.
- (i) The forwarding Note, complete in all respects, tendered 48 hours in advance of the date of offering of the consignment of booking, shall be deemed to be a proper notice under this rule.
 - (ii) When the Officer-in Charge of the railway station or shed is in a position to accept the goods, he shall notify the same on the notice board and such notice shall be deemed as proper intimation to the consignor under this rule.
- (2) Explosives should be offered to the railway authorities for dispatch only after the consigning authority has received a reply in writing from the Station Master concerned that he is prepared to receive the explosives for dispatch.

- (3) If cancellation of the booking of such consignments becomes necessary after issue of the notice of dispatch, immediate intimation of such cancellation shall be given to the Station Master.

Railway's Exceptions

B.P.T– Explosives when sent in full wagon loads are dealt withon B.P.T. Railway only under special arrangements.

McLeod & Co.– Articles which necessitate conveyance in specially constructed vehicles or powder-vans, are not carried, and other explosive and dangerous goods [except petroleum and other hydro-carbon oils, non-dangerous matches safety, motor spirit, petrol, benzene and turpentine may be carried only under special arrangements.

W.R. On the following branch lines of this Railway articles which require to be carried in specially constructed vehicles or powder vans are not carried but all other explosive are accepted:

Ex-GBS (NG) Branch Lines- Piplod Devgad Baria Branchline; Anklesvar – Rajpipla Branch Line and Jhagadia – Netrang Branch Line.

- (i) Explosive are not carried over the Ningala-Gadhada Swaminarayan Branch of this Railway.
- (ii) Explosives are also not accepted for carriage to and from stations on the following Narrow Gauge Branch Lines, viz.
 - 1. Bhavanagar-Mahuva Tramway
 - 2. Joravarnagar-Sayla Tramway
 - 3. MorviTramway viz–
 - a. Morvi-Ghantila Tramway
 - b. Morvi-Tankara Tramway
 - c. Morvi-Amran Road Tramway of this Railway.

FORWARDING NOTE, CERTIFICATE & FORM-C COMPLETIONS-

610. The following form filled in with correct details as required by the railways shall be submitted by the consigning authority when offering any consignment of explosives for dispatch:

- (1) Forwarding Note in FORM- A of Appendix VI/2 incorporating the following particulars:
 - a) Name and address of the consignor and consignee and details of the consignment-Rule 609 refers.

- b) Acceptance of any risk arising from the conveyance of the consignment– Rule 605 refers.
 - c) A declaration to the effect that the requirements of Rule 606 regarding packing of explosives have been complied with.
 - d) A declaration to the effect that the explosive are safe for transport.
- (2) In the case of explosive not included in Appendix VI/1, a guarantee certificate in FORM-B VI/2– Rule 603 refers.
 - (3) Authorisation in FORM-C of Appendix VI/2 for any modifications to these rules under Rule 601.

RECEIPT OF CONSIGNMENT OF EXPLOSIVES BY RAILWAYS FOR CONVEYANCE

611. Consignment(s) of explosive intended for conveyance by rail shall be received only-

- (1) By such person or persons as authorized by the Railway Administration concerned to receive dangerous goods for booking;
- (2) At such times between sunrise and sunset and at such places within the railway premises as the Railway Administration concerned may specify.

. ELECTRIFICATION OF DEFENCE SIDING AND RAILWAY TRACKS IN VARIOUS AMMUNITION DEPOTS

611A the electrification of defence siding of railway tracks inside the Ammunition depot is permitted subject to the following conditions:

- (1) The Marshalling Yard should be located at SIQD subject to minimum distance of 60m.
- (2) Electric line (From main line to Marshalling Yard) should be powered– on only during transportation.
- (3) Clean land (devoid of grass) of 5m wide lane on either side of rly track should be provided.
- (4) Shunting from Marshalling Yard to explosive area to be done by diesel/Battery operated locomotive.

PRECAUTIONS TO BE OBSERVED IN HANDLING OF EXPLOSIVES

- 612.(1) **Prohibition of Smoking, fires, lights and dangerous substances** – No person shall smoke, no fires, lights or articles/substances (such as acids, petroleum, carbide, or compressed gases) of flammable nature liable to cause or communicate fire or explosions shall be allowed–
- a. At any time within 30 meter of a place where an explosive is stored.
 - b. At any place where an explosive is handled, from one hour before and during such handling.
- (2) **Prohibition to possess matches, fuzes, knives, etc.**-No person on, in or near any place where explosive are handled or stored shall have in his possession any matches, fuzes or other appliances for producing ignition or explosion or any knives or other articles made of iron or steel.
- (3) **Prohibition of boots and shoes** –No person on, in or near any place where spark/friction sensitive explosives from Compatibility Group C and D are handled shall wear boots or shoes with iron nails or shod or strengthened with iron, unless such boots or shoes are covered with leather, rubber, felt or other equipment material, in the form of overshoes or otherwise. Where footwear of the required type is not available the persons concerned shall work bare-footed.
- (4) **Prohibition of children and intoxicated persons**– No person who is under 18 years of age or who is in a state of intoxication shall be employed in the loading, unloading or transport of explosives or be employed in or allowed to enter the area where the operations are in progress.
- (5) **Prohibition of unauthorized persons**– No unauthorized person shall be allowed access to the place where explosives are stored, handled or transported.
- (6) **Precautions against accidents, fire or explosion-**
- (a) No person shall commit or attempt to commit any act which may tend to cause a fire or explosion in or about any place where explosives are stored, handled or transported.
 - (b) Every person in charge of or, engaged in, transport or handling of explosive shall at all times-
 - (i) Comply with the provisions of these rules,
 - (ii) Observe all due precautions for the prevention of thefts and of accidents by fire or explosion,
 - (iii) Prevent any other person from committing any such act as is prohibited

under these rules.

- (7) **Protection from sun, rain and snow**—Packages containing explosives shall not be exposed to sun, rain or snow, nor kept on damp ground. They should be protected with tarpaulins or other suitable materials, whenever required.
- (8) **Examination of place, carriage or wagon on which any explosive is kept or handled** – The floor of any place or wagon on which any explosive is kept and the ground, gangway and other places over which the explosive is to be conveyed during loading or unloading shall be-
 - a. Carefully examined to ensure that there is nothing thereon in contravention of these rules or likely to endanger the safety of the consignment;
 - b. Thoroughly cleaned and swept before and after use;
 - c. If any explosive escapes from the packages in which it is contained, or is spilled, such explosive(s) shall immediately be carefully collected and set aside to be dealt with by qualified Service personnel who should arrange, if necessary, for their destruction at a safe distance.
- (9) **Handling of packages**
 - a. The packages containing explosives shall not be thrown, dropped down, rolled or dragged along the ground or floor, and care must be exercised to avoid striking them against any hard object.
 - b. Heavy packages should be handled by a team of more than one person, each holding the package from a secure place, sling or support provided on the package. However, use of mechanically operated lifting devices may be permitted provided they are properly secured and directly supervised by competent personnel.

PLACE AND TIME OF LOADING AND UNLOADING

- 613.(1) Explosives shall be loaded and unloaded at a safe distance from station buildings, dwellings houses, factories, public buildings and other buildings or places where persons assemble or petroleum, timber or any other flammable material is stored or handled.
- (2) No operations connected with loading, unloading and handling of explosives shall be conducted between sunset and sunrise.
- (3) The maximum time permitted for clearing of ammunition more than 500MT at

Receipt & Issue (R&I)/ Central Loading Platforms (CLP) of Central Ammunition Depot (CAD) Pulgaon and Ordnance Transit Group (OTG) Pathankot is 10 days. If quantity is less than 500MT at CLP/ R&I of CAD Pulgaon and OTG Pathankot the maximum time permitted is 5 days only. This time for Ammunition Depots (AD) & Field Ammunition Depots (FAD) is five days.

- (4) Nothing in Sub-Rule (1) and (2) shall apply to any operations connected with the conveyance of explosives by a road van/train used for the transport of small consignments of explosive or in the brake-van of a passenger/mixed train.

RESPONSIBILITY FOR LOADING AND UNLOADING

- 614.(1) Unless it is otherwise notified by the Railway Administration, consignor and consignees have to do loading and unloading, except at trans-shipment points, of such consignments of explosives as are in wagon loads or otherwise chargeable as for full wagon loads.

In the case of trans-shipment points, the Railway Administration shall be responsible for the above operations. A representative of the consignor or consignee must be detailed to supervise loading and unloading at trans-shipment points in the case of—

- (a) Full wagon loads;
 - (b) Explosives belonging to UN hazard division 1.1 and also items of Compatibility Group K. (UN Hazard Division 1.2/1.3)
- (2) Whenever explosives are loaded, unloaded or handled, the consignor/consignee shall depute a competent person experienced/trained in the handling of explosives to be present and to conduct the operation according to these rules.
- (3) After the loading/unloading of explosives has commenced, the operations shall proceed with due diligence and without unnecessary stoppage. If for any reason the operation is interrupted, the explosives shall NOT be left unattended.
- (7) Not more than 5 railway wagon shall be loaded or unloaded at any one time and place.

WAGON TO BE IN READINESS FOR LOADING

615. (1) No explosives shall be brought on to any place of loading except Military sidings. In the Depot/Service Establishments until the wagon into which it is to be loaded is at the place in readiness to receive it.
- (2) Any wagon, or vessel or any other type of conveyance transporting explosives shall at all times be in charge of and constantly attended by a competent person experienced in handling of explosives and deputed by the consignor/consignee till such time the loading or unloading operations have been completed.
- (3) In an area where explosive are handled, loaded or unloaded, the person in charge of any carriage other than a railway carriage or vessel shall not drive, conduct or maneuver such carriage or vessel in a dangerous or negligent manner. The person in charge of such carriage or vessel shall not stop or delay at any place for a longer time than may be reasonably necessary nor stop unnecessarily at any place where such stopping would cause public danger.

REPAIRS TO WAGONS

616. Before any repairs or alterations are commenced in any part of a wagon or vessel in which explosives are being or have been transported, all due precautions shall be taken. To remove all such explosives, or any remnants thereof, and the space in such carriage or vessel in which explosives have been carried shall be thoroughly cleaned to ensure that no remnants of explosives remain there in.

EXPLOSIVES NOT TO BE CARRIED ACROSS RAILWAY BRIDGES

617. No explosives other than safety class ammunition are permitted to be transported by road vehicle across any railway bridge on which facilities for the transport by rail are afforded by the Railway Administration.

APPROVED TYPES OF WAGONS FOR TRANSPORT OF EXPLOSIVES

618. (1) Explosives shall be transported by rail in the following types of wagons approved by the Chief Controller of Explosives in India (Petroleum & Explosive Safety Organisation) and Ministry of Railways:-

- a) Explosives Van(X)
 - b) Covered Wagon ordinary (C)
 - c) Covered Wagon, with floor covered with wooden planks (CX)
 - d) Covered wagon with end ventilators (CV)
 - e) Covered Wagon, eight wheeled (BCXT)
 - f) Open Wagon (KC)
 - g) Refrigerated Wagon (RFG)
 - h) Freight Container (CTR)
- (2) All explosives listed in Appendix VI/1 may be transported in covered wagon, four or eight wheeled (C/BCXT), except the following:
- a) Substances/Articles under UN Serial Number 0027, 0028, 0081, 0083, 0084, 0101, 0143, 0144, 0476, 0478 shall be transported only in **Explosive Van (X)**
 - b) Substances/Articles under UN Serial Number—0004, 0082, 0072, 0241, 0226, 0391, 0079, 0118, 0143, 0266, 0496, 0150, 0411, 0151, 0216, 0219, 0394, 0392, 0393, 0489, 0484, 0483, should be transported in covered wagon, with floor covered with wooden planks. (CX)
 - c) Substances/Articles under UN Serial Number 0221, 0286, 0287, 0370, 0451, are permitted in open wagon. (KC)
 - d) All items belonging to Compatibility Group H, J and K should be transported in covered wagon with end ventilators. (CV).

TYPE OF WAGONS PROHIBITED FOR TRANSPORT OF EXPLOSIVES

619. Wagons fitted with:

- (a) Grease lubricated axle boxes
- (b) End falling doors, and
- (c) Doors on the floor (hopper type) shall not be used for the conveyance of Military Explosives.

STOWING OF EXPLOSIVES

620.(1) In an explosives van or covered wagon, explosives shall be so stowed as to allow a minimum of 61 centimeters of air space below the roof of the wagon. In an open wagon, the height of the stack shall be at least 30 centimeters below the height of the side of the wagon. In the case of large calibre air craft bombs over 454 Kilograms, loading shall be restricted to one tier only.

- (2) Unboxed ammunition and all packages containing explosives shall be stowed and secured in such manner as to prevent their movements during transit and to ensure there is no possibility of the falling down from a stack.
- (3) Barrels containing explosives when laid on their sides shall be firmly secured with wooden wedges when they are stacked on their ends the no barrel from the second tier is likely to topple down shall not be more than two tiers high. It should, however, be ensured that

CLASSIFICATION OF EXPLOSIVES

- 621. For storage and transport purposes, explosives are divided into 13 different groups called Compatibility Groups, which are defined in Appendix VI/6.

CARRIAGE OF EXPLOSIVES OF DIFFERENT COMPATIBILITY GROUPS IN THE SAME WAGON

622. Explosives belonging to different Compatibility Groups when required to be transported in full wagon loads should normally be conveyed in separate wagons. Where however, the quantities involved do not constitute full wagon loads for different Compatibility Groups, these may be mixed only, as shown below, for transport in the same wagon, except in case of small quantities as provided for under Rule 639:

- (a) Any explosive belonging to Compatibility Groups C, D and E may be loaded together in the same wagon;
- (b) Any explosive belonging to Compatibility Group S may be loaded with explosives belonging to any other Compatibility Group with the exception of Compatibility Groups A and L.

PROHIBITION REGARDING TRANSPORT OF EXPLOSIVES WITH DANGEROUS GOODS

623. Explosives shall not be carried in the same wagon with any other stores which are classified as "Dangerous Goods".

TRANSPORT OF EXPLOSIVES WITH OTHER ORDNANCE STORES

624. Explosives shall not be carried in the same wagon with other ordnance stores except with the prior concurrence of the Service Headquarters concerned and under conditions specified below:

- a) The quantity of explosives conveyed in a wagon shall not exceed 1000 kilograms net or 2000 kilograms gross weight whichever is less.
- b) Mixing of explosives shall be in accordance with Rule 622.
- c) The explosives shall be packed in accordance with Service Rules. Unboxed ammunition shall not be conveyed under the provisions of this rule.
- d) No matches, appliances for producing light, fire or ignition or any of the dangerous goods such as petroleum, carbide, compressed gases, acids or other articles of flammable or corrosive nature likely to cause fire or explosion shall be carried in the same wagon.
- e) The packages of explosives shall be stored away from other Ordnance stores, properly stacked and well secured.
- f) The packages of Ordnance stores should be so secured as to avoid any movement or displacement which may cause damage to the explosives packages.
- g) Open wagons shall not be used for such transport.

MAXIMUM QUANTITY OF EXPLOSIVES TO BE CARRIED IN A WAGON

625. The Net Explosives Content (NEC) of explosives in a wagon shall not, normally, exceed 8 tons. In cases, there is still spare capacity left after loading 8 tons, the wagon may be loaded upto 75% of the plated capacity (i.e. gross weight), however, this is not applicable to bulk explosives. The stowage requirements specified in Rule 620 shall, however, be complied with

CALCULATION OF NETWEIGHT OF EXPLOSIVES

626. (1) The NEQ may be calculated from the percentage charge weight ratios. The “weight of explosives” means the “net explosives content” and shall not include the weight of case or contrivance in which the explosives are contained and/or the weight of packing case or box in which the explosives are packed.
- (2) The “weight of explosives” in a consignment offered for transport by rail shall be given by the consignor.

MAXIMUMWEIGHTOFFREIGHTCHARGE

627. (1) The Railway freight charges shall be calculated on gross weight of the explosives in accordance with freight classification as notified by railways.
- (2) Subject to the exceptions given in clauses (3) and (4), the minimum weight for charge for consignments of explosives, other than consignments carried in brake vans, is 60 quintals for B.G., 45 quintals for M.G. and 35 quintals for N.G. per 4-wheeled wagon.
- (3) Where a railway notifies a day for the running of a regular service for the carriage of explosives, or any particular explosive (s), consignments that are required to be loaded in explosive vans on such nominated days in local looking over such railway, shall be charged on actual weight.
- (4) Safety Cartridges (1.4S) may be conveyed along with ordinary goods traffic in a covered wagon not containing any article or substance liable to cause or communicate fire or explosion and are charged on actual weight.

Railway's Notification

SOUTHERN RAILWAY

- (1) Explosives consigned and carried in vans provided on a regular service of powder- vans are charged on actual weight.
- (2) The following is the programme of the movement of powder-vans and booking of explosives subject to cancellation when no traffic is offered:

From Madras to Vijayawada and via	Booked every Monday
From Madras to Waltair and via	

From Madras to Bangalore City and via	Booked every Friday
(including via-Jalarpet for the Ex. S. I. Rly area)	

- (3) **MINIMUM CHARGE FOR COLLECTIVE LOADS OF EXPLOSIVES** – When two or more consignments of the articles other than those which are charged on actual weight are tendered by one consign or at the same time either for the same or for different stations in one and the same direction the minimum applies to all collectively, i.e. the difference in the actual aggregate weight and the minimum is levied proportionately on the several consignments so booked.

For instance—Three consignments of explosives weighing 3 quintals, 5 quintals and 7 quintals tendered for dispatch from any one station to three different stations in the same direction are charged as under:

3 + 5 + 7 15 quintals
15:3::30 quintal minimum 6 quintals minimum first station
15:5::30 quintals minimum 10 quintals minimum second station
15:7::7 quintals minimum 4 quintals minimum third station

WESTERN RAILWAY

Dispatch of Explosives

- (1) **FROM BOMBAY**—Explosives sensitive to spark and friction, requiring the use of powder vans are accepted for dispatch at Bombay (Mahim) only, and if booked on Saturdays are charged on actual weight over this Railway.
- (2) **FROM OTHER BROADGAUGE STATIONS IN THE DOWN DIRECTION**—Explosives will be booked over this Railway and charged on actual weight on days on which the regular service is run.
- (3) Explosives containing their own means of ignition must invariably be loaded by themselves in a separate powder van and charged on a minimum weight of 30 quintals. Such explosives that do not contain their own mean of ignition are accepted on Saturdays at Bombay (Mahim) and the consignment are charged on actual weight over this Railway.
- (4) **BRANCH LINES** – On all other Sections of this Railway where there are no regular services for the carriage of explosives (other than those which are permitted to be conveyed along with ordinary goods traffic in covered wagons), such explosives will be subject to minimum weight for charge as per Rule 627.
- (5) **GONDAL REGION**—
 - (i) Explosives when sent by powder vans or other wagons, in the absence of the powder vans on Tuesdays and Saturdays on which regular services run between Bhandhuka Junction and Batad Junction, will be charged on actual weight.
 - (ii) In case of booking of explosives from stations on the other Railways to stations on Gondal Region of this Railway charges will be made on weight applicable on the forwarding Railway.
 - (iii) In all other cases explosives booked from station on the Gondal region will be charged on a minimum weight of 30 quintals per consignment as per Rule 627.

PAD LOCKING OF WAGONS

628. Every wagon carrying explosives shall be securely padlocked on both sides. The padlocks shall be provided by the consignor. Additional security arrangements should be provided by way of door chainless cotter and swing door bolt to minimize pilferage during transit. The keys of the padlock should be retained by Military escorts when accompanying a van. When no Military escort travels, the keys should be handed over to the Guard at the starting station who should handover the keys to the Station Master at destination for delivering them to the consignee. The number of keys handed over

should be mentioned on the R.R.

MARKING OF RAILWAY WAGONS

629. (1) There shall be fixed on each side in conspicuous position of a railway wagon containing explosives a securely attached Dangerous label printed in bold letters with the words “NOT TO BE LOOSELY HUNTED” and the word “EXPLOSIVES” For specimen form of label see FORM ‘E’, Appendix VI/2. The Railway authorities shall be responsible for the supply of labels and affixing them.
- (2) Every wagon containing military explosives shall bear on each side in a conspicuous position a wagon label (supplied by the consignor) indicating hazard division and the compatibility group to which the explosives therein belong (FORM ‘F’ Appendix VI/2 refers).
- (3) In addition to the above wagon labels, every wagon containing military explosives shall bear on each side, in a conspicuous position, a label indicating the firefighting division (supplied by the consignor) of the explosives to which the explosives therein belong (FORM ‘G’ Appendix VI/2 refers).

MARSHALLING

630. (1) Where a train comprises wagons containing explosives which belong to Hazard Division 1.1 or are deemed to belong to Hazard Division 1.1 under sub para (2) of this rule, the following provisions shall apply:
- a) The maximum weight of explosives which may be conveyed at one time in the wagons is 40 ton of explosives.
- b) When a train comprises wagons containing military explosives, it shall not comprise any wagon which requires to be labeled as containing highly flammable liquid or a gas, whether compressed, liquefied or dissolved under pressure (with the exception of deeply refrigerated carbon dioxide), any tank wagon containing white or yellow phosphorous or high test hydrogen peroxide, unless such wagons are separated from any other wagon containing explosives by at least three wagons, which contain only goods not classified as dangerous.
- c) The provisions of para (b) of this rule shall not apply to discharged tank vehicles having flammable liquid with a flash point between 23°C and 61°C.

- (2) When wagons contain explosives belonging to Hazard Division 1.1 and explosives belonging to either Hazard Division 1.2 or 1.3 or both, then the Marshaling category of all the explosives in the wagons will be deemed to marshaling along category 1.1 for the purposes of paragraph (1) (a) of this rule.
- (3) In applying the provisions of para (1) of this rule explosives belonging to Hazard Division 1.4 shall be disregarded.

MARSHALLING CONDITIONS

631. The following marshalling conditions are prescribed by the Defence Services:

- a) Not more than five wagons (40t) having explosives belonging to Hazard Division 1.1 shall be carried in one train. The train can be completed by coupling wagons containing explosives of other hazard divisions.
- b) Wagons containing toxic chemical agents (Group K) should as far as possible be segregated at the rear end of the train.
- c) Wagons containing explosives should be placed as far away possible from the engine Guard's van and there shall in no case be less than two dummy wagons between the engine Guard's van and the wagon loaded with explosives.
- d) Every wagon containing explosives shall be close coupled to the adjoining wagons.
- e) Open wagons shall be marshalled at the rear end of the train to avoid spark risk from steam locomotives.
- f) While trains carrying wagons containing explosives are stopping in a marshalling yard or at a station, steam locomotives shall be stopped as far away as possible from wagons containing explosives and in no case nearer than three wagon lengths.

MAXIMUM NUMBER OF WAGONS CONTAINING EXPLOSIVES TO BE CARRIED IN A SINGLE TRAIN

- 632.a) **Goods Train** –Not more than 10 wagons containing explosives of different hazard divisions shall be carried in a single goods train.
- b) **Ammunition Special Train**– The number of wagons containing explosives that may be carried by an ammunition special train may, at the discretion of the Service Authorities, be upto the hauling capacity of the engine subject to the condition that not more than five wagons or 40t, NEC whichever is less, of hazard division 1.1 Explosives shall be normally carried in a single train. In

special circumstances additional wagons of this category may be carried by interposing 3 wagons containing explosives of hazard division 1.4.

- c) **Parcel Train**– Not more than three wagons containing explosives belonging to different hazard division may be forwarded by the parcel train. These wagons should be provided with two dummy wagons on either side.
- d) **Mixed Train**– On any line or section on which goods trains are not running; not more than three wagons containing explosives belonging to different hazard division may be forwarded by a mixed train. These wagons shall be provided with two dummy wagons on either side. On entering any section on which goods trains are running the wagon containing explosives shall be detached from the mixed train and attached to a goods train except when the distance to be covered on such section is less than 80 kilo meters in which case the wagons containing explosives may continue to be conveyed by the mixed train itself.
- e) Mixing of explosives in wagons shall be in accordance with Rule 622

RESTRICTION IN SHUNTING OF WAGONS CONTAINING EXPLOSIVES

633. Shunting of wagons containing explosives shall not be carried out except under the direct supervision of a competent and duly authorized railway official who shall be responsible that:

- a) There is no rough or loose shunting of wagons containing explosives.
- b) When the train is being marshalled, wagons loaded with explosives be separated from the engine by atleast two dummy wagons in case of coal locomotive or one dummy wagon in case of diesel/electric locomotive.
- c) During shunting of wagons containing explosives, the speed of the shunting locomotive shall NOT exceed 8 kilometers per hour.

ESCORT PARTIES

634. When an escort party accompanies a consignment of explosives, the party shall travel in a separate carriage which should be the smallest type of passenger carriage available as close as possible to the wagons containing explosives but separated from them by a barrier of two dummy wagons.

INTIMATION OF DESPATCH AND RECEIPT OF EXPLOSIVES CONSIGNMENTS

- 635.(1) The sender of an explosive consignment shall, as expeditiously as possible by a letter or a telegram, advise the consignee of its dispatch.
- (2) The Station Master of the dispatching station shall, on receipt of a consignment of explosives, telegraph to the receiving Station Master who should at once advise the consignee to be prepared to take delivery. When there is break of gauge, the Station Master of trans-shipping station should also be advised.
- (3) It shall be the duty of officer-in-charge of a station to keep all packages of explosives, received for dispatch by rail or which have been received at any station for trans-shipment or delivery to the consignee, at a safe location from the station buildings, in a covered place or wagon. If in open it shall be completely covered with tarpaulin or such other suitable material, so that it may not be exposed to the sun, rain or snow. Small arms ammunition of Safety class may, however, be stored in the station building itself.

DELIVERY TO AND FROM RAILWAY PREMISES

636. (1) Packages containing explosives shall be removed by the consignee from the station, wharf or depot of the railway to which they have been transported as soon as practicable and with all due diligence after arrival.
- (2) Every package containing explosives shall until removed or dispatched from a station be kept in a safe place under direction of the Station Master, either under lock and key or guarded by Police or Service personnel.

DELAY IN TRANSIT OR NON-RECEIPT OF CONSIGNMENTS AT DESTINATION

637. In every case when a consignment of explosives fails to reach the destination station or a trans-shipping station where there is break-of-gauge en route, within a reasonable period from the date of booking as shown by the invoice or the Way-bill of two weeks from the expected date of arrival of consignment, necessary action to trace the missing explosives should be taken up with railways and police authorities. The Station Masters of the destination station and the trans-shipping station shall report the facts, by wireless, to the Station Master of the booking station and junctions concerned if any. The Station Masters of the receiving, dispatching and trans-shipping stations should also make immediate report to the irrespective Police authorities.

SEALS AND PADLOCKS

638. Seals, labels and padlocks on both sides of the wagons and the ends shall be removed

by the consignee, in the presence of Railway representatives, at the unloading point before the wagon is released.

CONSIGNMENT OF MIXED EXPLOSIVES

639. Subject to prior approval of Service Headquarters, a consignment of mixed explosives not exceeding 2.5 tones net explosive weight or 8 tonnes gross weight from Compatibility Groups C, D, E, F, G and S whichever is less, may be loaded in to an explosive wagon with the exception of fuzed high capacity ammunition of charge weight ratio 60% and above. However, the explosives from Compatibility Group B packed in approved Service packages may be carried in the same wagon by further packing in approved metallic packages.

The wagon shall bear the Hazard Division 1.1 label on either side and end. For specification of metallic packages, see Appendix VI/3.

EXEMPTIONS FOR EXPLOSIVE FALLING UNDER 1.4S

640. Explosives belonging to Compatibility Group S (1.4S) may be conveyed in any quantity by goods, mixed or passenger trains without restriction on the maximum quantity carried, type of wagon used, number of wagon sontrain, amount loaded in a wagon subject to its carrying capacity, mixing with ordinary merchandise of a non-explosive and/or non-flammable nature, conveyance by brake-van of passenger or mixed train and also without the necessity for provision of dummy wagons.

CONVEYANCE OF EXPLOSIVES BY BRAKE-VAN OF PASSENGER OR MIXED TRAIN

641. (1) Subject to written permission of Service Headquarters or of officials duly authorized by them, limited quantities of explosives, as mentioned in Appendix VI/4 may be transported by brake-van of passenger or mixed train
- (2) Ammunition belonging to different hazard divisions may be conveyed packed in approved Service packages.
- (3) Sensitive explosives like gun-powder, CE, Nitrocellulose powder (HD1.1) propellants (which require magazine conditions) and high explosives should be in approved Service packages and shall be further packed in one of the approved steel ammunition packages of thickness 20B,G or thicker corresponding to lower B.G. specified in Appendix VI/5.
- (4) Initiatory explosives, PETN dry, RDX dry (all 28g samples) and detonators in their Service/approved packages shall be further packed in an approved metallic package to the specification given in Appendix VI/3.

- (5) Propellants and propellant charges (1.3C) shall be in approved metal lined packages.
- (6) Fuzed HE ammunition shall be defused and plugged prior to conveyance and the fuzed packed separately in normal Service packages may be forwarded in the same brake-van, if necessary. However, 105 mm HES Hand 106mm RCL ammunition, which are fitted with integral/base fuzes may be transported in the brake-van of passenger/mixed train with the quantity restrictions as laid down in Appendix VI/4.
- (7) Explosives tendered for dispatch by brake-van of passenger or mixed train shall be personally inspected by an Inspecting Ordnance Officer or officer of similar technical status who should thoroughly satisfy himself that the explosives are safe for conveyance.
- (8) The maximum permissible limits of explosives which may be so transported are given in Appendix VI/4.
- (9) Only one consignment of explosives which should normally belong to one Compatibility Group shall be conveyed by any one train. Where, however, explosives from two or more Compatibility Groups are required to be transported under the above provision, this can be only in accordance with the mixing permitted under rule 622, provided that the total quantity of the explosives in such consignment shall not exceed the maximum weight permitted for any one of the Hazard Divisions contained in that consignment (Refer App VI/4).
- (10) Explosives which are permitted in accordance with the above stipulations must be loaded separately and by themselves on the floor of the wagon and as far away as possible from other packages in the brake-van and from the tail-light. No other goods shall be stacked or kept in such a manner that they are likely to fall on the explosives packages during transit.

Exception to Rule 641

- (a) 20mm and 30mm, fuzed H.E. Ammunition can, however, be transported by the brake-van of passenger or mixed train subject to the conditions, mentioned below, being fulfilled:-
 - (1) The H.E. or H.E./ammunition, 20mm/30mm, shall be belted alternatively with Ball/Dummy/AP rounds and packed in boxes, H-60.

- (2) Each H-60 box shall not contain more than 15 rounds of 30mm H.E and 30 rounds of 20mm H.E./ammunition belted respectively.
 - (3) A maximum of two complete H-60 boxes shall be packed in any one outer metallic package.
 - (4) Case Transport Detonator or Explosive shall be used as outer metallic package.
 - (5) Smalls and bags shall be placed in-between the H-60 boxes and around them in such a way that there is no internal movement and they do not touch each other or the outer metallic package.
 - (6) The gross weight of HE ammunition in any one outer metallic package shall not exceed 46 kilograms.
 - (7) The consignor/consignee shall provide escort for every consignment of fuzed ammunition transported in the brake-van of passenger or mixed train and the loading/unloading operations shall be carried under the supervision of the consignor/consignee's representatives.
- (b) Conveyance of Liquid Propellant Fuel Samples by Brake-van of Passenger/Mixed Train-
- (1) Subject to written permission of Service Headquarters or of officials duly authorized by them, limited quantities of liquid propellant fuels may be transported by brake-van of passenger or mixed train.
 - (2) The liquid propellant fuels shall be packed in special packages approved by the Service Headquarters.
 - (3) Only one kind of liquid propellant fuel sample shall be packed in one package and only one kind of liquid propellant fuel sample shall be transported in a single brake-van.
 - (4) The maximum quantity permitted in a single brake-van is shown in Appendix VI/4.
 - (5) Liquid propellant fuel sample while being transported shall be escorted by a qualified escort belonging to the concerned Service and equipped with first-aid kits and other accessories to deal with leakages.

CONVEYANCE OF EXPLOSIVES IN PASSENGER CARRIAGES

642. (1) No explosives shall be conveyed in a railway carriage while carrying passengers except as otherwise provided in sub-rule (2) below.

- (2) Personnel authorized issue of Service small Arms Ammunition of small quantities of shot gun or rifle ammunition as permitted by a license issued under the Indian Arms Act, 1878 (XI of 1878) may be carried on person while traveling in passenger or mixed trains.

CONVEYANCE OF EXPLOSIVES BY MILITARY SPECIAL TRAIN

643. (1) All explosive forming part of unit equipment may be carried in the Military special train by which the unit travels. The explosives shall be carried in separate wagons.
- (2) Mixing of explosives, loading of wagons and marshalling conditions shall be as laid down in Rules 622, 625 and 631 respectively.

CONVEYANCE OF AMMUNITION CONTAINING TOXIC CHEMICALS

644. (1) Ammunition articles containing both an explosive substance and a toxic chemical fall under Compatibility Group K. Covered wagons, ventilated, should be used for their transport.
- (2) Wagons containing these items may be attached to goods or ammunition special train only and shall not be attached to passenger or mixed train.
- (3) Not more than two wagons shall be carried by any one goods train. Wagons containing these shall be segregated from other wagons, engine Or Guard's van by at least two dummy wagons. Any number of wagons Containing such items may be attached to an ammunition special train up to the hauling capacity of the engine.
- (4) No other explosives except those forming component parts of such articles shall be loaded in the same wagon.
- (5) A conductor or conducting party competent to deal with emergencies arising from any kind of leakage or damage to the store shall invariably Accompany all such consignments. The conducting party may also act as escort to the consignment if competent to do so. The size of the Conducting party should be determined by the consignor but normally shall be between 2 to 4.
- (6) The decontamination equipment to be carried by the conducting party should normally consist of the following:
 - (a) Protective clothing, Respirator and Ointment A.G for each member of the party.
 - (b) Bleaching powder and slaked lime in drums. (c) Water and sand drums.
 - (d) Picks and shovels.
 - (e) Fire extinguishers, hand
 - (f) Bags for contaminated clothing.

(g) Spare clothes.

- (7) The decontamination equipment shall be carried in a separate wagon.

In the event of contamination of railway wagons and/ or other public or private property due to leakage from such ammunition stores the consignor/consignee shall be responsible for carrying out necessary decontamination of the wagon and the permanent way track or any building or equipment that may have got contaminated. No wagon which has been contaminated during conveyance shall be used for conveyance of any stores until it has been thoroughly decontaminated.

- (8) In all cases where decontamination of wagons, permanent way track, railway and other property has been effected, the decontaminating authority shall issue a Certificate in FORM D, specimen given in Appendix VI/2, to the authorities concerned indicating that the wagon/building/store has been satisfactorily decontaminated. Any such decontaminated wagon shall NOT be used for transporting explosives or food stuffs for a period of three months from that date.

CONVEYANCE OF LIQUID PROPELLANTS

The following rules shall apply to the conveyance of liquid propellants by rail in goods train.

645. **Compatibility**— As far as possible, wagons containing only one particular kind of liquid propellant shall be transported at a time in a train. In exceptional circumstances, incompatible liquids, e.g. liquid propellant fuel and liquid propellant oxidizer have to be transported by the same train, wagons containing each type should not be coupled together, but these should be separated by interposing between them, at least three wagons of non- dangerous/non-flammable stores or dummy wagons.
646. **Prohibition regarding Transport of Liquid Propellants with Explosives and Dangerous Goods-** Wagons containing liquid propellants shall be separated from wagons containing explosives, highly flammable liquids, flammable liquids or gases, whether compressed, liquefied or dissolved under pressures, by a barrier of three dummy wagons or wagons containing on-dangerous/non-flammable stores or dummy wagons on the same train.
647. **Type of Packing** – Liquid propellants shall not be tendered for transport unless the consignment is packed in approved service or departmental containers. Under no circumstances they shall be permitted to be transported in tankers. Only a single tier of packing shall be permitted, i.e. The packages/containers shall not be stacked one over the other within the wagons. The loading in the wagon shall be a snug fit, i.e. there should not be any empty spaces which may result in movement or fall of containers. The empty spaces in between shall be packed with approved empty containers or inert material.

648. **Maximum Quantity to be carried in a Wagon/Train**—Subject to the limiting capacity as stated in para 647 above, there shall be no restriction on the quantity per wagon or the maximum quantity of liquid propellant which may be dispatched by a goods train.
649. **Type of Wagons to be used**—Only normal covered wagons (C) without wooden flooring or side panelling shall be used for transport of liquid propellants. However, KC (open) wagon can be used for conveyance of “O” fuel (RFNA).
650. **Marking of Packages** – Each container of liquid propellant shall be conspicuously marked in bold letters with its nomenclature, quantity and risk hazard as illustrated below:

Gross Wt.	Nomenclature	Net. Quantity	Risk Hazard
	Unsymmetrical Dimethyl Hydrazine (UDMH) UN No. 1163		TOXIC Class 6.1

Gross Wt.	Nomenclature	Net. Quantity	Risk Hazard
	Red Fuming Nitric Acid (“O” Fuel) UN No. 2032		Corrosive Class 8

Gross Wt.	Nomenclature	Net. Quantity	Risk Hazard
	Mixture of Xylidines and Trimethylamine UN No. 1711/1296		Flammable and Toxic Class 3/6.1

651. **Identification with Labels**—Commensurate with the risk and hazard from the liquid propellants, wagons containing these shall be securely affixed prominently with appropriate labels at two places on either side. Labels A, E&F stipulated at Appendix VIII/2, Chapter VIII Military Tariff NO. 6 shall be used on wagons containing liquid propellants as well. The size of the labels shall not be less than 20cm x 20 cm.
652. **Loading and Unloading** – All operations connected with the loading and unloading and handling of wagons shall be conducted between sunrise and sunset only.
653. **Handling**—Packages containing liquid propellants shall not be thrown about, dropped down, or dragged along the ground or floor. Packages containing liquid propellants shall not be handled or stored with explosives and other dangerous goods of flammable nature.
654. **Prohibition on Smoking, taking or having any Firelights and Dangerous Substance**—No person shall be permitted to smoke or take or be in possession of any fire, naked light, matches or other articles of flammable nature or any device which produces heat or spark near any vehicle containing liquid propellant or near any place where such goods are stored or are being loaded, unloaded or handled. 655. **Protection from Elements of Weather during Transit Storage**—During transit storage, no package containing liquid propellants shall be exposed to sun, rain or snow or kept on a damp ground. Such packages shall be protected with tarpaulins except in the case of ‘O’ Fuels/Oxidizers. ‘O’ Fuels/Oxidizers shall be stored in a covered area.
656. **Transport of Liquid Propellants by Passenger or Mixed Train**— Liquid propellants in wagon loads shall not be conveyed in passenger or mixed trains. However, liquid propellant samples can be transported by brake-van of passenger/mixed train as per rule 641(b).
657. **Marshalling & Shunting of Wagons**—All wagons containing liquid propellants, shall be placed as far away as possible from the engine. These shall be separated from the engine by not less than three wagons which shall not contain any explosives or other dangerous goods or articles of flammable nature. In case the traction is by means of an electric or diesel engine, the wagons containing liquid propellants may be separated from the engine by at least one dummy wagon or a wagon loaded with non-explosives or non-dangerous goods. The above buffering of wagons shall be followed during shunting operations also.
658. **Escorts**—The requirement of escort is not mandatory. However, at the discretion of the consignee, he may provide escorts.

659. In addition to the above stipulations, all other administrative instructions and general precautions as applicable to dangerous goods of flammable nature mentioned in Chapter VIII, Military Tariff No. 6 shall be strictly enforced.

CFEES, DRDO

APPENDIX VI/1**LIST OF SUBSTANCES OR ARTICLES BY UNSERIAL NUMBER**

As given in STEC-9 (1996T, "The names of substances and articles in capital letters indicate the Authorised Short Names of items for use on packages and transport documents. The alternative shipping name has been shown in brackets following a proper shipping name. Entries like N.O.S (Not otherwise specified) marked with an asterisk must be supplemented with the technical name for the purpose of documentation and packaging marking".

UN Serial Number	Description of Substance or Article	Classification Code
0004	AMMUNITION PICRATE dry or wetted with less than 10% water, by mass	1.1D
0005	CARTRIDGES FOR WEAPONS with bursting charge	1.1F
0006	CARTRIDGES FOR WEAPONS with bursting charge	1.1E
0007	CARTRIDGES FOR WEAPONS with bursting charge	1.2F
0009	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.2G
0010	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.3G
0012	CARTRIDGES FOR WEAPONS, INERT PROJECTILES Or CARTRIDGES, SMALL ARMS	1.4S
0014	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1.4S
0015	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1.2G
0016	AMMUNITION, SMOKE with or without burster expelling charge or propelling charge	1.3G
0018	AMMUNITION TEAR-PRODUCING with burster, expelling charge or propelling charge	1.2G
0019	AMMUNITION TEAR-PRODUCING with burster, expelling charge or propelling charge	1.3G
0020	AMMUNITION, TOXIC* with burster expelling charge or propelling charge	1.2K
0021	AMMUNITION, TOXIC* with burster, expelling charge or propelling charge	1.3K
0027	BLACK POWDER (GUN POWDER) granular or as a meal	1.1D
0028	BLACK POWDER (GUNPOWDER), COMPRESSED or BLACK POWDER (GUNPOWDER), INPELLETS	1.1D

UN Serial Number	Description of Substance or Article	Classification Code
0029	DETONATORS, NON-ELECTRIC for blasting	1.1B
0030	DETONATORS, ELECTRIC for blasting	1.1B
0033	BOMBS with bursting charge	1.1F
0034	BOMBS with bursting charge	1.1D
0035	BOMBS with bursting charge	1.2D
0037	BOMBS, PHOTO-FLASH	1.1F
0038	BOMBS, PHOTO-FLASH	1.1D
0039	BOMBS, PHOTO-FLASH	1.2G
0042	BOOSTERS without detonator	1.1D
0043	BURSTERS, explosive	1.1D
0044	PRIMERS, CAP TYPE	1.4S
0048	CHARGES, DEMOLITION	1.1D
0049	CARTRIDGES, FLASH	1.1G
0050	CARTRIDGES, FLASH	1.3G
0054	CARTRIDGES, SIGNAL	1.3G
0055	CASES, CARTRIDGE, EMPTY, WITH PRIMER	1.4S
0056	CHARGES, DEPTH	1.1D
0059	CHARGES, SHAPED, COMMERCIAL without detonator	1.1D
0060	CHARGES, SUPPLEMENTARY, EXPLOSIVE	1.1D
0065	CORD, DETONATING, flexible	1.1D
0066	CORD, IGNITER	1.4G
0070	CUTTERS, CABLE, EXPLOSIVE	1.4S
0072	CYCLOTRIMETHYLENETRINITRAMINE (CYCLONITE; HEXOGEN; RDX), WETTED with not less than 15% water, by mass	1.1D
0073	DETONATORS FOR AMMUNITION	1.1B

UN Serial Number	Description of Substance or Article	Classification Code
0074	DIAZODINITROPHENOL, WETTED with not less than 40% water, or mixture of alcohol and water, by mass	1.1A
0075	DIETHYLENEGLYCOL DINITRATE, DESENSITIZED with not less than 25% non-volatile, water-insoluble phlegmatizer by mass	1.1D
0076	DINITROPHENOL, dry or wetted with less than 15% water, by mass	1.1D
0077	DINITROPHENOLATES, alkali metals, dry or wetted with less than 15% water, by mass	1.3C
0078	DINITRORESORCINOL, dry or wetted with less than 15% water, by mass	1.1D
0079	HEXANITRODIPHENYLAMINE (DIPICRYLAMINE; HEXYL)	1.1D
0081	EXPLOSIVE, BLASTING, TYPE A	1.1D
0082	EXPLOSIVE, BLASTING, TYPE B	1.1D
0083	EXPLOSIVE, BLASTING, TYPE C	1.1D
0084	EXPLOSIVE, BLASTING, TYPE D	1.1D
0092	FLARES, SURFACE	1.3G
0093	FLARES, AERIAL	1.3G
0094	FLASH POWDER	1.1G
0099	FRACTURING DEVICES, EXPLOSIVE without detonator, for oil wells	1.1D
0101	FUSE, INSTANTANEOUS, NON-DETONATING (QUICKMATCH)	1.3G
0102	CORD (FUSE), DETONATING, metal clad	1.2D
0103	FUSE, IGNITER, tubular metal clad	1.4G
0104	CORD (FUSE), DETONATING, MILD EFFECT, metal clad	1.4D
0105	FUSE, SAFETY FUZES,	1.4S
0106	DETONATING FUZES,	1.1B
0107	DETONATING	1.2B

UN Serial Number	Description of Substance or Article	Classification Code
0110	GRENADES, PRACTICE, hand or rifle	1.4S
0113	GUANYL NITROSAMINO GUANYLIDENE HYDRAZINE, WETTED with not less than 30% water, by mass	1.1A
0114	GUANYL NITROSAMINO GUANYLTETRAZINE (TETRAZENE), WETTED with not less than 30% water or mixture of alcohol and water, by mass	1.1A
0118	HEXOLITE (HEXOTOL), dry or wetted with less than 15% water by mass	1.1D
0121	IGNITERS	1.1G
0124	JET PERFORATING GUNS, CHARGED, oil well, without detonator	1.1D
0129	LEAD AZIDE, WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1A
0130	LEAD STYPHNATE (LEAD TRINITRORESORCINATE), WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1A
0131	LIGHTERS, FUSE	1.4S
0132	DEFLAGRATING METAL SALTS OF AROMATIC NITRODERIVATIVES, N.O.S.*	1.3C
0133	MANNITOL HEXANITRATE (NITROMANNITE), WETTED with not less than 40% water, or mixture of alcohol and water, by mass	1.1D
0135	MERCURY FULMINATE, WETTED with not less than 20% water, or mixture of alcohol and water, dry mass	1.1A
0136	MINES with bursting charge	1.1F
0137	MINES with bursting charge	1.1D
0138	MINES with bursting charge	1.2D
0143	NITROGLYCERIN, DESENSITIZED with not less than 40% non-volatile water insoluble phlegmatizer, by mass	1.1D
0144	NITROGLYCERIN SOLUTION IN ALCOHOL with more than 1% but not more than 10% nitroglycerin	1.1D
0146	NITROSTARCH, dry or wetted with less than 20% water, by mass	1.1D

UN Serial Number	Description of Substance or Article	Classification Code
0147	NITRO UREA	1.1D
0150	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN), WETTED with not less than 25% of water, by mass, or PENTAERYTHRITE FETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN), DESENSITIZED with not less than 15% of phlegmatizer, by mass	1.1D
0151	PENTOLITE, dry or wetted with less than 15% water, by mass	1.1D
0153	TRINITROANILINE (PICRAMIDE)	1.1D
0154	TRINITROPHENOL (PICRIC ACID), dry or wetted with less than 30% water, by mass	1.1D
0155	TRINITROCHLOROBENZENE (PICRYL CHLORIDE)	1.1D
0158	POTASSIUM SALTS OF AROMATIC NITRO-DERIVATIVES, explosive	1.3C
0159	POWDER CAKE (POWDER PASTE), WETTED with not less than 25% water, by mass	1.3C
0160	POWDER, SMOKELESS POWDER,	1.1C
0161	SMOKELESS PROJECTILES with	1.3C
0167	bursting charge PROJECTILES with	1.1F
0168	bursting charge PROJECTILES with	1.1D
0169	bursting charge	1.2D
0171	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.2G
0173	RELEASE DEVICES, EXPLOSIVE	1.4S
0174	RIVETS, EXPLOSIVE	1.4S
0180	ROCKETS with bursting charge	1.1F
0181	ROCKETS with bursting charge	1.1E
0182	ROCKETS with bursting charge	1.2E
0183	ROCKETS with inert head	1.3C

UN Serial Number	Description of Substance or Article	Classification Code
0186	ROCKETS MOTORS	1.3C
0190	SAMPLES, EXPLOSIVE, * other than initiating explosive	---
0191	SIGNAL DEVICES, HAND	1.4G
0192	SIGNAL, RAILWAY TRACK, EXPLOSIVE	1.1G
0193	SIGNAL, RAILWAY TRACK, EXPLOSIVE	1.4S
0194	SIGNALS, DISTRESS, ship	1.1G
0195	SIGANLS, DISTRESS, ship	1.3G
0196	SIGANLS, SMOKE	1.1G
0197	SIGNALS, SMOKE	1.4G
0203	SODIUM SALTS OF AROMATIC NITRO-DERIVATIVES; N.O.S.*, explosive	1.3 C
0204	SOUNDING DEVICES, EXPLOSIVE	1.2F
0207	TETRANITROANILINE	1.1D
0208	TRINITROPHENYLMETHYLNITRAMINE (TETRYL)	1.1D
0209	TRINITROTOLUENE (TNT), dry or wetted with less than 30% water, by mass	1.1D
0212	TRACERS FOR AMMUNITION	1.3G
0213	TRINITROANISOLE	1.1D
0214	TRINITROBENZENE, dry or wetted with less than 30% water, by mass	1.1D
0215	TRINITROBENZOIC ACID, dry or wetted with less than 30% water, by mass	1.1D
0216	TRINITRO-m-CRESOL	1.1D
0217	TRINITRONAPHTHALENE	1.1D
0218	TRINITROPHENETOLE	1.1D
0219	TRINITRORESORCINOL (STYPHNIC ACID), dry or wetted with less than 20% water, or mixture of alcohol and water, by mass	1.1D

UN Serial Number	Description of Substance or Article	Classification Code
0220	UREA NITRATE, dry or wetted with less than 20% water, by mass	1.1D
0221	WARHEADS, TORPEDO with bursting charge	1.1D
0222	AMMONIUM NITRATE with more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	1.1D
0223	AMMONIUM NITRATE FERTILIZER, which is more liable to explode than ammonium nitrate with 0.2% combustible substance, including any organic substance calculated as carbon, to the exclusion of any other added substance	1.1D
0224	BARIUM AZIDE, dry or wetted with less than 50% water, by mass	1.1A
0225	BOOSTERS WITH DETONATOR	1.1B
0226	CYCLOTETRAMETHYLENETETRANITRAMINE (HMX; OCTOGEN), WETTED with not less than 15% Water, by mass	1.1D
0234	SODIUM DINITRO-o-CRESOLATE, dry or wetted with less than 15% water, by mass	1.3 C
0235	SODIUM PICRAMATE, dry or wetted with less than 20% water, by mass	1.3 C
0236	ZIRCONIUM PICRAMATE, dry or wetted with less than 20% water, by mass	1.3 C
0237	CHARGES, SHAPED, FLEXIBLE, LINEAR	1.4 D
----	ROCKET, LINE-THROWING	1.2G
0240	ROCKET, LINE-THROWING EXPLOSIVE,	1.3G
0241	BLASTING, TYPE E CHARGES,	1.1D
0242	PROPELLING, FOR CANNON	1.3C
0243	AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.2H
0244	AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.3H

UN Serial Number	Description of Substance or Article	Classification Code
0245	AMMUNITION, SMOKE, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.2H
0246	AMMUNITION, SMOKE, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.3H
0247	AMMUNITION, INCENDIARY, liquid or gel, with burster, expelling charge or propelling charge	1.3J
0248	CONTRIVANCES, WATER-ACTIVATED* with burster, expelling charge or propelling charge	1.2L
0249	CONTRIVANCES, WATER- ACTIVATED* with burster, expelling charge or propelling charge	1.3L
0250	ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge	1.3L
0254	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.3G
0255	DETONATORS, ELECTRIC for blasting	1.4B
0257	FUZES, DETONATING	1.4B
0266	OCTOLITE (OCTOL), dry or wetted with less than 15% water, by mass	1.1D
0267	DETONATORS, NON-ELECTRIC for blasting	1.4B
0268	BOOSTERS WITH DETONATOR	1.2B
0271	CHARGES, PROPELLING	1.1C
0272	CHARGES, PROPELLING	1.3C
0275	CARTRIDGES, POWER DEVICE	1.3C
0276	CARTRIDGES, POWER DEVICE	1.4C
0277	CARTRIDGES, OIL WELL	1.3C
0278	CARTRIDGES, OIL WELL	1.4C
0279	CHARGES, PROPELLING, FOR CANNON	1.1C
0280	ROCKET MOTORS	1.1C
0281	ROCKET MOTORS	1.2C

UN Serial Number	Description of Substance or Article	Classification Code
0282	NITOGUANIDINE (PICRITE), dry or wetted with less than 20% water, by mass	1.1D
0283	BOOSTERS without detonator	1.2D
0284	GRENADES, hand or rifle, with bursting charge	1.1D
0285	GRENADES, hand or rifle, with bursting charge	1.2D
0286	WARHEADS, ROCKET with bursting charge	1.1D
0287	WARHEADS, ROCKET with bursting charge	1.2D
0288	CHARGES, SHAPED, FLEXIBLE, LINEAR	1.1D
0289	CORD, DETONATING, flexible	1.4D
0290	CORD (FUSE), DETONATING, metal clad	1.1D
0291	BOMBS with bursting charge	1.2F
0292	GRENADES, hand or rifle, with bursting charge	1.1F
0293	GRENADES, hand or rifle, with bursting charge	1.2F
0294	MINES with bursting charge	1.2F
0295	ROCKETS with bursting charge	1.2F
0296	SOUNDING DEVICES, EXPLOSIVE	1.1F
0297	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.4G
0299	BOMBS, PHOTO-FLASH	1.3G
0300	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.4G
0301	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1.4G
0303	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1.4G
0305	FLASH POWDER	1.3G
0306	TRACERS FOR AMMUNITION	1.4C
0312	CARTRIDGES, SIGNAL	1.4G

UN Serial Number	Description of Substance or Article	Classification Code
0313	SIGNALS, SMOKE	1.2G
0314	IGNITERS	1.2G
0315	IGNITERS	1.3G
0316	FUZES, IGNITING	1.3G
0317	FUZES, IGNITING	1.4G
0318	GRENADES, PRACTICE, hand or rifle	1.3G
0319	PRIMERS, TUBULAR	1.3G
0320	PRIMERS, TUBULAR	1.4G
0321	CARTRIDGES FOR WEAPONS with bursting charge	1.2E
0322	ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge	1.2L
0323	CARTRIDGES, POWER DEVICE	1.4S
0324	PROJECTILES with bursting charge	1.2F
0325	IGNITERS	1.4G
0326	CARTRIDGES, FOR WEAPONS, BLANK	1.1C
0327	CARTRIDGES, FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1.3C
0328	CARTRIDGES FOR WEAPONS, INERT PROJECTILE	1.2C
0329	TORPEDOES with bursting charge	1.1E
0330	TORPEDOES with bursting charge	1.1F
0331	EXPLOSIVE, BLASTING, TYPE B	1.5D
0332	EXPLOSIVE, BLASTING, TYPE E	1.5D
0333	FIREWORKS	1.1G
0334	FIREWORKS	1.2G
0335	FIREWORKS	1.3G
0336	FIREWORKS	1.4G

UN Serial Number	Description of Substance or Article	Classification Code
0337	FIREWORKS	1.4S
0338	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1.4C
0339	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1.4C
0340	NITROCELLULOSE, dry or wetted with less than 25% water (or alcohol), by mass	1.1D
0341	NITROCELLULOSE, unmodified or plasticized with less than 18% plasticizing substance, by mass	1.1D
0342	NITROCELLULOSE, WETTED with not less than 25% alcohol, by mass	1.3C
0343	NITROCELLULOSE, PLASTICIZED with not less than 18% plasticizing substance, by mass	1.3C
0344	PROJECTILES with bursting charge	1.4D
0345	PROJECTILES, inert with tracer	1.4S
0346	PROJECTILES with burster or expelling charge	1.2D
0347	PROJECTILES with burster or expelling charge	1.4D
0348	CARTRIDGES FOR WEAPONS with bursting charge	1.4F
0349	ARTICLES, EXPLOSIVE, N.O.S.*	1.4S
0350	ARTICLES, EXPLOSIVE, N.O.S.*	1.4B
0351	ARTICLES, EXPLOSIVE, N.O.S.*	1.4C
0352	ARTICLES, EXPLOSIVE, N.O.S.*	1.4D
0353	ARTICLES, EXPLOSIVE, N.O.S.*	1.4G
0354	ARTICLES, EXPLOSIVE, N.O.S.*	1.1L
0355	ARTICLES, EXPLOSIVE, N.O.S.*	1.2L
0356	ARTICLES, EXPLOSIVE, N.O.S.*	1.3L
0357	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.1L
0358	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.2L

UN Serial Number	Description of Substance or Article	Classification Code
0359	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.3L
0360	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1.1B
0361	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1.4B
0362	AMMUNITION, PRACTICE	1.4G
0363	AMMUNITION, PROOF	1.4G
0364	DETONATORS FOR AMMUNITION	1.2B
0365	DETONATORS FOR AMMUNITION	1.4B
0366	DETONATORS FOR AMMUNITION	1.4S
0367	FUZES, DETONATING	1.4S
0368	FUZES, IGNITING	1.4S
0369	WARHEADS, ROCKET with bursting charge WARHEADS,	1.1F
0370	ROCKET with burster or expelling charge WARHEADS,	1.4D
0371	ROCKET with burster or expelling charge GRENADES,	1.4F
0372	PRACTICE, hand or rifle	1.2G
0373	SIGNAL DEVICES, HAND	1.4S
0374	SOUNDING DEVICES, EXPLOSIVE	1.1D
0375	SOUNDING DEVICES, EXPLOSIVE	1.2D
0376	PRIMERS, TUBULAR	1.4S
0377	PRIMERS, CAP TYPE	1.1B
0378	PRIMERS, CAP TYPE	1.4B
0379	CASES, CARTRIDGE, EMPTY, WITH PRIMER	1.4C
0380	ARTICLES, PYROPHORIC	1.2L
0381	CARTRIDGES, POWER DEVICE	1.2C
0382	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.*	1.2B

0383		
0384	COMPONENTS,EXPLOSIVETRAIN,N.O.S.*	1.4B
0385	COMPONENTS,EXPLOSIVETRAIN,N.O.S.*	1.4S
0386	5-NITROBENZOTRIAZOL	1.1D
0387	TRINITROBENZENESULPHONICACID	1.1D
0388	TRINITROFLUORENONE	1.1D
0389	TRINITROTOLUENE(TNT) ANDTRINITROBENZENE MIXTURE or TRINITROTOLUENE(TNT) AND HEXANITROSTILBENEMIXTURE	1.1D
0390	TRINITROTOLUENE(TNT)MIXTURECONTAINING TRINITROBENZENEANDHEXANITROSTILBENE	1.1D
0391	TRITONAL	1.1D
0392	CYCLOTRIMETHYLENETRINITRAMINE(CYCLONITE; HEXOGEN;RDX)ANDCYCLOTETRAMETHYLENE-TETRAMITRAMINE(HMX;OCTOGEN)MIXTURES, WETTED with not less than15% water,by massor CYCLOTRIMETHYLENETRINITRAMINE(CYCLONITE HEXOGEN;RDX)ANDCYCLOTETRAMETHYLENE TETRAMITRAMINE(HMX;OCTOGEN)MIXTURES, DESENSITIZED with not less than10%phlegmatizer, By mass	1.1D
0393	HEXANITROSTILBENE	1.1D
0394	HEXOTONAL	1.1D
0395	TRINTRORESORCINOL(STYPHNICACID), WETTED with not less than20% water,or mixture of alcohol and water, by mass	1.1D
0396	ROCKET MOTORS, LIQUID FUELLED	1.2J
0397	ROCKET MOTORS, LIQUID FUELLED	1.3J
0398	ROCKETS, LIQUID FUELLED with bursting charge	1.1J
0399	ROCKETS ,LIQUID FUELLED with bursting charge BOMBS	1.2J
0400	WITH FLAMMABLE LIQUID with bursting charge BOMBS	1.1J
0401	WITH FLAMMABLE LIQUID with bursting charge	1.2J
	DIPICRYL SULPHIDE, dry or wetted with less than10%water, by mass	1.1D

UN Serial Number	Description of Substance or Article	Classification Code
0402	AMMONIUM PERCHLORATE	1.1D
0403	FLARES, AERIAL	1.4G
0404	FLARES, AERIAL	1.4S
0405	CARTRIDGES, SIGNAL	1.4S
0406	DINITROSOBENZENE	1.3C
0407	TETRAZOL-1-ACETIC ACID	1.4C
0408	FUZES, DETONATING with protective features	1.1D
0409	FUZES, DETONATING with protective features	1.2D
0410	FUZES, DETONATING with protective features	1.4D
0411	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN) with not less than 7% wax, by mass	1.1D
0412	CARTRIDGES FOR WEAPONS with bursting charge	1.4E
0413	CARTRIDGES FOR WEAPONS, BLANK	1.2C
0414	CHARGES, PROPELLING, FOR CANNON	1.2C
0415	CHARGES, PROPELLING	1.2C
0417	CARTRIDGES FOR WEAPON S, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1.3C
0418	FLARES, SURFACE	1.1G
0419	FLARES, SURFACE	1.2G
0420	FLARES, AERIAL	1.1G
0421	FLARES, AERIAL	1.2G
0424	PROJECTILES, inert with tracer	1.3G
0425	PROJECTILES, inert with tracer	1.4G
0426	PROJECTILES with burster or expelling charge	1.2F
0427	PROJECTILES with burster or expelling charge	1.4F
0428	ARTICLES, PYROTECHNIC for technical purposes	1.1G

UN Serial Number	Description of Substance or Article	Classification Code
0429	ARTICLES, PYROTECHNIC for technical purposes	1.2G
0430	ARTICLES, PYROTECHNIC for technical purposes	1.3G
0431	ARTICLES, PYROTECHNIC for technical purposes	1.4G
0432	ARTICLES, PYROTECHNIC for technical purposes	1.4S
0433	POWDER CAKE (POWDER PASTE), WETTED with not less than 17% alcohol, by mass	1.1C
0434	PROJECTILES with burster or expelling charge	1.2G
0435	PROJECTILES with burster or expelling charge	1.4G
0436	ROCKETS with expelling charge	1.2C
0437	ROCKETS with expelling charge	1.3C
0438	ROCKETS with expelling charge	1.4C
0439	CHARGES, SHAPED, COMMERCIAL without detonator	1.2D
0440	CHARGES, SHAPED, COMMERCIAL without detonator	1.4D
0441	CHARGES, SHAPED, COMMERCIAL without detonator	1.4S
0442	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.1D
0443	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.2D
0444	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.4D
0445	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.4S
0446	CASES, COMBUTIBLE, EMPTY, WITHOUT PRIMER CASES,	1.4C
0447	COMBUTIBLE, EMPTY, WITHOUT PRIMER	1.3C
0448	5-MERCAPTOTETRAZOL-1-ACETIC ACID	1.4C
0449	TORPEDOES, LIQUID FUELLED with or without bursting charge	1.1J
0450	TORPEDOES, LIQUID FUELLED with inert head	1.3J
0451	TORPEDOES with bursting charge	1.1D
0452	GRENADES, PRACTICE, hand or rifle	1.4G

UN Serial Number	Description of Substance or Article	Classification Code
0453	ROCKETS, LINE-THROWING	1.4G
0454	IGNITERS	1.4S
0455	DETONATORS, NON-ELECTRIC for blasting	1.4S
0456	DETONATORS, ELECTRIC for blasting	1.4S
0457	CHARGES, BURSTING, PLASTICS BONDED	1.1D
0458	CHARGES, BURSTING, PLASTICS BONDED	1.2D
0459	CHARGES, BURSTING, PLASTICS BONDED	1.4D
0460	CHARGES, BURSTING, PLASTICS BONDED	1.4S
0461	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.*	1.1B
0462	ARTICLES, EXPLOSIVE, N.O.S.*	1.1C
0463	ARTICLES, EXPLOSIVE, N.O.S.*	1.1D
0464	ARTICLES, EXPLOSIVE, N.O.S.*	1.1E
0465	ARTICLES, EXPLOSIVE, N.O.S.*	1.1F
0466	ARTICLES, EXPLOSIVE, N.O.S.*	1.2C
0467	ARTICLES, EXPLOSIVE, N.O.S.*	1.2D
0468	ARTICLES, EXPLOSIVE, N.O.S.*	1.2E
0469	ARTICLES, EXPLOSIVE, N.O.S.*	1.2F
0470	ARTICLES, EXPLOSIVE, N.O.S.*	1.3C
0471	ARTICLES, EXPLOSIVE, N.O.S.*	1.4E
0472	ARTICLES, EXPLOSIVE, N.O.S.*	1.4F
0473	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.1A
0474	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.1C
0475	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.1D
0476	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.1G
0477	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.3G

UN Serial Number	Description of Substance or Article	Classification Code
0478	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.3G
0479	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.4C
0480	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.4D
0481	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.4S
0482	SUBSTANCES, EXPLOSIVE, VERY INSENSITIVE (SUBSTANCES, EVI), N.O.S.*	1.5D
0483	CYCLOTRIMETHYLENETRINITRAMINE (CYCLONITE; HEXOGEN; RDX), DESENSITIZED	1.1D
0484	CYCLOTETRAMETHYLENETETRANITRAMINE (OCTOGEN, HMX), DESENSITIZED	1.1D
0485	SUBSTANCES, EXPLOSIVE, N.O.S.*	1.4G
0486	ARTICLES, EXPLOSIVE, EXTREMELY INSENSITIVE (ARTICLES, EEI)	1.6N
0487	SIGNALS, SMOKE	1.3G
0488	AMMUNITION, PRACTICE	1.3G
0489	DINITROGLYCOURIL (DINGU)	1.1D
0490	NITROTRIAZOLONE (NTO)	1.1D
0491	CHARGES, RPOELLING	1.4C
0492	SIGNAL, RAILWAY TRACK, EXPLOSIVE	1.3G
0493	SIGNAL, RAILWAY TRACK, EXPLOSIVE	1.4G
0494	JET PERFORATING GUNS, CHARGED, oil well without detonator	1.4D
0495	PROPELLANT, LIQUID	1.3C
0496	OCTONAL	1.1D
0497	PROPELLANT, LIQUID	1.1C
0498	PROPELLANT, LIQUID	1.1C
0499	PROPELLANT, SOLID	1.3C

APPENDIX VI/2

FORM A (See Rule 610)

Forwarding Note for Explosives tendered by Defence Services Size-1/2 foolscap or 21.59 cm. X 34.29 cm. Colour of paper-white (Approved by the Central Government for use on all Railways under Section 72 of the India Railways Act of 1890)

TO
THE STATION MASTER

.....RAILWAY.....STATION

Please receive the undermentioned consignment and forward by Goods and/or Mixed train*/Coaching and/or Mixed train* to.....station on theRailway as consigned below :-

By Whom Consigned		To Whom Consigned		Station	No. of Articles	Discussion of Stores, Classification Code and UN No.	Sender's Wt.	Freight paid / to pay
Name	Address	Name	Address				Kilogram	

Notwithstanding the above, I agree to pay freight by the dearer route if goods are actually carried by the route and if the railway administration is authorised by the Central Government to do so under section 27(A) of the Indian Railways Act.

I do hereby certify that I have satisfied myself that the description of stores, classification code, UN No. and weight or quantity of goods consigned by me have been correctly entered in this Forwarding Note.

I certify that the goods entered in the Forwarding Note have been packed in approved service packages.

Certified that the nominal packages used for packing of the stores/items detailed in the Forwarding Note is/are suitable for their packing. The packing has been done satisfactorily so as To avoid any damage and leakage of the explosive store during tansit and that the Explosive so packed is fit and safe for transport by rail.

Certified that the Explosives tendered in this Forwarding Note are declared safe for transport.

I further declare that I accept responsibility for any consequences to the aforesaid Railway Administration, or to the property of other persons, entrusted or to be entrusted to the Railway Administration for conveyance, or otherwise, which may be caused by the explosion, or otherwise by the said consignment, and that all risk and responsibility whether to the Railway Administration, to their servants or agents or to other, remain solely and entirely with me.

(1) Alternative railway risk and owners risk rates being available, elect to pay the.....rate.

(2) To be forwarded via.....(a dearer route*) at my request.

(3) The cheapest route being closed*/ partially to be charged via.....
The next cheapest open route.

(4) I declare that each package contains/piece is of a value of Rs.....and engage*/do not engage* to pay the percentage charge on value for the increased risk, as required by the Administration. (Description and contents in each package and value of excepted articles should be specifically mentioned).

*Strike out where inapplicable.

#Strike out any clause inapplicable before signing this form.

Signature of sender or his
agent.....
Dated.....20
Address.....
.....

Note—Additions or alternations made in the above entries must be signed (not initialed) by the sender or his agent.

(The form below to be filled in by the Railway staff)

Forwarding Note No.....

Dated

Particulars of weightment

No. of Articles	Description	Weight	Checked by	Dated	20
		Kilograms			
			Weighted by	Dated	20
			Loaded by	Dated	20
			Invoice by	Dated	20

Risk.....

.....

To be carried via.....

To be charged Via.....

1 Description	2. No. of articles	3. Marks	4. Actual Weight (Kg)	5. Weight Charge (Kg)	6. Class	7. Rate per Quintal		8. Paid		9. To pay		10. Receipt No.	11. Invoice Particulars of wagons					
						Rs.	P.	Rs.	P.	Rs.	P.		No.	Date	No.	Owning	C.C	Floor

Notes

- i. When alternative railway risk and owner's risk are quoted, the latter will apply unless the sender, in Clause (1) overleaf enters the words "railway risk" when he will pay or engage to pay the higher charge and will receive a certificate of this effect.
- ii. When a consignment is to be forwarded via other than the shortest route at the sender's request, the route by which the consignment is to be forwarded must be recorded in Clause (2) overleaf.
- iii. When a consignment is to be charged via the next cheapest open route, the cheapest route being closed, or partially closed, the route by which the consignment is to be charged must be recorded in Clause (3) overleaf.
- iv. Railways are not responsible for any loss, destruction, damage or deterioration of a package containing/piece of article (s) specified in the Second schedule to the Indian Railways Act whose value exceeds Rs 500 per package or piece, unless the contents of each package and value of excepted articles are declared at the time of booking and an engagement entered into to pay the percentage charge on value for increased risk.

Note— All clauses and words which are inapplicable are to be struck out before
The forwarding Note is signed

FORM B
(See Rule 603) GUARANTEE CERTIFICATE

This is to certify that.....an Explosive (not included in the List of Explosives in Appendix VI/I) offered for consignment by rail has been examined, is considered safe for transport and provisionally assigned the following transport conditions:

Hazard Division	Compatibility Group	Percentage Charge / Weight	Types of Wagon	Remarks

Issued under authority of Rule 603.

Signed
 Rank & Designation.....
 Department.....

Seal of Office

FORM C
(See Rule 601)
Authority for Modification of Rule

To

The Divisional/Transportation Officer

.....Railway

.....

The following Explosive/s which is/are the property of the Defence Services, India
is/are to be transported by rail from.....

.....

2. The consignment differs from the condition specified in the “Rules for Transport of
Services Explosives by Rail” in the following respect:

.....

.....

3. I hereby authorize this movement under Rule 602. Concurrence of the Railway Board has
been obtained.

Signed.....
Rank & Designation.....
Station.....
Department.....
Date.....

Seal of Office

FORM D
(See Rule 644) Decontamination Certificate

Certified that the following wagon/s buildings/stores has/have been satisfactorily decontaminated and is/are fit for re-use.

.....

.....

The wagon/s shall not however be used for transporting of foodstuff or explosives for a period of 3 months from this date.

Signed.....
Rank & Designation.....
Station.....
Department.....
Date.....

Seal of Office

APPENDIX VI/2
FORM 'E'
(See Rule 629)
WAGON LABELS



Note:-

(1)Background.....White

Symbol and Lettering.....Black

(2)Dimensions.....300 mm radius

(3)The label should be divided into 2 equal half circles, the upper being used for the lettering “NOT TO BE LOSSES HUNTED” and the symbol and the lower for the rest of the text, as indicated above.

Note:-

The compatibility group and the weight of explosives (in the case of detonators their number instead of weight) contained in the wagon or carriage must invariably shown on the wagon label. This information must also be entered on the seal cards and pocket labels.

APPENDIX VI/2
FORM 'F'
(See Rule 629)
WAGON LABELS



Size: -400 mm diameter
PRINTING:-To be printed in
Red on white
background

Illustration

In the above label 1.1 indicates the Hazard Division (HD) of the explosive and 'A' its Compatibility Group. Accordingly HD 1.1, 1.2, 1.3 or 1.4, as applicable, should be indicated along with Compatibility Group A, B, C, D, E, F, G, H, J, K, L, N or S, as applicable.



NOTE: Fire symbol as given above viz. 1, 2, 3, and 4 as applicable, should be affixed on the wagon to facilitate fire fighting in case of an accidental fire.

(See Rules 639 and 641)

Specification for Metallic Packages:-

Body.....of wrought iron, mild steel, hard rolled brass Muntz metal, or zinc, riveted or lap welded fitted at both ends with a substantial flange of same materials, or of gunmetal for the attachment of lid and bottom, if iron or steel to be thoroughly galvanized after making up or to be effectively painted. Thickness not less than 1.25 mm. or if of zinc, not less than 9.52 mm.

Bottom.....of same materials or gun metal; if of iron or steel to be thoroughly galvanized, securely riveted to flange or body or forming part of such flange. Thickness not less than 3.17 mm. or if zinc, not less than 9.52 mm.

Lid.....of same materials or gun metal; if of iron or steel to be thoroughly galvanized. Thickness not less than 1.58 mm. at centre, and not less than 3.17 mm throughout.

Fastening....The lid to be secured by not less than four good screw bolts or swing bolts, with or without a substantial hinge which may take the place of one of the four screws bolts or swing bolts.

Washer.....A washer of leather, rubber, or suitable material, to be between the lid and the flange, unless the lid is fitted with a projecting ring fitting into a depression in the flange.

All rivet heads to be well finished, and the inside of the package to be free from rough edges or burrs. The whole to be of good material and workmanship, are to be maintained in an efficient condition.

(See rule 641)
Explosive limit for brake-van of passenger or Mixed Train

Sl. No.	UN Hazard Division	Type of explosives/ammunition	Max. Qty. permitted	Packing
1.	1.1	All spark and friction sensitive explosives like gun powder, CE, Nitrocellulose powder propellants, ballistites, gun-cotton, blasting explosives except types A&B, SR&PN compositions	9 Kg Net	Service packages to be further contained in approved metallic packages to Appendix VI/5
2.	1.1	Bulk High Explosives	22.5 kg	Do-
3.	1.1	All ammunition except detonators and fuze mine contact	34 kg gross	Approved service packages.
4.	1.1	Initiatory composition samples	8x28 kg	Service packages to be further contained in approved metallic packages to Appendix VI/3
5.	1.1	Detonators	0.225 kg not exceeding 250, detonators	-do-
6.	1.1	Fuze mine contact	1.1 kg net	-do-

7	1.2	All ammunition including 105 mm HESH and 106 mm RCL ammunition fitted with integral/base fuze, except pyrotechnic and smoke items.	113 kg gross	Approved service packages
8.	1.3	Propellant charges	68 kg net	Approved metal lined packages
9.	1.4	All ammunition except safety class	113 kg gross	Approved service packages
10.	1.1 to 1.4	Pyrotechnic and smoke item	34 kg gross	-do
11.	1.4	All safety class ammunition	Any quantity	Approved service package
**12	Liquid Propellant	Fuel 'O', Fuel 'G' IPN and other similar ones.	24 kg	Approved Service packages,. Number of packages restricted to four.

* Fuzed ammunition shall be defused and plugged prior to conveyance. The fuzes, packed separately in approved Service packages, may be forwarded in the same brake-van, if necessary.

** Only one kind of liquid propellant sample shall be transported in one brake-van.

The following explosives/ammunition **are not to be** transported in the brake-van of passenger or mixed trains :

- (i) All Types A and B, SR and PN Compositions.
- (ii) Unboxed shells and bombs.
- (iii) High capacity HE filled ammunition containing its own means of ignition.
- (iv) Bulk initiatory compositions under Compatibility Group A except the

samples mentioned above.

- (v) All incendiary ammunition including those containing flammable liquid or gel (Compatibility Groups G and J).
- (vi) Ammunition containing phosphide or white phosphorous (Compatibility Group H) (However, WP ammunition with WP content not exceeding 5kg. May be transported by brake-van of passenger or mixed trains under escort, for proof purposes. In case of proof samples from Ordnance Factory, Chanda, the packing can be in Service, approved containers and for all other establishments/depots, the ammunition should be packed in hermetically closed polythene bags and immersed under water in approved steel water carriers).
- (vii) Ammunition containing toxic chemical agent (Compatibility Group K).
- (viii) Allammunition belonging to Compatibility Group L.

APPENDIX VI/5

(See Rule 641)

DETAILS OF EMPTY STEELS SERVICE AMMUNITION BOXES WHICH ARE APPROVED FOR FURTHER PACKING OF SENSITIVE EXPLOSIVES.

Approximate measurements in mm.

Box	No.	Length	Breadth	Height and body	Thickness of lid
H	50	460	285	260	20 B.G.
P	59	485	210	200	20 B.G.
G	70	485	210	200	20 B.G.
M	104	490	210	195	20 B.G.
B	166	500	230	335	20 B.G.
B	184	580	255	250	20 B.G.
B	167	555	240	240	20 B.G.
C	219	525	450	265	20 B.G.
C	224	625	390	260	18 B.G.
C	235	1180	315	160	20 B.G.
C	239	645	445	260	18 B.G.
C	185	375	375	840	20 B.G.
C	190	525	360	200	14 B.G.
C	216	510	455	280	18 B.G.
H	60	355	240	315	20 B.G.

Case Transport explosive

Mks-1 & 2	840	430	280	12B.G.
3	735	610	545	
4	505	885	340	10B.G.

Case Transport Detonators

Mks. 1&2	675	520	385	12 B.G.
Mk 3	675	305	240	14 B.G.
MK 4	585	530	355	

Note:- Other standard Service steel boxes of thickness 20 B.G or of greater thickness corresponding to lower B.Gs. may be used in lieu.

SYSTEM OF CLASSIFICATION OF EXPLOSIVES

General

1. The UN international System of Classification was devised in order to promote the safe transport of dangerous goods and its use has since been extended almost universally for control of storage and manufacture as well. The basis of the system is the classification of goods by the type of hazard involved.
2. The system consists of 9 classes (1-9) of which Class 1 comprises explosives substances and articles.
3. Class 1 is divided into 6 Hazard Divisions (HDs). The first 4 indicate the type of hazard to be expected in the event of an accident; blast (HD1.1), projection effects (HD 1.2), fire and radiant heat (HD 1.3) and no significant hazard (HD 1.4). The fifth Hazard Division (HD 1.5) comprises explosive substances which are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport. The Hazard Division 1.6 comprises extremely insensitive articles which do not have a mass explosion hazard. Strictly the first digit 1 in HD 1.1 etc. refers to the class of dangerous goods (i.e. Class 1–explosives) but it is common practice to include it when referring to Hazard Division or Hazard Classification Codes (e.g. 1.1 D).
4. In order to identify the kinds of explosives deemed to be compatible and those which may have to be segregated to promote safety in transport, they are assigned one or other of 13 Compatibility Groups on the basis of similarity of characteristics, properties and accident effects potential. These groups have been defined so that, with the exception of Compatibility Group L, all explosives in any one group are compatible with one another in storage and in every mode of transport. Explosives are considered to be compatible if they may be stored, stowed or carried together without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident.

Definitions of the Hazard Division

Hazard Division 1.1

5. This division comprises substances and articles of Class 1 which have a mass explosion hazard. The major hazards of this division are blast, high velocity projections and other projections of relatively low velocity.

Hazard Division 1.2

6. This division comprises substances and articles of Class 1 which have a projection hazard but not a mass explosion hazard. The explosion results in items burning and exploding progressively, a few at a time. Furthermore, fragments, firebrands and unexploded items may be projected in considerable number; some of these may explode on impact and cause fires or explosions. Blast effects are limited to the immediate vicinity.

Hazard Division 1.3

7. The division comprises substances and articles of Class 1 which have a mass fire hazard and either a minor blast hazard or minor projection hazard, but not a mass explosion hazard. This division includes some items which burn with great violence and intense heat emitting considerable thermal radiation (mass fire hazard) and others which burn sporadically. Items in this division may explode but do not usually turn dangerous. High velocity fragments, fire brands and burning containers may be projected.

Hazard Division 1.4

8. This division comprises substances and articles of Class 1 which present no significant hazard. This division includes items which are primarily a moderate fire hazard. They do not contribute excessively to a fire. The effects are largely confined to the package. No fragments of appreciable size or range are to be expected. An external fire does not cause the simultaneous explosion of the total contents of a package of such items.

Hazard Division 1.5

9. This division comprises very insensitive substances which have a mass explosion hazard. This division comprises explosive substances which are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport. As a minimum requirement, they must not explode in the external fire test. At present, there are no military explosive substances classified under HD 1.5

Hazard Division 1.6

10. This division comprises extremely insensitive articles which do not have a mass explosion hazard and which demonstrate a negligible probability of accidental initiation or propagation. The risk from articles of Hazard Division 1.6 is limited to the explosion of a single article.

11. DEFINITIONS OF THE COMPATIBILITY GROUPS

Compatibility Group ‘A’ Primary explosive substance.

Compatibility Group ‘B’ Article containing a primary explosive substance and not containing two or more effective protective features

Compatibility Group ‘C’ Propellant explosive substance or other deflagrating explosive substance or article containing such explosive substance.

Compatibility Group ‘D’ Secondary detonating explosive substance or black powder or article containing a secondary detonating explosive substance, in each case without means of initiation and without a propelling charge, or article containing a primary explosive substance and containing two or more effective protective features.

Compatibility Group ‘E’ Article containing a secondary detonating explosive substance, without means of initiation with a propelling charge (other than one containing a flammable liquid or gel or hypergolic liquids)

Compatibility Group ‘F’ Article containing a secondary detonating explosive substance with its own means of initiation, with a propelling charge (other than one containing a flammable liquid or gel or hypergolic liquids) or without a propelling charge.

Compatibility Group ‘G’ Pyrotechnic substance, or article containing a pyrotechnic substance, or article containing both an explosive substance and an illuminating, incendiary, tear- or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphides, or a pyrophoric substance, a flammable liquid or gel, or hypergolic liquids).

Compatibility Group ‘H’ Article containing both an explosive substance and white phosphorus.

Compatibility Group ‘J’ Article containing both an explosive substance and a flammable liquid or gel.

Compatibility Group ‘K’ Article containing both an explosive substance and a toxic chemical agent.

Compatibility Group ‘L’ Explosive substance or article containing an explosive substance and presenting a special risk (e.g. Due to water-activation or presence of hypergolic liquids, phosphides or a pyrophoric substance) and needing isolation of each type.

Compatibility Group ‘N’ Articles containing only extremely insensitive detonating substances.

Compatibility Group ‘S’ Substance or article so packed or designed that any hazardous effects arising from accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast or projection effects 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.

12. HAZARD CLASSIFICATION CODE

The combination of Hazard Division and Compatibility Groups is known as Hazard Classification Code. It consists of alpha-numeric symbol which denotes the complete Hazard Classification for a particular type or ammunition. The code comprises two digits, indicating the Hazard Division followed by a letter corresponding to the Compatibility Group.