

TRANSPORT OF DANGEROUS GOODS

**Recommendations concerning the classification,
listing and labelling of dangerous goods
and shipping papers for such goods**

**Recommendations prepared by
the United Nations Committee of Experts
on the transport of dangerous goods**



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I

INTRODUCTION

Nature and purpose of the recommendations

1. The following recommendations are addressed to governments and to the international organizations concerned with the regulation of the transport of dangerous goods. They cover the following points: classification and definitions of classes, listing of the principal dangerous goods, labelling and shipping papers. They do not apply to unpacked dangerous goods, which in most countries are subject to a special system of regulations.
2. They do not constitute new regulations which it is proposed to substitute for national and international regulations governing the various means of transport. They simply represent a framework broad and flexible enough to allow those regulations to be easily fitted into it and so develop, while complying with the special requirements they have to meet. The adoption of this framework should make it possible to achieve a minimum of uniformity at the world level for the various means of transport. That uniformity may - and it is desirable that it should - grow and expand when the Administrations and organizations responsible for the regulations have been able to exchange experiences on this common basis.
3. Although thus limited in scope, these recommendations are nevertheless of undeniable practical value for all who are in any way directly or indirectly concerned with such transport, because this uniformity will benefit all by simplifying transport, handling and control and by reducing formalities and loss of time. The advantages will be the greater in that trade in dangerous goods is increasing steadily.

Economic importance of the international transport of dangerous goods

4. The category of goods which are dangerous to carry has substantially widened in recent years, and particularly since the second world war, owing partly to the enormously increased use of some of these goods, and partly to a steady flow of new products on to the market, due to progress in chemical research. Dangerous goods are now of very great and constantly increasing importance in economic activity and in national and international traffic.

Principles underlying the regulation of the transport of dangerous goods

5. The transport of dangerous goods is regulated in order reasonably to prevent them from causing accidents to persons, damage to or even loss of the means of transport employed, or damage or destruction to other goods. Some explosions occurring in the course of transport have indeed ravaged entire cities. But at the same time the regulations must be so framed as not to impede the movement of

such goods, or at any rate of those which are not too dangerous to be accepted for transport. With that exception, the aim of the regulations may be said to be to make transport possible by eliminating risks or reducing them to a minimum. The problem is therefore both a safety problem and a problem of facilitating transport. By reason of the obligation to carry imposed on certain carriers, in particular on European railways by the International Convention on the Transport of Goods by Rail (CIM), these carriers cannot refuse acceptance of dangerous goods unless special regulations authorize them to do so.

Outline of existing international regulations

6. To meet the need for international regulation, a number of agreements have been established, as follows:

7. For inland transport:

- the International Regulations concerning the Transport of Dangerous Goods 1/ - RID (Annex I to the International Convention on the Transport of Goods by Rail (CIM)), which applies to European railways;
- the rules entitled "Special conditions for the transport of dangerous goods in international traffic by rail (Annex 4 to the Agreement on international traffic in goods by rail (SMGS)"2/) concluded between the People's Republic of Albania, the People's Republic of Bulgaria, the People's Republic of China, the Czechoslovak Republic, the German Democratic Republic, the People's Republic of Hungary, the Democratic Republic of Korea, the People's Republic of Mongolia, the People's Republic of Poland, the People's Republic of Roumania, the Popular Democratic Republic of Viet-Nam, and the USSR;
- the International Convention concerning the Transport of Combustible Liquids in Inland Navigation (The Hague, 1939), which is applied by all riparian States of the Rhine and by Belgium.

The Inland Transport Committee of the Economic Commission for Europe, a United Nations organ, has in preparation two European agreements concerning the international transport of dangerous goods by road and by navigable waterways respectively. It has also begun work at the European level on the preparation of general regulations concerning the handling of dangerous goods.

8. In North America there is no inter-governmental agreement; but the regulations concerning the transport of dangerous goods by rail are the same in Canada as in the United States because the Canadian Board of Transport Commissioners has adopted for Canada the regulations prescribed for the United States by the Interstate Commerce Commission. The Mexican Railways too have adopted very similar regulations to those of the Interstate Commerce Commission.

1/ The official title is "The Rules relating to substances and articles not acceptable for carriage or acceptable only under certain conditions (Annex 1)".

2/ The official title in Russian is "Sogwashenie O Meeshdunarodnom Jeleshodoroshnom Grousevom So-obshcheniyu".

9. European and American regulations are notably different.

10. There are no international regulations concerning seaborne transport. The International Convention for the Safety of Life at Sea (London, 1948) merely contains a Chapter VI dealing with the carriage of grain and dangerous goods, which includes a list of the various categories of dangerous goods. In addition, the 1948 Conference which prepared this Convention recommended "that the subject should receive further study as a matter of urgency" either by the Maritime Safety Committee of the Inter-governmental Maritime Consultative Organization (IMCO) or by representatives of the governments chiefly concerned.

11. In the field of international civil aviation, certain provisions relating to dangerous goods are contained in article 35 of the Convention on International Civil Aviation (Chicago, 1944) and in Annex 6 to this Convention, entitled "International Standards and Recommended Practices, Operation of Aircraft, International Commercial Air Transport". In addition, the "Regulations relating to the Carriage of Restricted Articles" of the International Air Transport Association (IATA) became effective on a world-wide basis on 1 January 1956. A majority of governments concerned with air transport have approved air lines operating in accordance with these regulations.

12. With regard to postal traffic, the Universal Postal Convention (Brussels, 1952) includes as a matter of principle dangerous substances among those articles the forwarding of which is prohibited (article 59). Article 6 of the Agreement concerning Postal Parcels contains a similar provision. That article, however, allows of an exception to the general rule in respect of the transport of certain dangerous goods, subject to agreement between the postal Administrations concerned, including the intermediary Administrations responsible for handling the goods in transit. Articles 121 and 138 of the Detailed Regulations of the Convention and articles 104 and 105 of the Detailed Regulations of the above-mentioned Agreement deal with the packaging of goods sent by letter post and by postal parcel, and in particular with the special packing required for a limited number of dangerous goods.^{3/}

Need for a certain uniformity at the world level for all means of transport

13. From the above rapid survey it is clear that international regulation is fragmentary and that the regulations applied in various parts of the world lack uniformity.

14. The main systems of regulation (RID, the United Kingdom regulations for seaborne transport, the regulations of the Interstate Commerce Commission and of the United States Coastguard in the United States and the regulations of IATA) differ in their framework, i.e. in their classifications (and corresponding labelling) and listing of goods. The terminology itself is different. These differences create difficulties for exporters, who are obliged to see that their consignments comply with the regulations of the countries of destination and transit, which ought to be easily ascertainable. They also create difficulties for the inspecting authorities. These difficulties are particularly acute in seaports, where inland and seaborne transport meet.

^{3/} See paragraph 23 below.

15. The main systems of regulation also differ as regards the regulations themselves, i.e., as regards the provisions relating to packaging and stowing. This creates obstacles, especially for inter-continental transport, since consignors have to comply with provisions which differ from country to country.

16. Lastly, it often happens that, on their journey from the original consignor to the final consignee, the same goods have to use a series of different means of transport. The lack of uniformity between the regulations applicable to the various means of transport complicates such transport.

17. This is the situation noted by the Transport and Communications Commission. As a remedy for all these difficulties, the Commission recommended, and the Economic and Social Council decided, that a study should be made with a view to framing, to the extent possible, uniform or practically uniform regulations at the world level, applicable to the various means of transport.

18. Furthermore, the lack of a world framework for regulations and also the lack of international regulations for seaborne transport have certainly impeded the preparation of international regulations related to traffic between continental and maritime countries.

19. The present juncture seems particularly propitious for such a venture towards uniformity. In certain fields, existing regulations are under periodical revision and accordingly in a relatively flexible state; in other fields regulations are being prepared; while finally there are some fields, such as seaborne transport, where there are no international regulations at all in the strict sense of the term.

Significance of the recommendations

20. In submitting these recommendations, there is no intention of imposing a new world-wide system to be abruptly substituted for existing regional or national systems. It is merely contemplated that governments, inter-governmental organizations and other international organizations which have drawn up, or are preparing, regulations should adapt them to these recommendations. In this way, the desired uniformity will be brought about smoothly and not abruptly.

21. In other words, the recommendations, which are based largely on existing regulations and on the work undertaken in this field by various organizations of an international character, are addressed to governments and to the international organizations concerned. They offer a general framework to which existing regulations can be adapted and within which they can develop, and new regulations, for international seaborne transport for example, be established. Once this adaptation of international and national regulations, whether existing or in preparation, to the general framework has been completed, carriers, consignors and inspecting authorities will benefit. When the same system of classification, labelling and listing of dangerous goods prevails throughout all the various regulations, their task will be much simpler, and obstacles to international transport of such goods will be reduced accordingly.

Effectiveness of safety measures for the transport of dangerous goods

22. Carriers can obviously not take the necessary safety measures regarding dangerous goods unless they are informed of the nature of the goods by the consignor's declaration.

23. The Universal Postal Convention (Brussels, 1952), article 59, and the Agreement concerning Postal Parcels, article 6, prohibit generally the forwarding by letter post or as postal parcels of explosive, inflammable or dangerous substances. Some of these substances, however (cartridges and loaded metal caps for portable firearms, non-explosive components of artillery fuses and matches, films, war celluloid or articles made of celluloid), may be forwarded as postal parcels where there is an agreement between Administrations (Agreement concerning Postal Parcels, article 6), subject to certain conditions as regards packing laid down in article 105 of the Agreement. When parcels containing such substances or objects are delivered for transport, sometimes together with other parcels, in bags bearing no mention of the nature of the contents, a carrier unaware of the contents of the bags cannot take the necessary safety measures.

24. Dangerous goods are also sometimes forwarded by letter post or as postal parcels under cover of false declaration. Because national legislations provide for secrecy of the mails, postal officials may not open packages in order to check the accuracy of the declaration. Moreover, under article 106 paragraph 7, of the Parcel Post Agreement, Administrations do not assume any responsibility for customs declarations. The abuse of postal facilities by unscrupulous or merely ill-informed persons makes it possible to evade the regulations governing the various means of transport and is thus likely to reduce their efficiency. Such postal packages not put up in accordance with safety requirements may cause accidents which carriers unaware of the nature of their contents are powerless to prevent.

25. The attention of the Universal Postal Union is drawn to this dangerous state of affairs referred to in paragraphs 23 and 24 so that the necessary safeguards may be adopted.

Preparation of the recommendations

26. The Committee of Experts on the Transport of Dangerous Goods, which is responsible for the recommendations contained in this document, was appointed in accordance with resolution 468 G (XV), adopted on 15 April 1953 by the Economic and Social Council. By this resolution the Council requested the Secretary-General to appoint a committee of qualified experts from countries having a substantial interest in the international transport of dangerous goods. The resolution directed the Committee, taking into consideration existing practices and procedures and giving due weight to the extent of present usage,

"(a) To make a study and present a report to the Transport and Communications Commission:

(i) Recommending and defining groupings or classification of dangerous goods on the basis of the character of risk involved;

- (ii) Listing the principal dangerous goods moving in commerce and assigning each to its proper grouping or classification;
- (iii) Recommending marks or labels for each grouping or classification which shall identify the risk graphically and without regard to printed text;
- (iv) Recommending the simplest possible requirements for shipping papers covering dangerous goods."

27. The Committee has held two sessions at Geneva, one from 10 August to 4 September 1954 and the other from 16 August to 12 September 1956. In compliance with resolution 567 E (XIX), adopted by the Economic and Social Council on 20 May 1955, the Secretary-General circulated the recommendations made by the Committee during its first session 4/ to governments of States Members of the United Nations and of the specialized agencies and to the interested international organizations with the request that they should communicate their views and comments thereon. At its second session as instructed by the Economic and Social Council in the resolution mentioned immediately above, the Committee of Experts has examined these replies and has established the final text of its recommendations, which is published in the present document independently from the report of the Committee on its second session 5/ and with explanatory notes.

28. The recommendations were unanimously adopted by the Committee of Experts on the Transport of Dangerous Goods, which was constituted as follows: 6/

Chairman

Sir Hugh Watts, C.B., M.B.E., G.M., (1 and 2),
Adviser to the Ministry of Transport and Civil Aviation, United Kingdom

Adviser

Mr. A.W. Clarke, (1 and 2)
Principal, Ministry of Transport and Civil Aviation

4/ See the report of the Committee on its first session, United Nations document E/CN.2/143 and Corr.1.

5/ United Nations document E/CN.2/165.

6/ The figures in brackets after the names of individuals or organizations indicate the sessions in which they participated.

Other members

Mr. E. Baticle, (1 and 2)
Inspecteur général des ponts et chaussées,
Former Chairman of the Committee on the Transport of Dangerous Goods,
France

Mr. A.A. Billberg, (1 and 2)
Chief Inspector of Explosives,
Department of Commerce,
Sweden

Advisers

Mr. A. Jönsson, (1)
Chief Chemist, State Railways

Mr. C.A. von Krusenstierna, (1)
Inspector of Explosives
Office of Explosives

Mr. J. Tysen, (1)
Nitroglycerine Company

Mr. V.E. Haninger, (1 and 2)
Chief, Explosives Branch,
Bureau of Safety and Service,
Interstate Commerce Commission,
United States of America

Advisers

Admiral H.C. Shepheard (USCG Ret.), (2)

Mr. C.H. Mayhood, (2)
Transportation and Packing Engineer,
Manufacturing Chemists Association, Inc.

Mr. H. Grady Gatlin, (2)
Industry Regulations Specialist,
Air Transport Association of America

Mr. Charles B. Smith, (2)
Administrative Officer,
Dangerous Cargo Transportation,
U.S. Coast Guard

Dr. M.K. Maitra, (1 and 2)
Chief Inspector of Explosives,
India

29. Representatives of the following international organizations participated in a consultative capacity in the work of the Committee:

Specialized Agencies

International Labour Organisation (ILO) (1 and 2)
United Nations Educational, Scientific and Cultural Organization (UNESCO) (2)
International Civil Aviation Organization (ICAO) (1 and 2)
World Health Organization (WHO) (1 and 2)
Universal Postal Union (UPU) (1 and 2)

Other inter-governmental organizations

Central Office for International Transport by Rail (1 and 2)
Central Commission for Navigation of the Rhine (CCNR) (1 and 2)

Non-governmental organizations

International Chamber of Commerce (ICC) (1 and 2)
International Air Transport Association (IATA) (1 and 2)
International Union for Inland Navigation (UINF) (1)
International Road Transport Union (IRU) (1 and 2)
International Union of Marine Insurance (IUMI) (1 and 2)
International Chamber of Shipping (1 and 2)
International Cargo Handling Co-ordination Association (ICHCA) (1 and 2)
Suez Maritime Canal Universal Company (1)

30. Mr. B. Lukač, Director of the Transport and Communication Division of the United Nations Secretariat, opened both sessions of the Committee on behalf of the Secretary-General. Messrs. L. Delaney, J. Dekock and A.G. David, also of the United Nations Secretariat acted as Secretary to the Committee, Assistant Secretary (first session) and Assistant Secretary (second session) respectively.

II

RECOMMENDATIONS

1. CLASSIFICATION AND DEFINITIONS RELATING TO THE CLASSES^{7/}

Class 1 - Explosives

31. An explosive is a substance, whether or not contained in a device specially prepared, manufactured with a view to produce a practical effect by explosion or a pyrotechnic effect, or any other substance which, by reason of the nature of its explosive properties, is to be treated as such, provided (1) that an explosive atmosphere of gas, vapour or dust shall not be considered to be an explosive for the purpose of this definition; and (2) that substances otherwise classified shall not be deemed to be explosives within the meaning of this definition.

32. This class is sub-divided further into three categories with sub-categories, namely:

(a) Explosives with a mass explosion risk

(i) Contrivances containing explosives and containing their own means of ignition, not included in (b) (i) below, which will explode en masse, and also initiating explosives.

(ii) Those explosives and contrivances containing explosives not containing their own means of ignition.

(iii) Contrivances containing incendiary compositions and fireworks liable to explode.

(b) Explosives which do not explode en masse

(i) Contrivances containing explosives with or without their own means of ignition which will not explode en masse.

(ii) Small samples of explosives other than detonators.

(c) Explosives having only a fire hazard

Class 2 - Gases: compressed, liquified and dissolved under pressure

33. This class comprises:

(a) Permanent gases

These are gases which cannot be liquified at normal temperatures;

^{7/} The order of the classes is not the order of degree of danger.

(b) Liquified gases

These are gases which can become liquid under pressure at normal temperatures;

(c) Dissolved gases

These are gases dissolved under pressure in a solvent, which may be absorbed in a porous material;

(d) Deeply refrigerated permanent gases - e.g. liquid air, oxygen etc.

34. In the cases (a), (b), and (c) above, the gases will be under pressure, and will be listed in this class unless otherwise classified.

35. Compressed poisonous (toxic) gases may also be placed under Class 6 (a) "Poisonous (toxic) substances", as they are in some codes.

Class 3 - Inflammable liquids*

36. These are liquids or mixtures of liquids or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers etc., but not including substances otherwise classified on account of their dangerous characteristics) which give off an inflammable vapour at or below 150°F. (65.6°C) open test. In view of the differences with regard to risk, Class 3 should be divided into two categories:

(a) those liquids with a flash point below 73°F. (23°C.) closed test or 80°F. (26.6°C.) open test; and

(b) those liquids with a flash point of 73°F. (23°C.) closed test or 80°F. (26.6°C.) open test to 141°F. (60.5°C.) closed test or 150°F. (65.6°C.) open test.

37. Since the results of open-cup tests and of closed-cup tests are not strictly comparable and even individual results by the same test are often variable, regulations varying from the above figures to take account of these differences would be within the spirit of this definition.

Class 4 - Inflammable solids or substances

38. This class comprises:

(a) Inflammable solids

These are substances, other than those classed as explosives, which, under conditions of transportation, are readily combustible, or may cause or contribute to fires through friction.

* The word inflammable has the same meaning as flammable.

(b) Inflammable solids, or substances, liable to spontaneous combustion

These are substances which are liable to spontaneous heating under normal conditions encountered in transport, or to heat up in contact with air, and are then liable to catch fire.

(c) Inflammable solids, or substances, which on contact with water emit flammable gases

These are substances which by interaction with water are liable to become spontaneously inflammable or to give off inflammable gases in dangerous quantities.

Class 5 - Oxidizing substances

39. These are substances which, while in themselves not combustible, may readily liberate oxygen and stimulate the combustion and violence of a fire in other material.

Class 6 - Poisonous (toxic) and infectious substances

40. This class comprises:

(a) Poisonous (toxic) substances

These comprise:

- (i) Poisonous (toxic) substances which give off a poisonous (toxic) gas or vapour; and
- (ii) Poisonous (toxic) substances other than those giving off poisonous (toxic) gases or vapours.

Compressed poisonous (toxic) gases may also be placed under Class 2 "Gases" as they are in some codes.

(b) Infectious substances

These are substances containing disease-producing micro-organisms.

Class 7 - Radio-active substances

41. These are substances or a combination of substances which spontaneously emit ionizing radiations.

Class 8 - Corrosives

42. These are substances such as acids, alkaline caustic and other corrosive liquids and solids which, when in contact with living tissue, will cause severe damage of such tissue by chemical action, or in the case of leakage will materially damage or destroy other freight or the means of transport by chemical action, and may also cause other hazards.

Class 9 - Miscellaneous dangerous substances

43. These are substances, the danger or risk of which depend on the addition of certain substances which change their properties, and also other substances the danger of which during transport would not be covered by the other classes.

2. LIST OF PRINCIPAL DANGEROUS GOODS, AND ASSIGNMENT OF EACH OF THEM TO ITS PROPER CLASS

(The French equivalent of the substance is given in the second column)

44. A - Explosives^{8/}

(Class 1)

(a) Explosives with a mass explosion risk

(i) Contrivances containing explosives and containing their own means of ignition, not included in (b)(i) below, which will explode en masse, and also initiating explosives. 9/

Detonators (blasting caps)	Détonateurs (amorces détonantes)
Electric detonators	Détonateurs électriques
(<u>Initiating explosives</u>):	(<u>Matières fulminantes</u>):
Fulminate of mercury (wet)	Fulminate de mercure (humide)
Lead azide (wet)	Azote de plomb (humide)
Lead, styphenate (wet)	Trinitroresorcinate de plomb (humide)

(ii) Those explosives and contrivances containing explosives not containing their own means of ignition. 10/

Gunpowder (black powder)	Poudre noire
Picric acid	Acide picrique

8/ The purity, stability, sensitivity and other physical properties of all explosives, whether or not contained in a contrivance, must comply with official requirements.

9/ Service explosives are not mentioned in this document. It may be mentioned, however, that ammunition such as, for example, filled bombs, depth charges, grenades, shells, torpedoes and quick firing ammunition (fixed ammunition) carry the same hazard as articles in sub-class (a)(i) when they contain their own means of ignition and those of sub-class (a)(ii) when they do not contain their own means of ignition.

10/ See above footnote concerning service explosives.

Hexyl (Hexa-nitro-diphenylamine)	Héxyl (Hexanitrodiphénylamine)
Tetryl	Tétryl
Tri-nitro-toluene	Trinitrotoluène
Blasting explosives containing nitro-glycerine	Explosifs de mine à la nitro- glycérine
(iii) Contrivances containing incendiary compositions and fireworks liable to explode.	
Distress signals	Signaux de détresse
Light signals	Signaux lumineux
Sound signals	Signaux sonores
(<u>Fireworks</u>):	(<u>Artifices</u>):
Shells	Bombes
Maroons	Marrons
(b) <u>Explosives which do not explode en masse</u>	
(i) Contrivances containing explosives with or without their own means of ignition which will not explode en masse.	
Percussion caps	Capsules (amorces)
Safety cartridges (small arms ammunition)	Cartouches de sûreté (munitions pour armes de petit calibre)
Safety cartridges (empty) capped	Cartouches de sûreté (vides) amorcées
Safety fuse	Mèches lentes (mèches de mineur ou mèches de sûreté)
Safety electric fuse	Fusées électriques de sûreté
(ii) Small samples of explosives other than detonators.	
(c) <u>Explosives having only a fire hazard</u>	
(<u>Fireworks</u>):	(<u>Artifices</u>):
Aluminium torches	Torches à poudre d'aluminium
Amorces (toy caps)	Amorces pour jouets d'enfants

Explosive corks

"Very" signal cartridges

Cordite (smokeless powder,
propellant)

Bouchons détonants

Cartouches pour signaux
éclairants

Cordite (poudre sans fumée)

45. B - Dangerous goods other than explosives^{11/12/}

Class 2 - Gases: compressed, liquefied and dissolved under pressure

Acetylene, dissolved	Acétylène dissous	3
Air, compressed	Air comprimé	
Air, liquid	Air liquide	5
Ammonia anhydrous, liquefied and Ammonia solutions below 0.880	Ammoniac liquéfié et ammoniac de poids spécifique inférieur à 0,880	6a
Argon	Argon	
Boron Trifluoride	Fluorure de bore	6a
Butadiene inhibited	Butadiène stabilisé	3
Carbon Dioxide, liquefied	Anhydride carbonique liquéfié	
Carbon Dioxide and Oxygen Mixtures	Mélanges d'anhydride carbonique et d'oxygène	
Carbon Dioxide and Nitrous Oxide Mixtures	Mélanges d'anhydride carbonique et de protoxyde d'azote	
Carbon Monoxide	Oxyde de carbone	6a, 3
Chlorine	Chlore	6a
Chlorodifluoromethane (Monochlorodifluoromethane)	Chlorodifluorométhane (monochlorodifluorométhane)	
Chloro-fluoro-hydrocarbon mixtures	Mélanges d'hydrocarbures chlorurés et fluorés	
Chlorotrifluoromethane (Trifluorochloromethane)	Chlorotrifluorométhane	
Coal gas	Gaz de ville	6a
Cyanogen, liquefied	Cyanogène liquéfié	6a, 3
Cyclopropane, liquefied	Cyclopropane liquéfié	3
Dichlorodifluoromethane and mixtures thereof	Dichlorodifluorométhane et mélanges	
Difluoroethane	Difluoréthane	
Difluoromonochloroethane	Difluoromonochloréthane	

11/ The number at the right-hand side of the page denotes the class appropriate to the subsidiary hazard attached to the particular substance.

12/ Whenever a flash point is mentioned in this list, it refers to the open test.

Dimethylamine, anhydrous	Diméthylamine, anhydre	3
Dimethyl Ether	Ether méthylique	3
Ethane	Ethane	3
Ethylamine (mono)	Ethylamine (mono)	3
Ethyl Chloride (Chlorethane)	Chlorure d'éthyle (Chloréthane)	3
Ethylene	Ethylène	3
Ethylene Oxide (Oxirane, Epoxyethane)	Oxyde d'éthylène (Oxyrane, Epoxyéthane)	3, 6a
Ethyl Oxide 90% by weight and Carbon Dioxide 10% by weight	Mélange d'oxyde d'éthylène (90% en poids) et d'anhydride carbonique (10% en poids)	3, 6a
Ethylene Oxide/Nitrogen Mixture (0.2% Nitrogen)	Mélange d'oxyde d'éthylène et d'azote (0,2% d'azote)	3, 6a
Fluorine	Fluor	6a, 8
Helium, compressed	Hélium comprimé	
Hydrocarbon gas, compressed or liquefied	Hydrocarbures gazeux, comprimés ou liquéfiés	3
Hydrogen Bromide, anhydrous	Gaz bromhydrique, anhydre	6a
Hydrogen, compressed	Hydrogène comprimé	3
Hydrogen Chloride, anhydrous	Acide chlorhydrique	8
Hydrogen Cyanide, (Hydrocyanic Acid)	Acide cyanhydrique stabilisé	6a
Hydrogen Fluoride, compressed (Hydrofluoric Acid, anhydrous)	Acide fluorhydrique anhydre comprimé	8, 6a
Hydrogen Sulphide, liquefied (Sulphuretted Hydrogen)	Acide sulfhydrique liquéfié (hydrogène sulfuré)	6a, 3
Krypton, compressed	Krypton comprimé	
Methane	Méthane	3
Methylamine, anhydrous	Méthylamine, anhydre	3
Methyl Bromide (Bromomethane)	Bromure de méthyle (bromométhane)	6a
Methyl Chloride (Chloromethane)	Chlorure de méthyle (chlorométhane)	3

Methylmercaptan	Mercaptan méthylique	
Monochlorodifluoromethane (Chlorodifluoromethane)	Monochlorodifluorométhane (Chlorodifluorométhane)	
Neon	Néon	
Nitrogen	Azote	
Nitrogen Tetroxide (Nitrogen Peroxide)	Péroxyde d'azote (tétroxyde d'azote)	8, 6a
Nitrosyl Chloride	Chlorure de nitrosyle	8
Nitrous Oxide	Protoxyde d'azote	
Oil Gas	Gaz d'huile	3
Oxygen, compressed	Oxygène comprimé	5
Oxygen, liquid	Oxygène liquide	5
Oxygen and Carbon Dioxide Mixtures	Mélanges d'oxygène et d'anhydride carbonique	
Petroleum Gases, liquefied	Gaz de pétrole liquéfiés	3
Phosgene (Carbonyl Chloride)	Phosgène (oxychlorure de carbone)	6a, 8
Propylene (Propene)	Propylène (Propène)	3
Sulphur Dioxide, liquefied	Anhydride sulfureux liquéfié	
Sulphur Hexafluoride	Hexafluorure de soufre	
Tetrafluoroethylene, inhibited	Tétrafluoréthylène, stabilisé	
Trifluorochloroethylene	Trifluorochloréthylène	
Trimethylamine, anhydrous	Triméthylamine, anhydre	3
Trimethylamine, compressed	Triméthylamine comprimée	3
Vinylbromide, inhibited	Bromure de vinyle, stabilisé	
Vinylchloride, inhibited	Chlorure de vinyle, stabilisé	3
Vinylmethylether, inhibited	Ether méthylique - vinylique (ou oxyde de méthyle et de vinyle) stabilisé	3

Class 3 - Inflammable liquids

Acetaldehyde (Aldehyde)	Acétaldéhyde (aldéhyde acétique)
Acetone	Acétone
Acetone oils	Huiles d'acétone
Acrolein (Acraldehyde)	Acroléine (aldéhyde acrylique) 6a
Acrylonitrile	Nitrile acrylique 6a (acrylonitrile)
Alcohols, liquid, not otherwise specified, having a flash point below 150°F (65.6°C.)	Alcools liquides, non spécifiés par ailleurs, de point d'éclair inférieur à 65,6°C (150°F)
Alcohol, denatured	Alcool dénaturé
Alcohol, industrial	Alcools d'industrie
Aldehydes, not otherwise specified, having a flash point below 150°F (65.6°C.)	Aldéhydes, non spécifiés par ailleurs, de point d'éclair inférieur à 65,6°C (150°F.)
Allyl Alcohol	Alcool allylique 6a
Amyl Acetate	Acétate d'amyle
Amyl Alcohol	Alcool amylique
Amyl Chloride	Chlorure d'amyle
Amyl Methyl Ketone (Methyl Amyl Ketone)	Méthyl-amyl-cétone (amyl-méthyl-cétone)
Amyl Nitrate	Nitrate d'amyle
Amyl Nitrite	Nitrite d'amyle
Benzene (Benzol)	Benzène (benzol)
Benzine	Benzine
Bitumen or asphalt Cut-backs (Road Asphalt or Tar Liquid)	Cuts-back bitumeux
Bromobenzene (Monobromobenzene)	Bromobenzène (monobromobenzène)
Butanol (Butyl Alcohol)	Butanol (alcool butylique normal)
Isobutanol (Isobutyl Alcohol)	Alcool isobutylique

sec. Butanol (Secondary Butyl Alcohol)	Alcool isobutylique
tert. Butanol (Tertiary Butyl Alcohol)	Alcool butylique tertiaire
Butyl Acetate	Acétate de butyle
Butyraldehyde	Butyraldéhyde (aldéhyde butylique)
Camphor Oil	Huile de camphre
Carbon Disulphide (Carbon Bisulphide)	Sulfure de carbone (bisulfure de carbone)
Cement, adhesive, containing an inflammable liquid and having a flash point below 150°F. (65.6°C.)	Ciment adhésif contenant un liquide inflammable et ayant un point d'éclair inférieur à 65,6°C. (150°F.)
Chlorobenzene (Monochlorobenzene)	Chlorobenzène (monochlorobenzène)
2-Chloroethanol (Ethylene Chlorohydrin)	2-Chloréthanol (éthylène chlorydrine, monochlorhydrine du glycol)
Coal Tar Distillate containing Benzene or Homologues (Coal Tar Oil)	Distillat du goudron de houille contenant du benzène ou des homologues (huile de goudron)
Coal Tar Light Oil	Huile légère de goudron de houille
Coal Tar Naphtha	Naphte de goudron de houille
Collodions	Collodions
Colophony (See "Rosin")	Colophane (voir "résine")
Crotonaldehyde	Aldéhyde crotonique
Decahydronaphthalene (Decalin)	Décahydronaphtalène (décaline)
Diacetone Alcohol, having a flash point below 150°F. (65.6°C.)	Diacétone alcool de point d'éclair inférieur à 65,6°C. (150°F.)
Dibutyl Ether (Butyl Ether)	Ether butylique normal
Dichloroethylene	Dichloréthylène
1 : 2-Dichloroethane (Ethylene Dichloride)	1,2-Dichloréthane (bichlorure d'éthylène)

Dichloropenthanes	Dichloropentanes
1 : 2-Diethoxyethane (see Ethylene Glycol Diethyl Ether)	1,2-Diéthoxyéthane (Voir éther diéthylique de l'éthylène glycol)
Diethylamine	Diéthylamine
Diethyl Ether (Ethyl Ether, Anaesthetic Ether, Sulphuric Ether)	Ether éthylique, éther anesthésique, éther sulfurique
Diisobutyl Ketone	Diisobutylcétone
Diisopropyl Ether	Ether isopropylique
Dimethylamine Solution	Diméthylamine (solution)
Dimethyl Sulphide	Sulfure de méthyle
Driers, Paint or Varnish, in liquid form	Siccatifs, peintures ou vernis (liquides)
Essences, having a flash point below 150°F. (65.6°C.)	Essences, de point d'éclair inférieur à 65,6°C. (150°F.)
Ethanol (Ethyl Alcohol)	Ethanol (alcool éthylique)
2-Ethoxyethanol (Ethylene Glycol Monoethyl Ether)	2-Ethoxyéthanol (éter monoéthylique de l'éthylène glycol)
2-Ethoxyethyl Acetate (Ethylene Glycol Monoethyl Ether Acetate)	Acétate de 2-éthoxyéthyle (acétate de l'éther monoéthylique de l'éthylène glycol)
Ethyl Acetate	Acétate d'éthyle
Ethyl Alcohol (See "Ethanol")	Alcool éthylique (voir éthanol)
Ethylbenzene	Ethylbenzène
Ethylbutyl Acetate	Acétate d'éthylbutyle
Ethyl Butyrate	Butyrate d'éthyle
Ethyl Chloroacetate	Chloracétate d'éthyle
Ethyl Chloroformate (Ethyl Chloro-carbonate)	Chloroformiate d'éthyle (Chlorocarbonate d'éthyle) 8
Ethylene Glycol Monoethyl Ether	Ether monoéthylique de l'éthylène glycol

Ethylene Glycol Monoethyl Ether Acetate	Acétate de l'éther monoéthylique de l'éthylène glycol
Ethylene Glycol Monomethyl Ether	Ether monométhylique de l'éthylène glycol
Ethylene Glycol Monomethyl Ether Acetate	Acétate de l'éther monométhylique de l'éthylène glycol
Ethyl Formate	Formiate d'éthyle
Ethylhexaldehyde	Aldéhyde éthylhéxylique (ethylhexanal)
Ethyl Lactate	Lactate d'éthyle
Ethyl Methyl Ketone (Methyl Ethyl Ketone)	Méthyl-éthyl-cétone (éthyl- méthyl-cétone)
Ethyl Nitrite (Nitrous Ether, Spirit of Ether Nit., Sweet Spirit of Nitre)	Nitrite d'éthyle (éther nitreux)
Extracts, Flavouring, liquid having a flash point below 150°F. (65.6°C.)	Extraits aromatiques liquides, de point d'éclair inférieur à 65,6°C. (150°F.)
Formaldehyde Solution (Formalin) having a flash point below 150°F. (65.6°C.)	Formaldéhyde (formol), solution, de point d'éclair inférieur à 65,6°C. (150°F.)
Furfural	Furfurol (furaldéhyde; furfural)
Furniture Stain, having a flash point below 150°F. (65.6°C.)	Teinture pour meubles, de point d'éclair inférieur à 65,6°C. (150°F.)
Fusel Oil (See "Amyl Alcohol")	Huile de fusel (voir "alcool amylique")
Gas Oil, having a flash point below 150°F. (65.6°C.)	Gas oil de point d'éclair inférieur à 65,6°C. (150°F.)
Gasoline	Essence de pétrole
Glyceryl Trinitrate (Nitro- glycerin Solution 5% in Alcohol)	Trinitrine (solution alcoolique de nitroglycérine à 5%)
Gutta Percha Solution, having a flash point below 150°F. (65.6°C.)	Gutta-percha (solution), de point d'éclair inférieur à 65,6°C. (150°F.)
Hexaldehyde	Hexaldéhyde

Inflammable Liquids, not otherwise specified, having a flash point below 150°F. (65.6°C.)	Liquides inflammables, non spécifiés par ailleurs, de point d'éclair inférieur à 65,6°C. (150°F.)
Ink, Printers, having a flash point below 150°F. (65.6°C.)	Encre d'imprimerie, de point d'éclair inférieur à 65,6°C. (150°F.)
Insecticides, Liquid, and Aerosol, having a flash point below 150°F. (65.6°C.) (According to the hazards of the <u>active</u> constituent)	Insecticides liquides et aérosols, de point d'éclair inférieur à 65,6°C. (150°F.) (Selon le danger présenté par le composant <u>actif</u>)
Kerosene (paraffin)	Pétrole lampant (kérosène)
Ketones, Liquid, not otherwise specified, having a flash point below 150°F. (65.6°C.)	Cétones liquides, non spécifiées par ailleurs, de point d'éclair inférieur à 65,6°C. (150°F.)
Lacquer-chips wet with an inflammable Liquid, having a flash point below 150°F. (65.6°C.)	Copeaux (chips) de laque additionnés de liquide inflammable, de point d'éclair inférieur à 65,6°C. (150°F.)
Mercaptans and Mixtures, Liquid	Mercaptans et mélanges (liquides)
Mesityl Oxide	Oxyde de mésityle
Methanol (Methyl Alcohol, Wood Alcohol, Columbian Spirits)	Méthanol (alcool méthylique, alcool de bois, esprit de bois)
Methyl Acetate	Acétate de méthyle
Methyl Acetone	Méthyl-acétone
Methylamyl Acetate	Acétate de méthylamyle
Methylated Spirit	Alcool dénaturé
Methyl Chloroformate (Methyl Chlorocarbonate)	Chloroformiate de méthyle 8, 6a (chlorocarbonate de méthyle)
Methyl Formate	Formiate de méthyle
Methyl Methacrylate Monomer	Méthacrylate de méthyle monomère
Motor Spirit (Gasoline, Petrol)	Carburants pour moteurs (essence)
Naphtha Coal Tar	Naphtes de goudron de houille
Naphtha Distillate	Naphtes légers
Naphtha, Petroleum	Naphte, essence lourde

Naptha, Solvent	Solvant-Naphte	
Natural Gasoline (Casinghead Gasoline)	Gazoline naturelle (essence de gaz naturel)	
Nickel Carbonyl	Nickel carbonyle	6a
Nitrocellulose (Collodion Cotton Wet with Inflammable Liquid)	Nitrocellulose (coton-collodion), humecté par un liquide inflammable	
Nitroglycerine, Solutions up to 5 per cent in Ethyl Alcohol	Nitroglycérine (solutions dans l'alcool éthylique ne dépassant pas 5 per cent)	
Paints, Enamels, Lacquers, Stains, Shellac, Varnish, Fillers (liquid), Lacquer, Base and Thinners, etc., having a flash point below 150°F. (65.6°C.)	Peintures, peintures-émail, laques, colorants, Shallac, vernis, enduits d'apprêt (liquides), bases pour laque et diluants dont le point d'éclair est inférieur à 65,6°C. (150°F.)	
Paraldehyde	Paraldéhyde	
Pentane	Pentane	
Perfumery Products containing inflammable solvents, having a flash point below 150°F. (65.6°C.)	Produits pour parfumerie, contenant des solvants inflammables, de point d'éclair inférieur à 65,6°C. (150°F.)	
Petroleum Crude Oil	Pétrole brut	
Petroleum Distillate, having a flash point below 150°F. (65.6°C.)	Distillats de pétrole, de point d'éclair inférieur à 65,6°C. (150°F.)	
Petroleum Naptha	Naphte de pétrole	
Petroleum Oil, having a flash point below 150°F. (65.6°C.)	Huiles de pétrole de point d'éclair inférieur à 65,6°C. (150°F.)	
Petroleum Spirit (Benzene, Benzolene, Lythene, Petroleum Ether)	Essences légères de pétrole (éther de pétrole, ligroïne)	
Pine Oil, having a flash point below 150°F. (65.6°C.)	Essence de térébenthine, de point d'éclair inférieur à 65,6°C. (150°F.)	
Polishes, having a flash point below 150°F. (65.6°C.)	Cirages et encaustiques de point d'éclair inférieur à 65,6°C. (150°F.)	

Propanol (Propyl Alcohol)	Propanol (alcool propylique)
Isopropanol (Isopropyl Alcohol)	Isopropanol (alcool propylique secondaire)
Pyridine	Pyridine
Pyroxylin Solutions	Solutions Nitrocellulosiques
Pyroxylin Solvents having a flash point below 150°F. (65.6°C.)	Solvants de la nitrocellulose de point d'éclair inférieur à 65,6°C. (150°F.)
Road Asphalt Tars or Oil, having a flash point below 150°F. (65.6°C.)	Liants routiers hydrocarbonés, de point d'éclair inférieur à 65,6°C. (150°F.)
Rosin Oil, having a flash point below 150°F. (65.6°C.)	Huile de résine, de point d'éclair inférieur à 65,6°C. (150°F.)
Rubber (Indiarubber) Solution, having a flash point below 150°F. (65.6°C.)	Caoutchouc naturel, dissolution de point d'éclair inférieur à 65,6°C. (150°F.)
Shale Oil, having a flash point below 150°F. (65.6°C.)	Huile de schiste, de point d'éclair inférieur à 65,6°C. (150°F.)
Tar, Liquid, having a flash point below 150°F. (65.6°C.)	Goudron liquide, de point d'éclair inférieur à 65,6°C. (150°F.)
Tetraethyl Silicate (Ethyl Silicate)	Silicate d'éthyle (silicate tétra-éthylque)
Tinctures, medicinal, having a flash point below 150°F. (65.6°C.)	Teintures médicinales, de point d'éclair inférieur à 65,6°C. (150°F.)
Toluene (Toluol)	Toluène (toluol)
Trimethylamine, solution in water, having a flash point below 150°F. (65.6°C.)	Triméthylamine, en solution aqueuse, de point d'éclair inférieur à 65,6°C. (150°F.)
Turpentine	Térébenthine
Turpentine Substitute (White Spirit)	White Spirit (succédané de l'essence de térébenthine)
Wood Preservatives containing inflammable liquids, with a flash point below 150°F. (65.6°C.) (6a, if poisonous)	Produits préservatifs du bois contenant des liquides inflammables de point d'éclair inférieur à 65,6°C. (150°F.) (6a, s'ils sont toxiques)
Xylene (Xylol)	Xylène (xylol)
Zirconium suspended in a liquid, with a flash point below 150°F. (65.6°C.)	Zirconium, en suspension dans un liquide, de point d'éclair inférieur à 65,6°C. (150°F.)

Class 4 (a) - Inflammable solids

Aluminium, powder, coated	Aluminium en poudre, enrobé	
Beryllium, powder	Glucinium (béryllium) en poudre	6a
Celluloid and Celluloid Scrap	Celluloïd et déchets de celluloïd	
Cork, granulated or ground	Liège en poudre ou en grains	
Films (Nitrocellulose Base)	Films à base de nitrocellulose	4b
Hafnium powder	Hafnium, en poudre	
Hay, straw or Bhusa	Foin, paille ou bhusa	4b
Hexamine	Héxamine	
Lacquer Base and Chips (if Nitrocellulose Base)	Laques et copeaux (chips) de laque à la nitrocellulose	
Matches, Bengal and "Strike Anywhere"	Allumettes de Bengale et allumettes n'exigeant pas de frottoir spécial	4b
Metaldehyde	Métaldéhyde	
Naphthalene, crude or refined (Creosote Salts)	Naphtaline, brute ou raffinée (sels de créosote)	
Phosphorus Amorphous (Red Phosphorus)	Phosphore amorphe (phosphore rouge)	
Phosphorus Sulphides, free from white phosphorus	Sulfures de phosphore, exempte de phosphore blanc)	
Photographic Flashlight Powders	Poudres photogéniques	
Rubber Scrap and Rubber Shoddy in powdered or granulated form	Déchets et rognures de caoutchouc pulvérisé ou granulé	
Silicon Powder	Poudre de silicium	
Sulphur	Soufre	
Thorium powder	Thorium, en poudre	
Titanium powder	Titane, en poudre	
Zirconium Metal (Wet)	Zirconium métal (humide)	

Class 4 (b) - Inflammable solids, or substances, liable to spontaneous combustion

Bags, nitrate of sodium, empty and unwashed	Sacs à nitrate de sodium, vides et non lavés
Calcium Phosphide	Phosphure de calcium
Charcoal of Animal or Mineral Origin	Charbon d'origine animale ou minérale
Charcoal of Vegetable Origin	Charbon d'origine végétale
Copra	Coprah
Cotton Waste, Oily	Déchets de coton gras
Cotton, Wet	Coton, humide
Diethylzinc	Zinc diéthyle
Diethylmagnesium	Magnésium-diéthyle
Dimethylmagnesium	Magnésium-diméthyle
Dimethyl Zinc	Zinc diméthyle
Driers, Paint or Varnish, in solid form	Siccatifs, Peintures ou vernis (solides)
Fibres, Vegetable, Burnt, Wet or Damp	Fibres végétales brûlées, mouillées ou humides
Fibres or Fabrics, Vegetable, with Animal or Vegetable Oil	Fibres ou tissus d'origine végétale, imprégnés d'huile d'origine animale ou végétale
Fish Scrap or Fish Meal	Déchets ou farine de poisson
Iron Oxide, spent, or iron sponge, spent (obtained from coal gas purification)	Oxyde de fer ou mousse de fer, ayant servi à la purification du gaz de ville
Paper, treated with unsaturated oils, incompletely dried	Papier, imprégné d'huiles non saturées, incomplètement séché
Phosphorus Sulphides	Sulfures de phosphore
Phosphorus, White or Yellow, dry or under water or in solution	Phosphore, blanc ou jaune, sec 6a ou sous l'eau ou en solution
Potassium Sulphide, Anhydrous	Sulfure de potassium, anhydre
Pyrophoric Metals and Alloys	Métaux et alliages pyrophoriques

Sodium Dithionite (Sodium
Hydrosulphite)

Sodium Sulphide Anhydrous or
containing less than 30%
water of crystallization

Seed Expellers (wet or damp)

Zirconium Metal (Dry), Powders
or Sponge

Hydrosulfite de sodium

Sulfure de sodium anhydre ou
contenant moins de 30% d'eau
de cristallisation

Décorticants pour graines
(mouillés ou humides)

Zirconium métal (sec), poudre
ou mousse

Class 4(c) - Inflammable solids, or substances, which in contact with water emit flammable gases

Alkali, Metal, Amalgams	Amalgames de métal alcalin
Alkali, Metal, Amides	Amidures des métaux alcalins
Alkali, Metal, Dispersions	Dispersion de métaux alcalins
Aluminium Carbide	Carbure d'aluminium
Aluminium Ferrosilicon Powder	Alumino-ferro-silicium, en poudre
Aluminium Powder, uncoated	Silico-aluminium, en poudre, non enrobé
Aluminium Silicon in Powder Form	Aluminium-silicium en poudre
Calcium, Metal and Alloys (Non-pyrophoric)	Calcium métallique et alliages (non pyrophoriques)
Calcium Carbide (Carbide of Calcium)	Carbure de calcium
Calcium Cyanamide, according to purity	Cyanamide calcique, selon pureté
Calcium Hydride	Hydrure de calcium
Calcium Silicide	Siliciure de calcium
Calcium Silicon (Calcium Manganese Silicon)	Silico-calcium (silico-mangano-calcium)
Caesium, Metal	Caesium, métal
Ferrosilicon, according to purity	Ferro-silicium, selon pureté
Hydrides, not otherwise specified	Hydrides, non spécifiés par ailleurs
Lithium, Metal	Lithium, métal
Magnesium Alloys, powders, shavings, etc., containing 80% or more Magnesium	Alliages de magnésium, en poudre, copeaux, etc., contenant 80% de magnésium au moins
Potassium, Metal	Potassium métallique
Potassium Sodium Alloy	Alliage de potassium et de sodium
Sodium, Metal	Sodium métal
Sodium Phosphide	Phosphure de sodium

Strontium Alloys
(Non-pyrophoric)

Alliages de strontium
(non-pyrophoriques)

Zinc Ashes

Cendres de zinc

Zinc, Powder or Dust

Poudre ou poussière du zinc

Class 5 - Oxidizing substances

Ammonium Chlorate	Chlorate d'ammonium	
Ammonium Dichromate (Ammonium Bichromate)	Bichromate d'ammonium	
Ammonium Nitrate, subject to certain conditions	Nitrate d'ammoniaque, sous réserve de certaines conditions	
Ammonium Nitrite	Nitrite d'ammonium	
Ammonium Perchlorate	Perchlorate d'ammoniaque	
Ammonium Permanganate	Permanganate d'ammoniaque	
Barium Chlorate	Chlorate de baryum	6a
Barium Nitrate	Nitrate de baryum	6a
Barium Perchlorate	Perchlorate de baryum	6a
Barium Permanganate	Permanganate de baryum	6a
Barium Peroxide (Barium Binoxide, Barium Dioxide Barium Superoxide)	Bioxyde de baryum (peroxyde de baryum)	6a
Benzoyl Peroxide, dry	Peroxyde de benzoyle, sec	
Bromates, not otherwise specified	Bromates, non spécifiés par ailleurs	
Calcium Chlorate	Chlorate de calcium	
Calcium Chlorite	Chlorite de calcium	
Calcium Perchlorate	Perchlorate de calcium	
Calcium Permanganate	Permanganate de calcium	
Calcium Peroxide (Calcium Superoxide)	Peroxyde de calcium (bioxyde de calcium)	
Chlorates, in solution, not otherwise specified	Chlorates en solution, non spécifiés par ailleurs	
Chlorates, solid, not otherwise specified or classified	Chlorates solides, non spécifiés ou classifiés par ailleurs	

Chlorites, not otherwise specified	Chlorites, non spécifiés par ailleurs	
Chromium Trioxide (Chromic Acid, Solid)	Anhydride chromique (acide chromique solide)	8
Dichromates, not otherwise specified	Bichromates, non spécifiés par ailleurs	
Guanidine Nitrate	Nitrate de guanidine	
Hydrogen Peroxide depending upon concentration	Eau oxygénée, selon concentration	8
Lead Nitrate	Nitrate de plomb	6a
Lead Perchlorate	Perchlorate de plomb	6a
Magnesium Perchlorate	Perchlorate de magnésium	
Magnesium Peroxide	Peroxyde de magnésium	
Nitrates, not otherwise specified	Nitrates, non spécifiés par ailleurs	
Perchlorates, not otherwise specified or classified	Perchlorates, non spécifiés ou classifiés par ailleurs	
Permanganates, not otherwise specified	Permanganates, non spécifiés par ailleurs	
Peroxides, not otherwise specified or classified	Peroxydes, non spécifiés ou classifiés par ailleurs	
Potassium Chlorate (Chlorate of Potash)	Chlorate de potassium (Chlorate de potasse)	
Potassium Nitrate (Saltpetre)	Nitrate de potassium (salpêtre)	
Potassium Nitrite	Nitrite de potassium	
Potassium Perchlorate	Perchlorate de potassium	
Potassium Permanganate	Permanganate de potassium	
Potassium Peroxide	Peroxyde de potassium	
Sodium Chlorate (Chlorate of Soda)	Chlorate de sodium	
Sodium Chlorite	Chlorite de sodium	
Sodium Nitrate (Chile Saltpetre)	Nitrate de sodium (salpêtre du Chili)	
Sodium Nitrite	Nitrite de sodium	

Sodium Perchlorate	Perchlorate de sodium
Sodium Peroxide (Sodium Binoxide, Sodium Dioxide, Sodium Superoxide, Ozone)	Peroxyde de sodium (Bioxyde de sodium, oxylithe)
Strontium Chlorate	Chlorate de strontium
Strontium Nitrate	Nitrate de strontium
Strontium Perchlorate	Perchlorate de strontium
Strontium Peroxide (Strontium Dioxide)	Peroxyde de strontium (bioxyde de strontium)
Tetranitromethane	Tétranitrométhane
Urea Hydrogen Peroxide (Hydrogen Peroxide Solid)	Urée oxygénée (eau oxygénée ' solide)
Zinc Chlorate	Chlorate de zinc
Zinc Permanganate	Permanganate de zinc
Zinc Peroxide	Peroxyde de zinc
Zirconium picramate, wet with water	Picramate de xirconium, mouillé d'eau

Class 6(a) - Poisonous (toxic) substances

Alkaloids, Poisonous, and their salts	Alcaloïdes toxiques et leurs sels
Aniline (Aniline Oil, Phenylamine, Aminobenzene)	Aniline (huile d'aniline, phénylamine)
Aniline Hydrochloride (Aniline Chloride, Aniline Salt)	Chlorhydrate d'aniline (sel d'aniline)
Antimony Lactate	Lactate d'antimoine
Antimonyl Potassium Tartrate (Tartar Emetic)	Tartrate antimonio-potassique (émétique)
Antimony Sulphide	Sulfure d'antimoine
Arsenic Acid, Liquid	Acide arsénique liquide
Arsenic Acid, Solid	Acide arsénique solide
Arsenic Bromide	Bromure d'arsenic
Arsenic Compounds, Liquid, not otherwise specified, including: Arsenates, Arsenites, Sulphides and Organic Compounds of Arsenic	Composés liquides de l'arsenic, non spécifiés par ailleurs, notamment: arsénates, arsénites, sulfures et composés organiques de l'arsenic
Arsenic Compounds, Solid, not otherwise specified, including: Arsenates, Arsenites, Sulphides and Organic Compounds of Arsenic	Composés solides de l'arsenic, non spécifiés par ailleurs, notamment: arsénates, arsénites, sulfures et composés organiques de l'arsenic
Arsenic, Metal	Arsenic métal
Arsenic Pentoxide	Anhydride arsénique
Arsenic Trichloride (Arsenic Chloride, Arsenious Chloride, Arsenous Chloride, Butter of Arsenic, Caustic Arsenic Chloride, Caustic Oil of Arsenic, Fuming Liquid Arsenic)	Trichlorure d'arsenic (Chlorure d'arsenic, Chlorure arsénieux, beurre d'arsenic)
Arsenic Trioxide (White Arsenic)	Anhydride arsénieux (arsenic blanc, acide arsénieux)
Arsenical Dust (Arsenical Flue Dust)	Poussière arsenicale
Barium Compounds, not otherwise specified, excluding Barium Sulphate	Composés du baryum, non spécifiés par ailleurs, à l'exclusion du sulfate de baryum

Barium Cyanide	Cyanure de baryum	
Beryllium compounds	Composés à base de béryllium	
Cacodylic Acid (Dimethyl-arsinic Acid)	Acide cacodylique (acide diméthyl-arsinique)	
Calcium Arsenate	Arséniate de calcium	
Calcium Cyanide	Cyanure de calcium	
Chlorodinitrobenzene (Dinitrochlorobenzene)	Dinitrochlorobenzène (chlorodinitrobenzène)	
Chloropicrin (Trichloronitromethane)	Chloropicrine (trichloronitrométhane)	
Copper Cyanide	Cyanure de cuivre	
Cyanides, not otherwise specified (not including Ferricyanides and Ferrocyanides)	Cyanures, non spécifiés par ailleurs (à l'exception des ferricyanures et ferrocyanures)	
o-Dichlorobenzene	Ortho-dichlorobenzène	
p-Dichlorobenzene	Para-dichlorobenzène	
Dichloromethane (Methylene Chloride)	Dichlorométhane (chlorure de méthylène)	
Diethyl Sulphate (Ethyl Sulphate)	Sulfate d'éthyle (sulfate diéthylique)	
Dimethyl Sulphate (Methyl Sulphate)	Sulfate de méthyle (sulfate diméthylique)	8
Dinitrobenzenes, (e.g. Metadinitrobenzene)	Dinitrobenzène (p. ex. métadinitrobenzène)	
Di-nitro-ortho-cresol	Dinitroorthocrésol	
Dinitrotoluenes, Liquid	Dinitrotoluènes (liquides)	3
Disinfectants, if containing a substantial proportion of poisonous substances (according to the hazard of the <u>active</u> constituent)	Désinfectants contenant une proportion notable de substances toxiques (selon le danger présenté par le composant <u>actif</u>)	
Fungicides (according to the hazard of the <u>active</u> constituent)	Fongicides (selon le danger présenté par le composant <u>actif</u>)	
Halogenated irritating liquid substances (i.e. Methylbromoacetone)	Liquides halogénés irritants (tels que Méthylbromoacétone)	

Hydrocyanic Acid Solutions not exceeding 4% Hydrocyanic Acid by weight	Acide cyanhydrique, en solution à 4% en poids au maximum
Hydrogen Cyanide, Anhydrous, Stabilized (Hydrocyanic Acid, Prussic Acid)	Acide cyanhydrique anhydre stabilisé (acide prussique)
Insecticides, Solid, under Compressed Gas, or Liquid having a flash point over 150°F. (65.6°C.)	Insecticides, solides sous gaz comprimé, ou liquides, de point d'éclair supérieur à 65,6°C. (150°F.)
Lead Arsenate	Arséniate de plomb
Lead Arsenite	Arsénite de plomb
Lead Cyanide	Cyanure de plomb
Mercuric Chloride (Corrosive Sublimate, Mercury Bichloride)	Chlorure mercurique (sublimé corrosif, bichlorure de mercure)
Mercuric Nitrate	Nitrate mercurique
Mercurous Nitrate	Nitrate mercurieux
Mercurous Sulphate	Sulfate mercurieux
Mercury Acetate	Acétate de mercure
Mercury-Ammonium Chloride	Chlorure double de mercure et d'ammonium (précipité blanc)
Mercury Benzoate	Benzoate de mercure
Mercury Bichloride (See "Mercuric Chloride")	Bichlorure de mercure (voir "chlorure mercurique")
Mercury Bisulphate	Bisulfate de mercure
Mercury Bromide	Bromure de mercure
Mercury Compounds, not otherwise specified, excepting mercurous chloride	Composés à base de mercure non spécifiés par ailleurs, non compris le chlorure mercurieux
Mercury Cyanide	Cyanure de mercure
Mercury Gluconate	Gluconate de mercure
Mercury Iodide	Iodure de mercure
Mercury Nucleate (Mercuriol)	Nucléinate de mercure (mercuriol)
Mercury Oleate	Oléate de mercure

Mercury Oxide	Oxyde de mercure
Mercury Oxycyanide	Oxycyanure de mercure
Mercury Potassium Iodide	Iodure double de mercure et de potassium
Mercury Salicylate	Salicylate de mercure
Mercury Sulphate	Sulfate de mercure
Mercury Thiocyanate	Sulfocyanure de mercure
Motor Fuel Anti-Knock compounds ("Ethyl Fluid")	Composés antidétonants (par exemple l'éthyl-fluide)
Naphthylthiourea	Naphthylthicurée
Naphthylurea	Naphthylurée
Nickel Cyanide	Cyanure de nickel
Nicotine	Nicotine
Nicotine Compounds and Preparations thereof, not otherwise specified	Nicotine, composés et préparations, non spécifiés par ailleurs
Nicotine Hydrochloride and Solutions thereof	Chlorhydrate de nicotine (et solutions)
Nicotine Salicylate	Salicylate de nicotine
Nicotine Sulphate, solid or in solution	Sulfate de nicotine, solide ou en solution
Nicotine Tartrate	Tartrate de nicotine
p-Nitroaniline (Paranitroaniline)	P-Nitraniline
Nitrobenzene (Nitrobenzol, Mirbane Oil)	Nitrobenzène (nitrobenzine, essence de mirbane)
p-Nitrophenol (Paranitrophenol)	Paranitrophénol
Nitrotoluene (Ortho-, para-nitrotoluene)	Nitrotoluène (ortho, para-nitrotoluène)
Oxalic Acid	Acide oxalique
Oxalic Salts	Oxalates
Parathion and mixtures, solid, liquid or under compressed gas (Diethyl p-nitro-phenyl thiophosphates)	Parathion et mélanges, solides, liquides ou sous gaz comprimé (thiophosphate de diéthyle et de paranitrophényle)

Pentachloroethane	Pentachloréthane
Phenol (Carbolic Acid)	Phénol (acide phénique)
m-Phenylenediamine (Metaphenylenediamine)	Métaphénylènediamine
Potassium Arsenate	Arséniate de potassium
Potassium Arsenite	Arsénite de potassium
Potassium Cuprocyanide	Cuprocyanure de potassium
Potassium Cyanide	Cyanure de potassium
Rodenticides	Rodenticides
Sheep Dips (according to the chief hazardous constituent)	Bains antiparasites pour moutons (selon le principal composant dangereux)
Silver Cyanide	Cyanure d'argent
Sodium Cyanide	Cyanure de sodium
Tetrachloroethane (Acetylene Tetrachloride)	Tétrachloréthane (tétrachlorure d'acétylène)
Tetraethyl Lead (Lead Tetraethyl)	Plomb tétraéthyle
Thallium Compounds	Composés du thallium
Trichloroethylene	Trichloréthylène
Zinc cyanide	Cyanure de zinc
Zinc Phosphide	Phosphure de zinc

Class 6(b) - Infectious substances

Note: See paragraph 71.

Class 7 - Radio-active substances

Radio-active Substances

Substances radioactives

Note: See paragraph 71

Class 8 - Corrosives

Acetyl Chloride	Chlorure d'acéthyle	
Acids, liquids, not otherwise specified if sufficiently corrosive	Acides, liquides, non spécifiés par ailleurs, si suffisamment corrosifs	
Alkalines, liquid, not otherwise specified if sufficiently corrosive	Bases, liquides, non spécifiées par ailleurs si suffisamment corrosives	
Ammonium Hydrogen Fluoride (Ammonium Bifluoride)	Fluorure acide d'ammonium (bifluorure d'ammonium)	
Antimonyl Pentachloride (Antimony Perchloride)	Pentachlorure d'antimoine (perchlorure d'antimoine)	
Antimony Pentachloride and solutions	Pentachlorure d'antimoine et solutions	
Antimony Pentafluoride	Pentafluorure d'antimoine	
Antimony, Trichloride (Antimonius Chloride, Caustic Antimony, Butter of Antimony, Mineral Butter)	Trichlorure d'antimoine (chlorure d'antimoine, beurre d'antimoine)	
Batteries, Electric Storage, Wet or Charged (Accumulators, Electric)	Accumulateurs électriques garnis de leur liquide	
Battery Fluid (Electrolyte)	Solution d'électrolyte pour accumulateurs (Electrolyte)	8
Benzoyl Chloride	Chlorure de benzoyle	
Benzyl Chloride	Chlorure de benzyle	6a
Boron Trichloride	Chlorure de bore	6a
Bromine and Solutions of Bromine	Brome et solutions de brome	6a
Bromine Pentafluoride	Pentafluorure de brome	6a
Bromine Trifluoride	Trifluorure de brome	6a
Caustic Organic Bases, liquid or solutions not otherwise specified if sufficiently corrosive	Bases organiques, caustiques, liquides ou en solutions non spécifiées par ailleurs, si suffisamment corrosives	
Chloroacetic Acid (Mono-chloroacetic Acid)	Acide chloracétique (acide mono-chloracétique)	

Chloroacetyl Chloride	Chlorure de chloracétyle
Chlorosulphonic Acid (with or without Sulphur Trioxide)	Chlorhydrate sulfurique (acide chlorosulfonique), avec ou sans anhydride sulfurique
Chromic Acid solution	Acide chromique (solution)
Compounds and preparations for cleaning, rust removing, etc., and fungicides if sufficiently corrosive.	Compositions et préparations pour décapage, etc., et fongicides, si suffisamment corrosifs
Diphenylmethyl Bromide	Bromure de diphenylméthyle
Ferric Chloride (Iron Chloride, Iron Perchloride, Ironsesquichloride)	Chlorure ferrique (Chlorure de fer)
Fluoboric Acid (Hydrofluoboric Acid)	Acide fluoborique (acide hydrofluoborique)
Fluosilicic Acid (Silicofluoric Acid, Hydrosilicofluoric Acid, Hydrofluosilicic Acid, Sand Acid)	Acide fluosilicique (acide hydrofluosilicique)
Formic Acid	Acide formique
Hexafluorophosphoric Acid	Acide hexafluorophosphorique
Hydrazine (Diamine) anhydrous or containing 50% or less of water	Hydrazine (Diamine) anhydre ou contenant 50% au plus d'eau
Hydriodic Acid (Hydrogen Iodide Solution)	Acide iodhydrique (solution d'iodure d'hydrogène)
Hydrobromic Acid (Hydrogen Bromide, Solution)	Acide bromhydrique (solution de bromure d'hydrogène)
Hydrochloric Acid (Muriatic Acid, Spirits of Salts, in Solution and Mixtures)	Acide chlorhydrique (acide muriatique, esprit de sel), en solution ou en mélanges
Hydrofluoric Acid Solution (Fluoric Acid, Hydrogen Fluoride Solution)	Acide fluorhydrique en solution
Hypochlorite Solutions (Bleach Liquor) if Chlorine content sufficiently high	Solutions d'hypochlorites (Produits de blanchiment) si la teneur en chlore est suffisante
Mixed Acid or Nitrating Acid (when consisting of a mixture of Sulphuric and Nitric Acid)	Mélanges sulfonitriques

Nitric Acid	Acide nitrique	5
Perchloric Acid (not exceeding 72% w/w)	Acide perchlorique (ne dépassant pas 72% en poids)	5
Phosphorus Pentachloride	Pentachlorure de phosphore	4a
Phosphorus Pentoxide (Phosphoric Acid, Anhydrous)	Anhydride phosphorique (pentoxyde de phosphore)	4a
Phosphorus Tribromide (Phosphorus Bromide)	Tribromure de phosphore (bromure de phosphore)	
Phosphorus Trichloride (Phosphorus Chloride)	Trichlorure de phosphore (chlorure de phosphore)	
Phosphoryl Chloride (Phosphorus Oxychloride)	Oxychlorure de phosphore	
Potassium Hydroxide Solution (Potassium Hydrate, Potassium Hydroxide Liquid, Caustic Potash, Potash Liquor)	Solution d'hydroxyde de potassium (hydrate de potassium, hydroxyde de potassium liquide, potasse caustique)	
Propionic Acid	Acide propionique	
Silicon Tetrachloride (Silicon Chloride)	Tétrachlorure de silicium (chlorure de silicium)	
Sodium Hydroxide Solution (Caustic Soda Liquor, Sodium Hydrate, Lye)	Hydroxyde de sodium, en solution (hydrate de sodium, lessive de soude)	
Stannic Chloride Anhydrous (Tin Tetrachloride, Tin Chloride Fuming)	Chlorure stannique anhydre (tétrachlorure d'étain, Liqueur fumante de Libabius)	
Sulphur Chlorides (Sulphur Dichloride, Sulphur Monochloride)	Chlorures de soufre (bichlorure et protochlorure de soufre)	
Sulphur Trioxide, stabilized	Anhydride sulfurique, stabilisé	
Sulphuric Acid	Acide sulfurique	
Sulphuryl Chloride	Chlorure de sulfuryle	
Thionyl Chloride	Chlorure de thionyle	
Titanium Tetrachloride	Tétrachlorure de titane	

Class 9 - Miscellaneous dangerous substances

Ammonium Picrate (wet)	Picrate d'ammonium (humide)	
Benzoylperoxide, wet	Péroxyde de benzoyle, humide	
Carbon Dioxide, solid	Anhydride carbonique solide	
Dinitrophenol (wet)	Dinitrophénol (humide)	
Di-nitro-phenolates (wet)	Dinitrophénates (humides)	
Di-nitro-resorcinol (wet)	Dinitrorésorcinol (humide)	
Nitrocellulose, containing not more than 12.6% Nitrogen, wet with not less than 25% water	Nitrocellulose, ne contenant pas plus de 12,6% d'azote et pas moins de 25% d'eau	
Picric Acid (wet)	Acide picrique (humide)	
Potassium Sulphide, Hydrated	Sulfure de potassium, hydraté	6a
Silver Picrate, wet	Picrate d'argent, humide	
Sodium Azide	Azoture de sodium	6a
Sodium Di-nitro-ortho-cresolate, wet	Dinitrocrésate de sodium	
Sodium Sulphide, hydrated	Sulfure de sodium, hydraté	
Trinitrobenzene, wet with not less than 10% water	Trinitrobenzène, humide, avec 10% d'eau au moins	
Trinitrobenzoic Acid, wet with not less than 10% water	Acide trinitrobenzoïque, humide, avec 10% d'eau au moins	
Urea nitrate, wet with not less than 10% water	Nitrate d'urée, humide, avec 10% d'eau au moins	

Unclassified

Eradicators, Paint or Grease,
liquid (same class as the
liquid used)

Détachants liquides pour peinture
ou corps gras (même classe que
le liquide employé)

Medicines, not otherwise
specified (according to the
most hazardous constituent)

Médicaments non spécifiés par
ailleurs (selon le composant le
plus dangereux)

Weed Killers, other than those
containing hormones (according
to the most hazardous constituent)

Désherbants, à l'exclusion de
ceux qui contiennent des
hormones (selon le composant
le plus dangereux)

3. LABELS IDENTIFYING THE RISK GRAPHICALLY AND WITHOUT REGARD TO PRINTED TEXT

46. The proposed labels are mainly intended for affixing on goods or packages. When, however, labels or placards are required on means of transport they may differ in form and even bear different symbols; in some regulations these are governed by special provisions which vary according to the means of transport.

47. The labelling system recommended comprises ten labels based on the classification and distinguished from each other by the symbols they bear, their colour, and the number of the class to which each one corresponds. Specimens of the labels and a description of them are given below.

48. In the case of explosives (Class 1), inflammable liquids (Class 3(b)) as explained in paragraph 50 below, inflammable solids or substances liable to spontaneous combustion (Class 4(b)), inflammable solids or substances which, in contact with water, emit inflammable gases (Class 4(c)), some regulations either make no provision for labelling or provide for it only in exceptional circumstances. Use of the appropriate label is therefore to be regarded as optional for these classes.

49. Compressed gases are, in most countries, put in special receptacles which themselves denote the nature of the contents. In some countries and for certain means of transport, however, the identification of receptacles containing non-inflammable compressed gases by means of a label is considered helpful, particularly as a guide to handling. A special label is therefore provided for such consignments; its use is optional. For consignments of other gases, any countries or organizations considering it necessary to identify them, may prescribe the use of labels indicating the type of risk. For example, for inflammable gases, the label might be that of Class 3 with the number of Class 2 substituted for 3; similarly, poisonous gases might carry the label for Class 6(a) bearing the number "2".

50. Inflammable liquids (Class 3), are sub-divided in the classification, in accordance with the practice followed for purposes of transport, into two groups according to their flash point. The dividing line recommended between the two groups is a flash point of 73°F (23°C), closed test or 80°F (26.6°C), open test. Liquids in the second group are naturally the less dangerous of the two and in inland transport in North America the risk attached to them is not regarded as sufficient to justify any special regulations. As the same label, with an optional inscription, is used for all substances in this class, those wishing to draw a distinction between the two groups of substances might designate them differently. A substance in the first group, for instance, might be described as an "inflammable liquid" and one in the second group as a "combustible liquid", or they might be described as "inflammable liquid A" and "inflammable liquid B" respectively. Another way would be to indicate the flash point of the product.

51. No label is thought necessary for Class 6(b) (infectious substances). As a matter of fact, the RID makes no provision for labelling goods of this category, in which, incidentally, there is relatively little traffic.

52. In accordance with Economic and Social Council Resolution 468 G (XV), these recommendations relate essentially to danger labels. There is no reason, however, why regulations should not provide for additional labelling indicating the

precautions to be taken. This is done, for instance, in the RID, which prescribes a label bearing an umbrella as a symbol for Class 4(c) (inflammable solids, or substances, which on contact with water emit inflammable gases), to show that such substances must not come in contact with water.

53. The proposed labels are all in the form of a square set at an angle of 45 degrees (diamond-shaped), with minimum dimensions of 4" x 4", except in the case of packages of dimensions such that they can only bear smaller labels. They have a line of the same colour (black) as the symbol, 1/5" inside the edge and running parallel to it. The labels are divided into two equal triangles, the upper being reserved for the symbol and the lower being available for a text. The addition of a text in the language of the country of origin is purely optional and the particulars on the labels should be confined to the following data: nature of the danger and precautions to be taken in handling. The number of the class to which the goods belong should be indicated in the bottom corner of the label, and may be either printed or stamped.

54. The symbol denotes the risk. The colour is required mainly as a guide to the handling, stowing and storage of the goods. Quite apart from the warning which it conveys as to the risk, the colour may be useful in drawing attention to the danger of putting certain goods in different classes near to each other. As a rule, goods bearing labels with backgrounds of different colours or colour patterns should not be stowed together. In certain cases, even goods bearing labels of the same colour should not be stowed together. Owing to the complicated nature of the problem, these colours can only be a first indication of incompatibility for stowage and the full instructions on stowage will always need to be consulted.

55. When a type of goods involves two major risks, for example, fire and poisoning, two labels should be affixed to the package, one for each risk; in this case they should, however, bear the same number, namely that of the class to which the goods in question belong.

56. Labels need not be affixed to all goods or to all packages of the class to which they apply, but should be affixed to those involving a real danger. More specific instructions on this point cannot be given until the closely related question of packaging has been studied.

57. Although this labelling system is mainly designed for international transport, the Committee recommends that it also be adopted as far as possible by the various countries for their inland traffic within a reasonable time, since consignments originally despatched as inland traffic often have their final destination abroad. In addition, co-ordination of labelling for national and international traffic could only serve to reduce the risk of confusion and simplify matters to the benefit of all concerned. Incidentally, such co-ordination would appear by the very nature of things, to be essential for seaborne and air transport, in view of their essentially international character.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 1
Explosives.

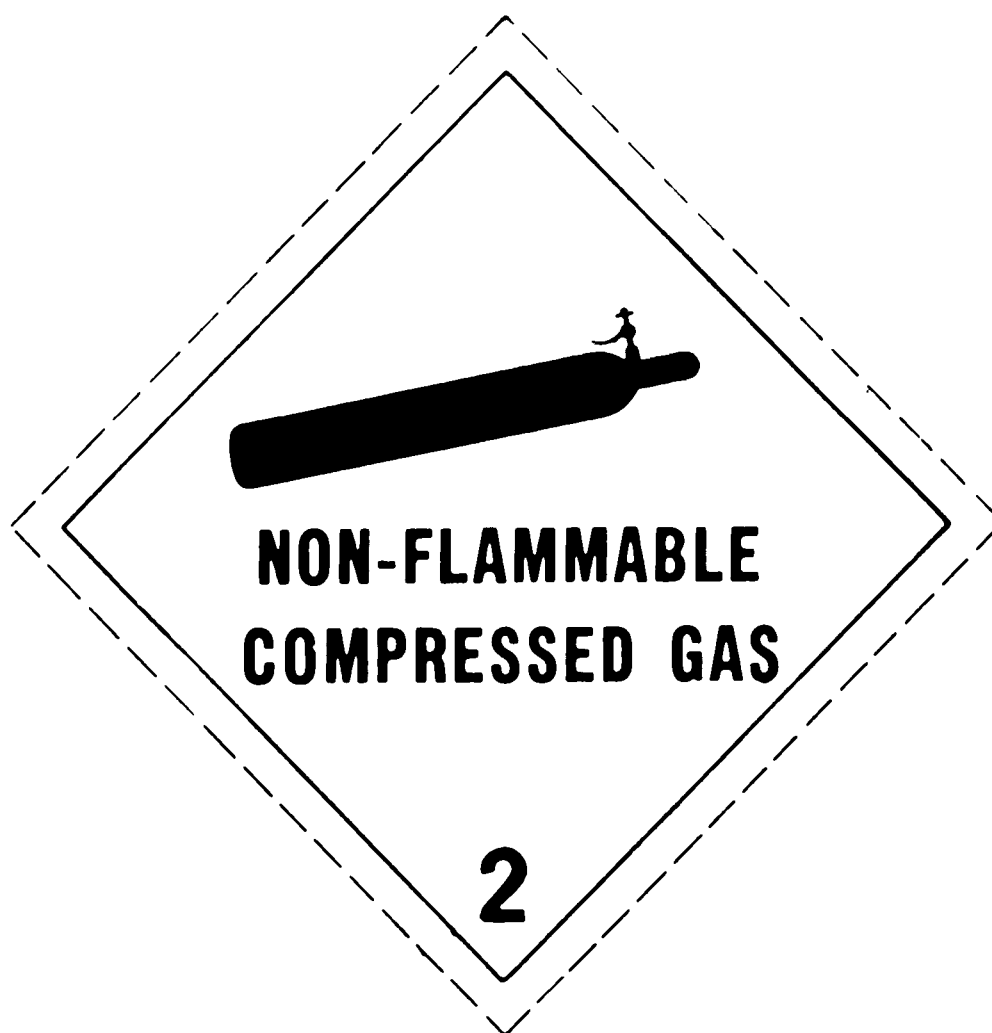
Bomb: black. Background: orange.
Text (optional): black.

Minimum dimensions: 4" x 4" except in the case of packages of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



Compressed, non-flammable gases
included in
Class 2 – Gases: compressed, liqui-
fied and dissolved under pressure.

Cylinder: black. Background: green.
Text (optional): black.

Minimum dimensions: 4" x 4" except in the case of packages
of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 3

Inflammable liquids.

Note: The word inflammable has the same meaning as flammable.

Flame: black. Background: red.
Text (optional): black.

Minimum dimensions: 4" x 4" except in the case of packages of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 4A

Inflammable solids.

Note: The word inflammable has the same meaning as flammable.

Flame: black. Background white with vertical red stripes. Text (optional): black.

Minimum dimensions: 4" x 4" except in the case of packages of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 4B

Inflammable solids or substances liable to spontaneous combustion. Note: The word inflammable has the same meaning as flammable.

Flame: black. Background: upper half white, lower half red.
Text (optional): black.

Minimum dimensions : 4" x 4" except in the case of packages of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 4C

Inflammable solids or substances which, in contact with water, emit flammable gases.

Note: The word inflammable has the same meaning as flammable.

Flame: black. Background: blue.
Text (optional): black.

Minimum dimensions: 4" x 4" except in the case of packages of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 5
Oxidizing substances.

Flame: black. Background: yellow.
Text (optional): black.

Minimum dimensions: 4" x 4" except in the case of packages of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 6A
Poisonous (toxic) substances.

Skull and crossbones: black. Back-
ground: white. Text (optional):
black.

Minimum dimensions: 4" x 4" except in the case of packages
of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 7
Radio-active substances.

Package with radiations and a skull and crossbones: black. Background: white. Text (optional): black.

Minimum dimensions: 4" x 4" except in the case of packages of dimensions such that they can only bear smaller labels.

TRANSPORT OF DANGEROUS GOODS

DANGER LABEL

UNITED NATIONS



CLASS 8
Corrosives.

Acid spilling from a glass vessel and attacking a metal: black. Background: upper half white, lower half black with white border. Text (optional): white.

Minimum dimensions: 4" x 4" except in the case of packages of dimensions such that they can only bear smaller labels.

4. SHIPPING PAPERS COVERING DANGEROUS GOODS

58. It is recommended that in all transport papers accompanying dangerous goods, where the goods are customarily named, the correct name of the goods 13/ should be used and the class of risk indicated. The shipping paper prepared by the shipper should in addition carry or be accompanied by a certificate or declaration that the shipment offered for transportation is properly packed, marked and labelled, and in proper condition for transportation in accordance with the operative regulations.

59. It is further recommended that, where the certificate or declaration is made in a separate document, a form similar to the one reproduced below should be used.

13/ If dangerous goods are given internationally valid code numbers, the appropriate code number should also be entered into the document.

FORM OR APPLICATION AND CERTIFICATE FOR FORWARDING/SHIPMENT OF DANGEROUS OR HAZARDOUS CARGO

To: Carrier "X"
 (Rail
 (Road
 (Inland navigation
 (Air
 (Sea

Please confirm acceptance of the following goods for forwarding/shipment per
 for which the following information is certified to be correct

Shipping/ Forwarding Mark and Destination or address	Package Nos.	Description of Packages etc.	Name of Goods	Flash Point (if any) Fahr. or Cent.	Net Weight kilos or cwts. qrs. lbs.	Total Measurement cu. ft. or cu. metres	Class No.

In consideration of your so doing we certify that the goods are packed in a manner adequate to withstand the ordinary risks of handling and transport by (.....) having regard to their nature.

To conform with this requirement the goods are packed in accordance with the recommendations contained in the, and the package or packages labelled or stencilled on the outside to indicate the identity of the goods and the nature of the danger to which the goods give rise.

Signature
 (This declaration must be signed by a duly authorized person)

.....
 Name and address of consignor

Date 19.....

III

EXPLANATORY NOTES ON THE RECOMMENDATIONS

1. CLASSIFICATION AND DEFINITIONS RELATING TO THE CLASSES

Classification

60. There exists presently a variety of classifications included in regulations, some international and of world-wide or regional application, others purely national. At the world level, the International Convention for the Safety of Life at Sea (1948), which has been ratified by forty-four countries,^{14/} contains (Chapter VI, regulation 3) a classification of dangerous goods for the purposes of sea transport. The Committee has attached very great weight to this situation. The classification of goods on the basis of the character of risk involved, which is recommended, has been drawn up to meet technical conditions, with the minimum interference with existing regulations.

Definitions

61. The definitions recommended are not definitions in the strict scientific sense of the word. In practice, the aim should be to provide general guidance as to which goods are dangerous and as to the class into which they fall, according to their characteristics. These definitions are so devised as to provide a common pattern from which it would be possible to formulate the definitions included in the several national and international regulations. In this way they will help to obtain uniformity in the classification of the various categories of dangerous goods in the regulations. The definitions recommended, together with the list of the main dangerous goods provided by way of illustration, should give to those concerned all the guidance they require. In view of their flexibility, they can be adapted to the various situations likely to be encountered.

62. Most of the definitions do not call for comment. As regards gases (Class 2) the difficulty was to reconcile the system of regulations existing in North America with the regulations for railway transport in Europe. The agreed definitions in this class are of a general nature, so as to cover both sets of regulations. As to the differentiation between a liquefied gas exerting a low pressure at a certain temperature and an inflammable liquid, it was not found possible to reconcile these two systems of regulations. This criterium has,

^{14/} Argentina, Belgium, Brazil, Bulgaria, Cambodia, Canada, Chile, Cuba, Denmark, Dominican Republic, Egypt, Finland, France, Federal Republic of Germany, Greece, Haiti, Iceland, India, Ireland, Israel, Italy, Japan, Liberia, Monaco, Netherlands, Nicaragua, New Zealand, Norway, Pakistan, Panama, Philippines, Poland, Portugal, Roumania, Spain, Sweden, Switzerland, Union of South Africa, Union of Soviet Socialist Republics, United Kingdom, United States of America, Venezuela, Viet-Nam and Yugoslavia.

therefore, been omitted so that the two methods of differentiation are recognized.

63. In some codes compressed poisonous gases are placed under Class 6(a) Poisonous (toxic) Substances, because their poisonous character is regarded as their most dangerous characteristic. On the other hand, others deal with these goods under Class 2, Gases, because they are carried in the same types of cylinders as other gases, with the same kind of safety factors. Since it appears that the authorities for neither set of codes are prepared to change their present practice, there seems no possibility of harmonizing the classification of these goods. The loss of harmony is not considerable and involves in Class 2 a cross-reference to Class 6(a) and in Class 6(a) a cross-reference to Class 2. As regards labelling, the difference in practice is again not great, because the "poisons" label is to be used for all compressed poisonous gases, in one code with the number 6(a) on it, and in the other with the number "2".

2. LIST OF PRINCIPAL DANGEROUS GOODS, AND ASSIGNMENT OF EACH OF THEM TO ITS PROPER CLASS

64. In accordance with its terms of reference, the Committee of Experts has prepared a list of dangerous goods other than explosives applicable to all means of transport. It has also assigned each of the goods to the appropriate class or category. Lastly, wherever necessary, it has indicated the class appropriate to the subsidiary risk.

65. In the list the goods are enumerated within each class in the alphabetical order of their English names.

66. The list is in no way exhaustive. As prescribed by the Economic and Social Council, it contains most of the principal dangerous goods moving in commerce. The degree of hazard may vary with the particular method of transport, the packaging, the quantity and possibly the climatic conditions likely to be encountered. This document does not deal with such factors, which, in the preparation of actual regulations, have to be carefully weighed in the light of experience, normal transport conditions and volume of traffic. Again, the Committee has based its choice of the goods it has listed largely on existing practices and procedures, as recommended by the Economic and Social Council. Hence it has omitted certain goods which, although dangerous, are not listed in most of the main sets of regulations.^{15/} This does not mean that they should be deleted from the lists in which they do appear.

67. The goods included in the list are mainly intended to serve as examples and to constitute a concrete illustration of the classification and the definitions proposed, as the first purpose of the list is to serve as a guide to the classification of the goods not entered in it. In the various international and national lists, such goods may be considered by analogy with goods in the present list having the same characteristics and placed in the same class.

68. The practical scope of the list being limited in this way, there is no need to draw a distinction between goods which must be labelled and others which need not. Such a distinction cannot be usefully made until the basic principles governing packaging are defined.

^{15/} This explains certain differences between the list contained in this document and that proposed in the report of the Committee on its first session (E/CN.2/143 and Corr.1).

69. Similarly, the question whether dangerous goods should be subdivided into restricted and free classes, as in the RID, does not arise in compiling such a list. The goods in it being intended merely to serve as examples, it is clear that they may or may not be subdivided into restricted and free classes, depending on the system adopted for a given set of regulations.

70. In the case of explosives (Class I), the Committee considered that it was not possible to draw up a list comparing with the list of other dangerous substances. The reason for this is that there is a great diversity of explosives and that many of them are designated by trade names, their exact composition being unknown. The Committee therefore confined itself to classifying explosives in three groups corresponding to the degree and nature of the risk, in accordance with the principle adopted in certain regulations, including those of the United States of America and France. For each of these groups the Committee has given certain typical explosives as examples. It believes that this should be sufficient to enable the different explosives to be assigned to their proper grouping in the various national and international regulations, so that the desired uniformity of classification may be achieved.

71. In the case of infectious substances (class 6(b)) and of radio-active substances (class 7) the Committee did not consider specific substances, as such substances are easily recognizable scientifically and may be listed accordingly.

3. LABELS IDENTIFYING THE RISK GRAPHICALLY AND WITHOUT REGARD TO PRINTED TEXT

72. The system of ten labels corresponding to nine classes of dangerous goods has been established with the following aims in mind:

(a) Easy identification of the risk, graphically and without regard to printed text, as recommended in Economic and Social Council resolution 468 G (XV); it is by means of a symbol that the nature of the risk connected with the goods can be indicated to all concerned, no matter what language they speak.

(b) Labels which, by their colour, make it easier to distinguish the goods, and thus provide a very useful guide for handling and stowing operations. The representatives of several organizations stressed the advantages of such a system which is already widely used in many countries. The meaning of the colours can likewise be understood by those concerned, whatever language they speak.

(c) Labels which, by their general appearance (symbol, colour and shape), are easily recognizable from a distance as indicating dangerous goods.

73. The main symbols are confined to five, each corresponding to a main risk, namely:

- the bomb, for the risk of explosion;
- the flame, for the risk of fire;
- the skull and crossbones, for the risk of poisoning;

- the package with radiations and a skull and crossbones, for the risk connected with radio-active substances;
- acid spilling from a glass vessel and attacking a metal, for the risk of corrosion.

74. These main symbols are supplemented by two others. The one for oxidizing substances (class 5) is merely a variant of that for inflammable substances. It was agreed with the experts of the International Labour Organisation that a special symbol was justified as the risk of fire is less in the case of oxidizing substances than in the case of inflammable substances. The symbol for non-inflammable compressed gases was added for the practical reasons given in paragraph 49.

75. The texts printed on the labels are given as examples and are optional.

76. The recommendation that these five main symbols be adopted was inspired by the work of the International Labour Organisation and the RID Committee of Experts. Of the five symbols proposed by the International Labour Organisation to indicate the main dangers, four were adopted. As stated above, the symbol subsequently proposed by the ILO group of experts for oxidizing substances was also accepted. As regards corrosive substances (class 8), however, the symbol (representing a withered hand) recommended by the International Labour Organisation was rejected for the transport of such substances, on the grounds that:

- In its resolution 468 G (XV), the Economic and Social Council directed the United Nations Committee of Experts to take into consideration existing practices and procedures and give due weight to the extent of present usage; but the symbol recommended by the International Labour Organisation appears in no international regulations concerning transport.
- The symbol recommended by the International Labour Organisation was prescribed in Annex I to the CIM for one corrosive substance only, hydrofluoric acid. It was subsequently deleted in order to reduce the number of symbols. The adoption of the "withered hand" as a symbol for all corrosive substances would mean that it would apply to a whole range of substances certainly not dangerous enough to justify such an alarming picture.
- Finally, it emerged very clearly that, owing to the unqualified opposition of certain governments and of the international organizations representing sea and air carriers, the symbol of the "withered hand" could not be adopted to serve as a basis of uniformity at the world level for all means of transport.

77. The symbol recommended (acid spilling from a glass vessel and attacking a metal) is that contained in the IATA regulations. As such, it has already been recognized by many governments and is used for air transport. Moreover, it should be noted that most corrosives dangerous in transport are liquids.

78. In proposing a system of labels based on both symbols and colours, account has been taken of the main systems in use throughout the world, in particular:

- the system used in Continental Europe and in part of the Asian Continent which, in view of the number of different languages spoken, relies on symbols;
- the system applied in other countries (including the United States of America, India and the United Kingdom) whereby classes of dangerous goods are distinguished exclusively - or almost exclusively - by the different colours of the labels.

79. The Committee has also taken account of the fact that the system of labels adopted by the IATA and suggested to governments by that organization makes use of both symbols and colours.

80. In accordance with a recommendation by the International Labour Organisation, the symbols are printed in black on all labels, to prevent fading. Other colours must also be resistant to weather.

4. SHIPPING PAPERS COVERING DANGEROUS GOODS

81. When dangerous goods are shipped, the same papers have to be made out as are required for other categories of goods. The form of these papers, the particulars to be entered on them and the obligations they entail are fixed by international conventions applying to certain means of transport, and by legislation. The rules thus established are the fruit of long practical experience and their interpretation has given rise to a large body of case law. The Committee of Experts felt that it had no authority to tamper with these rules and, moreover, that there was no need to do so.

82. The only condition especially essential in the case of dangerous goods is that they should be given an absolutely correct and accurate designation in the papers, in order to prevent any misunderstanding as to their nature on the part of those concerned, in particular, the carriers. The consignor must certify, either on the shipping paper itself or in a separate declaration, that he has put up his goods for shipping in accordance with the operative regulations. It may be added that these requirements as regards the designation of the goods and the declaration are included in most international and national regulations.

83. Recommendations have, therefore, been framed on these lines. A specimen declaration form has also been prepared which is suitable for use where the declaration is made in a separate document.