



SAS Flight Academy

DANGEROUS GOODS

FLIGHT - CREW

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This publication is intended to be used as educational material only
and must never replace the regulations
which are valid for transport of Dangerous Goods by air.
The information in this booklet is extracted from
The IATA Dangerous Goods Regulation 2004
and the *ICAO Emergency Response Guidance for Aircraft Incidents Involving
Dangerous Goods 2001 – 2002 edition*

DEFINITION OF DANGEROUS GOODS

(IATA – DGR 1.0)

Dangerous goods are articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in these Regulations or which are classified according to these Regulations.

Subjects which are :

- **Explosive**
- **Flammable**
- **Poisonous**
- **Infectious**
- **Corrosive**
- **Emitting radiation**
- **Can effect aircraft instruments**

are considered as Dangerous Goods and shall be treated as such.

BASIS FOR REGULATIONS

The UN Committee of Experts (CoE) develops recommended procedures for the transport of all types of dangerous goods except radioactive materials.

These procedures, applicable to all modes of transport, are published in the Recommendations on the Transport of Dangerous Goods—Model Regulations (Eleventh revised Edition).

The International Atomic Energy Agency (IAEA) develops recommended procedures for the safe transport of radioactive materials.

These procedures are published in the Regulations for the Safe Transport of Radioactive Material (IAEA ST-1).

ICAO-TI

The International Civil Aviation Organization (ICAO), has used these recommendations as the basis for developing the regulations for the safe transport of dangerous goods by air.

The ICAO regulations are codified in Annex 18 to the Convention on International Civil Aviation and in its Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284-AN/905 as amended) (Technical Instructions).

IATA – DGR

The IATA Dangerous Goods Regulations (the Regulations) contain all of the requirements of the Technical Instructions.

IATA has included additional requirements, which are more restrictive than the Technical Instructions and reflect industry standard practices or operational considerations.

These are identified by the symbol "☞" in the margin.

The IATA Dangerous Goods Regulations are applicable to:

- all airlines which are Members or Associate Members of IATA;
- all airlines which are party to the IATA Multilateral Interline Traffic Agreement—Cargo; and
- all shippers and agents that offer consignments of dangerous goods to these operators.

EXCEPTIONS

The provisions of these Regulations do not apply to dangerous goods carried on an aircraft where the dangerous goods are:

- (a) to provide medical aid to a patient during flight;
- (b) to provide veterinary aid or a humane killer for an animal during flight;
- (c) for dropping during flight in connection with agricultural, horticultural, forestry or pollution control activities;
- (d) to provide aid in connection with search and rescue operations during flight;

RESPONSIBILITY

The responsibility to carry Dangerous Goods is with the shipper and the operator.

Which responsibility is with whom is described in IATA - DGR 1.3 and 1.4.

SHIPPER'S RESPONSIBILITIES

(IATA-DGR 1.3)

- A shipper must comply fully with these Regulations when offering a consignment of dangerous goods to IATA Member and associate Member airlines, and to airlines participating in IATA interline agreements for cargo. In addition, shippers must comply with any applicable regulations set forth by the States of origin, transit and destination.
- The shipper must ensure that the articles or substances are not prohibited for transport by air
- The articles or substances must be properly identified, classified, packed, marked, labeled and documented in accordance with these Regulations.
- The shipper signs a "Shipper's declaration for Dangerous Goods" where he declares that the above is met.

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.



DANGEROUS GOODS FOR FLIGHT CREW

SHIPPER'S DECLARATION FOR DANGEROUS GOODS

Shipper	Air Waybill No. Page of Pages Shipper's Reference Number <i>(optional)</i>						
Consignee	For optional use for Company logo name and address						
Two completed and signed copies of this Declaration must be handed to the operator.	WARNING Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.						
TRANSPORT DETAILS							
This shipment is within the limitations prescribed for: <i>(delete non-applicable)</i>	Airport of Departure:						
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: center; padding: 2px;">PASSENGER AND CARGO AIRCRAFT</td> <td style="width:50%; text-align: center; padding: 2px;">CARGO AIRCRAFT ONLY</td> </tr> </table>	PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY	Airport of Destination:				
PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY						
Shipment type: <i>(delete non-applicable)</i> <input type="checkbox"/> NON-RADIOACTIVE <input type="checkbox"/> RADIOACTIVE							
NATURE AND QUANTITY OF DANGEROUS GOODS							
Dangerous Goods Identification							
Proper Shipping Name	Class or Division	UN or ID No.	Packing Group	Subsidiary Risk	Quantity and type of packing	Packing Inst.	Authorization
Additional Handling Information							
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.					Name/Title of Signatory Place and Date Signature <i>(see warning above)</i>		

OPERATOR'S RESPONSIBILITIES

(IATA DGR 1.4)

In transporting dangerous goods, an operator must comply with the requirements (of Section 9 IATA-DGR) for:

- **Acceptance**
- **Storage**
- **Loading**
- **Inspection**
- **Provision of Information**
 - Commander
 - Airline Employees
 - Passenger
 - Shippers
- **Reporting**
 - Dangerous Goods Accidents or Incidents
 - Undeclared or mis declared Dangerous Goods including Dangerous Goods not permitted in passengers baggage
- **Emergency Response**
- **Retention of Records**
- **Training**

This Section (9) details the responsibilities of operators with regard to the acceptance, handling and loading of dangerous goods. However, nothing contained herein should be interpreted as requiring an operator to transport a particular article or substance or as preventing an operator from imposing special requirements on the transport of a particular article or substance.

Various types of Acceptance Check-sheets :

Dangerous Goods Acceptance Check Sheet for NON Radioactive Material

AWB-No.: _____ Origin: _____ Destination: _____

The information given must be correct for each entry. Never accept or refuse the shipment before all items have been checked!

Shipper's Declaration

1. Two copies in English and in the IATA format? (01.01.01.01) Yes No N/A

2. Full name and address of shipper and consignee? (01.01.01.02) Yes No N/A

3. For Div. 6.2, infectious substances, name and let-ns of a responsible person? (01.01.01.03) Yes No N/A

4. Number of pages shown? (01.01.01.04) Yes No N/A

5. AWB-number/full name of city (or airport) of departure and destination shown? If not enter 01.01.01.05 (01.01.01.05) Yes No N/A

6. Non-applicable aircraft type deleted? (01.01.01.06) Yes No N/A

7. "Radioactive" deleted? (01.01.01.07) Yes No N/A

Identification (01.01.02)

8. Proper Shipping Name and the technical name in brackets for "X" entries? (01.01.02.01) Yes No N/A

9. Class or Division, and for Class 1, the Compatibility Group? Yes No N/A

10. UN number, preceded by the prefix UN (or ID for ID 8000)? Yes No N/A

11. Packing Group? Yes No N/A

12. Secondary risk? Yes No N/A

Quantity and Type of Packing (01.01.03)

13. Number and type of code of package(s) Yes No N/A

14. Net quantity (or gross mass if applicable) per package within limits and unit of measure? Yes No N/A

15. For different dangerous goods packed in one (outer) package(s):
 a) Contents compatible? (01.01.03.01) Yes No N/A
 b) All packed in one package type/overpack? Yes No N/A
 c) If value, not exceeding 1 and rounded up to full decimal place? (01.01.03.02) Yes No N/A
 d) Requirements for Div. 6.2 complied with? (01.01.03.03) Yes No N/A

16. For Overpack(s):
 a) Contents compatible? (01.01.03.04) Yes No N/A
 b) Overpack used? Yes No N/A

Packing Instruction (01.01.04)

17. Packing instruction number? Yes No N/A

Authorizations (01.01.05)

18. "Limited Quantity" or "LSI" or "Q1" or "Q2" packing instruction used? (01.01.05.01) Yes No N/A

19. Special Provision number shown if AL, AZ, AS, AH, A330 is used? Yes No N/A

20. Indication that requires approval/ authorization is attached and if not in English, including an accurate translation in English? Yes No N/A

Additional Handling Information

21. Statement for self-reactive substances of Division 4.1, organic peroxides or infectious substances? (01.01.06.01) Yes No N/A

22. Name and Title of Signatory, Place, Date and Signature of Shipper? (01.01.06.02) Yes No N/A

23. Amendments or alterations signed by the shipper? (01.01.06.03) Yes No N/A

Air Waybill (01.01.07)

24. "Dangerous Goods as per attached Shipper's Declaration" or "DGD"? Yes No N/A

25. "Cargo Aircraft Only" or "CAO"? Yes No N/A

26. For mixed shipments, number of packages containing DGD? Yes No N/A

Package(s) (01.01.08)

27. Package(s) comply with packing instruction and undamaged? (01.01.08.01) Yes No N/A

28. Same number/type of packaging delivered as shown on DGD? Yes No N/A

Marking(s) (01.01.09)

29. Proper Shipping Name and the technical name in brackets for "X" entries? (01.01.09.01) Yes No N/A

30. UN number, preceded by the prefix UN (or ID for ID 8000)? (01.01.09.02) Yes No N/A

31. Full name and address of shipper and consignee? (01.01.09.03) Yes No N/A

For UN Specification Packaging (01.01.10)

32. Symbol and type code marked? Yes No N/A

33. X, Y or Z signed with Packing Group/Packing instruction? Yes No N/A

34. Maximum gross weight not exceeded for packages containing solids or other packaging? Yes No N/A

35. Infectious substance marking? Yes No N/A

For Limited Quantity Packaging

36. "LIMITED QUANTITY" or "LSI" or "Q1" or "Q2"? (01.01.11) Yes No N/A

37. Additional marking requirements

38. Additional marking requirements for explosives, infectious substances, syringes, liquids, dry ice? (01.01.12) Yes No N/A

39. Statement "Your packages comply with prescribed specifications" if UN specification markings are not visible? (01.01.13) Yes No N/A

40. More than one overpack, identification marks and net quantity of each overpack must be indicated? (01.01.14) Yes No N/A

41. Cargo Aircraft Only restriction? (01.01.15) Yes No N/A

Labels (01.01.16)

42. Primary hazard labels, with Class or Division number, and for Class 1 the compatibility group, affixed on same surface near Proper Shipping Name? (01.01.16.01) Yes No N/A

43. Secondary risk labels affixed on same surface near primary label? (01.01.16.02) Yes No N/A

44. "Cargo Aircraft Only" labels affixed on same surface near hazard labels? (01.01.16.03) Yes No N/A

45. Orientation labels affixed on opposite sides? (01.01.16.04) Yes No N/A

46. "Magnified Material" label? (01.01.16.05) Yes No N/A

47. "Cryogenic Liquid" label? (01.01.16.06) Yes No N/A

48. Markings and labels correctly affixed? (01.01.16.07) Yes No N/A

49. Interverse markings/labels removed? (01.01.16.08) Yes No N/A

General

50. State and operator variations complied with? (01.01.17) Yes No N/A

51. Restrictions of the WOW members and their states complied with? Yes No N/A

52. Envelopes and restrictions of all stations in routing complied with? Yes No N/A

53. Packages containing Dry Ice - Marking labeling, DGD complied? (01.01.18) Yes No N/A

54. Shipment booking status "confirmed"? If not, the booking has to be amended. If CAO, ensure that cargo aircraft operates on all segments. Yes No N/A

Notes: The shipment is acceptable, when origin of this check sheet is the IATA accompanying information and a copy of this check sheet together with a copy of the AWB and DGD is the original of destination. It is mandatory to be accompanied with a "DGD" for each dangerous goods and to be accompanied by the complete form to be signed and stamped with four professionals.

This shipment is: Acceptable Not acceptable

Checked by: _____ (Name in block capitals and signature)

Department: _____ Date: _____

Comments: _____

Lufthansa Cargo SAS Cargo JALCARGO Member of WOW

1/ For NON-Radioactive shipments

Dangerous Goods Acceptance Check Sheet for Radioactive Material, Excepted Packages - Dangerous Goods in Excepted Quantities

AWB-No.: _____ Origin: _____ Destination: _____

The information given must be correct for each entry. Never accept or refuse the shipment before all items have been checked!

General

1. State and operator variations complied with? Yes No N/A

2. Restrictions of the WOW members and their states complied with? Yes No N/A

3. Envelopes and restrictions of all stations in routing complied with? Yes No N/A

4. Shipment booking status "confirmed"? If not, the booking has to be amended. Yes No N/A

EXCEPTED PACKAGES (RRE) **EXCEPTED QUANTITIES (REQ)**

Air Waybill (01.01.01)

5. Proper Shipping Name and compatibility group? (01.01.01.01) Yes No N/A

6. UN number, preceded by the prefix UN (or ID for ID 8000)? (01.01.01.02) Yes No N/A

Package(s) / Overpack(s) (01.01.02)

7. Package(s) undamaged? (01.01.02.01) Yes No N/A

8. Same number/type of packaging delivered as shown on DGD? (01.01.02.02) Yes No N/A

Marking(s) (01.01.03)

9. Proper Shipping Name and compatibility group? (01.01.03.01) Yes No N/A

10. UN number, preceded by the prefix UN (or ID for ID 8000)? (01.01.03.02) Yes No N/A

11. Full name and address of shipper and consignee? (01.01.03.03) Yes No N/A

12. Net quantity of Dry Ice per package? (01.01.03.04) Yes No N/A

13. Maximum gross weight, if it exceeds 50kg? (01.01.03.05) Yes No N/A

14. Interverse markings/labels removed? (01.01.03.06) Yes No N/A

Label(s) (01.01.04)

15. "Radioactive" label correctly affixed? (01.01.04.01) Yes No N/A

16. Name and address of shipper and consignee? (01.01.04.02) Yes No N/A

17. Class no. and applicable UN no. entered? (01.01.04.03) Yes No N/A

18. Markings and labels correctly affixed? (01.01.04.04) Yes No N/A

19. Interverse markings/labels removed? (01.01.04.05) Yes No N/A

20. If more than one UN number is shown on the label, all the contents comply? (01.01.04.06) Yes No N/A

DRY ICE used as refrigerant for RRE or REQ

Air Waybill (01.01.05)

21. Does the Air Waybill show in the "Nature and Quantity of Goods" section operator as follows:
 a) Dry Ice, IS, UN1845 or Carbon dioxide, serial 9, UN1845? Yes No N/A
 b) Number of packages containing Dry Ice? Yes No N/A
 c) Net quantity of Dry Ice per package? Yes No N/A

Marking(s) / Label(s) (01.01.06)

22. Dry Ice UN1845 or Carbon dioxide, serial 9, UN1845? (01.01.06.01) Yes No N/A

23. Full name and address of shipper and consignee? (01.01.06.02) Yes No N/A

24. Net quantity of Dry Ice in kg? (01.01.06.03) Yes No N/A

25. Markings and UN1845 label (or UN1845 label) correctly affixed? (01.01.06.04) Yes No N/A

26. Interverse markings/labels removed? (01.01.06.05) Yes No N/A

Notes: The shipment is acceptable, when origin of this check sheet is the IATA accompanying information and a copy of this check sheet together with a copy of the AWB and DGD is the original of destination. It is mandatory to be accompanied with a "DGD" for each dangerous goods and to be accompanied by the complete form to be signed and stamped with four professionals.

This shipment is: Acceptable Not acceptable

Checked by: _____ (Name in block capitals and signature)

Department: _____ Date: _____

Comments: _____

Lufthansa Cargo JALCARGO Member of WOW

2/ For Radioactive Material, Excepted Packages and For DG in Excepted Quantities

Dangerous Goods Acceptance Check Sheet for Dry Ice - when DGD is not required

AWB-No.: _____ Origin: _____ Destination: _____

The information given must be correct for each entry. Never accept or refuse the shipment before all items have been checked! This check sheet may also be used for Dry Ice used as a refrigerant for dangerous goods.

Air Waybill (01.01)

1. Does the Air Waybill show in the "Nature and Quantity of Goods" section the following as follows:
 a) Dry Ice, UN1845 or Carbon dioxide, serial 9, UN1845? Yes No N/A
 b) Number of packages containing Dry Ice? Yes No N/A
 c) Net quantity of Dry Ice per package? Yes No N/A

Package(s) (01.01.02)

2. Package(s) undamaged? Yes No N/A

3. Package(s) comply with Packing Instruction 0047? Yes No N/A

Marking(s) (01.01.03)

4. Dry Ice UN1845 or Carbon dioxide, serial 9, UN1845? Yes No N/A

5. Full name and address of shipper and consignee? Yes No N/A

6. Net quantity of Dry Ice in kg? Yes No N/A

Labels (01.01.04)

7. UN1845 label (or serial 9)? Yes No N/A

8. Markings and labels correctly affixed? (01.01.04.01) Yes No N/A

9. Interverse markings and labels removed? (01.01.04.02) Yes No N/A

General (01.01.05)

10. State and operator variations complied with? Yes No N/A

11. Restrictions of the WOW members and their states complied with? Yes No N/A

12. Envelopes and restrictions of all stations in routing complied with? Yes No N/A

13. Shipment booking status "confirmed"? If not, the booking has to be amended. Yes No N/A

Notes: The shipment is acceptable, when origin of this check sheet is the IATA accompanying information and a copy of this check sheet together with a copy of the AWB and DGD is the original of destination. It is mandatory to be accompanied with a "DGD" for each dangerous goods and to be accompanied by the complete form to be signed and stamped with four professionals.

This shipment is: Acceptable Not acceptable

Checked by: _____ (Name in block capitals and signature)

Department: _____ Date: _____

Comments: _____

Lufthansa Cargo SAS Cargo JALCARGO Member of WOW

3/ For Dry Ice when DGD is not required

Dangerous Goods Acceptance Check Sheet for Radioactive Material

AWB-No.: _____ Origin: _____ Destination: _____

The information given must be correct for each entry. Never accept or refuse the shipment before all items have been checked!

Shipper's Declaration

1. Two copies in English and in the IATA format? (01.01.01.01) Yes No N/A

2. Full name and address of shipper and consignee? (01.01.01.02) Yes No N/A

3. Number of pages shown? (01.01.01.03) Yes No N/A

4. AWB-number and full name of city (or airport) of departure and destination shown? If not enter 01.01.01.04 (01.01.01.04) Yes No N/A

5. Non-applicable aircraft type deleted? (01.01.01.05) Yes No N/A

6. "Non-Radioactive" deleted? (01.01.01.06) Yes No N/A

Identification (01.01.02)

7. Proper Shipping Name? Yes No N/A

8. Class? Yes No N/A

9. UN number, preceded by UN? Yes No N/A

10. Packing Group, if required for extraordinary risks? Yes No N/A

11. Secondary risk, if applicable? Yes No N/A

Quantity and Type of Packing (01.01.03)

12. Name or symbol of radionuclide(s)? Yes No N/A

13. Description of physical and chemical form, if in other form or specific form or low dispersible material? Yes No N/A

14. Number and type of package(s) Yes No N/A

15. Activity in Bq (or multiples thereof) per package? (for fissile material the weight of fissile material may be shown) Yes No N/A

16. Activity within the limits for Type A (low SAH or B) or for B or C packages, low dispersible material? Yes No N/A

17. For LSA-I, LSA-II, SCO-I and SCO-II the total activity of the consignment as a multiple of A2? Yes No N/A

18. For different individual radionuclides, the activity of each radionuclide and the words "All packed in one"? Yes No N/A

19. Overpack used? Yes No N/A

Packing Instruction (01.01.04)

20. Category of package(s) or overpack(s)? (low I.S.G.) Yes No N/A

21. Transport index of package(s) or overpack(s) and dimensions for Category II and III only? Yes No N/A

22. "Fissile receptacle"? Yes No N/A

23. Criticality Safety Index for fissile material? Yes No N/A

Authorizations (01.01.05)

24. Identification marks of required certificates/approvals entered with a statement that documents are attached? Yes No N/A

25. Copies of required certificates/approvals attached? If not in English, including an accurate translation in English? Yes No N/A

Additional Handling Information

26. Require additional handling information? (01.01.06.01) Yes No N/A

27. Name and Title of Signatory, Place, Date and Signature of Shipper? (01.01.06.02) Yes No N/A

28. Amendments or alterations signed by the shipper? (01.01.06.03) Yes No N/A

Air Waybill (01.01.07)

29. "Dangerous Goods as per attached Shipper's Declaration" or "DGD"? Yes No N/A

30. "Cargo Aircraft Only" or "CAO"? Yes No N/A

31. For mixed shipments, number of packages containing DGD? Yes No N/A

Package(s) (01.01.08)

32. Package(s) undamaged? (01.01.08.01) Yes No N/A

33. Same number/type of packaging delivered as shown on DGD? (01.01.08.02) Yes No N/A

Marking(s) (01.01.09)

34. Proper Shipping Name and UN number, preceded by UN? (01.01.09.01) Yes No N/A

35. Full name and address of shipper and consignee? (01.01.09.02) Yes No N/A

36. Marking of package type: Industrial package, Type A? (01.01.09.03) Yes No N/A

37. Marking of package type: B, or B or C or fissile package with corresponding ID approval mark, serial number and label symbol? (01.01.09.04) Yes No N/A

38. If fissile material, Criticality Safety Index marking? (01.01.09.05) Yes No N/A

39. If fissile material, gross weight, if it exceeds 50kg? (01.01.09.06) Yes No N/A

Overpack(s) (01.01.10)

40. Statement "Your packages comply with prescribed specifications" if package type marking is not visible? (01.01.10.01) Yes No N/A

Labels (01.01.11)

41. Two completed primary hazard labels affixed on opposite sides? (01.01.11.01) Yes No N/A

42. Secondary hazard labels affixed on same surface near primary labels? (01.01.11.02) Yes No N/A

43. "Cargo Aircraft Only" labels affixed on same surface near hazard labels? (01.01.11.03) Yes No N/A

44. For fissile material, two Criticality Safety Index labels, affixed on same surface near hazard labels? (01.01.11.04) Yes No N/A

45. Markings and labels correctly affixed? (01.01.11.05) Yes No N/A

46. Interverse markings/labels removed? (01.01.11.06) Yes No N/A

General

47. State and operator variations complied with? (01.01.12) Yes No N/A

48. Restrictions of the WOW members and their states complied with? Yes No N/A

49. Envelopes and restrictions of all stations in routing complied with? Yes No N/A

50. Packages containing Dry Ice - Marking labeling, DGD complied? (01.01.13) Yes No N/A

51. Shipment booking status "confirmed"? If not, the booking has to be amended. If CAO, ensure that cargo aircraft operates on all segments. Yes No N/A

Notes: The shipment is acceptable, when origin of this check sheet is the IATA accompanying information and a copy of this check sheet together with a copy of the AWB and DGD is the original of destination. It is mandatory to be accompanied with a "DGD" for each dangerous goods and to be accompanied by the complete form to be signed and stamped with four professionals.

This shipment is: Acceptable Not acceptable

Checked by: _____ (Name in block capitals and signature)

Department: _____ Date: _____

Comments: _____

Lufthansa Cargo SAS Cargo JALCARGO Member of WOW

4/ For Radioactive Material

LIMITATIONS

Dangerous Goods can be divided into four main groups

- **Forbidden in aircraft under any circumstances**
- **Forbidden unless exempted**
- **Permitted as air-cargo**
- **Excepted**

FORBIDDEN UNDER ALL CIRCUMSTANCES

(IATA – DGR 2.1.1)

Some dangerous goods are too dangerous to be carried by aircraft

Specific subjects , which are forbidden for transport, (approximately 200) are listed in the IATA DGR (2.1.1).

These subjects are also to be found in the "blue pages".

DANGEROUS GOODS FORBIDDEN UNLESS EXEMPTED (IATA – DGR 2.1.2. , 2.6.1)

Exemptions and approvals are used for items which are normally forbidden for transport on passenger aircraft or on passenger and cargo aircraft.

In cases of extreme urgency, or when other forms of transport are inappropriate, or where full compliance with the prescribed requirements is contrary to the public interest, the States concerned may grant exemptions from these Regulations provided that, in such cases, every effort is made to achieve an overall level of safety in transport which is equivalent to the level of safety provided by these Regulations.

(The States concerned are the States of origin, transit, overflight and destination of the consignment and the State of the operator.)

PERMITTED

About 3000 substances are published in the IATA-DGR. In the "blue pages", you can find these substances in

- alphabetical order
- if transport is allowed or not
- if the substance is allowed for transport on passenger aircraft or on cargo aircraft only
- which quantity can be transported
- which packing – instruction is to be used

The allowed substances must be

- classified
- identified
- packed
- marked
- labeled
- documented

by the shipper in accordance with the IATA –DGR and be sent as cargo.

EXCEPTED

There are exceptions for substances which normally are classed as Dangerous Goods when they are transported by air as

- mail
- operators property
- carried by passengers or crew as baggage
- excepted quantities

EXCEPTIONS FOR PASSANGER AND CREW (IATA-DGR 2.3)

Dangerous goods must not be carried in or as passengers or crew, checked or carry-on baggage, except as otherwise provided below.

Permitted in or as carry-on baggage					
Permitted in or as checked baggage					
Permitted on one's person					
The approval of the operator(s) is required					
The pilot-in-command must be informed of the location					
NO	NO	NO	n/a	n/a	Disabling devices such as mace, pepper spray, etc. containing an irritant or incapacitating substance are prohibited on the person, in checked and carry-on baggage.
NO	NO	NO	n/a	n/a	Security-type attaché cases, cash boxes, cash bags, etc. incorporating dangerous goods, such as lithium batteries and/or pyrotechnic material, are totally forbidden. See entry in 4.2 - List of Dangerous Goods.
NO	YES	NO	YES	NO	Ammunition (cartridges for weapons) for sporting purposes, securely boxed (in Division 1.4S), in quantities less than 5 kg (11 lb) gross weight per person for that person's own use, excluding ammunition with explosive or incendiary projectiles. Allowances for more than one passenger must not be combined into one or more packages.
NO	YES	NO	YES	NO	Camping stoves and fuel containers that have contained a flammable liquid fuel, may be carried provided the fuel tank of the camping stove and/or fuel container has been completely drained of all liquid fuel and action has been taken to nullify the danger. (See 2.3.2.5 for details).
YES	YES	NO	YES	NO	Carbon dioxide, solid (dry ice), in quantities not exceeding 2 kg (4.4 lb) per passenger when used to pack perishables not subject to these Regulations in carry-on baggage, provided the package permits the release of carbon dioxide gas. Operator approval required for checked baggage only.
NO	YES	NO	YES	NO	Wheelchairs or other battery-powered mobility devices with non-spillable batteries (see Packing Instruction 806 and Special Provision A67), provided that the battery is disconnected, the battery terminals are insulated to prevent accidental short circuits and the battery is securely attached to the wheelchair or mobility aid. <i>Note: Wheelchairs/mobility aids with gel type batteries do not require the battery to be disconnected provided the battery terminals are insulated to prevent accidental short circuits.</i>
NO	YES	NO	YES	YES	Wheelchairs or other battery-powered mobility devices with spillable batteries. (See 2.3.2.4 for details.)
YES	NO	NO	YES	NO	Heat producing articles such as underwater torches (diving lamps) and soldering irons. (See 2.3.3.2 for details.)
YES	NO	NO	YES	YES	Mercury barometer or thermometer carried by a representative of a government weather bureau or similar official agency. (See 2.3.3.1 for details.)
YES	YES	NO	YES	NO	Avalanche rescue backpack, one (1) per passenger, equipped with a pyrotechnic trigger mechanism containing less than 200 mg net of Division 1.4S and less than 250 mg of compressed gas in Division 2.2. The backpack must be packed in such a manner that it cannot be accidentally activated. The airbags within the backpacks must be fitted with pressure relief valves.
YES	YES	NO	YES	NO	Insulated packagings containing refrigerated liquid nitrogen (dry shipper), fully absorbed in a porous material and intended for transport, at low temperature, of non-dangerous products are not subject to these Regulations provided the design of the insulated packaging would not allow the build-up of pressure within the container and would not permit the release of any refrigerated liquid nitrogen irrespective of the orientation of the insulated packaging.

Note: n/a means not applicable.

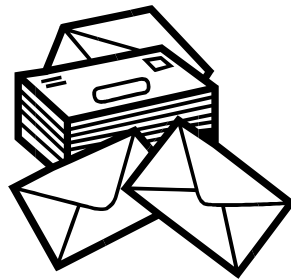
EXCEPTIONS FOR PASSANGER AND CREW
(IATA-DGR 2.3) continued

Permitted in or as carry-on baggage					
Permitted in or as checked baggage					
Permitted on one's person					
The approval of the operator(s) is required					
The pilot-in-command must be informed of the location					
YES	YES	YES	YES	NO	Non-flammable gas cylinder fitted into a life jacket containing carbon dioxide or other suitable gas in Division 2.2, up to two (2) small cylinders per passenger, and up to two (2) spare cartridges.
YES	YES	NO	YES	NO	Oxygen or air cylinders required for medical use.
NO	YES	NO	NO	NO	Aerosols in Division 2.2 , with no subsidiary risk, for sporting or home use. And
YES	YES	YES	NO	NO	Non-radioactive medicinal or toilet articles (including aerosols) such as hair sprays, perfumes, colognes and medicines containing alcohol. The <u>total</u> net quantity of all above mentioned articles must not exceed 2 kg (4.4 lb) or 2 L (2 qt), and the net quantity of each single article must not exceed 0.5 kg (1 lb) or 0.5 L (1 pt).
YES	YES	YES	NO	NO	Alcoholic beverages , when in retail packagings, containing more than 24% but not more than 70% alcohol by volume, in receptacles not exceeding 5 L, with a total net quantity per person of 5 L.
YES	YES	YES	NO	NO	Carbon dioxide gas cylinders worn for the operation of mechanical limbs. Also, spare cylinders of a similar size if required to ensure an adequate supply for the duration of the journey.
YES	YES	YES	NO	NO	Consumer electronic devices containing lithium or lithium ion cells or batteries , such as watches, calculating machines, cameras, cellular phones, lap-top computers, camcorders, etc., when carried by passengers or crew for personal use (See Packing Instruction 912 and Special Provision A45). Spare batteries must be individually protected to prevent short circuits and carried in carry-on baggage only. In addition, each spare battery must not exceed the following quantities: a) for lithium metal or lithium alloy batteries, a lithium content of less than 2 g; or b) for lithium ion batteries, an aggregate equivalent lithium content of less than 8 g. Lithium ion batteries with an aggregate equivalent lithium content of more than 8 g but not more than 25 g may be carried in carry-on baggage if they are individually protected so as to prevent short circuits and are limited to two spare batteries per person.
YES	YES	NO	NO	NO	Hair curlers containing hydrocarbon gas , up to one (1) per passenger or crew-member, provided that the safety cover is securely fitted over the heating element. These hair curlers must not be used on board the aircraft at any time. Gas refills for such curlers are not permitted in checked or carry-on baggage.
YES	YES	YES	NO	NO	Medical or clinical thermometer , which contains mercury, one (1) per passenger for personal use, when in its protective case.
NO	NO	YES	NO	NO	Radioisotopic cardiac pacemakers or other devices, including those powered by lithium batteries, implanted into a person, or radiopharmaceuticals contained within the body of a person as the result of medical treatment.
NO	NO	YES	NO	NO	Safety matches or a lighter with fuel/fluid fully absorbed in a solid and intended for use by an individual when carried on one's person. However, lighters with a flammable liquid reservoir containing unabsorbed liquid fuel (other than liquefied gas), lighter fuel and lighter refills are not permitted on one's person nor in checked or carry-on baggage. Note: "Strike anywhere" matches are forbidden for air transport.

DANGEROUS GOODS AS MAIL (IATA-DGR 2.4)

The Universal Postal Union Convention forbids the carriage of dangerous goods in the mail except as permitted in 2.4.1.

- (a) Infectious substances, provided a “Shipper's Declaration” accompanies the consignment;
- (b) Carbon dioxide, solid (dry ice) when used as a refrigerant for infectious substances provided a “Shipper's Declaration” accompanies the consignment; and
- (c) Radioactive material, provided the activity does not exceed one tenth of that permitted in Table 10.5.A.



OPERATORS PROPERTY (IATA-DGR 2.5)

Substances which normally are classed as Dangerous Goods but are needed for the operation of the aircraft or the flight.

Examples :

fire –fighting equipment
oxygen –generators
life-rafts
batteries
fuel
perfume
alcohol
dry-ice

DANGEROUS GOODS IN EXCEPTED QUANTITIES (IATA-DGR 2.7)

Very small quantities of dangerous goods may be transported, in such a manner that they may be excepted from the marking, labeling and documentation requirements of these Regulations.

When they are transported under these provisions, such goods are called Dangerous Goods in Excepted Quantities.

Normal marking and labeling is not required. Instead this special label is used. The shipper enters all information, signs and attaches it on the consignment.

DANGEROUS GOODS IN EXCEPTED QUANTITIES

This package contains dangerous goods in excepted small quantities and is in all respects in compliance with the applicable international and national government regulations and the IATA Dangerous Goods Regulations

Signature of Shipper

Title _____ Date _____

Name and address of Shipper

This package contains substance(s) in Class(es)
(check applicable box(es))

Class: 2 3 4 5 6 8 9

and the applicable UN Numbers are:

DANGEROUS GOODS IN LIMITED QUANTITIES (IATA-DGR 2.8)

It is recognized that many dangerous goods can be safely carried in good quality combination packaging which meet the construction requirements (of Subsections 6.1 and 6.2)

but which have not been marked and tested in accordance with the requirements (of 6.0.4 and Subsection 6.3).

Dangerous goods may be carried as “Limited Quantity” only if they comply with the restrictions provided in this paragraph, in the List of Dangerous Goods and in Section 5. **All requirements of these Regulations must be met unless otherwise provided.**

STATE AND OPERATOR VARIATIONS (IATA-DGR 2.9)

States and Operators may submit additions to the Dangerous Goods Regulations.

For example , some governments require that prior authorization must be obtained before certain classes of Dangerous Goods may be shipped to, from or through their country.

Some do not permit the use of certain packaging.

Some airlines have similar restrictions.

It is always necessary to check the applicable State and Operator variations in DGR 2.9 to ensure compliance.

CLASSES AND DIVISIONS

(IATA-DGR Section 3)

Dangerous goods are defined as those goods which meet the criteria of **one or more of nine UN hazard classes** and, where, **to one of three UN packing groups** according to the provisions of this section.

The nine classes relate to the type of hazard whereas the packing groups relate to the degree applicable of danger within the class.

Some hazard classes are further subdivided into hazard divisions due to the wide scope of the class.

The nine hazard classes and their divisions are listed below.

The order in which they are numbered is for convenience and does not imply a relative degree of danger.

CLASSES :

Class 1 — Explosives

Class 2 — Gases

Class 3 — Flammable Liquids

**Class 4 — Flammable Solids;
Substances Liable to Spontaneous Combustion;
Substances Which, in Contact with Water,
Emit Flammable Gases**

Class 5 — Oxidizing Substances and Organic Peroxide

Class 6 — Toxic and Infectious Substances

Class 7 — Radioactive Material

Class 8 — Corrosives

Class 9 — Miscellaneous Dangerous Goods

DIVISIONS :

Class 1 — Explosives

- Division 1.1 — Articles and substances having a mass explosion hazard.
- Division 1.2 — Articles and substances having a projection hazard but not a mass explosion hazard.
- Division 1.3 — Articles and substances having a fire hazard, a minor blast hazard and/or a minor projection hazard but not a mass explosion hazard.
- Division 1.4 — Articles and substances presenting no significant hazard.
- Division 1.5 — Very insensitive substances having a mass explosion hazard.
- Division 1.6 — Extremely insensitive articles which do not have a mass explosion hazard.

Class 2 — Gases

- Division 2.1 — Flammable gas.
- Division 2.2 — Non-flammable, non-toxic gas.
- Division 2.3 — Toxic gas.

Class 3 — Flammable Liquids

This class has no sub-divisions.

Class 4 — Flammable Solids; Substances Liable to Spontaneous Combustion; Substances Which, in Contact with Water, Emit Flammable Gases

- Division 4.1 — Flammable solid.
- Division 4.2 — Substances liable to spontaneous combustion.
- Division 4.3 — Substances which, in contact with water, emit flammable gases.

Class 5 — Oxidizing Substances and Organic Peroxide

- Division 5.1 — Oxidizer.
- Division 5.2 — Organic peroxides.

Class 6 — Toxic and Infectious Substances

- Division 6.1 — Toxic substances.
- Division 6.2 — Infectious substances.

Class 7 — Radioactive Material

Class 8 — Corrosives

Class 9 — Miscellaneous Dangerous Goods

These classes have no sub-divisions.

PACKING GROUPS :

Packing Groups are given for some classes and divisions to show the degree of danger of a substance.

Depending how dangerous a substance is , it is divided in one of the Packing Groups.

Packing Group I = Great Danger

Packing Group II = Medium Danger

Packing Group III = Minor Danger

CLASS 1 EXPLOSIVES

Goods of Class 1 are assigned to one of six divisions, depending on the type of hazard they present, and to one of thirteen compatibility groups (A,B,C,D,E,F,G,H,J,K,LN or S) which identify the kinds of explosive articles and substances that are deemed to be compatible.

Most explosive articles are not permitted for air transport.

For cargo aircraft Division 1.3 compatibility group C and G , and Division 1.4 compatibility group B,C,D,E,G, and S are allowed.

For passenger aircraft only Division 1.4 compatibility group S is allowed.

Cargo IMP Code 1.4 S : RXS

**** = place for Division and Compatibility group**

Background : Orange



CLASS 2 GASES

This class comprises compressed gases; liquefied gases; gases in solution; refrigerated liquefied gases; mixtures of gases; mixtures of one or more gases with one or more vapors of substances of other classes; articles charged with a gas; tellurium hexafluoride; aerosols.

DIVISION 2.1 FLAMMABLE GAS

Cargo IMP Code: RFG
Examples :
 Acetylen
 Butane
 Ethane
 Propane
Background : Red



DIVISION 2.2 NON-FLAMMABLE, NON-TOXIC GAS

Cargo IMP Code:
RCL , RNG
Examples :
 Neon
 Helium
 Nitrogen
Background : Green



DIVISION 2.3 TOXIC GAS

Most Toxic gases are forbidden to transport by air.
All Toxic gases are forbidden on passenger aircraft.

Cargo IMP Code: RPG
Examples :
 Chlorine
 Sulphur dioxide
Background : White



CLASS 3
FLAMMABLE LIQUID

This class has no subdivisions. It comprises liquids or mixtures of liquids or liquids containing solids in solution or in suspension (for example paints, varnishes, lacquers, etc., but not including substances otherwise classified on account of their dangerous characteristics) which give off a flammable vapor at temperatures of not more than 60.5°C (141°F) closed-cup test or not more than 65.6°C (150°F) open-cup test normally referred to as the flash point.

Cargo IMP Code: RFL

Examples :

Paints

Gasoline

Acetone

Background : Red



CLASS 4

Flammable Solids;
Substances Liable to Spontaneous Combustion;
Substances Which, in contact with water,
emit Flammable Gases

DIVISION 4.1

FLAMMABLE SOLIDS

Solids which, under conditions encountered in transport, are readily combustible or may cause or contribute to fire through friction; self-reactive and related substances which are liable to undergo a strongly exothermic reaction; desensitized explosives which may explode if not diluted sufficiently.

Cargo IMP Code: RFS
Examples :
 Matches
 Celluloid
Background: White with
seven vertical red stripes



DIVISION 4.2

SPONTANEOUS COMBUSTIBLE

Substances liable to spontaneous combustion. Substances which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up in contact with air, and being then liable to catch fire.

Cargo IMP Code: RSC
Examples :
 Phosphorus
 Sulphur
 Copra
Background: Upper half
White, Lower half Red



DIVISION 4.3
DANGEROUS WHEN WET

Substances which, in contact with water, emit flammable gases (Dangerous when wet). Substances which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

Cargo IMP Code: RFW

Examples :

Lithium

Sodium

Background: Blue



CLASS 5

OXIDIZING SUBSTANCES AND ORGANIC PEROXIDES

DIVISION 5.1

OXIDIZING SUBSTANCES

Oxidizing substances are substances which, in themselves are not necessarily combustible, but may generally cause or contribute to the combustion of other material by yielding oxygen.

Cargo IMP Code: ROX
Examples :
Hydrogen Peroxide ,
Oxygen generators
chemical
Background: Yellow



DIVISION 5.2

ORGANIC PEROXIDES

This division is made up of organic substances which contain the bivalent structure -O-O- and may be considered derivatives of hydrogen peroxide in which one or both of the hydrogen atoms have been replaced by organic radicals.

Note:Hydrogen peroxide is made up of two hydrogen atoms and two oxygen atoms connected in a chain thusly: H-O-O-H.

Cargo IMP Code: ROP
Background: Yellow



CLASS 6
TOXIC AND INFECTIOUS SUBSTANCES

DIVISION 6.1
TOXIC SUBSTANCES

Division 6.1 Toxic substances are substances which are liable to cause death or injury or to harm human health if swallowed, inhaled or contacted by the skin.

Cargo IMP Code: RPB
Examples :
 Arsenic
 Cyanide
 Nicotine
Background: White



DIVISION 6.2
INFECTIOUS SUBSTANCES

Division 6.2 includes substances which are infectious to humans and/or animals, genetically modified micro-organisms and organisms, biological products, diagnostic specimens and clinical and medical waste.

Cargo IMP Code: RIS
Background: White



CLASS 7 RADIOACTIVE MATERIAL

Description

Radioactive materials are articles or substances which spontaneously and continuously emit ionizing radiation which can be harmful to the health of humans and animals and can affect photographic or X-Ray film. This radiation cannot be detected by any of the human senses (sight, smell, hearing, touch or taste), but it can be detected and measured with suitable instruments.

Transport Index (TI) is a convenient unit for indicating the radiation level of a package containing radioactive materials. It is used for controlling the accumulation of such packages that may be loaded on an aircraft and to establish spacing requirements during loading.

The TI is shown on the label of Radioactive Category II – Yellow and Radioactive Category III – Yellow packages. Packages labeled Category I-White (RRW) may be loaded in unlimited quantities with no separation requirements. These shipments do not have the TI on the label.

Cargo IMP Code: RRW
TI : 0
Background: White



Cargo IMP Code: RRY
TI : 0.0 – 1.0
Background: Top half Yellow with White border, bottom half White



Cargo IMP Code: RRY
TI : 1.1 – 10.0
Background: Top half Yellow with White border, bottom half White



CLASS 8 **CORROSIVES**

Substances which by chemical action, can cause severe damage when in contact with living tissue or, in the case of leakage will materially damage or even destroy, other goods or the means of transport.

Cargo IMP Code: RCM
Examples :
 Mercury
 Sulphuric acid
Background: Upper half
White, lower half Black
with White border



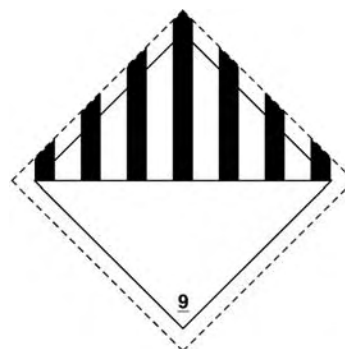
CLASS 9 **MISCELLANEOUS DANGEROUS GOODS**

Articles and substances which during air transport present a danger not covered by other classes. Included in this class are: Aviation regulated solids or liquids, Magnetized material and miscellaneous articles and substances.

Cargo IMP Code: RMD

Also
IMP-codes MAG,ICE and RSB
are used for magnetic
materials, dry-ice and
polymeric beads respectively

Symbol (seven vertical
stripes in upper half): Black
Background: White



IATA Cargo IMP Codes

IMP = Interline Message Procedure

The following Cargo-IMP Codes are used extensively within the airline industry and have the meanings shown:

All classes and divisions have IMP-codes

The first letter "R" stands for restricted.

Code / Meaning

CAO	Cargo Aircraft Only
ICE	Carbon dioxide, solid (dry ice)
MAG	Magnetized Material
RCL	Cryogenic Liquid
RCM	Corrosive
RCX	Explosives 1.3C
REX	To be reserved for normally forbidden Explosives, Divisions 1.1, 1.2, 1.3, 1.4F, 1.5 and 1.6
RFG	Flammable Gas
RFL	Flammable Liquid
RFS	Flammable Solid
RFW	Dangerous When Wet
RGX	Explosives 1.3G
RIS	Infectious Substance
RMD	Miscellaneous Dangerous Goods
RNG	Non-Flammable Non-toxic Gas
ROP	Organic Peroxide
ROX	Oxidizer
RPB	Toxic substance
RPG	Toxic Gas
RRW	Radioactive Material Category I-White
RRY	Radioactive Material Categories II-Yellow and III-Yellow
RSB	Polymeric Beads
RSC	Spontaneously Combustible
RXB	Explosives 1.4B
RXC	Explosives 1.4C
RXD	Explosives 1.4D
RXE	Explosives 1.4E
RXG	Explosives 1.4G
RXS	Explosives 1.4S

IDENTIFICATION

(IATA – DGR Section 4.)

General

Dangerous goods must also be assigned to one of the standard names used in the transport of dangerous goods. These names are called

“proper shipping names”

and are used to identify the dangerous article or substance on the outside of the package and on the “Shipper's Declaration for Dangerous Goods”.

Subsection 4.2 contains approximately 3000 articles and substances with dangerous properties which are most likely to be shipped by air.

The list is not intended to be all inclusive, therefore it contains several names of a general nature, known as n.o.s. (not otherwise specified) names or entries, under which unlisted items may be transported.

If you do not find a substance in the “blue pages” it does not automatically mean the substance is not dangerous.

UN – or ID – NUMBER

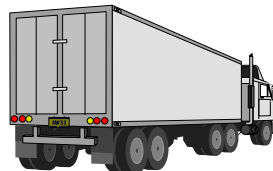
Substances are given a serial number in the United Nations classification-system.

UN-numbers are connected to the Proper Shipping Names.

A UN-nbr can have several Proper Shipping Names and one Proper Shipping Name can have several UN-nbrs depending on the subjects different properties and concentrations.

The UN-nbrs are the same irrespective of way of transport (air, road, rail, sea)

The ID-nbr. is a serial number which IATA has given substances which the UN not yet have integrated in their classification system.
ID numbers start from 8000.



THE "BLUE PAGES"(List of Dangerous Goods)
IATA – DGR 4.2

The "blue pages" are divided into 14 columns .
 (In section 4.1.6 there is a detailed description)

- A = UN / ID number
- B = Proper Shipping Name
- C = Class / Division (primary risk)
- D = Subsidiary risk
- E = Hazard label to be used
- F = Packing group (if applicable)
- G = Packing instruction , "limited quantity", for each packing group on PAX a/c
- H = Max net quantity, "limited quantity", per package on PAX a/c
- I = Packing instruction for each packing group on PAX a/c
- J = Max net quantity per package on PAX a/c
- K = Packing instruction for each packing group on CGO a/c
- L = Max net quantity per package on CGO a/c
- M = Special Provisions (to be found in subsection 4.4)
- N = Emergency Response Drill code (ICAO)

UN/ID No.	Proper Shipping Name/Description	Class or Div.	Sub Risk	Hazard Label(s)	PG	Passenger and Cargo Aircraft				Cargo Aircraft Only		S.P. see 4.4	ERG Code		
						Ltd Qty		Pkg Inst	Max Qty per Pkg	Pkg Inst	Max Qty per Pkg			Pkg Inst	Max Qty per Pkg
						G	H								
A	B	C	D	E	F	G	H	I	J	K	L	M	N		
	Accellerene, see p-Nitrosodimethylaniline (UN 1369)														
	Accumulators, electric, see Batteries, etc. (UN 2794, UN 2795, UN 2800)														
	Accumulators, pressurized, hydraulic (containing non-flammable gas), see Articles, pressurized, hydraulic (UN 3164)														
	Accumulators, pressurized, pneumatic (containing non-flammable gas), see Articles, pressurized, pneumatic (UN 3164)														
1088	Acetal	3		Flamm. liquid	II	Y305	1 L	305	5 L	307	60 L		3H		
1089	Acetaldehyde	3		Flamm. liquid	I	-	-	Forbidden		304	30 L	A1	3H		
1841	Acetaldehyde ammonia	9		Miscellaneous	III	-	-	906	200 Kg	906	200 Kg	A48	9L		
2332	Acetaldehyde oxime	3		Flamm. liquid	III	Y309	10 L	309	60 L	310	220 L		3L		
2789	Acetic acid, glacial	8	3	Corrosive & Flamm. liquid	II	Y809	0.5 L	809	1 L	813	30 L		8F		
2789	Acetic acid solution more than 80% acid, by weight	8	3	Corrosive & Flamm. liquid	II	Y809	0.5 L	809	1 L	813	30 L		8F		

HIDDEN DANGEROUS GOODS

(IATA-DGR 2.2)

Sometimes passengers or shippers do not understand the possible hazards of having certain articles in baggage/shipments

Here are some examples :

“**CAMPING EQUIPMENT**” may contain flammable gases (butane, propane, etc.), flammable liquids (kerosene, gasoline, etc.), flammable solids (hexamine, matches, etc.) or other dangerous goods.

“**CYLINDERS**” may indicate compressed or liquefied gas.

“**DIVING EQUIPMENT**” may contain cylinders (such scuba tanks, vest bottles, etc.) of compressed gas (air, oxygen, etc), high intensity diving lamps which can generate extremely high heat when operated in air. In order to be carried safely, the bulb or battery must be disconnected.

“**DRILLING AND MINING EQUIPMENT**” may contain explosive(s) and/or other dangerous goods.

“**ELECTRICAL EQUIPMENT**” may contain magnetized materials or mercury in switch gear and electron tubes or wet batteries.

“**ELECTRICALLY POWERED APPARATUS**” (wheelchairs, lawn mowers, golf carts, etc.) may contain wet batteries.

“**FROZEN EMBRYOS**” may contain refrigerated liquefied gas or Carbon dioxide, solid (dry ice).

“**FROZEN FRUIT, VEGETABLES, ETC.**” may be packed in Carbon dioxide, solid (dry ice).

“**HOUSEHOLD GOODS**” may contain items meeting any of the criteria for dangerous goods including flammable liquids such as solvent based paint, adhesives, polishes, aerosols (for passengers, those not permitted under 2.3), bleach, corrosive oven or drain cleaners, ammunition, matches, etc.

“**INSTRUMENTS**” may conceal barometers, manometers, mercury switches, rectifier tubes, thermometers, etc. containing mercury.

“**LABORATORY/TESTING EQUIPMENT**” may contain items meeting any of the criteria for dangerous goods, particularly flammable liquids, flammable solids, oxidizers, organic peroxides, toxic or corrosive substances.

“**MACHINERY PARTS**” may contain adhesives, paints, sealants, solvents, wet and lithium batteries, mercury, cylinders of compressed or liquefied gas, etc.

PACKING

(IATA – DGR section 5 and 6)

The shipper is responsible for all aspects of the packing of dangerous goods in compliance with these Regulations.

When preparing each package of dangerous goods, the shipper must:

- (a) comply with the set of packing requirements appropriate to the type of packaging to be used;
- (b) use only the packaging permitted by the applicable packing instruction specified in Columns G, I and K of the List of Dangerous Goods;
- (c) for all packaging, restrict the overall quantity per package to the limits specified in Columns H, J or L of the List of Dangerous Goods (as applicable) or to the design limit for the package whichever is more restrictive. In addition, for combination packaging, the quantity limit per inner packaging must not exceed the limits specified in the applicable packing instruction;
- (d) assemble and secure all components of the packaging exactly in the manner intended; and
- (e) ensure that his responsibilities for packing are completely fulfilled when the package is presented to the operator for shipment.

When the package is received by the operator it is carefully checked by the operator.

PACKING METHODS

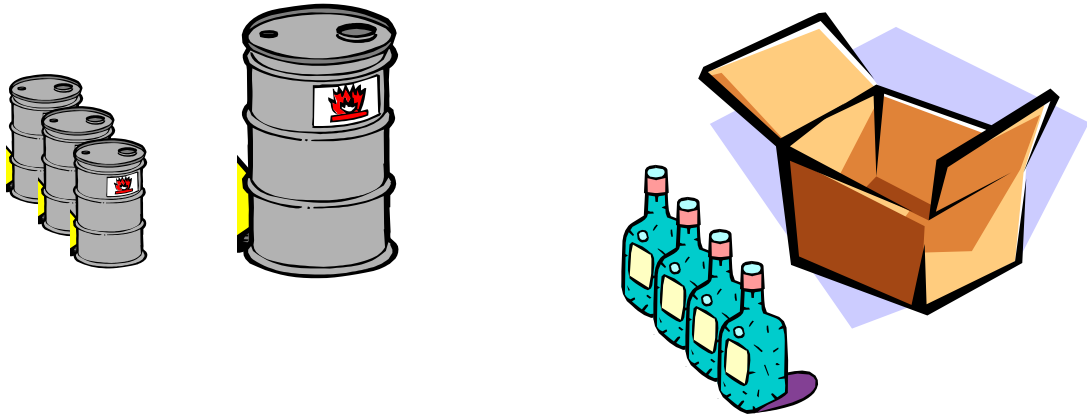
Generally , there are two kinds of packaging of Dangerous Goods :

COMBINATION PACKAGING

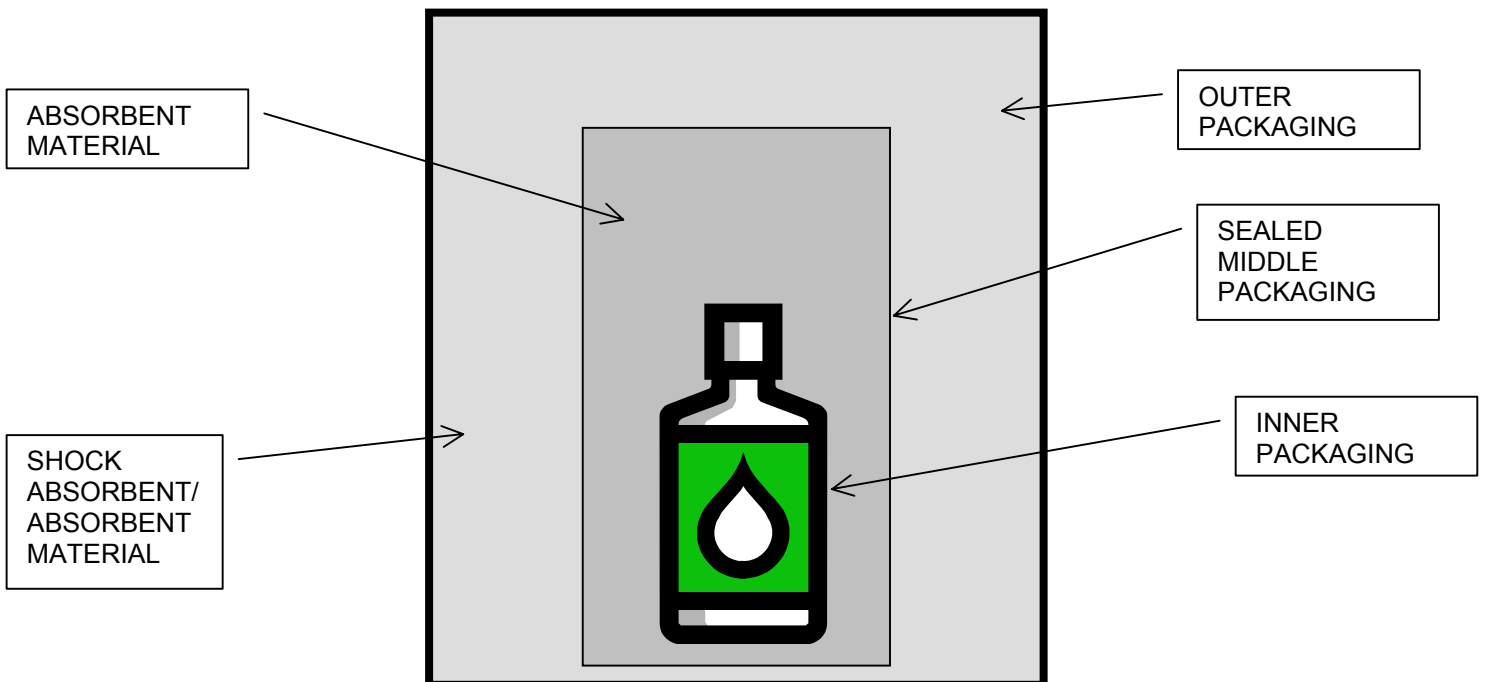
SINGLE PACKAGING

COMBINATION PACKAGING

A combination packaging consist of an outer package which shall hold one or more inner packages



Example of combination-packaging , cross section of a type used for radioactives.



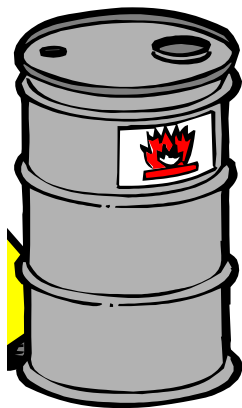
SINGLE PACKAGING

In single packagings the Dangerous Goods is kept direct in the outer-packaging. There is no demand for inner-packaging.

In the packing-instruction for a substance you will find if single-packaging is accepted.

Examples of single-packaging.

Steel drum
Plastic jerricans



TYPES OF PACKAGING

- UN SPECIFICATION PACKAGING
- LIMITED QUANTITY PACKAGING
- OTHER PACKAGING

UN - SPECIFICATION PACKAGING

Most packaging used for Dangerous Goods must be tested and approved by the authorities to be used.
An approved packaging shall have UN-specification marking.

Example of UN specification marking :



4G/X20/S/93/S/SP234



= UN Symbol

4G = Type code 4 = box G = fibreboard

X = Packing group X=I Y=II Z=III

20 = Tested for max 20 kg Gross weight.

S = for SOLID or inner-packagings

93 = year of manufacturing

S = state authorizing the allocation of the mark

SP234 = identification of manufacturer

LIMITED QUANTITY PACKAGING

Some Dangerous Goods may be transported in limited Quantities in packaging which is not UN-marked but are manufactured after the same specifications and shall withstand certain tests.

Such packagings are always combination-packaging.

The only marking necessary is the noting : LTD QTY or LIMITED QUANTITY.

The packing instructions starting with the letter “Y” are to be used for LTD QTY.

OTHER PACKAGING

In some packing-instructions it is referred to packings which are not UN – specified and also not for LTD QTY.

Example packinginstruction 200 , where a “strong outer-packaging is required.

PACKING OF RADIOACTIVE MATERIAL (IATA – DGR 10.5)

The packaging used for the transport of radioactive material serve two functions.

First, they perform the containment function as do all packagings for dangerous goods.

Second they must provide protection from radiation. Selection of the type of packaging used depends upon the amount of radiation given off (the activity), the potential for contaminating people and the environment if the package leaks or is damaged, and the physical state of the material.

The types of packages used for radioactive material are:

- Excepted packages;
- Industrial packages;
- Type A packages;
- Type B(U) packages;
- Type B(M) packages.

The most common is Type A.

Type B (M) can only be sent onboard cargo aircraft.

HAZARD- AND HANDLING LABELS

(IATA – DGR section 7)

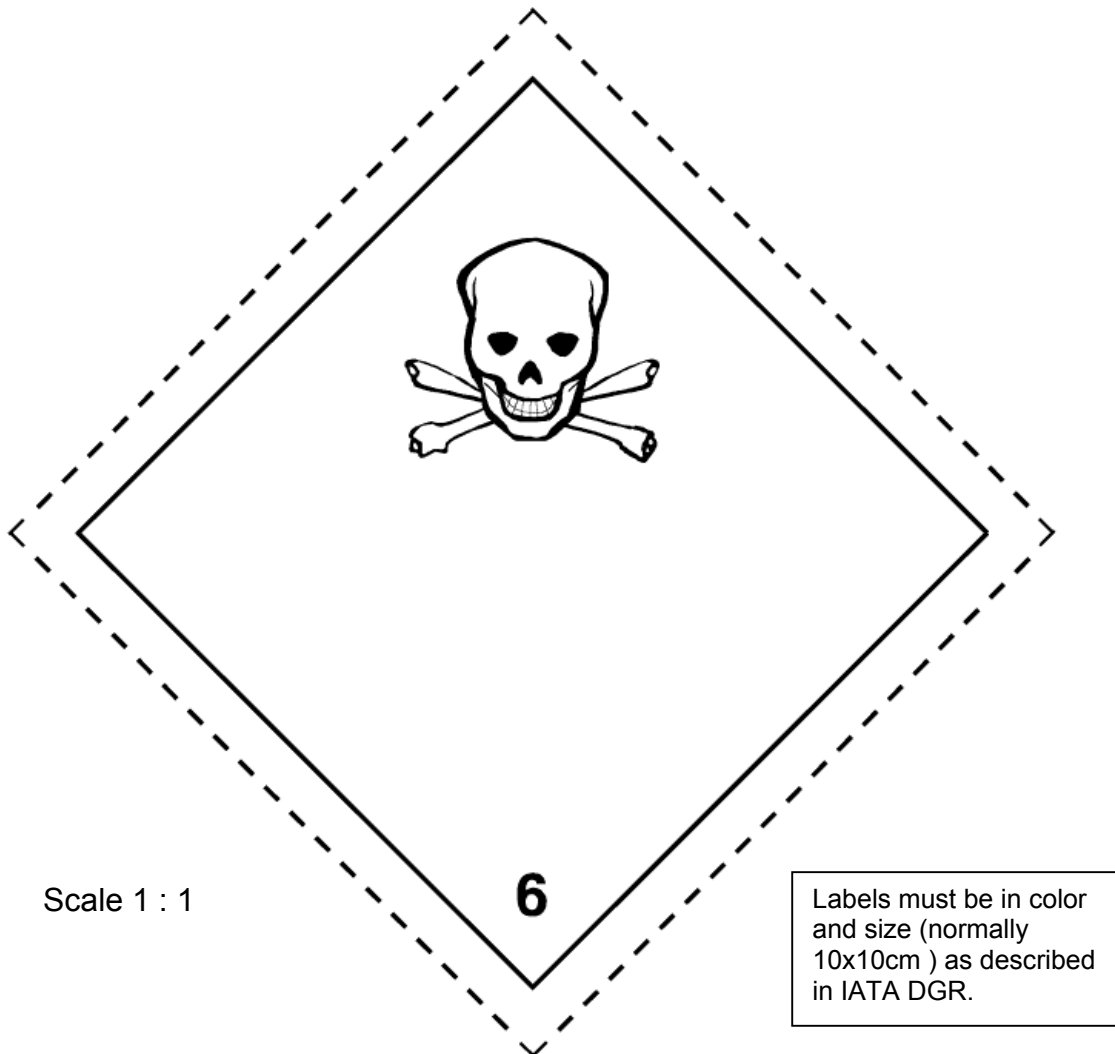
The shipper is responsible for all necessary marking and labelling of each package of dangerous goods.

All markings must be readily visible, legible and so placed that they are not covered or obscured by any part of or attachment to the packaging or any other label or marking.

The material of every label, the printing and any adhesive thereon, must be sufficiently durable to withstand normal transport conditions including open weather exposure without a substantial reduction in effectiveness.

Labels are of two types:

- (a) hazard labels (in the shape of a square set at 45°), which are required for most dangerous goods in all classes; and
- (b) handling labels (in various rectangular shapes), which are required, either alone or in addition to hazard labels, for some dangerous goods.



HAZARD LABELS FOR PRIMARY HAZARDS

Except as otherwise provided in the IATA- DGR , the minimum dimensions of the hazard labels must be 100 x 100 mm (4 x 4 in).

Hazard labels have a line of the same colour as the symbol, 5 mm inside the edge and running parallel to it.

With the exception of Divisions 1.4, 1.5 and 1.6 labels, the upper half of the label is reserved for the pictorial symbol and the lower half for texts and the class or division number and the compatibility group letter as appropriate.

Hazard labels having dimensions not smaller than 50 x 50 mm may be used on packages containing infectious substances when the packages are of such dimensions that they can only bear smaller labels.

Unless otherwise provided in the IATA-DGR , text indicating the nature of the risk may be inserted in the lower half of the hazard label(s) in addition to the class or division number or compatibility group.



HAZARD LABELS FOR SUBSIDIARY HAZARDS

Note: Effective 1 July 2001, all subsidiary risk labels MUST show the Class or Division number. No distinction will exist between primary and subsidiary risk labels as of 1 July 2001.



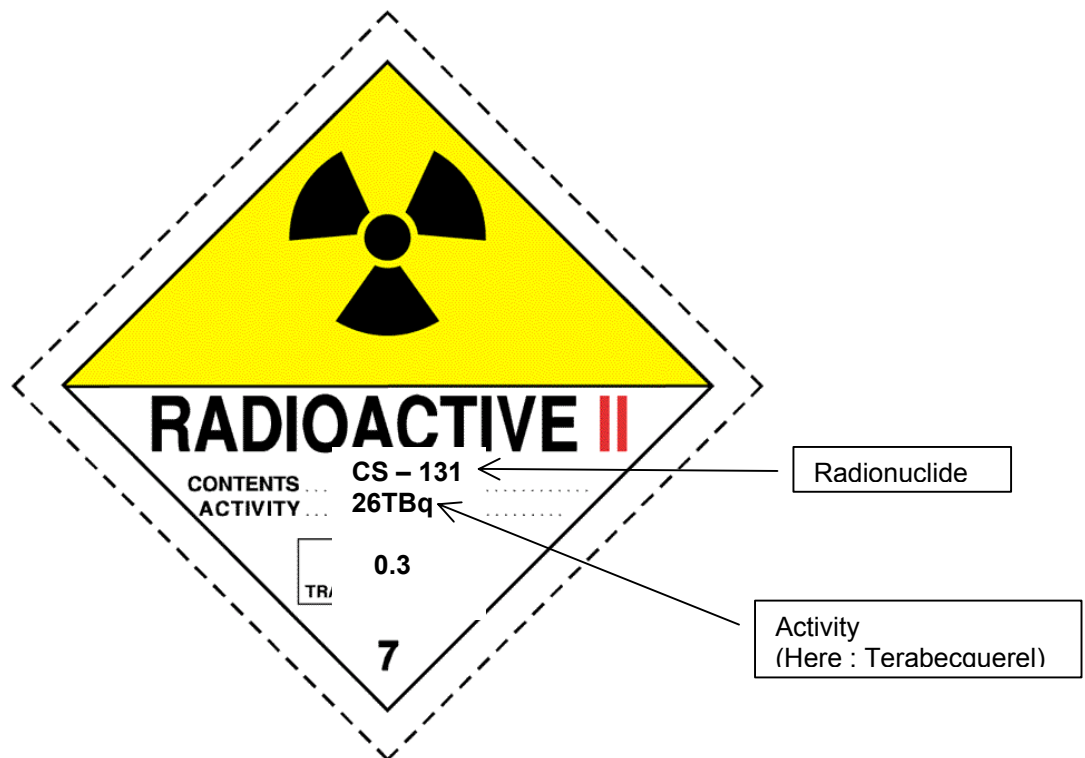
Hazard Label

LABELLING OF RADIOACTIVE MATERIAL (IATA – DGR 10.7)

For RADIOACTIVE MATERIAL there are three different hazard-labels.

The contents, activity and for Category II and III labels the transport index must be marked on the label in a clear and durable manner.

For Category II and Category III labels only, the Transport Index must be inscribed in the box provided. It must be shown to one decimal place.



HANDLING LABELS

Handling labels (in various rectangular shapes), are required, either alone or in addition to hazard labels, for some dangerous goods.

Magnetized Material

The “Magnetized Material” label must be used on packages and overpacks containing magnetized material.



Cargo IMP Code: MAG
Minimum dimensions:
110 x 90 mm
Colour: Blue on White

Cargo Aircraft Only

The “Cargo Aircraft Only” label must be used on packages containing dangerous goods that are permitted only on cargo aircraft. However, where the packing instruction number and the permitted quantity per package are identical for passenger and cargo aircraft, the “Cargo Aircraft Only” label should not be used.



Name: Cargo Aircraft Only
Cargo IMP Code: CAO
Minimum dimensions:
120 x 110 mm
Colour: Black on Orange

Cryogenic Liquid

The “Cryogenic Liquid” handling label must be used in addition to the Non-flammable gas (Division 2.2) hazard label on packages and overpacks containing cryogenic liquids.



Name: Cryogenic
Liquid
Cargo IMP Code:
RCL
Minimum dimensions:
74 x 105 mm
Colour: White on
Green

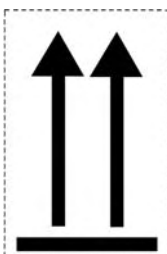
HANDLING LABELS continued

Package Orientation

Either the “Package Orientation” (This Way Up) label , or pre-printed package orientation labels meeting the same specifications must be used on :

- combination packagings and overpacks containing liquid dangerous goods, excluding packages containing flammable liquids in inner packagings of 120 ml or less,
- or infectious substances in primary receptacles of 50 mL or less
- or radioactive material.

The labels must be affixed or pre-printed on at least two opposite sides so as to show the proper package orientation.



Name: Package Orientation
(This Way Up)
Minimum dimensions: 74 x 105
mm
Color: Red or Black on a
contrasting background

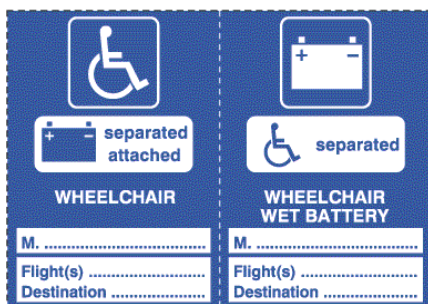
Battery-powered Wheelchair and Mobility Aid Label

To assist the handling of wheelchairs and mobility aids with batteries, This is a label which may be used to assist in identifying whether or not a wheelchair has had the battery removed.

The label is in two parts;

Part A remains with the wheelchair and indicates whether or not the battery has been removed. In the particular case where the battery is separated from the wheelchair,

Part B may be used to assist in identifying the battery and also in reconciling the battery and its wheelchair.



HANDLING LABELS continued

Keep Awat from Heat Label

The Keep away from Heat handling label should be used in addition to the applicable hazard label on packages and overpacks containing selfreactive substances in Division 4.1 and Division 5.2, Organic Peroxides.
(Recommended from 1 January 2004 ,Mandatory from 1 January 2005)



PACKAGING USE MARKING

(IATA – DGR 7.1.5)

Beside the hazard and handling labelling,

unless otherwise specified in the IATA - DGR, each package and overpack containing dangerous goods must be marked, durably and legibly on the outside of the package and overpack, with each of the following:

- (a) the PROPER SHIPPING NAME(S) of the contents (see 8.1.3) (supplemented with the technical name(s) if appropriate) and the corresponding UN NUMBER(S) or ID NUMBER(S) preceded by the letters "UN" or "ID".
- (b) the full NAME AND ADDRESS of the shipper and the consignee;
- (c) (for Class 1, Explosives): the NET QUANTITY of explosives and the GROSS WEIGHT of the package.
- (d) (for Division, 6.2 Infectious Substances): the NAME AND TELEPHONE NUMBER OF A PERSON RESPONSIBLE FOR THE SHIPMENT
- (e) (for Class 2, Refrigerated Liquefied Gases, referenced to Packing Instruction 202): the upright position of each package must be indicated prominently by arrows, or by using the "Package Orientation" label . The wording "KEEP UPRIGHT" must be placed at 120° intervals around the package or on each side. The package must also be clearly marked "DO NOT DROP—HANDLE WITH CARE". The package must also have instructions for emergency.
- (f) (for Carbon dioxide, solid (dry ice)): the net weight of Carbon dioxide, solid (dry ice) within the package

HANDLING

(IATA – DGR section 9)

After acceptance the operator or his handling agent is responsible for

- **Storage**
- **Loading**
- **Inspection**

MANUALS

Basic general regulations how Dangerous Goods shall be accepted, handled and separated are found I IATA-DGR section 9.

The operator can always be more restrictive then ICAO,IATA or the state regulations.

STORAGE

Dangerous Goods must be stored in such a manner that it can not be mishandled.

Example : separation , protection from heat .

RADIOACTIVE MATERIAL (IATA-DGR 9.2.1)

The radiation exposure of storage personnel must be as low as reasonably achievable and must be so controlled that no person is likely to receive a radiation dose greater than that permitted for members of the public.

Where the transport index of a group of packages, overpack or freight container exceeds 50 TI, storage must be such as to maintain a spacing of at least 6 m (20 ft) from other groups of packages, overpacks or freight containers or other conveyance carrying radioactive material.

PROVISION OF INFORMATION AT CARGO ACCEPTING POINTS (IATA-DGR 9.5.8)

An operator must ensure that sufficient notices, prominently displayed, are provided at cargo acceptance points, giving information about the transport of dangerous goods.

SEGREGATION OF DANGEROUS GOODS (IATA-DGR 9.3.2)

Packages containing dangerous goods which might react dangerously with each other must not be stowed on an aircraft next to each other or in a position that would allow interaction between them in the event of leakage.

Segregation is also necessary when loading certain substances together with other special cargo not classed as Dangerous Goods.

For this purpose a separation table is used, see also IATA – DGR 9.3.A

Stowing Instructions Incompatible Dangerous Goods and Special Cargo

Cargo IMP Code	Hazard Label	R	R X G	R X C	R X D	R X E	R X S	R X G	R X L	R X G	R X L	R X S	R X C	R X W	R X O	R X P	R X B	R X S	R X Y	R X M	I C E	A V I	F I L	H U M	E A T	H E G	L H O
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
RXB	*1.4B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RXG RGX	*1.4G,/1.3G	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RXC RCX	*1.4C/1.3C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RXD	*1.4D	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RXE	*1.4E	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RXS	1.4S																										
RNG	2.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RFG	2.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RCL	2.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X				X	
RPG	*2.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			X		
RFL	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RFS	4.1																										
RSC	4.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RFW	4.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
ROX	5.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
ROP	5.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RPB	6.1																					X			X		
RIS	6.2																					X			X		
RRY	7 Cat II/III																					①	②			①	①
RCM	8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RMD	9																										
ICE	9																					X				X	
Special Load																											
AVI											X	X					X	X	①		X			X	X		
FIL																											
HUM																						X			X	X	
EAT											X						X	X				X		X			
HEG										X												①		X			
LHO																						①			X		

Instructions

X = Shall be adequately separated from one another.

Bulk load - not to be loaded in same compartment

Unit load - not to be loaded on same pallet/container

1 = RRY must be segregated from AVI/LHO/HEG by at least 0.5 M.

2 = FIL must not be loaded in the same compartment as RRY. Exception: For 767 a minimum of 2 pallets or 3 containers must be maintained between FIL and RRY.

* = These dangerous goods are acceptable on CARGO AIRCRAFT ONLY.

RADIOACTIVE MATERIAL

In order to maintain the principle of keeping exposure to radiation as low as reasonably achievable, packages of radioactive materials should be stored as far away from passengers and crew as possible, i.e. on the floor of underfloor compartments or in the furthestmost end of main deck compartments. The separation distances shown in the IATA-DGR (tables 9.3.D and 9.3.E) are the minimum values and greater distances should be used where feasible.

Category II-Yellow and Category III-Yellow packages, overpacks or freight containers must be separated from persons.

These distances are measured from the surface of the packages, overpacks or freight containers to the nearest inside surface of the passenger cabin or flight deck partitions or floors, irrespective of the duration of the carriage of the radioactive material.

The Transport Index is shown on the hazard label of radioactives Category II + Category III.

If more than 1 package are loaded together the radiation is accumulated.

Example :

1 package with 3 TI is loaded next to 1 package with 1 TI, the value of 4 TI should be used in the separation table and the minimum distance 0.85m must be applied

	Total Sum of T.I.	Minimum Distance	
		metres	ft. in.
	0.1 to 1.0	0.30	1'0"
	1.1 to 2.0	0.50	1'8"
	2.1 to 3.0	0.70	2'4"
	3.1 to 4.0	0.85	2'10"
	4.1 to 5.0	1.00	3'4"
	5.1 to 6.0	1.15	3'10"
	6.1 to 7.0	1.30	4'4"
	7.1 to 8.0	1.45	4'9"
	8.1 to 9.0	1.55	5'1"
	9.1 to 10.0	1.65	5'5"
	10.1 to 11.0	1.75	5'9"
	11.1 to 12.0	1.85	6'1"
	12.1 to 13.0	1.95	6'5"
	13.1 to 14.0	2.05	6'9"
	14.1 to 15.0	2.15	7'1"
	15.1 to 16.0	2.25	7'5"
	16.1 to 17.0	2.35	7'9"
	17.1 to 18.0	2.45	8'1"
	18.1 to 20.0	2.60	8'6"
	20.1 to 25.0	2.90	9'6"
	25.1 to 30.0	3.20	10'6"
	30.1 to 35.0	3.50	11'6"
	35.1 to 40.0	3.75	12'4"
	40.1 to 45.0	4.00	13'1"
table 9.3 D	45.1 to 50.0	4.25	13'11"

MAXIMUM TRANSPORT INDEX

In order not to expose passengers and crew to precarious radiation levels, a maximum number of Transport Indices are established by operators for different aircraft types, pieces and compartments

Example :

Loading of Radioactive Material (RRW and RRY)

Maximum number of Transport Index (T.I.) allowed per aircraft/compartament

Note: RRW allowed on all aircraft types except SAAB 2000 and Q400.

Aircraft type	Max T.I. per package/group ULD a)	Max T.I. per A/C	Max. T.I. per compartment b)				
			CPT 1	CPT 2	CPT 3	CPT 4	CPT 5
DC-9 MD-80 MD-90	3	12	3	6	X	3	X
767	7	35	7	7	14	7	X
737	3	8	NA	4	4	NA	X
F28-4000	2	12	2	2	4	4	NA
F50	0	0	0	X	X	0	X
SAAB 2000	NA	NA	X	X	NA	NA	X
Q400	NA	NA	NA	X	NA	NA	X

a) = Depending on package height.
See respective AHM 5.2 for details.

b) = Depending on minimum separation distances between packages.
See respective AHM 5.2 for details.

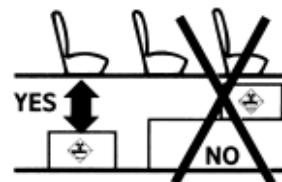
NA = RRW and RRY not allowed.

0 = Only RRW allowed.

~~X~~ = CPT not available on aircraft.

Loading of RRY (Yellow Label)

Must always be stowed directly on the pallet, container or compartment floor.



LOADING OF OTHER DANGEROUS GOODS

MAGNETIZED MATERIAL

(IATA-DGR 9.3.11)

Magnetized materials must not be loaded in such a position that they will have a significant effect on the direct-reading magnetic compasses or on the master compass detector units.

DRY ICE

(IATA-DGR 9.3.12)

Carbon dioxide, solid (dry ice) shipped by itself or used as a refrigerant for other commodities, may be carried provided that the operator has made suitable arrangements dependent on the aircraft type, the aircraft ventilation rates, the method of packing and stowing, whether or not animals will be carried on the same flight and other factors.

The operator must ensure that ground staff are informed that Carbon dioxide, solid (dry ice) is being loaded or is on board the aircraft.

LIVE ANIMALS (IATA-DGR 9.3.14)

Live animals should not be loaded in close proximity of cryogenic liquids or Carbon dioxide, solid (dry ice).

Category II-Yellow and Category III-Yellow packages, overpacks and freight containers must be separated from live animals by a distance of 0.5 metre or more for journeys of 24 hours or less and by a distance of 1.0 metre or more for journeys of more than 24 hours.

Substances of Class 6 (toxic or infectious substances) and substances requiring a subsidiary risk "Toxic" label must not be stowed in the same compartment with animals



LOADING AND INSPECTION

(IATA-DGR 9.3.6)

Operators must ensure that a package or overpack is not loaded onto an aircraft or into a unit load device unless the package or overpack has been inspected immediately prior to loading and found free from visible leaks or damage.

Before loading on an aircraft, unit load devices must be inspected and found free from any evidence of leakage from or damage to any dangerous goods contained therein.

Any package which appears to be damaged or leaking must be removed from the aircraft and safe disposal arranged. In the case of leakage, the operator must ensure the remainder of the consignment is undamaged and that no other package has been contaminated.



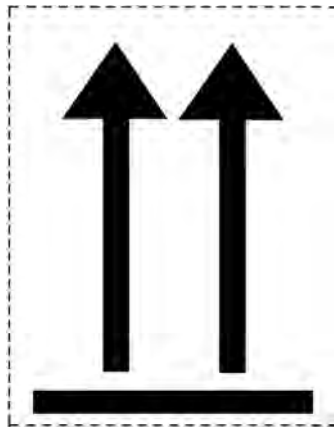
REPLACEMENT OF LABELS

(IATA-DGR 9.3.7)

When an operator discovers that labels have become lost, detached or illegible, he must replace them in accordance with the information provided on the “Shipper's Declaration for Dangerous Goods”. This requirement does not apply where the labels are found to be missing or illegible at time of acceptance.

HANDLING AND LOADING OF PACKAGES CONTAINING LIQUID DANGEROUS GOODS (IATA-DGR 9.3.3)

During the course of transport, packages bearing the package orientation “This Way Up” label must be loaded, stowed and handled at all times in accordance with such a label. Single packagings with end closures, containing liquid dangerous goods must be loaded and stowed aboard an aircraft with such closures upwards, notwithstanding that such single packagings may also have side closures.



GENERAL LOADING AND SECURING REQUIREMENTS (IATA-DGR 9.3.5)

When dangerous goods subject to the requirements herein are loaded in an aircraft, the operator must protect the packages of dangerous goods from being damaged. Particular attention must be paid to the handling of packages during their preparation for transport, the type of aircraft on which they are to be carried and the method required to load that aircraft, so that accidental damage is not caused through dragging or mishandling of the packages.

The operator must secure dangerous goods in the aircraft in a manner that will prevent any movement in flight which would change the orientation of the packages.

LOADING RESTRICTIONS ON FLIGHT DECK AND CABIN OCCUPIED BY PASSENGERS

(IATA-DGR 9.3.1)

Dangerous goods must not be carried in an aircraft cabin occupied by passengers or on the flight deck of an aircraft, except as permitted by (IATA DGR 2.3.2 to 2.3.5 and 2.5.1)(table on page 11 in this handout) and for excepted packages of radioactive materials (IATA – DGR see 10.5.9)

INSPECTION FOR DAMAGE OR LEAKAGE AT UNLOADING

(IATA-DGR 9.4)

Packages or overpacks containing dangerous goods must be inspected for signs of damage or leakage upon unloading from the aircraft or unit load device. If evidence of damage or leakage is found, the position where the dangerous goods or unit load device was stowed on the aircraft must be inspected for damage or contamination and any hazardous contamination removed.



EMERGENCY PROCEDURES

Emergency procedures must be established where Dangerous Goods are handled.

The procedures can be established by a state, airport-authority or by an operator.

The operator must give their staff instructions how to act in case of an accident or incident with Dangerous Goods.

There are no rules how Emergency procedures must be shaped.

The procedures can differ from station to station depending on size and organization.

Main items are

- You should know why they exist
- that they exist
- that they are known and followed by the staff

When an accident with Dangerous Goods takes place it is important that everyone knows what to do and that peoples safety and health has the highest priority.



REPORTING

(IATA-DGR 9.6)

An operator must report dangerous goods accident or incident to the appropriate authority of the State in which the accidents or incidents occurred, as required by that authority.

An operator must report any occasion when undeclared or mis-declared dangerous goods are discovered in cargo or when dangerous goods not permitted under IATA-DGR 2.3 (table on page 11 in this handout) are discovered in passengers' baggage.

Such reports must be made to the appropriate authority of the State in which this occurred.

An operator of an aircraft carrying dangerous goods which is involved in an aircraft accident must, as soon as possible, inform the State in which the accident occurred of the dangerous goods carried including their proper shipping names, class and subsidiary risk for which labels are required, the compatibility group for Class 1 and the quantity and location on board the aircraft.

An operator of an aircraft carrying dangerous goods that is involved in an aircraft incident should on request from the State in which the incident occurred, provide that State with information required to minimise the hazards created by any damage to the dangerous goods carried.



INFORMATION

An important part for the safe transportation of Dangerous Goods is the information which the operator is responsible for to provide.

The following are to be informed :

- Operator employees
- Passengers
- Shippers
- PIC
- ATC by PIC (in case of incident/accident)
- Authorities (in case of undeclared or misdeclared goods)
- State (in case of incident/accident)

OPERATOR EMPLOYEES (IATA-DGR 9.5.2)

An operator must provide information to employees in their manuals so as to enable them to carry out their responsibilities with regard to dangerous goods.

This information must include:

- (a) the action to be taken in the event of emergencies involving dangerous goods;
- (b) details of the location and identification of cargo holds; and
- (c) the maximum transport index of radioactive material permitted in each hold.

PASSENGERS

(IATA-DGR 9.5.3)

Each operator must ensure that information is promulgated in such a manner that passengers are warned as to the types of goods which they are prohibited from transporting aboard an aircraft.

As a minimum, this information must consist of:

- (a) information with the passenger ticket or in another manner such that prior to or during the check-in process, the passenger receives the information; and
- (b) notices sufficient in number and prominently displayed at each of the places at an airport where:
 - tickets are issued,
 - passengers checked in,
 - aircraft boarding areas,
 - in baggage claim areas.
- (c) notices clearly displayed at any other location where passengers are checked in.

ATC

(IATA-DGR 9.5.1.3)

If an in-flight emergency occurs and the situation permits, the pilot-in-command must inform the appropriate air traffic services unit of any dangerous goods carried as cargo on board an aircraft.

Wherever possible, this information should include

the proper shipping name and/or UN/ID number,
the class/division and for Class 1 the compatibility group,
any identified subsidiary risk(s),
the quantity and the location on board the aircraft or,
a telephone number where a copy of the written information to the pilot-in-command during that flight can be obtained.

When it is not considered possible to include all the information, those parts thought most relevant in the circumstances should be given.

P-I-C

(IATA-DGR 9.5.1)

The operator of an aircraft in which dangerous goods are to be carried must provide the pilot-in-command as soon as practicable prior to departure, with written information concerning dangerous goods which specifies at least the following:

-the Air Waybill number (when issued);

-the Proper Shipping Name and UN Number or ID Number

-the Class or Division, and subsidiary risk(s) by numerals and in the case of Class 1, the compatibility group;

-the Packing Group

-(for non-radioactive material)

the number of packages,

the net quantity, or gross mass if applicable, of each package,

except that this does not apply to radioactive material or other dangerous goods where the net quantity or gross weight is not required

- their exact loading location;

-(for radioactive material)

the number of packages, overpacks, or freight containers,

their category, their transport index, if applicable,

their exact loading location;

-whether the package must be carried on cargo aircraft only;

-the airport at which the package(s) is to be unloaded;

-(where applicable) an indication that the dangerous goods are being carried under a State exemption.

**THIS WRITTEN INFORMATION IS CALLED
THE “NOTOC”**

This information to the pilot-in-command should be presented on a dedicated form.

When written information is provided, the pilot-in-command must indicate on a copy of it, or in some other way, that the information has been received.

The information to the pilot-in-command must also include confirmation that there is no evidence that any damaged or leaking packages have been loaded on the aircraft.

DANGEROUS GOODS FOR FLIGHT CREW

Notification to Captain (NOTOC)



Station of loading		Flight Number	Date	Aircraft Registration	Prepared by								
Station of Unloading	Air Waybill Number	Proper Shipping Name	Class / Division For Class 1 compt group	UN or ID Nbr.	Sub. Risk	Nbr of Packages	Net quantity or Transp. Ind. per Package	Radioact. Mater. Category	UN Packing Group	Erg. Drl. code	Code see Reverse	CAO (X)	Loading position
													ULD
													CPT
Other Special Load													
Station of Unloading	Air Waybill Number	Contents and Description		Number of Packages	Quantity	Supplementary information		Code	Loading Pos.				
									ULD				
Passengers													
Dest.	Code	Name		Age, disability or title		Supplementary information		Codes	Categories				
								WF DEPO SIC UM VIP WCHS WCHR WCHC	Use IATA Disruptive or prisoner Sick or invalid passenger Unaccompanied minor Very important passenger Wheelchair, steps Wheelchair, ramp Wheelchair, carry				
There is no evidence that any damaged or leaking packages containing dangerous goods have been loaded on the aircraft.		Loaded as shown		Captain's Signature		Other information							

0451 5/05

DRILL CODES

(ICAO Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods)

The aircraft emergency response drills are for guidance of crew members when an incident occurs in flight which is, or might be, related to a particular package, or packages, containing Dangerous Goods.

The DRILL CODE assigned to an item of Dangerous Goods consists of a number from 1 to 10 plus one or two letters.

Referring to the chart of emergency response drills, each drill number corresponds to a line of information concerning the risk posed by that substance and guidance on the preferable action that should be taken.

The DRILL CODES can be obtained in two ways :

- using the Proper Shipping Name in the Alphabetical List
- using the UN-nbr in the Numerical List

DANGEROUS GOODS FOR FLIGHT CREW

Emergency Response Guidance for Aircraft Incidents involving Dangerous Goods

Example : List with Drillcodes in alphabetical order

<i>UN No.</i>	<i>Drill Code</i>	<i>Proper shipping name</i>	<i>UN No.</i>	<i>Drill Code</i>	<i>Proper shipping name</i>
2045	3H	Isobutyl aldehyde	1616	6L	Lead acetate
1214	3CH	Isobutylamine	1617	6L	Lead arsenates
1055	10L	Isobutylene	1618	6L	Lead arsenites
2393	3L	Isobutyl formate	0129	1L	Lead azide, wetted
2528	3L	Isobutyl isobutyrate	2291	6L	Lead compound, soluble, n.o.s.
2486	3P	Isobutyl isocyanate	1620	6L	Lead cyanide
2283	3L	Isobutyl methacrylate, stabilized	1872	5L	Lead dioxide
2394	3L	Isobutyl propionate	1469	5P	Lead nitrate
2045	3H	Isobutyraldehyde	1470	5P	Lead perchlorate
2529	3C	Isobutyric acid	2989	3L	Lead phosphite, dibasic
2284	3P	Isobutrylonitrile	0130	1L	Lead styphnate, wetted

Example : List with Drillcodes in numerical order

<i>UN No.</i>	<i>Drill Code</i>	<i>Proper shipping name</i>	<i>UN No.</i>	<i>Drill Code</i>	<i>Proper shipping name</i>
1968	2L	Insecticide gas, n.o.s.	2001	3L	Cobalt naphthenates, powder
1969	10L	Isobutane	2002	4L	Celluloid, scrap
1970	2L	Krypton, refrigerated liquid	2003	4W	Metal alkyls, water-reactive, n.o.s.
1971	10L	Methane, compressed	2003	4W	Metal aryls, water-reactive, n.o.s.
1971	10L	Natural gas, compressed	2004	4W	Magnesium diamide
1972	10L	Methane, refrigerated liquid	2005	4W	Magnesium diphenyl
1972	10L	Natural gas, refrigerated liquid	2006	4L	Plastics, nitrocellulose-based, self-heating, n.o.s.
1973	2L	Chlorodifluoromethane and chloropentafluoroethane mixture	2008	4L	Zirconium powder, dry
1973	2L	Refrigerant gas R 502	2009	4L	Zirconium, dry
1974	2L	Chlorodifluorobromomethane	2010	4W	Magnesium hydride

DANGEROUS GOODS FOR FLIGHT CREW

Table 4-1. Aircraft Emergency Response Drills

1. COMPLETE APPROPRIATE AIRCRAFT EMERGENCY PROCEDURES.
2. CONSIDER LANDING AS SOON AS PRACTICABLE.
3. USE DRILL FROM THE CHART BELOW.

DRILL NO.	INHERENT RISK	RISK TO AIRCRAFT	RISK TO OCCUPANTS	SPILL OR LEAK PROCEDURE	FIRE-FIGHTING PROCEDURE	ADDITIONAL CONSIDERATIONS
1	Explosion may cause structural failure	Fire and/or explosion	As indicated by the drill letter(s)	Use 100% oxygen; no smoking	All agents according to availability; use standard fire procedure	Possible abrupt loss of pressurization
2	Gas, non-flammable, pressure may create hazard in fire	Minimal	As indicated by the drill letter(s)	Use 100% oxygen; establish and maintain maximum ventilation for "A", "I" or "P" drill letter	All agents according to availability; use standard fire procedure	Possible abrupt loss of pressurization
3	Flammable liquid or solid	Fire and/or explosion	Smoke, fumes and heat, and as indicated by the drill letter(s)	Use 100% oxygen; establish and maintain maximum ventilation; no smoking; minimum electrics	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization
4	Spontaneously combustible or pyrophoric when exposed to air	Fire and/or explosion	Smoke, fumes and heat, and as indicated by the drill letter(s)	Use 100% oxygen; establish and maintain maximum ventilation	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization; minimum electrics if "F" or "H" drill letter
5	Oxidizer, may ignite other materials, may explode in heat of a fire	Fire and/or explosion, possible corrosion damage	Eye, nose and throat irritation; skin damage on contact	Use 100% oxygen; establish and maintain maximum ventilation	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization
6	Poison, may be fatal if inhaled, ingested, or absorbed by skin	Contamination with poisonous liquid or solid	Acute poisoning, effects may be delayed	Use 100% oxygen; establish and maintain maximum ventilation; do not touch without gloves	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization; minimum electrics if "F" or "H" drill letter

DRILL NO.	INHERENT RISK	RISK TO AIRCRAFT	RISK TO OCCUPANTS	SPILL OR LEAK PROCEDURE	FIRE-FIGHTING PROCEDURE	ADDITIONAL CONSIDERATIONS
7	Radiation from broken/unshielded packages	Contamination with spilled radioactive material	Exposure to radiation, and personnel contamination	Do not move packages; avoid contact	All agents according to availability	Call for a qualified person to meet the aircraft
8	Corrosive, fumes disabling if inhaled or in contact with skin	Possible corrosion damage	Eye, nose and throat irritation; skin damage on contact	Use 100% oxygen; establish and maintain maximum ventilation; do not touch without gloves	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization; minimum electrics if "F" or "H" drill letter
9	No general inherent risk	As indicated by the drill letter	As indicated by the drill letter	Use 100% oxygen; establish and maintain maximum ventilation if "A" drill letter	All agents according to availability; no water on "W" drill letter	None
10	Gas, flammable, high fire risk if any ignition source present	Fire and/or explosion	Smoke, fumes and heat, and as indicated by the drill letter	Use 100% oxygen; establish and maintain maximum ventilation; no smoking; minimum electrics	All agents according to availability	Possible abrupt loss of pressurization

DRILL LETTER	ADDITIONAL RISK	DRILL LETTER	ADDITIONAL RISK
A	ANAESTHETIC	M	MAGNETIC
C	CORROSIVE	N	NOXIOUS
E	EXPLOSIVE	P	POISON
F	FLAMMABLE	S	SPONTANEOUSLY COMBUSTIBLE OR PYROPHORIC
H	HIGHLY IGNITABLE	W	IF WET GIVES OFF POISONOUS OR FLAMMABLE GAS
I	IRRITANT / TEAR PRODUCING	X	OXIDIZER
L	OTHER RISK LOW OR NONE		

Exercise Incompatibility
F 28 -4000 KF123/today

Cpt 5

Cpt 4

Cpt 3

Cpt 2

Cpt 1

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Planned cargo :

1 pc ROX 5 KG

1 pc RCM 2 KG

1 pc EAT 2 KG

1 pc RRY 1.8 TI

1 pc RRY 2.3 TI

1 pc RPB 1 KG

DGR WORKSHOP

ALLOWED – NOT ALLOWED

Nr.	Article	Checked in bagage	Carry-on bagage	On one's person	Notify PIC / Operators approval
1	Shoe impregnating agent				
2	Hairspray				
3	Matches / Lighter				
4	Shaving – cream				
5	Distress flare				
6	Matches (8-pack)				
7	Paint				
8	Anti corrosive agent				
9	Adhesives				
10	Chock klor				
11	Alcohol 80 % volume				
12	Lighter gas				
13	Oven cleaner				
14	Rat-poison				
15	Alcohol 65 % volume				
16	Fireworks				
17	Camper gas				
18	Perfume				
19	Nail polish remover				
20	Shot - cartridges				
21	Carbon dioxide cylinder				
22	Sodium hydroxid				
23	Dry Ice				
24	Small oxygen cylinder				
25	Hair curler				
26	Pacemaker				
27	Lampoil				