

Instructions

Welcome to this web based training for Excepted Quantities of Dangerous Goods.

It is unlawful to ship a dangerous good without meeting the training requirements. This presentation will provide training regarding the requirements for packaging and shipping dangerous goods in excepted quantities.

To meet the training requirements, do the following:

1. Review the slides.


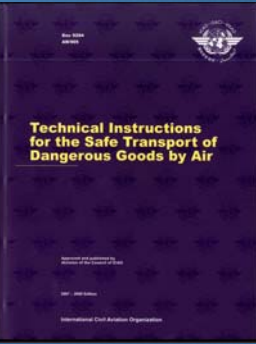
- A current copy of the ICAO Technical Instructions or the IATA Dangerous Goods Regulations may be required for more detailed information.

2. After review of the slides, take the examination provided as an attachment within this presentation.

DANGEROUS GOODS TRAINING
Dangerous Goods in Excepted Quantities
ICAO Section 2.4 & 3.5.1
IATA Section 2.7

TEN-E Packaging Services, Inc.
Presentation Created 1/11/2010

TRAINING

Regulation	Training	Training	Excepted Quantities
	IATA Dangerous Good Regulations	Chapter 1.5	Chapter 2.7
	ICAO Technical Instructions	Part 1, Chapter 4	Part 1, Chapter 2.5 Part 3, Chapter 5

The IATA Dangerous Goods Regulations (DGR) are based on the ICAO Technical Instructions (TI) with additional operational requirements.

TRAINING

Purpose and Scope

A properly planned and maintained program for all persons concerned in the transport of dangerous goods, including:

- **General familiarization training** — the general philosophy and main provisions for successful application of regulations.
- **Function specific training** — detailed training in the requirements applicable to the job function.
- **Safety training** — the hazards presented by dangerous goods, as well as safe handling and emergency response procedures to be followed.

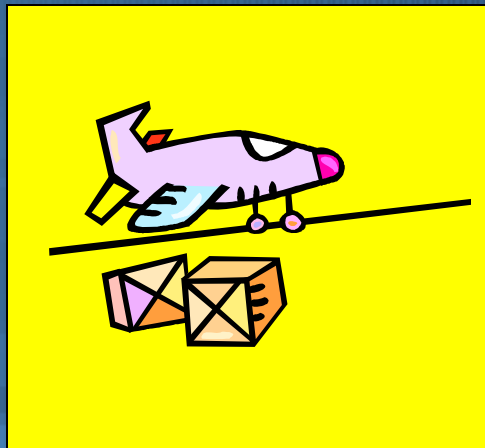
TRAINING

- **Initial Training -**
Provided or verified upon employment
- **Recurrent Training -**
Must be conducted within 24 months of pervious training
- **Exam -**
Must be taken to verify understanding of the regulations
 - Successful completion must be confirmed

TRAINING

Initial and recurrent training programs must be established and maintained by or on behalf of:

- **shippers** of dangerous goods, *including* packers and persons' or organizations' undertaking the responsibilities of the shipper



- operators
- handling agencies
- freight forwarders
- security agencies

TRAINING

Training Curricula

Minimum Requirements for Shippers and Packers

Aspects of transport of dangerous goods by air with which they should be familiar	1	2
General philosophy	X	X
Limitations	X	
General requirements for shippers	X	
Classification	X	X
List of dangerous goods	X	X
General packaging requirements	X	X
Packing instructions	X	X
Labeling and marking	X	X
Shipper's Declaration and other relevant documentation	X	
Acceptance procedures		
Recognition of undeclared Dangerous Goods	X	X
Storage and loading procedures		
Pilots' notification		
Provisions for passengers and crew	X	X
Emergency procedures	X	X

1 Shippers and persons undertaking the responsibilities of shippers', including operator's staff acting as shippers, operator's staff preparing dangerous goods a COMAT

2. Packers

TRAINING

Recordkeeping

Training Records

A record of training must be maintained,
which must include:

- Individual's name
- Most recent training completion date
- Description, copy or reference to training material used
- Name and address of the organization providing the training
- Evidence which shows that a test has been satisfactorily completed

Training records must be made available upon request to the
appropriate national authority.

Excepted Quantities

ICAO 3; 5.5.1

IATA – 2.7

Dangerous goods meeting the small or excepted quantity provisions are not subject to the other provisions of the regulations except for:

- Training requirements (IATA Subsection 1.5)
- Dangerous goods in air mail (IATA Subsection 2.4)
- Classification and packing group criteria (IATA Section 3)
- Packaging Requirements (IATA Subsections 5.0.2.4, 5.0.2.6.1, 5.0.2.8, 5.0.2.9 & 5.0.2.11(a))
- Loading restrictions (IATA 9.3.1)
- Reporting of dangerous goods accidents, incidents and other occurrences (IATA 9.6.1 & 9.6.2)
- Requirements for radioactive material in excepted packages (IATA 10.5.8) (if applicable)
- Definitions (IATA Appendix A)

CLASSIFICATION



Class 1
Explosives



Class 2
2.1 Flammable gas
2.2 Non-flammable compressed gas
2.3 Poisonous Gas



Class 3
Flammable and combustible liquid



Class 4
4.1 Flammable solid
4.2 Spontaneously combustible
4.3 Dangerous when wet



Class 5
5.1 Oxidizer
5.2 Organic peroxide



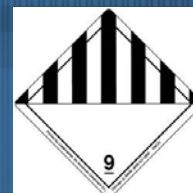
Class 6
6.1 Poisonous materials
6.2 Infectious substance



Class 7
Radioactive



Class 8
Corrosive materials



Class 9
Miscellaneous

CLASSIFICATION

DANGEROUS GOODS LIST

UN/ ID No.	Proper Shipping Name/ Description	Class or Div. (Sub Risk)	Hazard Label	PG	EQ See 2.7	Passenger and Cargo Aircraft				Cargo Aircraft Only		S.P. See 4.4	ER G Cod e	
						Ltd Qty		Pkg Inst	Max Net Qty/Pkg	Pkg Inst	Max Net Qty/Pkg			Max Net Qty/Pk g
						Pkg Inst	Max Net Qty/Pkg							
A	B	C	D	E	F	G	H	I	J	K	L	M	N	
3274	Alcohols, n.o.s. ★	3	Flamm. Liquid	II III	E2 E1	Y305 Y309	1L 10L	305 309	5L 60L	307 310	60 L 220 L	A3	3L 3L	
1514	Zinc nitrate	5.1	Oxidize r	II	E2	Y508	2.5	508	5 Kg	511	25 kg		5L	

Excepted Quantity Code

Contains the Excepted
Quantity code assigned to
the substance or article by
packing group

Refers to Table Section 2.7

Table 2.7.A Excepted Quantity Codes

Code	Maximum Quantity per Inner Packaging	Maximum Quantity per Outer Packaging
E0	Not permitted as Excepted Quantity	
E1	30g/30mL	1kg/1L
E2	30g/30mL	500g/500mL
E3	30g/30mL	300g/300mL
E4	1g/1mL	500g/500mL
E5	1g/1mL	300g/300mL

CLASSIFICATION

Packing Group (degree of danger)

- I = Great Danger
- II = Medium Danger
- III = Minor Danger

Shipper must determine correct packing group for the hazardous material

PACKING

5.0.2.6.1 General Packing Requirements

Compatibility

- Packaging which are in direct contact with dangerous goods must not be affected or weakened by the dangerous goods and must not cause a dangerous effect or reaction.

5.0.2.8 General Packing Requirements

Liquids Packaging

- Sufficient ullage (outage) must be left to ensure that neither package leakage or permanent distortion will occur as a result of liquid expansion caused by temperatures likely to prevail during transport.
- Liquids must not completely fill a packaging at a temperature of 55°C (130°F).

PACKING

5.0.2.4 General Packing Requirements

Dangerous Goods Packaging Quality

Manufacturers and subsequent distributors of packagings must provide information regarding procedures to be followed

- **closure instructions** for inner packagings and receptacles
- **closure description**, including types, dimensions, and any required gaskets
- **other components** to ensure packages as presented for transport are capable of passing the applicable performance tests of Subsections 6.3 to 6.6 and the pressure differential requirements of 5.0.2.9, as applicable.

PACKING

5.0.2.9 Internal Pressure Standards

Liquids packagings

Must be capable of withstanding, without leakage, an internal pressure which produces a pressure differential of not less than:

- 95 kPa (13.8 psi)
- **EXCEPT** for liquids in Packing Group III of Class 3 or Division 6.1, the pressure must not be less than 75 kPa (10.9 psi)
OR a pressure related to the vapour pressure of the liquid to be transported, **whichever is the greater.**

5.0.2.11 Different Packaging

An outer packaging *may* contain more than one item of dangerous goods or other goods provided that all applicable requirements are met.

Excepted Quantities

ICAO 3; 5.5.1

IATA – 2.7

Baggage and Post

Dangerous goods in excepted quantities are

NOT

permitted in or as checked or carry-on baggage nor in the mail.

Excepted Quantities

ICAO 3; 5.5.1

IATA – 2.7

Materials Permitted

Class or Division (Exclusions)	Packaging Group
Division 2.2 – Non-flammable, Non-toxic Gas (Excluding UN1950, UN2037, UN2857 and UN3164)	No subsidiary risk
Class 3 – Flammable Liquid (Excluding those in Packing Group I with a subsidiary risk, and UN1204, UN2059 and UN3473)	PG I, II, III
Class 4 – Flammable Solids, Spontaneously Combustible and Dangerous When Wet (Excluding all self-reactive substances and UN2555, UN2556, UN2557, UN2907, UN3292 and UN 3476)	PG II, III
Division 5.1 – Oxidizer	PG II, III
Division 5.2 – Organic Peroxide	only when in a chemical kit, first aid kit or polyester resin kit

Excepted Quantities

ICAO 3 5.5.1

IATA – 2.7

Materials Permitted

Class or Division (Exceptions)	Packing Group
Division 6.1 – Toxic (Excluding those having an inhalation toxicity of Packing Group I)	PG I, II, III
Class 8 – Corrosive (Excluding UN1774, UN2794, UN2795, UN2800, UN2803, UN2809, UN3028 and UN3477)	PG II, III
Class 9 – Miscellaneous (Other than carbon dioxide, solid, genetically modified organisms and genetically modified microorganisms)	All articles are excluded.

Articles and substances in the permitted classes, divisions and packing groups may also be radioactive materials in excepted packages.

Excepted Quantities

ICAO 3; 5.5.1

IATA – 2.7

Quantity Limits

Dangerous goods which may be carried as excepted quantities are shown in Column F of the List of Dangerous Goods.

Dangerous Goods List		
Hazard Label	PG	EQ See 2.7
D	E	F

IATA		
F	Maximum Quantity Per	
Code	Inner Packaging	Outer Packaging
E0	Not permitted as excepted Quantity	
E1	30g/30mL	1Kg/1L
E2	30g/30mL	500g/500mL
E3	30g/30mL	300g/300mL
E4	1g/1mL	500g/500mL
E5	1g/1mL	300g/300mL

* Other than Division 6.1, PG I, Hazard Zone A or B

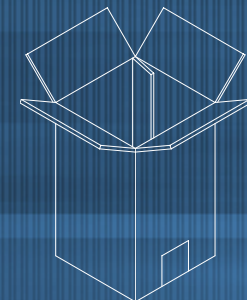
Excepted Quantities

ICAO 3; 5.5.1

IATA – 2.7

Triple Packaging System

- Inner receptacles constructed of plastic, glass, porcelain, stoneware, earthenware or metal
 - Plastic packaging thickness not less than 0.2mm (0.008")
- Removable closures must be held in place by a positive means
 - Threaded closures must be leakproof
- Packed in an intermediate packaging with cushioning
 - The intermediate packaging must completely contain the contents if leakage occurs
 - For liquids, absorbent material to absorb the entire contents
 - Will not react dangerously with the packaging materials
- Strong outer Packaging
 - Wood, fibreboard or other equally strong material
- Size of packaging must be adequate to apply all markings
- The package is not opened or otherwise altered until no longer in commerce
- Overpacks may be used
 - May also contain other hazmat packagings or other packagings



Excepted Quantities

ICAO 3; 5.5.1

IATA – 2.7

Package Tests

Capable of withstanding

- 1.8 m Drop Test
 - Flat on base
 - Flat on Top
 - Flat on long side
 - Flat on short side
 - On a corner
- 24 Hour Compressive Load

Equivalent to the total mass of identical packages in a 3m high stack (including the drop sample)

As demonstrated by **testing** and appropriately **documented**

Sample Preparation

Liquids: 98% of Capacity (Minimum)

Solids: 95% of Capacity (Minimum)

- The substances to be transported may be replaced with a similar non-hazardous substance, provided the validity of the tests are not affected.

Pass / Fail Criteria

- Without breakage or leakage of any inner packaging
- Without significant reduction in effectiveness

Excepted Quantities

ICAO 3; 5.5.1

IATA – 2.7

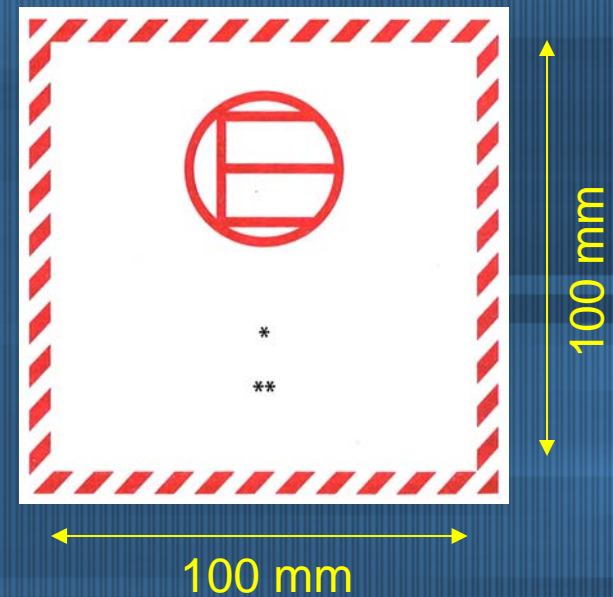
Marking

Durably and legibly marked with the following:

- * Must be replaced by the primary hazard class, or division
- ** The name of the shipper or consignee
 - If not shown elsewhere

Hatching and symbol of the same color

- Black or red
- On white or suitable contrasting background



Overpacks containing dangerous goods in excepted quantities must display the marking, unless such markings on packages within overpack are clearly visible

Excepted Quantities

ICAO 3; 5.5.1

IATA – 2.7

Documentation

- The Shipper's Declaration for Dangerous Goods is **NOT** required.
- For air transport, **if** a document (such as a bill of lading or air waybill) accompanies dangerous goods in excepted quantities, it must include the statement:

Dangerous Goods in Excepted Quantities

A package containing dangerous goods in excepted quantities must **NOT** contain other dangerous goods that require a Shipper's Declaration

Handling

- A checklist is **NOT** required for dangerous goods in excepted quantities
- Information is not required to appear on the written information to the pilot in command.

State and Operator Variations

IATA 2.9

States and operators may submit variations to the regulations.

2.9.2: State Variations

- Where the variation is **MORE** restrictive than the regulations, they apply:
 - To, from or through all territories of the state
 - Outside the territory of the notifying state to all operators for whom the notifying state is the state of the operator
- Where the variation is **LESS** restrictive than the regulations the variation is listed for information purposes only and **may only be applied** within the territory of the notifying state.

State and Operator Variations

IATA 2.9

States and operators may submit variations to the regulations.

2.9.3: Operator Variations

- Operator variations impact on the shipper's ability to have the particular dangerous goods accepted for transport
 - Specific to a
 - UN number
 - Class or division
 - Packaging types
 - Packaging methods

State and Operator Variations

FORMAT

STATE

- Three-letter group
- Last letter is always “G” (Government)
- Followed by a two-digit group to identify the specific variation

e.g. JPG-23 = Japan

Radioactive material of class 7 in excepted packages with an associated risk of another class specified in Subsection 2.7 must be subject to the provisions of 10.5.8 and to the variations JPG-03 and JPG-09

OPERATOR

- Two letter alpha-numeric
- Followed by a two-digit group to identify the specific variation

e.g. AM-11 = Aeromexico

Dangerous goods in Excepted Quantities will not be accepted for carriage (see Subsection 2.7)

Variations related to the text of these regulations are referenced under the subsection heading.

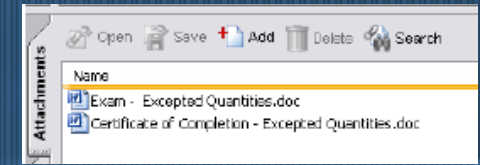
Examination

The training requirements in the ICAO Technical Instructions and the IATA Dangerous Goods Regulations require that an examination be taken to verify understanding of these regulations. Confirmation that the examination has been completed satisfactorily is required.

1. Open the attachment by clicking on the “Attachments” tab



1. Click on the document entitled “Exam – Excepted Quantities”



3. The exam will open as a Microsoft® Word Document.
4. Save the document to your computer and complete the exam by filling in the blanks or checking the appropriate boxes.
 - Some questions may have more than one answer
5. Upon completion, print the exam and a copy of the presentation.
 - Training records must be kept for a minimum of 36 months.

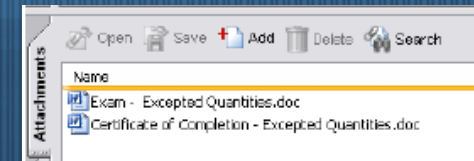
Certificate of Completion

A certificate of completion may be completed and signed by a company official to verify training has been successfully completed.

1. Open the attachment by clicking on the “attachment tab”



2. Click on the document entitled “Certificate of Completion – Excepted Quantities”



3. The certificate will open as a Microsoft® Word Document.
4. Save the document to your computer and complete the certificate by filling in the appropriate sections.
5. Upon completion, print the certificate and have it signed by a company official.
 - Retain as part of the training records.