0 FRONT MATTER

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0.2 REVISION HIGHLIGHTS

This table summarizes the major changes made to each revision, not all changes. Throughout each review cycle, subsequent entries may change prior entries or proposed changes may be held, disregarded, and/or obsolete. This is a summary of input received throughout the duration. Changes throughout the manual are indicated by vertical revision bars.

Note: *The vertical bar (change bar) in the margin indicates a change, addition, or deletion in the adjacent text for the current revision of that page only.*

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0.9 MANAGEMENT APPROVAL

Manual Number:	**RXI/OPS-GRH-M03**
Title:	**DANGEROUS GOODS MANUAL**
Issue:	00
Revision:	00

Recommended by:		Date:
Title:		
Signature:		

Quality Review by:		Date:
Title:		
Signature:		

Approved by:		Date:
Title:		
Signature:		

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0.10 GACA APPROVAL / ACCEPTANCE

This manual is a controlled document, prepared to meet the requirements of the General Authority of Civil Aviation Regulations (GACAR) and is herewith accepted/approved by the General Authority of Civil Aviation (GACA) exclusively for the use of Riyadh Air.

If any conflict exists between the contents of this manual and GACA requirements, GACA requirements shall take precedence, and the manual will be revised without delay in accordance with GACA eBook Vol.4 Ch.12, section 4.

All contents of this manual are current, as listed in the List of Effective Pages (LEP) Revision 0. 18 Feb 2024.

This manual becomes 'uncontrolled' when printed.

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0.11 INTRODUCTION

0.11.1 Policy

This Dangerous Goods Manual is approved by the General Authority of Civil Aviation (GACA), and it is compliant with all relevant GACA regulations (GACAR part 109) and applicable international standards. It is the method by which Riyadh Air undertakes all operations.

The Dangerous Goods Manual contains procedures, instructions and guidance for ground operations personnel to execute their duties. It serves as a crucial guide for all employees to ensure that the planning and execution of every flight is conducted in accordance with the highest levels of safety, efficiency and effectiveness.

Riyadh Air is DG non-carry operator.

0.11.2 Applicability

The Dangerous Goods Manual serves as an essential guide for all ground operations personnel in our organization, and it is incumbent upon every employee, regardless of their role, to adhere to the policies, procedures, regulations, guidance and instructions detailed within Riyadh Air's ground operations manuals.

0.11.3 Common Language

IOSA FLT 3.1.1

English shall be the language used for all operational communications at Riyadh Air. This is to help eliminate misunderstandings and ensure clear and standardized interactions between all employees. Riyadh Air's decision to implement English as a language protocol is a strategic one aimed at promoting safety and consistency within its operational framework.

English shall be exclusively used during all:

1. Load planning conversations, notifications, and documentation.
2. Briefings between load controllers, load supervisors, and ramp agents.
3. Communications with flight crew regarding aircraft loading.
4. Communication with cabin crew regarding passengers carrying DG in accordance with Table 4.
5. Manuals, guidelines, forms, and notifications related to mass and balance operations.

For general Common Language please refer to Corporate Policy Manual, Section 0.11.1.

0.11.4 Usage of Terms

Dangerous Goods Manual applies to both male and female ground operations personnel, operations personnel, passengers and other persons, for simplification a gender-neutral text is used in this manual. Throughout this manual, specific terms (e.g., shall, should, may etc.) are used to provide precise instructions and expectations within the context of Riyadh Air's operations. These terms serve distinct purposes and outline the level of obligation or permission associated with each action. It is crucial that all ground operational personnel understand the nuances of these terms.

For general Use of Terms please refer to Corporate Policy Manual Section 0.11.2.

0.11.5 Human Factor Principles

GACAR § 121.139 ,121.533

IOSA FLT 1.7.4

At Riyadh Air, human factors principles are applied to Dangerous Good Manual, checklists, procedure design, personnel training and to operations and maintenance equipment, systems, processes and procedures. They consider human capabilities and limitations, as well as the safe interface between the human and system components, for the purpose of optimizing human performance and reducing human error.

Incorporating human factor principles into the design of our Operations Manuals, checklist and procedures is crucial for optimizing safety and efficiency. Riyadh Air captures human factors principles in document design and checklist usage by:

1. Preparing documentation in a useable format for information presentation, at the appropriate reading level and with the required degree of technical sophistication and clarity.
2. Improving user performance through the use of effective and consistent labels, symbols, colors, terms, acronyms, abbreviations, formats and data fields.
3. Ensuring the availability and usability of information to the user for specific tasks, when needed and in a form that is directly usable.
4. Designing operational procedures for simplicity, consistency and ease of use.
5. Minimizing the need for special or unique operator skills, abilities, tools or characteristics.
6. Assessing the net demands or impacts upon the physical, cognitive and decision-making resources of our employees, using objective and subjective performance measures.

0.11.6 Applicable Regulations and Standards

Throughout this manual, compliance tags are used to help users easily locate and reference applicable regulations, rules, standards and recommended practices. These tags are a systematic and organized way to manage and ensure adherence to regulatory requirements, company policies and industry standards.

This allows Riyadh Air to ensure that all regulatory standards imposed by the GACA and other aviation authorities are explicitly covered. Where an applicable regulation, rule or standard exists, the relevant section of the Operations Manual includes a header bar listing the applicable regulation and/or standard (example below).

Example Header:

GACAR § 121.123

The following regulations and standards addressed in this manual, include:

1. GACA Regulations:
    a. PART 4 - OCCURRENCE REPORTING AND SAFETY INFORMATION SYSTEM
    b. PART 5 - SAFETY MANAGEMENT SYSTEMS
    c. PART 109 - TRANSPORTATION OF DANGEROUS GOODS BY AIR
    d. PART 121 - OPERATIONS: COMMERCIAL AIR OPERATORS OPERATING TRANSPORT CATEGORY AIRCRAFT OR COMMUTER CATEGORY AIRPLANES
2. IATA Dangerous Goods Regulations (DGR) Edition 65
3. Aviation Investigation Bureau Regulations (AIBR)

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0.12 ABBREVIATIONS, ACRONYMS AND DEFINITIONS

0.12.1 Abbreviations and Acronyms

This manual contains a list of abbreviations and acronyms for easy reference. The Table below explains frequently used abbreviations and acronyms, while less common ones are defined in the relevant sections where they are used.

A	
AFM	Aircraft Flight Manual
AIP	Aeronautical Information Publications
ARFF	Aircraft Rescue and Fire Fighting
ATC	Air Traffic Control
D	
DG	Dangerous Goods
DGD	Dangerous Goods Declaration
DMS	Document Management System
F	
FSDS	Flight Safety Documentation System
G	
GACA	General Authority of Civil Aviation
GACAR	General Authority of Civil Aviation Regulations
GHS	Globally Harmonized System
GM	Guidance Material
I	
IATA	International Air Transport Association
IMP	Interchange Message Procedures
ICAO	International Civil Aviation Organization
O	
OM	Operations Manual
P	

PMED	Portable Medical Electronic Devices
R	
RXI	Riyadh Air
S	
SDS	Safety Data Sheet
SMS	Safety Management System
T	
TIs	(ICAO) Technical Instructions
TR	Temporary Revision

0.12.2 Definitions

GACAR PART 1 – Definitions, Abbreviations and Editorial Conventions, contains a full list of aviation definition. For ease of reference the following GACAR and Company definitions commonly used throughout this manual are noted below:

A	
Approval	An authorization granted by an appropriate national authority for: 1. the transport of dangerous goods forbidden on passenger and/or cargo aircraft where the Technical Instructions state that such goods may be carried with an approval; or 2. other purposes as provided for in the Technical Instructions. *Note.— In the absence of a specific reference in the Technical Instructions allowing the granting of an approval, an exemption may be sought.*
C	
Cargo aircraft.	Any aircraft, other than a passenger aircraft, which is carrying goods or property.
Consignment.	One or more packages of dangerous goods accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address.
Crew member	A person assigned by an operator to duty on an aircraft during a flight duty period.
D	
Dangerous goods.	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 the Technical Instructions or which are classified according to those Instructions.

Dangerous goods accident.	An occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property or environmental damage.
Dangerous goods incident.	An occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property or environmental damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardizes the aircraft or its occupants is also deemed to constitute a dangerous goods incident.
E	
Exception.	A provision in this Annex which excludes a specific item of dangerous goods from the requirements normally applicable to that item.
Exemption	An authorization, other than an approval, granted by an appropriate national authority providing relief from the provisions of the Technical Instructions.
F	
Flight crew member	A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.
O	
Operator	A person, organization or enterprise engaged in or offering to engage in an aircraft operation.
Overpack.	An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage. *Note.— A unit load device is not included in this definition.*
P	

Package	The complete product of the packing operation consisting of the packaging and its contents prepared for transport.
Packaging	Receptacles and any other components or materials necessary for the receptacle to perform its containment function. *Note.— For radioactive material, see Part 2, paragraph 7.2 of the Technical Instructions.*
Passenger aircraft	An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an authorized representative of an appropriate national authority or a person accompanying a consignment or other cargo.
Pilot-in-command	The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.
S	
Serious injury	An injury which is sustained by a person in an accident and which: 1. requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was 2. received; or 3. results in a fracture of any bone (except simple fractures of fingers, toes or nose); or 4. involves lacerations which cause severe hemorrhage, nerve, muscle or tendon damage; or 5. involves injury to any internal organ; or 6. involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface; or 7. involves verified exposure to infectious substances or injurious radiation.
State of Destination	The State in the territory of which the consignment is finally to be unloaded from an aircraft.

State of Origin.	The State in the territory of which the consignment is first to be loaded on an aircraft.
State of the Operator.	The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.
T	
Technical Instructions	The Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284), approved and issued periodically in accordance with the procedure established by the ICAO Council.
U	
UN number	The four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals to identify an article or substance or a particular group of articles or substances.
Unit load device.	Any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo. *Note.— An overpack is not included in this definition.*

0.13 SYSTEM OF AMENDMENT AND REVISION

0.13.1 Manual Ownership

The Vice President Ground Operations (VPGO) is responsible for overseeing the Dangerous Goods Manual and serves as the Manual Owner. All revisions to the manual undergo a structured approval process. Technical publications personnel are responsible for generating amendments, which are then reviewed by the Dangerous Goods Manager before being forwarded to the VPGO for the approval process.

The VPGO has the final authority to approve amendments to Dangerous Goods Manual. This emphasizes the manual owner's significance in ensuring document accuracy and compliance. Any amendments that require GACA approval or acceptance are submitted for review before they are published.

To ensure efficient dissemination of information, all approved amendments are shared electronically with manual holders. This aligns with Riyadh Air's commitment to transparent and accessible communication of operational updates.

This systematic approach reflects Riyadh Air's dedication to upholding rigorous standards in operational documentation.

0.13.2 Manual Holder Responsibility

No personnel within our operational framework may perform their duties without access to a current copy of the relevant and applicable operational manuals. This policy highlights the importance of real-time information in creating a safe and efficient operational environment. Regular manual updates not only help conform to regulations but also enhance the overall effectiveness of our personnel in carrying out their responsibilities with precision and in accordance with industry best practices.

Note: *Uncontrolled copies of the Dangerous Goods Manual shall not be used for the conduct of ground operations.*

0.13.3 Distribution List and Availability

GACAR § 121.151 / § 121.155

At Riyadh Air, all operational personnel are provided with an updated electronic copy of this manual along with other relevant manuals. Subsequent updates are also given to the appropriate personnel, including but not limited to ground operations staff, maintenance staff, crew members, and assigned GACA representatives.

It is mandatory for the recipients of these manuals to keep them up to date with the provided changes and additions. All operational staff must ensure that the relevant manuals provided to them are accessible when performing their assigned duties. This ensures that they can be easily accessed when

required. Additionally, Riyadh Air maintains a complete copy of the required manuals at its principal base of operations.

When conducting scheduled and unscheduled operations, Riyadh Air shall ensure that reading device that produces a legible image of the applicable manuals (e.g., Operations Manuals, maintenance information) is available to the flight crew and other operational personnel who require access to the company manuals.

0.13.4 Publication Hierarchy

IOSA ORG 2.5.3

Refer to Corporate Policy Manual Section 0.13.4.

0.13.5 Manual Structure

The Dangerous Goods Manual is divided into 8 chapters and Appendices, as shown below:

0 FRONT MATTER

1 DANGEROUS GOODS – GENERAL

2 CLASSIFICATION AND PACKAGING OF DANGEROUS GOODS

3 CARRIAGE OF DANGEROUS GOODS

4 DANGEROUS GOODS TRANSPORT PROCEDURES

5 RADIOACTIVE MATERIAL

6 EMERGENCY HANDLING OF DANGEROUS GOODS

7 DANGEROUS GOODS SECURITY

8 TRAINING

9 APPENDIX

0.13.6 Source of Amendments

Refer to Corporate Policy Manual, Section 0.13.6.

0.13.7 Referenced and Linked Documents

This Operations Manual (OM Part A) is interconnected with the following Regulations and Manuals. When changes are made to any of the below Regulations or Manuals, Riyadh Air undertakes a review of the relevant changes for incorporation into OM Part A.

1. GACAR - Safety Regulations.
2. CPM - Corporate Policy Manual.

3. OM Part A - General Operations Manual.
4. OM Part D - Training Manual.
5. OM Part E - Cabin Crew Operations Manual.
6. Corporate Safety Management Manual (CSMM).
7. Ground Operations Manual (GOM).
8. Mass and Balance Manual (MBM).

0.13.8 Format and Documentation Control Requirements

IOSA ORG 2.5.1 / ORG 2.5.3

Riyadh Air receives controlled documentation from external sources, such as regulatory documentation from GACA and industry standards such as IATA Dangerous Goods Regulations and many other relevant documents containing material that pertains to the safety of operations which may affect the content of this manual.

For general Format and Documentation Control Requirements refer to Corporate Policy Manual, Section 0.13.8.

0.13.9 Error Reporting and Corrections And Suggestions For Improvement

All personnel are responsible for maintaining the accuracy and integrity of Riyadh Air's operations. If an employee comes across an error, notices any incorrect information in this manual or has a suggestion, they should report it to the Dangerous Goods Manager. They will acknowledge receipt of the information and provide feedback to the concerned employee on their suggestion, the action taken to fix the error or update the information.

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1 DANGEROUS GOODS – GENERAL

1.1 GENERAL POLICIES ON DANGEROUS GOODS TRANSPORTATION

Riyadh Air (RXI) is fully committed to the safe, secure and compliant transportation of dangerous goods by air. Our policies and procedures align with all applicable regulations, with safety as the highest priority in handling hazardous materials. Riyadh Air may not transport dangerous goods by air unless those goods are accepted, handled and transported in accordance with ICAO Technical Instructions (TIs).

Key elements of our approach include:

1. Full compliance with General Authority of Civil Aviation (GACA) regulations, International Civil Aviation Organization (ICAO) technical instructions, and other applicable dangerous goods regulations. Regular review of regulations and incorporation of changes.
2. Regular review of regulations and incorporation of changes.
3. Comprehensive dangerous goods training programs for all employees involved in accepting, handling, or transporting hazardous materials.
4. Use of proper packaging, labelling, marking, and documentation procedures by shippers for all dangerous goods.
5. Thorough acceptance procedures including verification of paperwork, authorizations, proper package conditions.
6. Safe storage, loading, and transport procedures to prevent dangerous goods incidents or accidents.
7. Effective response procedures for dangerous goods emergencies or security incidents.
8. Maintaining up-to-date manuals, instructions, records, checklists, and forms for dangerous goods handling.
9. Fostering a safety culture and sense of shared vigilance with staff, shippers, contractors, and authorities.
10. Continuous improvement of policies, procedures, training, facilities, and equipment related to hazardous materials.

1.2 DEFINITION OF DANGEROUS GOODS

Refer to Section 0.12.2 for a complete list of Dangerous Goods Definitions.

Some key dangerous goods definitions per ICAO Technical Instructions (Doc 9284) include:

1. **Explosives** - Substances/articles with potential for explosion, and pyrotechnic effects.
2. **Flammable liquids** - Liquids with flashpoint ≤ 60°C.
3. **Flammable solids** - Solids liable to cause fires through friction, absorption of moisture, spontaneous chemical changes.
4. **Oxidizers** - Substances that yield oxygen readily, may ignite/enhance combustion of organic matter.
5. **Toxic substances** - Liable to cause injury or harm human health.
6. **Infectious substances** - Contain pathogens capable of disease when exposure occurs.
7. **Radioactive materials** - Materials/isotopes emitting ionizing radiation.
8. **Corrosives** - Cause severe damage when in contact with living tissue or other goods.

1.3 MANAGEMENT DEPARTMENTS AND RESPONSIBILITIES

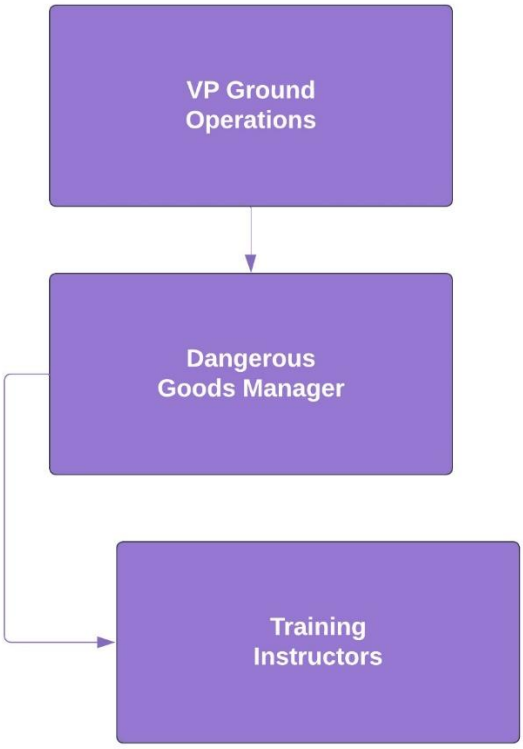


Figure 1: DG Department Chart

1.4 ROLES AND RESPONSIBILITIES

1.4.1 Dangerous Goods Manager

Job Description:

Oversees day-to-day execution of DGR policies, procedures and compliance for Riyadh Air. Develops and implements DGR training programs. Liaises with ramp operations on proper handling of permitted dangerous goods. Investigates and reports DGR incidents.

Responsibilities:

1. Maintains up-to-date knowledge on DGR regulations.
2. Creates and updates DGR policies and procedures.
3. Oversees training curriculum and delivery for DGR personnel.
4. Audits dangerous goods handling areas and processes.
5. Reviews permitted DGR requests and makes acceptance decisions.
6. Coordinates with ramp supervisors on DGR operations.
7. Investigates non-compliance and proposes corrective actions.
8. Generates DGR compliance reports and statistics.
9. Maintains DGR records and documentation.

Qualifications:

1. Bachelor's degree in aviation management, logistics or equivalent field.
2. 3+ years' experience in airline DGR management role.
3. Advanced knowledge of IATA DGR and GACAR regulations.
4. Working knowledge of Riyadh Air operations and procedures.
5. Strong leadership, communication, and organizational skills.

1.4.2 Training Instructor

Job Description:

Develops, coordinates and delivers dangerous goods training programs for Riyadh Air personnel. Maintains training records and evaluates program effectiveness. Reports to Dangerous Goods Manager.

Responsibilities:

1. Develops DGR training curriculum and materials.
2. Conducts classroom and hands-on DGR training sessions.

3. Administers written and practical competency assessments.
4. Maintains accurate training records for each employee.
5. Ensures recurrent training is completed on schedule.
6. Identifies training gaps and improves program components.

Qualifications:

1. Associate degree in aviation, education or relevant technical field.
2. 2+ years' experience in developing and delivering airline training programs.
3. Completion of airline instructor training certification.
4. Expert knowledge of DGR regulations and Riyadh Air operations.
5. Proficient in instructional design and adult education techniques.

1.4.3 Compliance Agent(s)

Job Description:

Conducts routine inspections of facilities, personnel, documentation and procedures to ensure DGR compliance. Reports any non-conformities and follows up on corrective actions. Reports to Dangerous Goods Manager.

Responsibilities:

1. Inspects dangerous goods handling areas and processes.
2. Audits personnel training records and qualifications.
3. Examines DGR documentation for completeness and accuracy.
4. Identifies any areas of non-compliance with regulations.
5. Documents inspection findings and recommended corrective actions.
6. Verifies implementation of corrective actions.
7. Generates inspection reports and statistics.

Qualifications:

1. Associate degree in aviation management or relevant technical field.
2. 2+ years' experience in aviation compliance role.
3. In-depth knowledge of DGR and security regulations and airline operations.
4. Strong attention to detail and communication skills.
5. Proficient in Microsoft Office and databases.

1.4.4 Ramp Supervisor

Job Description:

Oversees the acceptance, handling, loading and unloading of permitted dangerous goods and COMAT on the ramp. Ensures compliance with DGR regulations and airline procedures.

Responsibilities:

1. Verifies accuracy and completeness of DGR documentation.
2. Witnesses' dangerous goods acceptance inspections.
3. Supervises ramp agents handling permitted DGR and COMAT shipments.
4. Ensures proper container identification, placarding, and loading procedures are followed.
5. Coordinates buildup/breakdown of DGR shipments with cargo department.
6. Reports any errors or irregularities to Dangerous Goods Manager.

Qualifications:

1. High school diploma/GED required; Associate degree preferred.
2. 2+ years supervisory experience in airline ramp operations.
3. Knowledge of IATA DGR and Riyadh Air DGR policies and procedures.
4. Effective communication and leadership skills.
5. Able to work under pressure in fast-paced environment.

1.5 CONTACT DETAILS

In case of a DGR emergency, contact Riyadh Air OCC (Contact Number: TBA)

1.6 DELEGATION OF DUTIES

Riyadh Air will implement a delegation of duties framework within the DGR department to maintain continuity of key functions.

Segregation of tasks provides redundancy in capabilities and cross-verification to reduce risks. Work will be distributed to prevent any one person from controlling an entire process without oversight.

Examples of delegation include:

1. Dangerous goods acceptance inspections and paperwork verification will be performed by both the Ramp Supervisor and Compliance Agent.
2. Dangerous goods registrations and customer approvals will require review by both the Dangerous Goods Manager and Compliance Agent.
3. DGR training development and delivery will be divided between the Manager, Instructor(s) and subject matter experts.
4. Internal DGR audits and inspections will be conducted by the Compliance Agent and spot-checked by the Manager.
5. Corrective actions for non-compliance will require proposals from the Compliance Agent and approval by the Manager.

1.7 REGULATIONS ON DANGEROUS GOODS TRANSPORTATION

This manual is developed in compliance with GACAR Part 109 TRANSPORTATION OF DANGEROUS GOODS BY AIR, ICAO Annex 18 The Safe Transport of Dangerous Goods by Air and IATA DGR Manual.

1.7.1 Compliance with GACAR

Riyadh Air maintains compliance with all requirements outlined in GACA Civil Aviation Regulations Part 109 (GACAR Part 109) - Transport of Dangerous Goods. Key regulations include:

1. This whole document is built in accordance with GACAR §109 Subpart G.
2. GACAR §109 Subpart B – Packaging and Shipping by Air is addressed in Chapter 2.
3. GACAR §109 Subpart D – Operator's Responsibilities is addressed in Chapter 3 & Chapter 4.
4. GACAR §109 Subpart E – Provision of Information is covered in Chapter 4.& Chapter6.
5. GACAR §109 Subpart E – Dangerous Goods Training is addressed in Chapter 8.

1.8 THE SHIPPER'S RESPONSIBILITIES

Riyadh Air is responsible for verifying that shippers adhere to all relevant regulations concerning the correct classification, packaging, marking, labeling, and documentation, as well as the certification of hazardous materials, as stipulated in GACAR Part 109 Subpart B.

Key shipper responsibilities as per GACAR §109.21 include:

1. Properly classifying dangerous goods and verifying prohibitions.
2. Selecting appropriate packaging that meets Packing Instructions.
3. Ensuring proper package condition and securing interior contents.
4. Marking and labelling each package correctly.
5. Generating accurate dangerous goods transport documents.
6. Signing the declaration stating compliance with regulations.
7. Providing necessary authorizations and approvals with the shipment, and
8. Retaining documents for minimum required timeframes.

1.9 TRAINING OF DANGEROUS GOODS TRANSPORT

In alignment with GACAR Part 109 Subpart F, Riyadh Air will establish, maintain, and verify dangerous goods training programs for all relevant personnel involved in the transport of hazardous materials via air.

Initial and recurrent training will be provided based on each person's responsibilities. Training records will be retained as per GACAR §109.125.

For a detailed description of DGR training activities refer to Chapter 8.

1.10 DANGEROUS GOODS EXCEPTIONS

The regulations contained in these instructions do not apply to dangerous goods carried on board Riyadh Air aircraft when:

1. Used to provide medical aid to a patient during flight, provided:
    a. Gas cylinders are specifically manufactured for containing and transporting that gas.
    b. Equipment with wet cell batteries is kept secured upright to prevent spillage.
2. Used to provide veterinary aid or a humane killer for an animal.
3. For dropping in connection with agricultural, horticultural, forestry or pollution control activities.
    a. To provide aid in connection with search and rescue operations.
    b. Vehicles transported on aircraft designed for vehicle ferry operations, provided.
    c. Authorizations have been granted by relevant authorities.
    d. Vehicles are secured upright.
    e. Fuel tanks prevent spillage during loading, unloading and transit.

Adequate ventilation rates are maintain DA Exceptions must be stowed and secured for takeoff and landing and when deemed necessary by the pilot-in-command. Trained personnel must control exceptions while in use.

2 CLASSIFICATION AND PACKAGING OF DANGEROUS GOODS

GACAR § 109 Appendix B

ICAO Doc 9284 – Part 2

2.1 CLASSIFICATION OF DANGEROUS GOODS

Dangerous goods are classified into nine hazard classes and assigned to three packing groups according to degree of danger. Classes relate to hazard type and, packing groups relate to hazard severity within a single class.

Wastes must be transported based on hazard class criteria. Wastes covered by the Basel Convention may be classified as Class 9.

Many Class 1-9 substances are environmentally hazardous without additional labeling.

Classification is made by the appropriate authority or shipper if authorized.

Hazard Classes

1. Class 1 – Explosives
2. Class 2 – Gases
3. Class 3 - Flammable Liquids
4. Class 4 - Flammable Solids, Self-Reactive Substances, Substances Emitting Flammable Gases in Contact with Water
5. Class 5 - Oxidizers and Organic Peroxides
6. Class 6 - Toxic and Infectious Substances
7. Class 7 - Radioactive Material
8. Class 8 – Corrosives
9. Class 9 - Miscellaneous Dangerous Goods

Packing Groups

1. Packing Group I - High Danger
2. Packing Group II - Medium Danger
3. Packing Group III - Low Danger

Criteria for packing groups are provided in Sections 3.3. Dangerous goods must meet performance levels as per their relevant packing group unless excepted.

Articles are not assigned packing groups. Any packaging performance requirements are specified in packing instructions.

2.1.1 Shipper's Responsibility

GACAR § 109.21

ICAO Doc 9284 – Part 5

The shipper's responsibilities include:

1. Identification of all dangerous goods in a consignment.
2. Classification of each item into a Hazard Class and Division.
3. Assignment of a packing group if relevant.

2.1.2 Class 1—Explosives

ICAO Doc 9284 – Part 2 Chapter 1

IATA DGR Section 3.1

Definition:

1. Explosive substances except those too dangerous for transport or where the hazard is appropriate to another class.
2. Explosive articles, except those containing only a small quantity of explosive substances such that accidental ignition or initiation does not cause external projection, fire, smoke, heat, or noise.
3. Articles and substances manufactured with the intent of producing a practical explosive or pyrotechnic effect.

IATA classifies Class 1 DGR into six Hazard Divisions:

1. **Division 1.1** - Mass explosion hazard.
2. **Division 1.2** - Projection hazard without mass explosion.
3. **Division 1.3** - Fire/minor blast/projection hazard, no mass explosion.
4. **Division 1.4** - Minimal hazard with ignition.
5. **Division 1.5** - Very insensitive explosives with mass explosion hazard.
6. **Division 1.6** - Extremely insensitive articles with no mass explosion.

2.1.3 Class 2—Gases

ICAO Doc 9284 – Part 2 – Chapter 2

IATA DGR – Section 3.2

Gases are substances which at 50°C have a vapor pressure greater than 300 kPa or are completely gaseous at 20°C and standard pressure of 101.3 kPa. Transport conditions are:

1. **Compressed gas** - Entire gaseous state at -50°C.
2. **Liquefied gas** - Partially liquid above -50°C (high/low pressure types).
3. **Refrigerated liquefied gas** - Made partially liquid by low temperature.
4. **Dissolved gas** - Dissolved in liquid solvent.
5. **Adsorbed gas** - Adsorbed on porous material.

Class 2 includes compressed gases, liquefied gases, refrigerated gases, dissolved gases, gas mixtures, and articles charged with gas.

Gases are divided into three Divisions:

1. **Division 2.1** - Flammable gases.
2. **Division 2.2** - Non-flammable, non-toxic gases.
3. **Division 2.3** - Toxic gases.

Division is based on primary hazard. Aerosols and cartridges meeting flammability criteria are Division 2.1.

1. Mixtures are classified based on flammability, toxicity, and oxidizing ability.
2. Division 2.3 takes precedence over 2.1 and 2.2. Division 2.1 takes precedence over 2.2.
3. Aerosols are classified based on contents. Division 2.1 if >85% flammable components. Division 2.2 if ≤1% flammable. Otherwise they are classified based on flammability tests.
4. Division 2.3 gases cannot be used as propellant. Toxic/corrosive contents may require subsidiary hazard.
5. Chemically unstable gases are forbidden unless stabilized to prevent dangerous reactions.

2.1.4 Class 3—Flammable Liquids

ICAO Doc 9284 – Part 2 – Chapter 3

IATA DGR – Section 3.3

Class 3 includes:

1. Flammable liquids with flash point ≤60°C (closed cup) or ≤65.6°C (open cup).
2. Liquid desensitized explosives.

Liquids with flash point >35°C may be exempt if they do not sustain combustion as per combustibility tests.

Liquids offered for transport at temperatures ≥ flash point are considered flammable liquids.

Based on flash point and initial boiling point:

1. Packing Group I: Flash point ≤35°C.
2. Packing Group II: Flash point <23°C, initial boiling point >35°C.
3. Packing Group III: Flash point ≥23°C but ≤60°C.

Viscous flammable liquids meeting viscosity and flash point criteria may be Packing Group III.

Elevated temperature flammable liquids are normally forbidden except Packing Group III.

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

ICAO Doc 9284 – Part 2 – Chapter 4

IATA DGR – Section 3.4

1. **Division 4.1** - Flammable Solids:
    a. Readily combustible solids, self-reactive substances, solid desensitized explosives, and polymerizing substances.
    b. Readily combustible solids are powders, granules, pastes that can be easily ignited and flames spread rapidly.
    c. Assigned to:
        i. Packing Group II if burning time <45 sec, flame passes wetted zone, and.
        ii. Packing Group III if burning time <45 sec, wetted zone stops flame for ≥4 min.
    d. Metal powders in:
        i. Packing Group II if reaction spreads in ≤5 min, and
        ii. Packing Group III if >5 min but ≤10 min.

2. **Division 4.2** - Substances Liable to Spontaneous Combustion:
    a. Includes pyrophoric and self-heating substances. Ignite on contact with air.
    b. Pyrophoric ignite within 5 minutes. Assigned to Packing Group I.
    c. Self-heating substances ignite based on sample cube test results.
        i. Packing Group II if positive at 25mm,and
        ii. Packing Group III if positive at 100mm but negative at 25mm.
3. **Division 4.3** - Substances Emitting Flammable Gases in Contact with Water:
    a. Substances that emit flammable gases when in contact with water. Assigned to packing group based on reaction rate:
        i. Packing Group I: vigorous reaction, tendency for spontaneous ignition.
        ii. Packing Group II: maximum rate ≥20 L/kg per hour, and
        iii. Packing Group III: maximum rate >1 L/kg per hour.

2.1.6 Class 5—Oxidizing Substances and Organic Peroxides

ICAO Doc 9284 – Part 2 – Chapter 5

IATA DGR – Section 3.5

1. Division 5.1 - Oxidizing Substances

a. Substances that yield oxygen causing or contributing to combustion of other materials.

b. Solids classified based on comparison to standard potassium bromate/cellulose mixtures in burning tests. These are assigned to packing group based on mean burning time or burning rate.

c. Liquids classified based on pressure rise time in closed cell test with cellulose. Assigned packing group based on comparison to standard nitric acid/cellulose mixtures.

2. Division 5.2 - Organic Peroxides

a. Contain the bivalent -O-O- structure and are thermally unstable. Classified into 7 types based on degree of danger.

b. Listed organic peroxides are assigned to generic entries UN 3103 to UN 3120 specifying type, physical state, and temperature control needs.

c. New peroxides are classified based on tests. Mixtures classified based on most dangerous component.

d. Desensitized by dilution with compatible organic/inorganic solids and liquids.

e. Certain types require temperature control based on self-accelerating decomposition temperature (SADT) and effects when heated under confinement.

2.1.7 Class 6—Toxic and Infectious Substances

ICAO Doc 9284 – Part 2 – Chapter 6

IATA DGR – Section 3.6

Division 6.1 - Toxic Substances

These are assigned to packing groups based on LD50 and LC50 toxicity data collecting from animal testing by oral, dermal, and inhalation routes.

1. Packing Group I - Very severe toxicity.
2. Packing Group II - Serious toxicity.
3. Packing Group III - Relatively low toxicity.

Liquids in Packing Group I by vapor inhalation are forbidden on passenger and cargo aircraft.

Division 6.2 - Infectious Substances

1. Category A: Capable of causing permanent disability or life-threatening/fatal disease. These are assigned to UN 2814 or UN 2900.
2. Category B: Does not meet Category A criteria. These are assigned to UN 3373.

Exceptions include non-pathogenic microorganisms, neutralized substances, and environmental samples. Biological products are either licensed for transport or assigned UN 2814, UN 2900, or UN 3373 if infectious. Medical/clinical waste with infectious substances are assigned UN 2814, UN 2900, UN 3291, and UN 3549. Infected live animals are generally not permitted unless there is no other option.

Patient specimens are assigned UN 2814, UN 2900 or UN 3373 unless exempted.

2.1.8 Class 7—Radioactive Material

ICAO Doc 9284 – Part 2 – Chapter 7

IATA DGR – Section 3.7

Material containing radionuclides where the activity concentration and total activity exceed specified values.

This class does not apply to:

1. Radioactive material implanted/incorporated in person or animal for diagnosis/treatment
2. Person contaminated with radioactive material and transported for treatment
3. Radioactive consumer products approved for end users
4. Natural material/ores containing naturally occurring radionuclides below specified activity concentration limits

5. Non-radioactive solid objects with permitted levels of radioactive substance surface contamination

In summary, Class 7 applies to radioactive material transported as cargo that exceeds defined thresholds of radioactivity, with exceptions for implanted/incorporated material, contaminated humans, approved consumer goods, and natural materials below concentration limits.

2.1.9 Class 8—Corrosives

ICAO Doc 9284 – Part 2 – Chapter 8

IATA DGR – Section 3.8

Substances that cause irreversible damage to skin or corrode other materials if leaked.

This class is assigned to packing groups based on exposure time to cause irreversible skin damage or corrosion rate on steel/aluminum.

1. Packing Group I: ≤3 min exposure time.
2. Packing Group II: >3 min, ≤1 hour exposure time.
3. Packing Group III: >1 hour, ≤4 hours exposure time.

For mixtures: They are classified based on testing data, bridging principles, or calculation method considering all corrosive ingredients ≥1%.

Substances are forbidden if chemically unstable and may dangerously decompose or polymerize unless stabilized.

In summary, Class 8 corrosives are assigned to packing groups based on skin corrosion data from testing or bridging principles. Calculation methods can be used for mixtures to determine packing group. Chemically unstable corrosives require stabilization.

2.1.10 Class 9—Miscellaneous Dangerous Goods

ICAO Doc 9284 – Part 2 – Chapter 9

IATA DGR – Section 3.9

This covers dangers not included in other classes.:

1. Aviation regulated solids/liquids that could impair crew duties if spilled.
2. Magnetized materials that can deflect a compass.
3. Elevated temperature substances transported at ≥100°C (liquid) or ≥240°C (solid).
4. Environmentally hazardous substances meeting aquatic toxicity criteria.
5. Genetically modified microorganisms and organisms.
6. Lithium batteries meeting testing and quality requirements.

7. Asbestos materials.
8. Capacitors.
9. Substances evolving flammable vapor.
10. Life-saving appliances.
11. Substances that may form dioxins in a fire.
12. Other specifically listed dangerous goods.

Substances are forbidden if chemically unstable and may dangerously decompose or polymerize unless stabilized.

In summary, Class 9 covers a wide variety of miscellaneous dangerous goods not meeting classifications in other hazard classes.

2.1.11 Classification of Articles/Substances with Multiple Hazards

IATA DGR – Section 3.10

1. For hazards in Classes 3, 4, 8, Divisions 5.1, 6.1, Table 3.10.A determines primary and subsidiary hazards.
2. Primary hazard is the class/division at the intersection of the relevant row and column.
3. Packing group is the most stringent based on the hazards.

Class or Division	Packaging Group	4.2	4.2	4.3	4.3	4.3	5.1	5.1	5.1	6.1 (d)	6.1 (o)	6.1	6.1	8	8	8	8	8	8
		II	III	I	II	III	I	II	III	I	I	II	III	I	I	II	II	III	III
3	I(*)			4.3, I	4.3, I	4.3, I	(_)	(_)	(_)	3, I	3, I	3, I	3, I	3, I	(_)	3, I	(_)	3, I	(_)
3	II(*)			4.3, I	4.3, II	4.3, II	(_)	(_)	(_)	3, I	3, I	3, II	3, II	8, I	(_)	3, II	(_)	3, II	(_)
3	III(*)			4.3, I	4.3, II	4.3, III	(_)	(_)	(_)	6.1, I	6.1, I	6.1, II	3, III(**)	8, I	(_)	8, II	(_)	3, III	(_)
4.1	II(*)	4.2, II	4.2, II	4.3, I	4.3, II	4.3, II	5.1, I	4.1, II	4.1, II	6.1, I	6.1, I	4.1, II	4.1, II	(_)	8, I	(_)	4.1, II	(_)	4.1, II
4.1	III(*)	4.2, II	4.2, III	4.3, I	4.3, II	4.3, III	5.1, I	4.1, II	4.1, III	6.1, I	6.1, I	6.1, II	4.1, III	(_)	8, I	(_)	8, II	(_)	4.1, III
4.2	II			4.3, I	4.3, II	4.3, II	5.1, I	4.2, II	4.2, II	6.1, I	6.1, I	4.2, II	4.2, II	8, I	8, I	4.2, II	4.2, II	4.2, II	4.2, II
4.2	III			4.3, I	4.3, II	4.3, III	5.1, I	5.1, II	4.2, III	6.1, I	6.1, I	6.1, II	4.2, III	8, I	8, I	8, II	8, II	4.2, III	4.2, III
4.3	I						5.1, I	4.3, I	4.3, I	6.1, I	4.3, I	4.3, I	4.3, I	4.3, I	4.3, I	4.3, I	4.3, I	4.3, I	4.3, I
4.3	II						5.1, I	4.3, II	4.3, II	6.1, I	4.3, I	4.3, II	4.3, II	8, I	8, I	4.3, II	4.3, II	4.3, II	4.3, II
4.3	III						5.1, I	5.1, II	4.3, III	6.1, I	6.1, I	6.1, II	4.3, III	8, I	8, I	8, II	8, II	4.3, III	4.3, III
5.1	I									5.1, I	5.1, I	5.1, I	5.1, I	5.1, I	5.1, I	5.1, I	5.1, I	5.1, I	5.1, I
5.1	II									6.1, I	5.1, I	5.1, II	5.1, II	8, I	8, I	5.1, II	5.1, II	5.1, II	5.1, II
5.1	III									6.1, I	6.1, I	6.1, II	5.1, III	8, I	8, I	8, II	8, II	5.1, III	5.1, III
6.1 (d)	I													8, I	6.1, I	6.1, I	6.1, I	6.1, I	6.1, I
6.1 (o)	I													8, I	6.1, I	6.1, I	6.1, I	6.1, I	6.1, I

6.1 (i)	II													8, I	6.1, I	6.1, II	6.1, II	6.1, II	6.1, II
6.1 (d)	II													8, I	6.1, I	8, II	6.1, II	6.1, II	6.1, II
6.1 (o)	II													8, I	8, I	8, II	6.1, II	6.1, II	6.1, II
6.1	III													8, I	8, I	8, II	8, II	8, III	8, III

Table 1 IATA Table 3.10A Precedence of Hazards and Packaging Groups for classes 3,4,8 and Divisions 5.1 and 6.1

(l): = liquid

(s): = solid

(i): = inhalation

(d): = dermal

(o): = oral

(—): = an impossible combination.

(*): Substances of Division 4.1 other than self-reactive substances and solid desensitized explosives and substances of Class 3 other than liquid desensitized explosives.

(**): For pesticides only, the primary hazard must be Division 6.1.

Note: *This table is based on the UN Precedence of Hazards Table.*

Using Table 3.10.A Precedence of Hazards:

1. Locate the relevant row for the first hazard class/division and column for the second hazard class/division.
2. The class/division at the intersection is the primary hazard.
3. The other class/division is the subsidiary hazard.
4. If there are more than two hazards, compare the primary hazard to the next hazard using the table.
5. Continue until all hazards are assigned as primary or subsidiary.
6. The most stringent packing group applicable to the hazards is assigned.
7. The proper shipping name will be the n.o.s. entry for the primary hazard class/division.

Examples:

1. A substance in Class 3 Packing Group I and Division 6.1 Packing Group I - The table shows Class 3 as primary and Division 6.1 as subsidiary. Packing Group I applies in this case. Proper shipping name would be the n.o.s. entry for Class 3 Packing Group I.
2. A substance in Division 5.1 Packing Group II and Division 6.1 Packing Group III - The table shows Division 5.1 as primary and Division 6.1 as subsidiary. Packing Group II applies in this case. Proper shipping name would be the n.o.s. entry for Division 5.1 Packing Group II.
3. A substance in Division 4.1 Packing Group III, Class 8 Packing Group II, and Division 6.1 Packing Group III - Division 4.1 takes precedence over the other two hazards. Class 8 vs Division 6.1 shows Class 8 as primary as per table. So the final classification is Division 4.1 primary, Class 8 subsidiary, Division 6.1 subsidiary. Packing Group II applies. Proper shipping name would be the n.o.s. entry for Division 4.1 Packing Group II.

Exceptions:

1. Classes 1, 2, 7 take precedence.
2. Divisions 5.2, 6.2 take precedence.
3. Certain Division 4.1, 4.2 hazards take precedence
4. Certain toxic gases take precedence.
5. Liquid desensitized explosives take precedence.
6. Class 7 radioactive materials require subsidiary hazard identification.
7. Magnetized materials require additional identification.
8. Infectious substances in Division 6.2 require identification of greatest other hazard.

2.1.12 Transport of Samples for Further Testing

IATA DGR – Section 3.11

1. If hazard class is unknown, assign tentative class, packing group, and UN number based on available information and precedence of hazards.
2. Proper shipping name must include the word "sample" (e.g. Flammable liquid, n.o.s., sample).
3. Limitations:
    a. Not forbidden or restricted per regulations (e.g. Class 1, infectious).
    b. Complies with self-reactive substance/organic peroxide requirements.
    c. Net quantity per package ≤2.5 kg.
    d. Not packed with other goods.

4. Samples of energetic materials may be transported under certain Division 4.1 entries if criteria met, including:
    a. No explosives/pyrotechnic components.
    b. Oxidizer concentration limits if applicable.
    c. Data does not allow more precise classification.
    d. Shipped under applicable packing instruction.

In summary, tentative classification is assigned when hazards are unknown, with restrictions on quantity and other packed goods.

2.2 IDENTIFICATION OF DANGEROUS GOODS

GACAR § 109.113

1. Dangerous goods are assigned a proper shipping name, UN number, and other markings based on hazard classification and composition.
2. The List of Dangerous Goods contains entries for articles/substances commonly shipped by air.
3. For items not specifically listed, the shipper must determine the classification based the most appropriate shipping name.
4. Proper shipping names are selected in this preferred order:
5. Single entry for a well-defined substance
    a. Generic entry for a group of substances.
    b. Specific n.o.s. entry.
    c. General n.o.s. entry.
6. For generic or n.o.s. entries marked with ★, the proper shipping name must be supplemented with technical or chemical group names.
7. The Numerical Cross-Reference Index links UN numbers to proper shipping names.
8. The shipper must consult the appropriate authority if there is doubt whether an unlisted article/substance can be transported by air.

2.3 SEGREGATION OF INCOMPATIBLE GOODS

GACAR § 109.113

Packages with incompatible hazards must be segregated by the minimum distances during loading as per the DGR segregation table.

Hazard Label	1 excl. 1.4S	2.1	2.2, 2.3	3	4.1	4.2	4.3	5.1	5.2	8	9
1 excluding 1.4S	See note 1	x	x	x	x	x	x	x	x	x	x
2.1	x	—	—	—	—	—	—	—	—	—	x
2.2 2.3	x	—	—	—	—	—	—	—	—	—	—
3	x	—	—	—	—	—	—	x	—	—	x
4.1	x	—	—	—	—	—	—	—	—	—	x
4.2	x	—	—	—	—	—	—	x	—	—	—
4.3	x	—	—	—	—	—	—	—	—	x	—
5.1	x	—	—	x	—	x	—	—	—	—	x
5.2	x	—	—	—	—	—	—	—	—	—	—
8	x	—	—	—	—	—	x	—	—	—	—
9	x	x	—	x	x	—	—	x	—	—	—

Table 2 DGR Segregation Table

Segregation must be maintained based on all primary and subsidiary hazards, except for certain specified exceptions. Incompatible goods must also remain segregated during storage, handling, and acceptance.

Note:

1- Explosives of Division 1.4B must not be loaded with other explosives except for Division 1.4S. When loaded on the same aircraft with explosives other than Division 1.4S, Division 1.4B explosives must be loaded into separate unit load devices and when stowed aboard the aircraft, the unit load devices must be separated by other cargo with a minimum separation distance of 2 m. When not loaded in a unit load device Division 1.4B and other explosives must be loaded into different, non-adjacent loading positions and separated by other cargo with a minimum separation distance of 2 m.

2- Packages and overpacks containing UN 3480 - lithium ion batteries prepared in accordance with Section IA or Section IB of PI 965 and packages and overpacks containing UN 3090 - lithium metal batteries prepared in accordance with Section IA or Section IB of PI 968 must not be stowed on an aircraft

next to, or in a position that would allow interaction in the event of damage/fire with packages or overpacks containing dangerous goods which bear a Class 1, other than Division 1.4S, Division 2.1, Class 3, Division 4.1 or Division 5.1 hazard label. To maintain acceptable segregation between packages and overpacks, the segregation requirements shown in Table 9.3.A must be observed. The segregation requirements apply based on all hazard labels applied on the package or overpack, irrespective of whether the hazard is the primary or subsidiary hazard.

2.4 GENERAL REQUIREMENT OF PACKAGING

GACAR § 109.113

IATA DGR – Section 6

For packing purposes, dangerous goods of all classes, other than Classes 1, 2 and 7 and Divisions 5.2 and 6.2, have been divided among three packing groups according to the degree of danger they present. The packing groups have the following meanings:

1. Packing Group I — Substances presenting high danger.
2. Packing Group II — Substances presenting medium danger.
3. Packing Group III — Substances presenting low danger.

Some substances in Class 9 and liquids in Division 5.1 have been assigned to packing groups by experience rather than through application of technical criteria.

The shipper is responsible for ensuring dangerous goods are packed in compliance with regulations. This includes:

1. Using only authorized packaging:
    a. Restricting quantities per package limits.
    b. Properly assembling packaging.
    c. Ensuring no external contamination, and
    d. Meeting all packing responsibilities before handoff to operator
2. Dangerous goods that generally may not be packed in freight containers or unit load devices, with some exceptions.
3. Packages that must be marked to remove previous hazard markings when reused.
4. Overpacks that must contain compatible packages that are properly prepared.
5. Salvage packaging that can only contain one damaged/leaking package with absorbent material. Restrictions apply for certain hazard classes.
6. Some dangerous goods that may be transported in portable tanks with approval.
7. Additional air transport requirements that exist beyond other modes in areas like quantity limits, absorbent material, pressure differential.
8. Packages that are assigned Packing Groups I, II or III indicating danger level. Exceptions for certain Class 9 and Division 5.1 substances.
9. Packaging that must meet performance requirements for the assigned Packing Group.
10. Packages that must be of good quality and closed to prevent leakage and withstand transport conditions.

11. Packaging materials that must be compatible with contents and meet temperature/vibration resistance requirements.
12. Liquids that require sufficient ullage space for expansion.
13. Packages that must withstand minimum internal pressure based on contents.

Note: Packaging is the responsibility of the shipper.

2.5 MARKINGS AND LABELS

IATA DGR Section 7

2.5.1 General

1. The shipper is responsible for ensuring all necessary markings and labels are applied to dangerous goods packages and overpacks according to regulations.
2. There must be sufficient space on the package to properly affix all required marks and labels.

Key marking requirements:

1. The proper shipping name, UN number, and other required information must be marked on packages.
2. Markings must be durable, visible, and able to withstand exposure without reducing legibility.
3. Minimum size requirements apply based on package dimensions.
4. Markings must appear on a background of contrasting color.

Key labeling requirements:

1. Hazard labels must be applied corresponding to the hazard class/division of the goods.
2. Labels must be placed adjacent to markings and comply with size, color, and design requirements.
3. Packages with multiple hazards require subsidiary risk labels.
4. Labels must remain intact under exposure conditions.
5. Arrangement of labels must consider proximity to other hazard labels.

2.5.2 Marking

All marks must be so placed on the packages or overpacks in such a manner that they are not covered or obscured by any part of or attachment to the packaging or any other label or mark. Where marks are applied by means of a label, the label must not be folded or affixed so that parts of the same mark appear on different faces of the package. The required marks must not be located with other package marks that could substantially reduce their effectiveness.

1. All marks must be:
    a. Durable and printed or otherwise marked on, or affixed to, the external surface of the package or overpack.
    b. Readily visible and legible;

c. Able to withstand open weather exposure without a substantial reduction in effectiveness; and

d. Displayed on a background of contrasting color.

e. English must be used in addition to the language, which that may be required by the State of origin.

2. Each package must be marked with:

a. The proper shipping name and UN/ID number as listed in Riyadh Air's regulations.

b. The full name and address of the shipper and consignee.

c. The net or gross weight as applicable, except for single packages, identical multiple package shipments, ID8000, and Class 7.

d. The net weight of dry ice for UN1845.

e. The name and phone of responsible person for Division 6.2 infectious substances.

f. Orientation arrows and handling marks for refrigerated liquefied gases.

g. "Biological Substance Category B" mark for UN3373.

h. Statement for chemical oxygen generators in PBEs per Special Provision A144.

i. Environmentally hazardous substance mark if applicable.

2.5.2.1 Limited Quantities

Packages of dangerous goods shipped under the Limited Quantity provisions must be marked with the Limited Quantities mark.

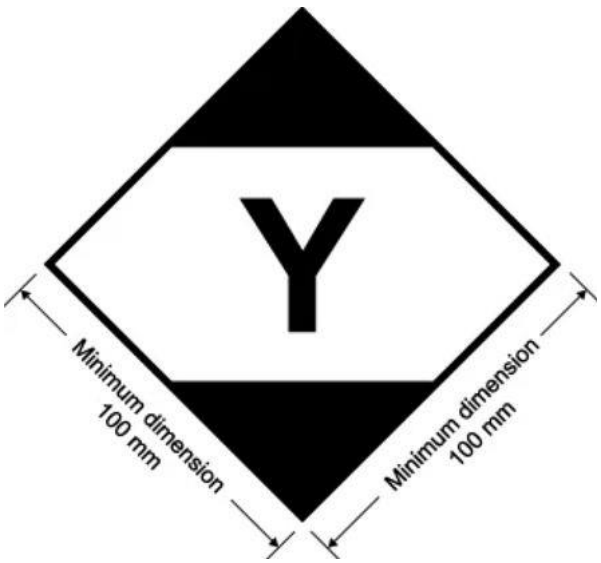


Figure 2 : Limited Quantities Mark

2.5.2.2 Environmentally Hazardous Substances

Packages containing environmentally hazardous substances or mixtures (UN 3077 and UN 3082), must be durably marked with the environmentally hazardous substance mark as shown

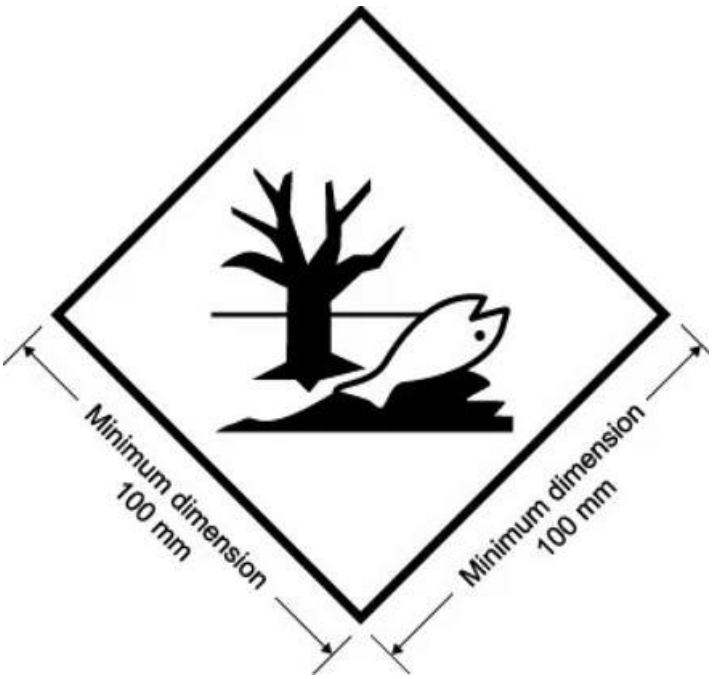


Figure 3 : Environmentally Hazardous Mark

The environmentally hazardous substance mark may also appear on packages containing substances other than UN 3077 and UN 3082 when required by other international or national transport regulations.

2.5.2.3 Lithium Batteries

The mark must indicate:

1. The appropriate UN number preceded by the letters "UN" as follows:
    a. "UN 3090" for lithium metal cells or batteries;
    b. "UN 3480" for lithium ion cells or batteries;
    c. "UN 3091" for lithium metal cells or batteries contained in, or packed with, equipment; or
    d. "UN 3481" for lithium ion cells or batteries contained in, or packed with, equipment.

Where a package contains lithium cells or batteries assigned to different UN numbers, all applicable UN numbers must be indicated on one or more marks.

The UN number(s) indicated on the mark should be at least 12 mm high.

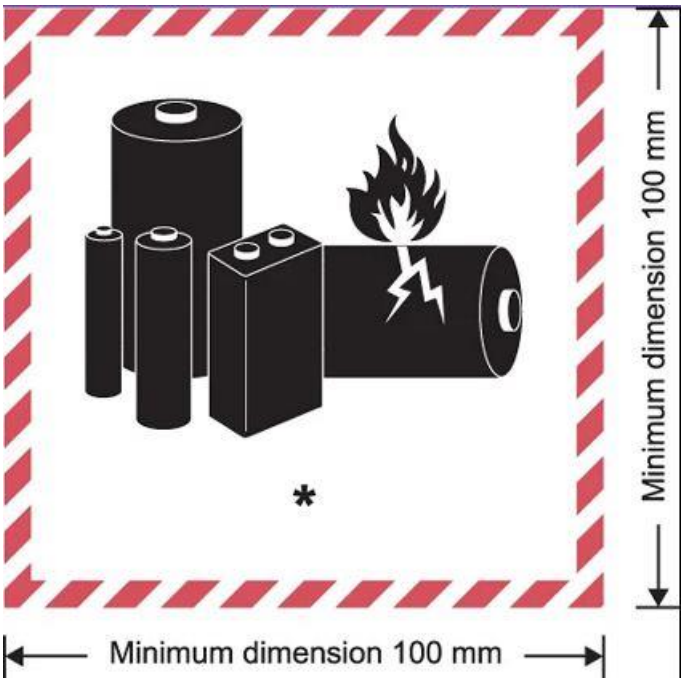


Figure 4: Lithium Batteries Mark

2.5.3 Labelling

1. Riyadh Air must remove/obliterate any irrelevant labels on packages.
2. Only labels meeting RIYADH AIR 's specifications for durability and design can be used.
3. Primary and subsidiary hazard labels must be applied corresponding to the hazard class/division.
4. Labels must have the hazard class or division number displayed.
5. Specific label color and design requirements apply based on hazard class.
6. Hazard text with UN number, hazard description, etc. is permitted if it does not obscure required elements.
7. Labels must meet size, color, and placement specifications.
8. "Cargo Aircraft Only" and other handling labels must be used when required. This is not applicable for Riyadh Air DGR Cargo.
9. Overpacks must have all labels representative of contents visible.
10. Labels must remain affixed and intact during air transport conditions.
11. Packages must have adequate space for all required hazard and handling labels.

Refer to 3.6.1 Hazard Labels for labels.

2.5.4 Hazard Label Specifications

Class	Division(s)	Label	Details
1	1.1 1.2 1.3		Name: **Explosive** Cargo IMP Code: REX, RCX, RGX, as applicable Minimum dimensions: 100 × 100 mm Symbol (exploding bomb): Black Background: Orange (Pantone Color No. 151U)
	1.4		Name: **Explosive** Cargo IMP Code: RXB, RXC, RXD, RXE, RXG, RXS, as applicable Minimum dimensions: 100 × 100 mm Figures: Black Background: Orange (Pantone Color No. 151U)
	1.5		Name: **Explosive** Cargo IMP Code: REX Minimum dimensions: 100 × 100 mm Figures: Black Background: Orange (Pantone Color No. 151U)
	1.6		Name: **Explosive** Cargo IMP Code: REX, RCX, RGX, as applicable Minimum dimensions: 100 × 100 mm Symbol (exploding bomb): Black Background: Orange (Pantone Color No. 151U)
2	2.1		Name: **Flammable Gas** Cargo IMP Code: RFG Minimum dimensions: 100 × 100 mm Symbol (flame): Black or White Background: Red (Pantone Color No. 186U)
	2.2		Name: **Non-flammable, non-toxic Gas** Cargo IMP Code: RNG or RCL for Cryogenic Minimum dimensions: 100 × 100 mm Symbol (gas cylinder): Black or White Background: Green (Pantone Color No. 335U)

	2.3		Name: **Toxic Gas** Cargo IMP Code: RPG Minimum dimensions: 100 × 100 mm Symbol (skull and crossbones): Black Background: White
3			Name: Flammable Liquids Cargo IMP Code: RFL Minimum dimensions: 100 × 100 mm Symbol (flame): Black or White Background: Red (Pantone Color No. 186U)
4	4.1		Name: **Flammable Solid** Cargo IMP Code: RFS Minimum dimensions: 100 × 100 mm Symbol (flame): Black Background: White with seven vertical red stripes (Pantone Color No. 186U)
	4.2		Name: **Spontaneously Combustible** Cargo IMP Code: RSC Minimum dimensions: 100 × 100 mm Symbol (flame): Black Background: Upper half White, lower half Red (Pantone Color No. 186U)
	4.3		Name: **Dangerous When Wet** Cargo IMP Code: RFW Minimum dimensions: 100 × 100 mm Symbol (flame): Black or White Background: Blue (Pantone Color No. 285U)
5	5.1		Name: **Oxidizer** Cargo IMP Code: ROX Minimum dimensions: 100 × 100 mm Symbol (flame over circle): Black Background: Yellow (Pantone Color No. 109U)

	5.2		Name: **Organic Peroxides** Cargo IMP Code: ROP Minimum dimensions: 100 × 100 mm Symbol (flame): Black or White Background: Upper half Red (Pantone Color No. 186U), lower half Yellow (Pantone Colour No. 109U)
6	6.1		Name: **Toxic** Cargo IMP Code: RPB Minimum dimensions: 100 × 100 mm Symbol (skull and crossbones): Black Background: White
	6.2		Name: **Infectious Substance** Cargo IMP Code: RIS Minimum dimensions: 100 × 100 mm For small packages the dimensions may be 50 × 50 mm Symbol (three crescents superimposed on a circle) and inscription: Black Background: White
7	Catergory I		Name: **Radioactive** Cargo Imp Code: RRW Minimum dimensions: 100 × 100 mm Symbol (trefoil): Black Background: White
	Category II		Name: **Radioactive** Cargo Imp Code: RRY Minimum dimensions: 100 × 100 mm Symbol (trefoil): Black Background: Top half Yellow (Pantone Color No. 109U) with White border, bottom half White

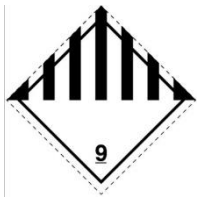
	Category III		Name: **Radioactive** Cargo Imp Code: RRY Minimum dimensions: 100 × 100 mm Symbol (trefoil): Black Background: Top half Yellow (Pantone Color No. 109U) with White border, bottom half White
			Placard for Class 7—Radioactive Materials
8			Name: **Corrosive** Cargo IMP Code: RCM Minimum dimensions: 100 × 100 mm Symbol (liquids spilling from two glass vessels and attacking a hand and a metal): Black Background: Upper half White, lower half Black with White border
9			Name: **Miscellaneous** Cargo IMP Code: RMD or ICE, RSB (polymeric beads and plastics moulding compound Minimum dimensions: 100 × 100 mm Symbol (seven vertical stripes in upper half): Black Background: White
			Name: **Lithium battery** Cargo IMP Code: RBI, RBM, RLI and RLM Minimum dimensions: 100 × 100 mm Symbol (seven vertical black stripes in upper half; battery group, one broken and emitting flame in lower half): black Background: White

Table 3 Hazard Label Specification

2.5.5 Handling Labels

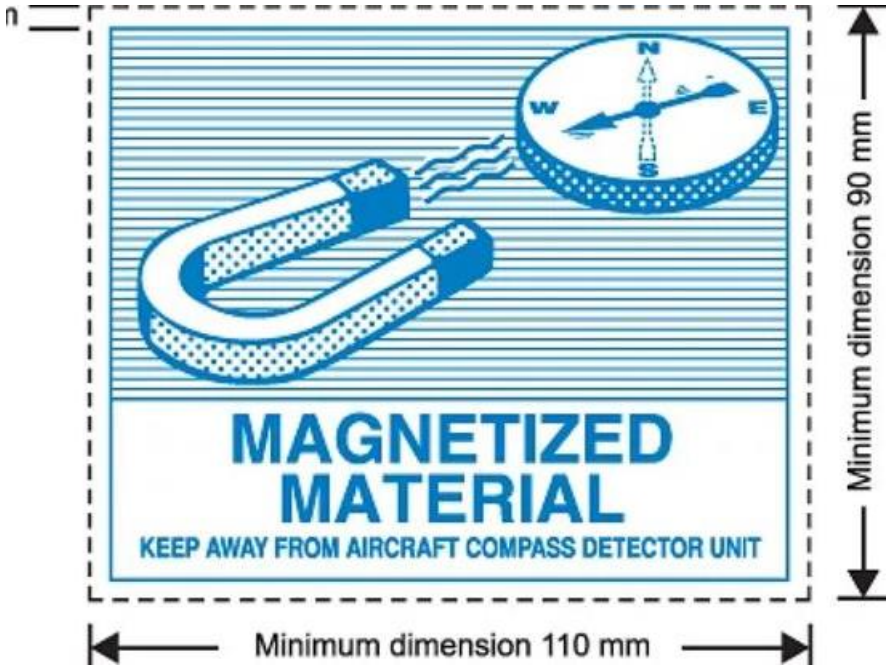


Figure 5 : Class 9—Magnetized Material

Figure 6 : Cargo Aircraft Only

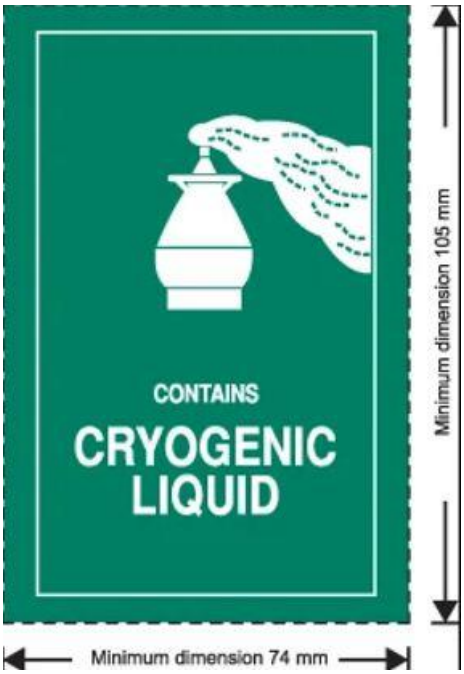


Figure 7 : Cryogenic Liquids

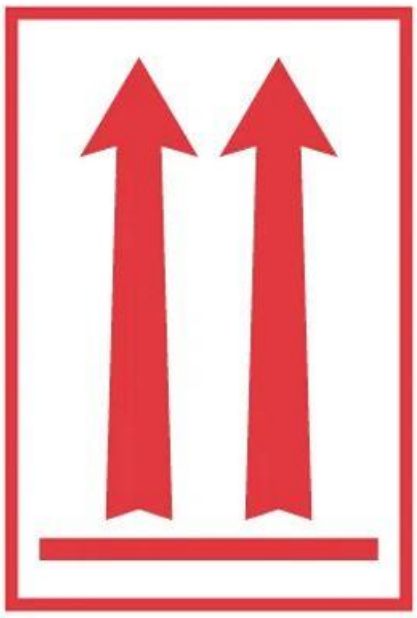


Figure 8 : Package Orientation

Figure 9 :Keep Away From Heat

Figure 10 : Radioactive Material—Excepted Package

3 CARRIAGE OF DANGEROUS GOODS

3.1 GENERAL PRINCIPLES

Dangerous goods can be transported safely via air transport provided certain principles are strictly followed. The Riyadh Air Dangerous Goods Regulations Manual aligns with the International Civil Aviation Organization (ICAO) Technical Instructions and General Authority of Civil Aviation Regulations (GACAR) Part 109 requirements.

This manual provides a detailed list of dangerous goods prohibited from air transport as well as goods that can be transported safely if requirements for classification, packaging, marking, labeling, documentation, storage, loading and pilot notification are met. Training for all personnel involved in handling dangerous goods is essential.

Packaging is a key component in safely transporting hazardous materials by air. The manual provides packing instructions for permitted dangerous goods with options for inner, outer and single packaging aligned with UN specifications. Limited quantities may be shipped using excepted packaging but with strict limitations to minimize risk.

Proper shipment documentation ensures all parties are aware of the dangerous goods contents, required handling, and emergency procedures. Pilots must be notified of dangerous goods onboard to respond effectively to in-flight emergencies. Information on goods forbidden in baggage also aids passenger compliance.

Reporting of any dangerous goods incidents or accidents enables full investigation and corrective actions to be taken, including revisions to regulations. Compliance with this manual will enable the safe air transport of hazardous materials.

Riyadh Air is a non-carry operator of DGR. Only Company Materials (COMAT) and DGR carried by passengers in the cabin as stated in Section 3.3.33.3.3 are allowed.

3.2 DANGEROUS GOODS PROHIBITED IN AIR TRANSPORT

IATA DGR – Section 2.1

3.2.1 Forbidden Dangerous Goods

IATA DGR -Section 2.1.1

Articles or substances that are liable to explode, dangerously react, emit toxic gases, or spontaneously combust when transported by air must not be carried under any circumstances per ICAO Doc 9284. This includes goods specifically forbidden on the Dangerous Goods List in Table 3-1 of the ICAO Technical Instructions.

Note: Riyadh Air retains the authority to decline the transport of any cargo classified as dangerous goods that surpass the scope of our handling capabilities. It is imperative to acknowledge that the list of Dangerous Goods Regulations (DGR) detailed in Table 3-1 of the ICAO Technical Instructions does not represent an all-encompassing directory of hazardous materials. Cargo personnel must exercise due diligence in identifying potential dangers beyond those explicitly outlined

3.2.2 Dangerous Goods Requiring Exemption

IATA DGR -Section 1.2.6

The following dangerous goods are prohibited on aircraft unless specifically exempted by the General Authority of Civil Aviation (GACA) under the provisions of GACAR §109.7:

1. Radioactive material that is:
    a. In vented type B(M) packages
    b. Requiring external cooling by an ancillary cooling system
    c. Subject to operational controls during transport
    d. Explosive
    e. A pyrophoric liquid
2. Articles and substances, including those not otherwise specified, that are identified in the List of Dangerous Goods as being forbidden, unless otherwise provided.
3. Infected live animals.
4. Liquids having a vapor inhalation toxicity requiring Packing Group I packaging.
5. Substances offered for transport in a liquid state at/above 100°C or solid state at/above 240°C.
6. Any other articles or substances specified by GACA as requiring exemption.

Dangerous goods meeting the above criteria may only be transported by air if GACA grants a specific written exemption approval after reviewing the proposed shipment details.

3.2.3 Approval of Exemptions

Exemption requests will be submitted to the (GACA) providing details on the shipment contents, reasons for air transport, and any special handling procedures proposed.

The final decision on whether to accept and transport a dangerous goods shipment under exemption rests solely with DG Manager based on our assessment of:

1. Aircraft capabilities and limitations
2. Ability to follow required handling procedures
3. Availability of qualified personnel
4. Adequate facilities, equipment, packaging
5. Overall risk to flight safety

Riyadh Air reserves the right to reject transport of dangerous goods approved for exemption by GACA if our safety assessment determines we lack the required capabilities, resources or procedures to manage the shipment properly.

Exempted dangerous goods will only be transported after receiving written GACA approval and subsequent Riyadh Air acceptance.

3.2.4 Restrictions on Specific Dangerous Goods

Certain descriptions of cargo may indicate the potential presence of dangerous goods requiring further verification. IATA DGR manual has shown the following commodities often contain undeclared hazardous materials:

1. **Aircraft on Ground (AOG) Spares** - May contain explosives, compressed gases, batteries, paints, flammable liquids, etc.
2. **Aircraft Parts/Equipment** - May contain pyrotechnics, oxygen generators, batteries, compressed gases, flammables, etc.
3. **Automobile Parts** - May contain batteries, compressed gases, flammable liquids, magnetic materials, etc.
4. **Camping Equipment** - May contain flammable gases, flammable liquids, flammable solids, etc.
5. **Chemicals** - May contain flammables, oxidizers, organic peroxides, corrosives, toxics, etc.
6. **Cylinders** - May indicate compressed or liquefied gases.
7. **Electrical Equipment** - May contain magnetized materials, mercury, lithium batteries, fuel cells, etc.
8. **Machinery Parts** - May contain flammables, compressed gases, corrosives, etc.

9. **Medical/Dental Equipment** - May contain infectious substances, radioactive materials, batteries, mercury, etc.
10. **Metal Construction Materials** - May contain magnetic material requiring special stowage.
11. **Pharmaceuticals** - May contain radioactive material, flammables, corrosives, etc.
12. **Photographic Equipment** - May contain batteries, flammables, corrosives, etc.
13. **Repair Kits** - May contain flammables, organic peroxides, etc.
14. **Sporting Goods** - May contain compressed gases, flammables, batteries, etc.

Shippers must verify such cargo against dangerous goods classifications. Additional cargo screening and passenger baggage inspection procedures will be utilized to detect undeclared dangerous goods. Refer to Section 9.4.

3.2.5 Dangerous Goods In The Mail

IATA DGR – Section 2.4

In accordance with Universal Postal Union (UPU) standards, dangerous goods as defined in these Regulations are prohibited from air mail, with the following exceptions permitted subject to approval from relevant authorities:

1. Patient specimens meeting Packing Instruction 650 requirements
2. Category B infectious substances (UN 3373) packed per Packing Instruction 650
3. Radioactive material not exceeding one-tenth of activity limits in Table 2-15 of ICAO Technical Instructions
4. Solid carbon dioxide (dry ice) when used as refrigerant for permitted dangerous goods

Riyadh Air mail facilities and personnel will be trained to identify and prevent restricted dangerous goods from entering air mail. Coordination with postal authorities will ensure dangerous goods mail complies with UPU Convention and ICAO Technical Instructions.

Riyadh Air will not accept Dangerous Goods in the mail.

3.3 DANGEROUS GOODS CARRIED BY PASSENGERS AND CREW

IATA DGR – Section 2.3

Dangerous goods including excepted radioactive material are prohibited in checked baggage, carry-on baggage, or on the person of passengers or crew members, except the ones approved for personal use.

3.3.1 Required Operator Approval

GACAR § 109.63

The following dangerous goods require specific operator approval as per table Table 4 : Provisions for Dangerous Goods Carried by Passengers or Crew:

1. Portable electronic devices containing lithium batteries exceeding 100Wh but not exceeding 160Wh.
2. Non-infectious specimens in flammable or corrosive preservatives.
3. Radioisotopic cardiac pacemakers or other devices implanted into a person.
4. Wheelchairs/mobility aids with lithium batteries.
5. Wheelchairs/mobility aids with spillable batteries.
6. Wheelchairs/mobility aids powered by lithium batteries exceeding 300Wh but not exceeding 600Wh.

The operator must have documented procedures for approval and notifying the pilot-in-command when these goods are carried.

3.3.2 Forbidden Goods

IATA DGR – Section 2.2

Dangerous goods completely prohibited from passenger and crew baggage include:

1. Explosives, fireworks, flares
2. Compressed gases, deeply refrigerated gases
3. Flammable liquids and solids
4. Oxidizers, organic peroxides
5. Toxic or infectious substances
6. Radioactive material
7. Corrosives
8. Goods that are forbidden in Table 4 : Provisions for Dangerous Goods Carried by Passengers or Crew.

3.3.3 Provisions for Carriage in the Cabin

IATA DGR Section 2.3

The Pilot-in-Command must be informed of the location				
Permitted in or as carry-on baggage				
Permitted in or as checked baggage				
The approval of the operator is required				
Alcoholic beverages, when in retail packaging, 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. **Note:** Alcoholic beverages containing 24% or less alcohol by volume are not subject to any restrictions. Applicable as per local regulations (Refer to 9.1).	NO	YES	YES	NO
Ammunition, securely packaged (in Div. 1.4S, UN 0012 or UN 0014 only), in quantities not exceeding 5 kg gross weight per person for that person's own use. Allowances for more than one person must not be combined into one or more packages.	YES	YES	NO	NO
Avalanche rescue backpack, one (1) per person, containing cartridges of compressed gas in Div. 2.2. May also be equipped with a pyrotechnic trigger mechanism containing no more than 200 mg net of Div. 1.4S. 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	YES	NO
Baggage with installed lithium batteries non-removable batteries exceeding–0.3 g lithium metal or 2.7 Wh.	FORBIDDEN			
Baggage with installed lithium batteries: 1. Non-removable batteries. Batteries must contain no more than 0.3 g lithium metal or for lithium ion must not exceed 2.7 Wh; 2. Removable batteries. Batteries must be removed if baggage is to be checked in. Removed batteries must be carried in the cabin.	NO	YES	YES	NO

The Pilot-in-Command must be informed of the location			
Permitted in or as carry-on baggage			
Permitted in or as checked baggage			
The approval of the operator is required			
Batteries, spare/loose, including lithium batteries, non-spillable batteries, nickel-metal hydride batteries and dry batteries (IATA DGR Manual section 2.3.5.8) for portable electronic devices must be carried in carry-on baggage only. Articles which have the primary purpose as a power source, e.g., power banks, are considered as spare batteries. These batteries must be individually protected to prevent short circuits. Lithium metal batteries: the lithium metal content must not exceed 2 g (IATA DGR Manual section 2.3.5.8.4). Lithium-ion batteries: the Watt-hour rating must not exceed 100 Wh (IATA DGR Manual section 2.3.5.8.4). Each person is limited to a maximum of 20 spare batteries. (*The operator may approve the carriage of more than 20 batteries.) Non-spillable batteries: must be 12 V or less and 100 Wh or less. Each person is limited to a maximum of 2 spare batteries (IATA DGR Manual section 2.3.5.8.5).	NO*	NO	YES	NO
Camping stoves and fuel containers that have contained a flammable liquid fuel, with empty fuel tank and/or fuel container (IATA DGR Manual section 2.3.2.5 for details).	YES	YES	NO	NO
Chemical Agent Monitoring Equipment, when carried by staff members of the Organization for the Prohibition of Chemical Weapons on official travel (IATA DGR Manual section 2.3.4.4).	YES	YES	YES	NO
Disabling devices such as mace, pepper spray, etc. containing an irritant or incapacitating substance are forbidden on the person, in checked and carry-on baggage.	FORBIDDEN			
Dry ice (carbon dioxide, solid), in quantities not exceeding 2.5 kg per person when used to pack perishables not subject to these Regulations in checked or carry-on baggage, provided the baggage (package) permits the release of carbon dioxide gas. Checked baggage must be marked “dry ice” or “carbon dioxide, solid” and with the net weight of dry ice, or an indication that there is 2.5 kg or less dry ice.	YES	YES	YES	NO

The Pilot-in-Command must be informed of the location				
Permitted in or as carry-on baggage				
Permitted in or as checked baggage				
The approval of the operator is required				
e-cigarettes (including e-cigars, e-pipes, other personal vaporizers) containing batteries must be individually protected to prevent accidental activation (IATA DGR Manual section 2.3.5.8.2).	NO	NO	YES	NO
Electroshock weapons (e.g., Tasers) containing dangerous goods such as explosives, compressed gases, lithium batteries, etc. are forbidden in carry-on baggage or checked baggage or on the person.	FORBIDDEN			
Fuel cells containing fuel, powering portable electronic devices (e.g., cameras, cellular phones, laptop computers and camcorders), IATA DGR Manual section 2.3.5.9 for details.	NO	NO	YES	NO
Fuel cell cartridges, spare for portable electronic devices, IATA DGR Manual section 2.3.5.9 for details.	NO	YES	YES	NO
Gas cartridges, small, non-flammable containing carbon dioxide or other suitable gas in Division 2.2. Up to two (2) small cartridges fitted into a self-inflating personal safety device, intended to be worn by a person, such as a life jacket or vest. Not more than two (2) devices per passenger and up to two (2) spare small cartridges per device, not more than four (4) cartridges up to 50 mL water capacity for other devices (IATA DGR Manual section 2.3.4.2).	YES	YES	YES	NO
Gas cylinders, non-flammable, non-toxic, 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.	NO	YES	YES	NO
Hair styling equipment containing a hydrocarbon gas cartridge, up to one (1) per passenger or crew member, provided that the safety cover is securely fitted over the heating element. This hair styling equipment must not be used on board the aircraft. Spare gas cartridges for such hair styling equipment are not permitted in checked or carry-on baggage.	NO	YES	YES	NO

The Pilot-in-Command must be informed of the location				
		Permitted in or as carry-on baggage		
		Permitted in or as checked baggage		
	The approval of the operator is required			
Insulated packaging's containing refrigerated liquid nitrogen (dry shipper), fully absorbed in a porous material containing only non-dangerous goods.	NO	YES	YES	NO
Internal combustion or fuel cell engines, must meet A70 (IATA DGR Manual section 2.3.5.12 for details).	NO	YES	NO	NO
Lithium Batteries: Portable electronic devices (PED) containing lithium metal or lithium-ion cells or batteries, including medical devices such as portable oxygen concentrators (POC) and consumer electronics such as cameras, mobile phones, laptops and tablets (IATA DGR Manual section 2.3.5.8). For lithium metal batteries the lithium metal content must not exceed 2 g and for lithium-ion batteries the Watt-hour rating must not exceed 100 Wh. Devices in checked baggage must be completely switched off and must be protected from damage. Each person is limited to a maximum of 15 PED.	NO*	YES	YES	NO
Lithium batteries, spare/loose, including power banks, see Batteries, spare/loose				
Lithium battery-powered electronic devices. Lithium-ion batteries for portable (including medical) electronic devices, a Wh rating exceeding 100 Wh but not exceeding 160 Wh. For portable medical electronic devices only, lithium metal batteries with a lithium metal content exceeding 2 g but not exceeding 8 g. Devices in checked baggage must be completely switched off and must be protected from damage.	YES	YES	YES	NO
Lithium batteries, spare/loose with a Watt-hour rating exceeding 100 Wh but not exceeding 160 Wh for consumer electronic devices and PMED, or with a lithium metal content exceeding 2 g but not exceeding 8 g for PMED only. Maximum of two spare batteries in carry-on baggage only. These batteries must be individually protected to prevent short circuits.	YES	NO	YES	NO

The Pilot-in-Command must be informed of the location			
Permitted in or as carry-on baggage			
Permitted in or as checked baggage			
The approval of the operator is required			
Matches, safety (one small packet) or a small cigarette lighter that does not contain unabsorbed liquid fuel, other than liquefied gas, intended for use by an individual when carried on the person. Lighter fuel and lighter refills are not permitted on one's person or in checked or carry-on baggage. ***Note:*** *"Strike anywhere" matches, "Blue flame" or "Cigar" lighters or lighters powered by a lithium battery without a safety cap or means of protection against unintentional activation are forbidden (see IATA DGR Manual section 2.3.5.8.4(e)).*	NO	ON ONE'S PERSON	NO
Mobility Aids: Battery-powered wheelchairs or other similar mobility devices with non-spillable wet batteries, nickel-metal hydride batteries or dry batteries, (IATA DGR Manual section 2.3.2.2).	YES	YES NO	YES
Mobility Aids: Battery-powered wheelchairs or other similar mobility devices with spillable batteries or with lithium-ion batteries (IATA DGR Manual section 2.3.2.3 and 2.3.2.4 for details).	YES	YES NO	YES
Mobility Aids: Battery-powered wheelchairs or other similar mobility devices with lithium-ion batteries where the design of the mobility aid does not provide adequate protection for the battery(ies) (IATA DGR Manual section 2.3.2.4.3 for details).	YES	NO YES	YES
Non-radioactive medicinal or toiletry articles (including aerosols) such as hairsprays, perfumes, colognes and medicines containing alcohol; and non-flammable, non-toxic (Division 2.2) aerosols, with no subsidiary hazard, for sporting or home use (IATA DGR Manual section 2.3.5.1). The total net quantity of non-radioactive medicinal or toiletry articles and non-flammable, non-toxic (Division 2.2) aerosols must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L. Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents.	NO	YES YES	NO

The Pilot-in-Command must be informed of the location			
Permitted in or as carry-on baggage			
Permitted in or as checked baggage			
The approval of the operator is required			
Matches, safety (one small packet) or a small cigarette lighter that does not contain unabsorbed liquid fuel, other than liquefied gas, intended for use by an individual when carried on the person. Lighter fuel and lighter refills are not permitted on one's person or in checked or carry-on baggage. ***Note**: "Strike anywhere" matches, "Blue flame" or "Cigar" lighters or lighters powered by a lithium battery without a safety cap or means of protection against unintentional activation are forbidden (*IATA DGR Manual section *2.3.5.8.4(e))*.	NO	ON ONE'S PERSON	NO
Mobility Aids: Battery-powered wheelchairs or other similar mobility devices with non-spillable wet batteries, nickel-metal hydride batteries or dry batteries, (IATA DGR Manual section 2.3.2.2).	YES	YES NO	YES
Mobility Aids: Battery-powered wheelchairs or other similar mobility devices with spillable batteries or with lithium-ion batteries (IATA DGR Manual section 2.3.2.3 and 2.3.2.4 for details).	YES	YES NO	YES
Mobility Aids: Battery-powered wheelchairs or other similar mobility devices with lithium-ion batteries where the design of the mobility aid does not provide adequate protection for the battery(ies) (IATA DGR Manual section 2.3.2.4.3 for details).	YES	NO YES	YES
Non-radioactive medicinal or toiletry articles (including aerosols) such as hairsprays, perfumes, colognes and medicines containing alcohol; and non-flammable, non-toxic (Division 2.2) aerosols, with no subsidiary hazard, for sporting or home use (IATA DGR Manual section 2.3.5.1). The total net quantity of non-radioactive medicinal or toiletry articles and non-flammable, non-toxic (Division 2.2) aerosols must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L. Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents.	NO	YES YES	NO

The Pilot-in-Command must be informed of the location				
Permitted in or as carry-on baggage				
Permitted in or as checked baggage				
The approval of the operator is required				
Oxygen or air, gaseous, cylinders required for medical use. The cylinder must not exceed 5 kg gross weight. Note: Liquid oxygen systems are forbidden for transport.	YES	YES	YES	YES
Permeation devices, must meet A41 (IATA DGR Manual section 2.3.5.13 for details).	NO	YES	NO	NO
Radio isotopic cardiac pacemakers or other devices, including those powered by lithium batteries, implanted into a person, or fitted externally.	NO	ON ONE'S PERSON		NO
Security-type equipment (IATA DGR Manual section 2.3.2.6 for details).	YES	YES	NO	NO
Security-type attaché cases, cash boxes, cash bags, etc., incorporating dangerous goods, such as lithium batteries and/or pyrotechnic material, except as provided in IATA DGR Manual section 2.3.2.6 are totally forbidden. See entry in 4.2 – List of Dangerous Goods.	FORBIDDEN			
Specimens, non-infectious, packed with small quantities of flammable liquid, must meet A180 (IATA DGR Manual section 2.3.5.11 for details).	NO	YES	YES	NO
Thermometer, medical or clinical, which contains mercury, one (1) per person for personal use, when in its protective case.	NO	YES	NO	NO
Thermometer or barometer, mercury filled, carried by a representative of a government weather bureau or similar official agency (IATA DGR Manual section 2.3.3.1 for details).	YES	NO	YES	YES

Table 4 : Provisions for Dangerous Goods Carried by Passengers or Crew

3.4 GENERAL EXCEPTIONS

3.4.1 Airworthiness and Operational Items

IATA DGR – Section 2.5

Articles and substances that would otherwise be classified as dangerous goods but required on board Riyadh Air aircraft in accordance with airworthiness requirements and operating regulations are excepted from the provisions of these Regulations, including but not limited to:

1. Aircraft spare parts such as chemical oxygen generators, fire extinguishers, compressed gas cylinders.
2. Fuels, lubricants, paints, sealants, and other consumable products required for operation.
3. Dry ice for perishable preservation.

3.4.2 Medical Aid for a Patient

IATA DGR – Section 2.3

Approval is not required for dangerous goods placed on board a Riyadh Air aircraft to provide in-flight medical aid, including:

1. Dangerous goods approved by Riyadh Air to be carried for use during flight by a patient under direction of medical professional, limited to reasonable quantities per patient.
2. Dangerous goods that are part of permanent aircraft equipment adapted for specialized use to provide in-flight medical aid, such as:
    a. Gas cylinders are manufactured specifically for containing and transporting that gas.
    b. Drugs, medicines and other medical material under control of trained personnel when in use.
    c. Equipment with wet cell batteries secured upright to prevent spillage.
    d. Equipment properly stowed and secured during takeoff/landing as instructed by the pilot-in-command.

These dangerous goods are also permitted on flights to collect or deliver a patient when impractical to load/unload at the time of the medical flight.

3.5 HANDLING OF SPECIFIC DANGEROUS GOODS

IATA DGR – Section 2.3

3.5.1 Loading of Battery Powered Mobility Aids – General Requirements

A battery powered mobility aid (wheelchair) with installed batteries must be properly secured by straps, tie-downs or other restraint devices. The mobility aid, batteries, cabling and controls must be protected from damage by baggage/cargo movement.

Riyadh Air must verify:

1. Battery terminals are protected from short circuit, such as by enclosure in a battery container.
2. The battery is either:
    a. Securely attached to the mobility aid with electrical circuits isolated per manufacturer instructions or.
    b. Removed by the user if specifically designed for removal per manufacturer instructions.
3. To check electrical circuit isolation, power on the device (not in freewheel mode) and verify the mobility aid will not move when the joystick is used.

Supplemental motorized systems like seating must have cables disconnected to prevent inadvertent operation.

If a mobility aid has not been made safe for carriage, it must not be loaded.

3.5.2 Additional Requirements – Non-Spillable Battery Powered Mobility Aids

The passenger must confirm the battery is a non-spillable wet type meeting Special Provision A67 or Packing Instruction 872 vibration/pressure tests.

A maximum of one spare battery is permitted per passenger. Spare batteries and any batteries removed from the mobility aid must be carried in rigid packaging, protected from short circuit, and stowed in the cargo compartment.

3.5.3 Additional Requirements – Spillable Battery Powered Mobility Aids

Where possible, batteries should have spill-resistant vent caps.

If the mobility aid cannot stay upright, or does not adequately protect the battery, Riyadh Air must remove the battery and carry it in leak-tight, spill-proof packaging as follows:

1. Secured upright in packaging using straps, brackets, holders, etc. and not braced by cargo.
2. Protected against short circuit and surrounded by absorbent material.
3. Marked "Battery, wet, with wheelchair/mobility aid".
4. Labeled with "Corrosive" and package orientation labels.

3.5.4 Additional Requirements – Lithium-ion Battery powered Mobility Aids

Any lithium-ion batteries removed from the mobility aid and spare batteries must be carried in the cabin protected from damage (e.g. in protective pouches) with terminals insulated to prevent short circuit (e.g. taped).

Removed batteries cannot exceed 300 Watt-hours (Wh). Permitted spare batteries are:

1. One battery not exceeding 300 Wh; or
2. Two batteries not exceeding 160 Wh each.

Watt-hours are calculated by:

Volts (V) x Ampere-hours (Ah) = Watt-hours (Wh)

This covers key limitations on lithium-ion batteries from mobility aids brought into the cabin.

3.5.5 Labelling of Battery Powered Mobility Aids

All battery powered mobility aids must be labelled with the tag shown below.

Figure 11: Labelling: Battery Powered Mobility Aids

The label has two parts:

1. **Part A**, which remains with the wheelchair and indicates whether or not the battery has been removed.
2. **Part B**, which, in cases where the battery is separated from the wheelchair, should be affixed to the battery and be used to assist in identifying and reconciling the battery with its wheelchair.

3.5.6 Battery Powered Mobility Aids – Information to Commander

A Riyadh Air staff member or handling agent must inform the PIC of:

The location of any mobility aids with installed batteries

1. The location of any removed or spare batteries
2. The battery type (e.g. lithium-ion, spillable lead acid)
3. For lithium-ion batteries, confirmation that the Watt-hour rating complies with the limits in Section 3.5.4.

This information ensures the pilot is aware of the presence and location of mobility aid batteries for safety and emergency response purposes.

3.5.7 Medical Oxygen

With prior approval, passengers may carry medical oxygen cylinders for in-flight use with a medical certificate showing oxygen need.

Requirements:

1. Cylinders cannot exceed 5 kg gross weight.
2. Cylinders, valves and regulators must be protected from damage.
3. ISI/ISO/UNCOE standard cylinders are highly recommended.
4. Only gaseous oxygen systems are permitted.

Personal medical devices using liquid oxygen are forbidden.

3.5.8 Dry Ice (Carbon dioxide, Solid)

Dry ice used to store perishables in the galley should not exceed 5 kg per aircraft.

3.5.9 Ammunition

Carriage of Ammunition is prohibited. Refer to AOSP for information.

3.6 MARKING AND LABELLING OF PACKAGES

Dangerous goods assigned a UN number under the United Nations classification system must be marked with the applicable 4-digit UN number preceded by "UN".

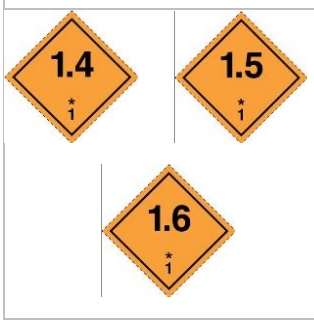
Packages may also contain hazard labels indicating the class/division or handling labels/marks.

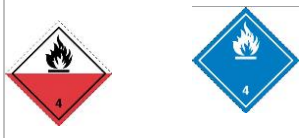
As Riyadh Air does not hold approval to transport dangerous goods, items bearing the following must not be loaded except as identified in Section 3.4:

1. UN number
2. Hazard label
3. "Radioactive Material, Excepted Package" label
4. Lithium battery handling mark
5. Environmentally hazardous substances mark
6. Excepted or limited quantities mark

Undeclared dangerous goods indicated by marks or labels must not be loaded. Reporting procedures per section **Error! Reference source not found.** will be followed.

3.6.1 Hazard Labels

DANGEROUS GOODS LABELS	CLASS/CATEGORY
 	**Class 1 Explosives:** Explosive substances, explosive articles, pyrotechnic devices. Includes ammunition, fireworks, detonators, toy gun caps, etc. Division 1.4 S is the only division transported by passenger aircraft. It consists of articles and substances which present no significant hazard (e.g. cartridges for weapons).

DANGEROUS GOODS LABELS	CLASS/CATEGORY
 	**Class 2 Gases:** Transported as compressed, liquefied, refrigerated liquefied, or gas in solution. Includes aerosols. This class has three divisions: Division 2.1: Flammable gases, i.e. butane, propane, camping gas cylinders, gas refills for lighters. Division 2.2: Non-flammable, non-toxic gases, i.e. oxygen, liquid nitrogen, compressed air (aqualungs). Division 2.3: Toxic gases, i.e. chlorine, coal gas, halon fire extinguishers.
	**Class 3 Flammable liquids:** Includes liquids with a boiling point of 35 degrees C or less, or a flashpoint of 60 degrees C or less. Examples are petrol, alcohol, varnish, paint (and thinners), lighter fluid, many adhesives, methylated spirits, ether, turpentine.
 	**Class 4 Flammable solids:** Substances liable to spontaneous combustion and substances which, when in contact with water, emit flammable gases. Class 4 has 3 divisions: **Division 4.1:** Flammable solids such as hexamine solid fuel tablets for camping stoves, self-reactive substances, and desensitized explosives. **Division 4.2:** Substances liable to spontaneous combustion under normal conditions encountered in air transport, such as phosphorus which burns when exposed to air. **Division 4.3:** Substances in contact with water emit flammable gases, i.e. "Dangerous when wet". Examples are sodium, zinc particles, etc.

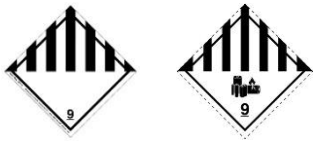
DANGEROUS GOODS LABELS	CLASS/CATEGORY
	**Class 5.1 Oxidizing substances:** Substances which themselves are not necessarily combustible, but which by yielding oxygen may cause or contribute to the combustion of other material. An example is generators which produce oxygen by chemical reaction, and bleaching agents. **Class 5.2 Organic peroxides:** These are thermally unstable substances that may undergo heat-generating, self-accelerating decomposition, which may be explosive, rapid, sensitive to impact or friction, or react dangerously with other substances. An example is hydrogen peroxide.
	**Class 6.1 Toxic substances:** Those substances which are liable to cause death or injury if swallowed, inhaled, or absorbed through the skin. Examples are pesticides and poisons (cyanides, arsenic). **Class 6.2 Infectious substances:** Those known to contain, or are reasonably expected to contain, pathogens (live virus materials, bacteria, blood, feces, urine).
	**Class 7 Radioactive material:** Substances for medical diagnoses or treatment, certain pacemakers, and several types of measuring instruments.
	**Class 8 Corrosives:** Substances which, in the event of leakage, can cause severe damage by a chemical reaction when in contact with living tissue or materially damage other freight, containers, or aircraft. Examples are mercury (thermometers), nitric acid, sulfuric acid, battery acids, photo developers, drain cleaners, ammonia, oven cleaners, and alkaline.
	**Class 9 Miscellaneous:** Includes magnetic articles, which can have an impact on the aircraft's compass, internal combustion engines, dry ice (solid carbon dioxide), retail packaging of perfumes, eau de cologne, acetone, and nail polish remover.

Table 5 : Dangerous Goods Labels

3.6.2 Handling Labels

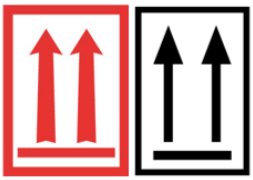
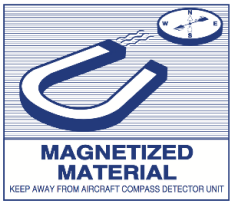
	Cryogenics: Used on liquefied gases		This Way Up
	Magnetic Material		Cargo Aircraft Only: A warning that the package must not be carried on a passengeraircraft.
		Keep away from heat	

Table 6: Dangerous Goods Handling Labels

3.6.3 Markings

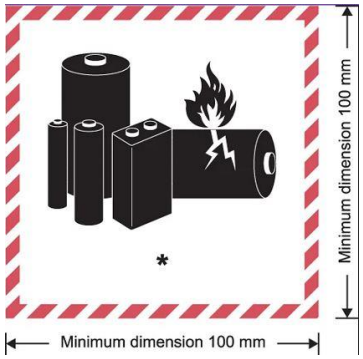
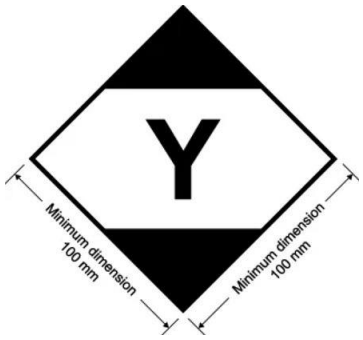
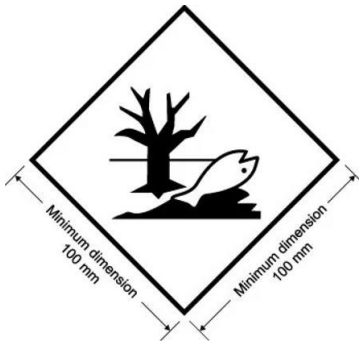
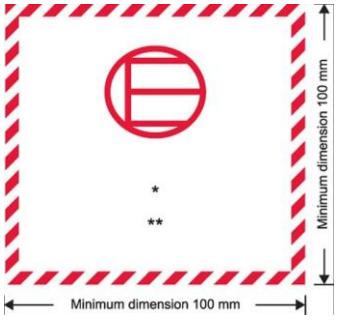
Lithium Battery Mark	
	Applies to packages of lithium batteries which, whilst regulated, are excepted from a number of requirements. Size ranges from 100mm x 100mm to 120mm x 120mm
	For packages containing limited quantity of dangerous goods
	Packages containing environmentally hazardous substances must be durably marked with the environmentally hazardous substance mark.
	For packages containing excepted quantities of dangerous goods. Black or red colored on white or suitable contrasting background. * place for class or, when assigned the division number ** place for name of shipper or consignee, if not shown elsewhere on the package.

Table 7 Lithium Battery Marking

3.7 RECOGNITION OF UNDECLARED DANGEROUS GOODS

IATA DGR – Section 9.6

3.7.1 Identification of Dangerous Goods Through X-Ray Screening

Personnel conducting x-ray screening of cargo should watch for dangerous goods in packages without required markings/labels or shipper's declaration. Items such as aerosols, gas cylinders, lighters, and wet batteries can often be identified in x-ray images. In the absence of dangerous goods documentation, suspicious package contents should be opened and hand-searched to verify no undeclared hazardous materials are present.

3.7.2 GHS Consumer Labelling

IATA DGR – Appendix B Section 4

Some household chemicals have consumer warning labels which may not indicate classification as dangerous goods for air transport. Different countries have varying laws on hazard classification and communication through supply labeling/safety data sheets. The same chemical could be considered toxic in one country but not another.

To address this, the UN Globally Harmonized System (GHS) was created to standardize chemical hazard classification and labeling internationally. However, GHS supply chain labels do not always align with air transport classifications.

Figure 12 : GHS Consumer Labelling

4 DANGEROUS GOODS TRANSPORT PROCEDURES

GACAR § 109 Subpart D

ICAO Doc.9284 Part 7

4.1 GENERAL RULES FOR COLLECTION AND TRANSPORTATION

Acceptance of Dangerous Goods

1. Riyadh Air must not accept dangerous goods for air transport unless accompanied by required documentation, such as the dangerous goods transport document.
2. Required documents must accompany the shipment and a copy retained by Riyadh Air. Documents must be accessible during transport.
3. When information is provided electronically, it must be available at all times and printable as a paper document.

Prior to accepting a dangerous goods shipment, Riyadh Air must check the following parameters:

1. Transport documents comply with requirements.
2. Quantity limits are not exceeded.
3. Packages properly are marked and markings are visible.
4. Packing group letter matches contents (not required for overpacks).
5. Proper shipping names, labels, etc. are visible on packages or overpacks.
6. Required hazard labels are applied.
7. Outer packaging type matches documents.
8. No incompatible dangerous goods requiring segregation.
9. No leakage or integrity compromise.
10. Any other acceptance check requirements per Riyadh Air's policies.
11. Minor discrepancies that don't affect safety should not cause rejection.
12. For overpacks/containers, check outer markings rather than inner packages.
13. Exceptions exist for dangerous goods in excepted quantities and radioactive material in excepted packages.

4.2 DELIVERY, COLLECTION AND TRANSPORTATION PROCEDURES

Collection Procedures:

1. Riyadh Air will verify all required documents are accurate and complete prior to collection of dangerous goods from a shipper's facility.
2. Packages will be inspected visually for proper condition, marking, labelling, and no sign of damage or leakage.
3. Quantity limitations will be confirmed not exceeded by collecting weight/volume data for packages.
4. Collected dangerous goods will be issued a shipment identification number and will be accompanied by a copy of the dangerous goods transport document. Documents must align with collected shipment details.
5. Any discrepancies noted will result in rejection of the shipment until satisfactorily addressed by the shipper.

Transportation Procedures:

1. While in Riyadh Air custody, dangerous goods shipments must be secured and not left unattended. Only authorized and trained personnel can handle or supervise the shipments.
2. Vehicles transporting dangerous goods must have placards, markings, safety equipment, and emergency response information as required. Parking restrictions apply. Idling must be minimized.
3. Shipments must be verified as allowed for air transport and all acceptance checks passed before loading onto aircraft.
4. Cargo must be inspected for damage/leakage before loading. Damaged or leaking packages will not be loaded.
5. Dangerous goods must be properly loaded, segregated, secured and stowed on aircraft as required.
6. After unloading from aircraft, dangerous goods must be promptly delivered to designated storage areas appropriate for the hazards.
7. While on airport property, a safety zone must be maintained around dangerous goods vehicles. Transfer times should be minimized.

Delivery Procedures:

1. Shippers must schedule deliveries of dangerous goods shipments in advance with Riyadh Air and obtain approval prior to delivery. Last minute unscheduled deliveries will not be accepted.
2. Shippers must ensure all required dangerous goods transport documents, shipper's declarations, safety data sheets, and authorizations accompany the shipment. Documents must be carefully reviewed to ensure accuracy and completeness. Electronic data is acceptable if it meets regulatory requirements.
3. Dangerous goods must only be delivered to designated restricted and access-controlled areas at Riyadh Air cargo facilities. Deliveries to passenger terminals or undesignated areas are prohibited.
4. Shipments must be properly packed, marked, labelled, and in suitable outer packaging that is clean, damage-free, and void of any residue. Salvage or damaged packages will be rejected.
5. Shippers must provide necessary safety equipment and resources to safely handle the shipment during delivery per the specific hazards.
6. Upon delivery, Riyadh Air will perform acceptance checks on all required documentation, package marking/labelling, quantity limits, compatibility, package integrity, and other regulatory requirements applicable to the shipment.

4.3 STORAGE OF DANGEROUS GOODS

ICAO Doc 9284 Part 7 Chapter 2

4.3.1 General Storage Requirements

Riyadh Air shall always prioritizes the quick transportation of dangerous goods over storage. Dangerous goods should only be stored when necessary and storage times should be minimized. The priority is always transporting dangerous goods to their destination as quickly as possible. Segregation of Dangerous Goods should be observed in accordance with 2.3.

1. Designated storage areas must have proper construction, ventilation, drainage, and fire protection systems appropriate for the hazards classes stored.
2. Access must be restricted, and storage areas must remain locked when unattended. Clear hazard communication signage is required.
3. Incompatible dangerous goods must be separated by the minimum required distances during storage.
4. Packages must be inspected periodically while in storage and inspected for damage or leaks prior to dispatch.
5. Storage areas must be kept clean and free of any potential ignition sources.
6. Proper storage equipment like cradles, braces, stands, etc. must be used as needed to secure packages and prevent movement/tipping.

Riyadh Air will not store Dangerous Goods in-house. Instead, the company will outsource this task to specialized storage facilities that are in full compliance with Section 9.2 of the IATA Dangerous Goods Regulations (DGR). Riyadh Air shall ensure full compliance through Service Letter Agreements.

4.3.2 Storage of Specific Dangerous Goods

1. Exposure of transport and storage personnel to radiation must be controlled and limited to permitted levels for the general public, unless classified as radiation workers.
2. Personnel must receive instructions on radiological hazards and precautions. Exposure should be kept as low as reasonably achievable.
3. Packages should be placed on the floor of underfloor cargo compartments when feasible to maximize distance from passengers.
4. Activity limits per aircraft and requirements for exclusive use shipments must be followed.
5. Consignments must be securely stowed and meet segregation requirements.
6. Loading of containers and packages must be controlled so total transport index limits per aircraft are not exceeded.

7. Minimum segregation distances apply when transported under exclusive use.
8. Access to radioactive material storage areas is restricted to authorized personnel wearing personnel monitoring devices.
9. Radiological surveys must be performed periodically to check exposure levels and contamination.
10. Proper placarding, labelling, and posting of radiation areas is required. Decay storage may also be needed.
11. Spill containment and emergency response provisions must be in place relevant to the radioactive material hazards.

4.3.3 Storage of Dangerous Goods Spares

1. When feasible, maintenance spares classified as dangerous goods should be stored in small quantities with minimum storage times.
2. Spare aircraft batteries, flammable hydraulic fluids, cleaners, solvents, sealants, etc. present significant dangers and must be stored per the specific requirements. Access restrictions are critical.
3. Any radioactive device spares must only be stored in an isolated radiation area with strict contamination controls and personnel radiation monitoring.

4.4 LOADING OF DANGEROUS GOODS

1. Dangerous goods are prohibited in passenger cabins or on the flight deck, except for specifically permitted items.
2. Dangerous goods are only permitted in Class C main deck cargo compartments on passenger aircraft. "Cargo Aircraft Only" labelled cargo is prohibited on passenger aircraft.

Class C and Class D are cargo compartments not accessible to a crew member

3. With State approval, some dangerous goods may be permitted in main deck compartments.
4. Packages with orientation arrows must be loaded and stowed to align with arrow direction showing proper upright position.
5. Single packages of liquids with end closures must have closures upward when loaded, even if side closures exist.
6. Incompatible dangerous goods must be loaded to maintain segregation minimum distances and separation requirements.
7. Dangerous goods must be properly secured and restrained to prevent any movement in flight that could change orientation or cause damage.
8. Packages showing any sign of damage, leakage or sifting of contents cannot be loaded until inspected and cleared.
9. For radioactive materials, stowage must consider limitations on total transport index and maintaining minimum distances.
10. Loading personnel must verify package marking/labelling matches accompanying documentation. Discrepancies must be addressed prior to loading.
11. Loaded dangerous goods should be inspected to ensure compliance with all loading procedures and requirements.

4.5 DANGEROUS GOODS DOCUMENTS

GACAR § 109 Subpart E

IATA DGR Section 8

The shipper is responsible for providing completed and signed Shipper's Declaration forms containing all required information to Riyadh Air along with dangerous goods shipments. The forms must follow the approved format in English, with optional additional languages as required by the state of origin. There are specifications regarding paper size, print color, and form layout that must be followed.

The specific information that must be included on the declaration forms includes:

1. UN number, proper shipping name, hazard class/division, and packing group for each dangerous goods.
2. Type and number of packages.
3. Total quantity of all dangerous goods.
4. Name and address of shipper and consignee.
5. Any additional certifications or information required by regulations.

Only information relevant to the dangerous goods in the shipment should be included. If both dangerous and non-dangerous goods are listed, the dangerous goods must be emphasized first.

For consolidated shipments containing multiple dangerous goods components, separate declaration forms are required for each component. Copies of all forms must accompany the consolidated shipment.

If the form lacks sufficient space for all required dangerous goods entries, approved extension pages can be attached using the specified format. All pages must show the same aircraft limitations and shipment type.

The shipper must provide two completed and signed copies of the declaration for Riyadh Air. One copy will be retained by Riyadh Air and one will accompany the shipment to its destination. Electronic systems can be used but data must be easily reproducible on paper.

Riyadh Air must retain the declaration forms for the required duration to facilitate audits and incident investigations. Information must match the actual shipment details or discrepancies must be corrected.

4.6 HANDLING

IATA DGR Section 9

Riyadh Air will not be carrying Dangerous Goods. The following procedures for awareness and future reference.

4.6.1 General

1. Handling of dangerous goods may only be performed by Riyadh Air personnel who are trained and authorized.
2. Safety data sheets must be reviewed to understand risks and proper precautions prior to handling any dangerous substance.
3. Required personal protective equipment, such as gloves, safety glasses, masks, etc., must be worn.
4. Packages must be inspected for damage or leaks before handling. Damaged or leaking items cannot be handled until contents are cleaned up and secured.
5. Packages must be grasped firmly and moved in a stable manner when handling manually. Throwing or dropping is prohibited. Equipment should be used appropriately.
6. Orientation arrows must be followed to keep packages upright. Prevent shifting of contents.
7. Take care with fragile, heavy or unbalanced loads. Provide additional support as needed.
8. RXI's safety management system policies and procedures for acceptance, handling, and loading of dangerous goods must be followed.
9. Ground handling agents may perform these functions for Riyadh Air but are also subject to operator responsibilities per regulations.

4.6.2 Acceptance

Riyadh Air must ensure cargo acceptance staff are adequately trained to identify undeclared dangerous goods in general cargo shipments. Staff should be provided with information on descriptions shippers often use for items that may contain hazardous materials. Staff should also look for hazard pictograms, labels, markings and other indicators that dangerous goods may be present. When cargo descriptions seem suspicious, staff should request confirmation from the shipper on the contents. This helps prevent undeclared hazards from being unknowingly loaded.

Dangerous goods will only be accepted by Riyadh Air if accompanied by required documentation such as the Shipper's Declaration. Electronic data is acceptable if it meets printability requirements. One copy of the declaration must stay with the shipment and one copy retained by Riyadh Air where it can be accessed until the shipment reaches its destination.

Before initially accepting any dangerous goods for air transport, Riyadh Air must complete an acceptance checklist to verify:

1. The Shipper's Declaration and documents comply with all requirements.
2. The quantity of dangerous goods per package does not exceed limits.
3. Marks on packages/overpacks match the declaration and are clearly visible.
4. The packing group letter matches the contents where required.
5. Proper shipping names, labels, handling codes are visible on packages.
6. Required hazard labels are applied.
7. The package type is permitted and matches the declaration.
8. No incompatible dangerous goods are present.
9. There are no signs of damage, leaks or integrity issues.

Any discrepancies found must be addressed before the shipment can be accepted. The person performing the acceptance check must be identifiable. Some exceptions exist such as for consumer goods, magnetized material, and dry ice.

Special procedures apply for accepting infectious substances and self-reactive/organic peroxide shipments.

4.6.3 Loading

Loading of dangerous goods requires stringent compliance with segregation, separation, orientation, securing, aircraft limitation, and other regulatory requirements to ensure safety. This section outlines key procedures Riyadh Air must follow when loading packages containing hazardous materials.

Prohibited Items and Aircraft Limitations

1. Dangerous goods are prohibited in passenger cabins and on the flight deck except for specifically permitted items.
2. Only certain Class 1 explosives and other hazard classes are permitted on cargo aircraft. Packages labelled "Cargo Aircraft Only" are forbidden on passenger aircraft.
3. With Riyah Air Ground Operations team approval, some dangerous goods that do not meet packing standards may be allowed in passenger aircraft cargo compartments.

4.6.3.1 Separation of Explosives

1. Explosives of different compatibility groups may be loaded together based on DGR compatibility requirements, except Division 1.4B.

2. Division 1.4B must be in separate unit load devices spaced at least 2 meters apart from other explosives.
3. Explosives in Compatibility Group S may be stowed with explosives in all compatibility groups.

4.6.3.2 Handling and Orientation of Packages

1. Packages with orientation arrows must be loaded and stowed to align with arrow directions.
2. Liquids with end closures must have closures upward when stowed.
3. Dangerous goods must be secured against movement in flight. Radioactive materials have specific securing requirements.
4. Unit load devices containing dangerous goods must have proper identification tags.

4.6.3.3 Inspecting Packages and Devices

1. All packages and devices must be inspected just prior to loading and show no signs of damage or leakage.
2. Any damaged or leaking packages must be removed and handled appropriately.
3. Other cargo impacted must also be inspected and decontaminated.

Refer to section 4.6.4 for detailed inspection instructions.

4.6.3.4 Loading Magnetized Material

1. Magnetized material must be loaded to minimize effects on aircraft compasses and in compliance with specific approvals.

Note: Multiple packages may produce a cumulative effect. They must be loaded so that headings of aircraft compasses are maintained within the tolerances prescribed by the applicable aircraft airworthiness requirements and where practical, in locations minimizing possible effects on compasses.

4.6.3.5 Loading Dry Ice

1. Dry ice shipped alone or as a coolant must be handled based on aircraft type, ventilation, packing, stowage, presence of live animals, and other factors. The Shipper must consult IATA DGR packing instructions for Dry Ice before loading onto the aircraft.
2. Ground staff must be informed when dry ice is loaded or onboard.
3. If Riyadh Air adds more dry ice to a shipper prepared unit, the updated quantity must be provided to the pilot-in-command.
4. Crew/passenger checked baggage with dry ice must have proper marking and quantity indications.

Figure 13: Dry Ice Label

4.6.3.6 Loading Cryogenic Liquids

Packages of cryogenic liquids can be carried after making arrangements considering aircraft type, other temperature-sensitive cargo, presence of live animals, and allowing venting before cargo door opening.

4.6.3.7 Loading Live Animals with Dangerous Goods

1. Live animals should not be stowed near dry ice, which concentrates at lower levels. Animals must go above dry ice packages.
2. Category II-III packages require minimum separation distances from live animals based on journey duration.

Note: In certain circumstances carbon dioxide, solid (dry ice) may be packaged with live animals as a coolant, e.g. bees. All other requirements for the transport of carbon dioxide, solid (dry ice) must be met.

4.6.3.8 Loading Mobility Aids with Batteries

1. Wheelchairs/mobility aids with certain batteries can be loaded as checked baggage based on battery type and with approval.
2. Spillable batteries must meet more stringent loading requirements.
3. The pilot-in-command must be informed of battery locations.
4. Advance arrangements are recommended. Spill-resistant vents should be used when feasible.
5. Mobility aid battery handling labels can identify if the battery has been removed or not. See figure

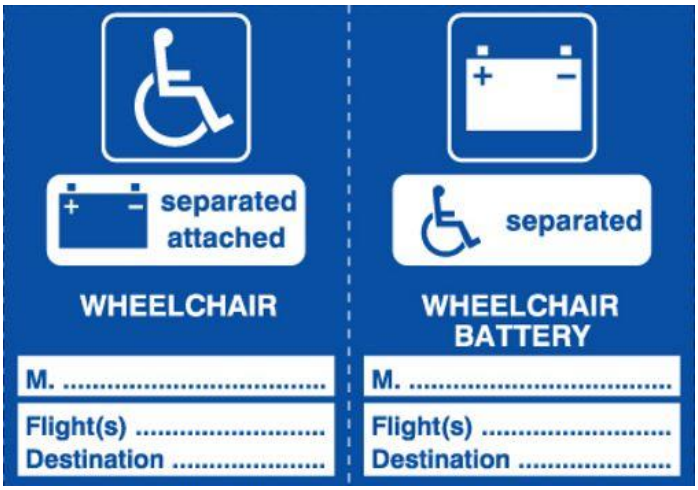


Figure 14: Battery-powered Wheelchair and Mobility Aid Label

4.6.4 Inspection

After unloading dangerous goods from an aircraft or unit load device, Riyadh Air must thoroughly inspect all packages, overpacks, cargo areas and containment systems for any signs of damage or leakage that could have occurred during transport. Finding evidence of such issues requires immediate and proper response actions to isolate hazards, decontaminate affected areas, notify appropriate authorities, and protect persons, property and the environment from further exposure or harm. The special responsibilities of operators regarding radioactive materials is stated in Chapter 5.

For infectious substances:

1. Avoid handling leaking or damaged packages or minimize handling.
2. Isolate any potentially contaminated adjacent packages.
3. Notify public health authorities and provide details on possible exposure.
4. Inform the shipper and consignee.

For damaged or leaking packages:

1. Restrict access to the package.
2. Follow local safety and emergency procedures.
3. Consider additional steps to protect persons, property, and the environment.
4. Account for GHS pictograms suggesting environmental/health risks.

4.7 PROVISION OF INFORMATION

GACAR § 109 Subpart E

4.7.1 Information to the Pilot-in-Command

1. Written information must be provided about all dangerous goods loaded, including proper shipping name, UN/ID number, class/division, packing group, number/type of packages, quantity, loading location, unloading airport, and any other relevant details.
2. This information must be provided as early as possible before departure, but no later than aircraft movement under its own power.
3. Operational control personnel must also receive the same information.
4. The pilot must indicate receipt of the information. Confirmation that there was no evidence of damage or leaks must also be provided.
5. A copy must be kept on the ground and accessible until arrival.
6. The information must be readily available to the pilot during flight.

Instructions shall be written in English primarily and any other language(s) dictated by the state of origin.

4.7.2 Information by Pilot-in-Command in In-Flight Emergency

If an in-flight emergency occurs, the pilot-in-command must inform air traffic control as soon as possible about any dangerous goods on board, including the proper shipping name, UN number, class, quantity and location.

4.7.3 Information to Passengers

When accepting excess baggage as cargo, Riyadh Air must seek confirmation from passengers that it does not contain any prohibited dangerous goods.

Riyadh Air will implement multiple touchpoints to inform passengers of dangerous goods regulations and ensure prohibited items are not brought on board inadvertently.

During ticket purchase and check-in, the booking page and confirmation emails will prominently display warnings that dangerous goods are not permitted in carry-on or checked baggage. Links will provide access to lists of common prohibited items.

At the Check-in counters Riyadh Air will display posters advising passengers of dangerous goods restrictions. Agents will be trained to spot prohibited items and explain regulations to non-compliant passengers.

Before the security checkpoint, large signage will warn passengers about prohibited dangerous goods and request declaration of any restricted exceptions. Agents at the boarding gate will also monitor passengers and carry-ons for potential violations.

Pre-flight safety briefings and inflight announcements will remind passengers that dangerous goods are completely forbidden aboard Riyadh Air aircraft.

Riyadh Air will ensure adequate resources to avoid carriage of undeclared dangerous goods by passengers. Information will be provided on prohibited items in the following ways:

1. Dangerous goods information provided to passengers during online or agent booking.
2. Notification of restrictions included on printed tickets.
3. Verbal reminders during passenger check-in procedures.
4. Dangerous goods cards distributed onboard with the passenger briefing cards.
5. Verbal confirmation by cabin crew that passengers:
    a. Understand the restrictions on dangerous goods.
    b. Are not carrying any prohibited items.
    c. Any permitted exceptions are in accordance with regulations.

At KSA airports, security screening per GACA requirements is performed by airport personnel. All passengers and baggage pass through this system.

When operating outside KSA, the contracted handling agent and airport must communicate information on forbidden dangerous goods to passengers through visual examples at baggage drop-off and boarding areas.

4.8 RETENTION OF DOCUMENTS

IATA DGR Section 1.3

Riyadh Air policy of DGR documents retention:

1. At least one copy of all applicable dangerous goods transport documents must be kept for a minimum of 3 months after the flight.
2. Documents to be retained include:
    a. Shipper's Declaration.
    b. Other transport documents.
    c. Acceptance checklist (if completed).
    d. Identification of acceptance personnel.
    e. Written information provided to the pilot-in-command.
3. Documents must be printable and made available to authorities upon request.
4. For any unaccepted shipment due to shipper error, copies of the documents, completed checklist, and acceptance personnel identification must also be kept for 3 months.

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5 RADIOACTIVE MATERIAL

IATA DGR Section 10

5.1 TRANSPORT OF RADIOACTIVE MATERIAL

Due to the nature of radioactive material and the potential hazard they may impose on the safety of passengers and crew, they have special requirements that must be satisfied to ensure safety and to protect people, property and the environment from the harmful effects of ionizing radiation during the transport of radioactive material by air.

These requirements are satisfied by:

1. Applying a graded approach to the limits of the contents for packages and aircraft and to the performance standards, which are applied to package designs depending upon the hazard of the radioactive contents.
2. Imposing conditions on the design and operation of packages and on the maintenance of the packaging, including consideration of the nature of the radioactive contents.
3. Requiring administrative controls including, where appropriate, approval by competent authorities, and
4. Making arrangements for planning and preparing emergency response to protect people, property, and the environment.

Some exceptions apply, such as:

1. Radioactive material implanted or incorporated into a person or live animal for diagnosis or treatment.
2. Radioactive material in or on a person who is to be transported for medical treatment because the person has been subject to accidental or deliberate intake of radioactive material or to contamination, taking into account the necessary radiological protection measures with respect to other passengers and crew, subject to approval by the operator.
3. Radioactive material in consumer products which have received regulatory approval, following their sale to the end user.
4. Natural material and ores containing naturally occurring radionuclides (which may have been processed).

IN ADDITION TO THE RADIOACTIVE AND FISSILE PROPERTIES, ANY SUBSIDIARY HAZARD OF THE CONTENTS OF A PACKAGE, SUCH AS EXPLOSIVENESS, FLAMMABILITY, PYROPHORICITY, CHEMICAL TOXICITY AND CORROSIVENESS, MUST ALSO BE TAKEN INTO ACCOUNT IN THE DOCUMENTATION, PACKING, LABELLING, MARKING, PLACARDING,

STOWAGE, SEGREGATION AND TRANSPORT, IN ORDER TO BE IN COMPLIANCE WITH ALL RELEVANT PROVISIONS FOR DANGEROUS GOODS OF THESE REGULATIONS.

5.2 LIMITATIONS

Prohibited Radioactive Material: The following items are forbidden on aircraft unless specifically exempted:

1. Type B(M) packages;
2. Packages requiring external cooling;
3. Packages needing operational controls;
4. Explosives;
5. Pyrophoric liquids.

Riyadh Air policy does not allow the transport of radioactive material by mail. Refer to Section 9.1and Section 9.2 for more information.

5.3 CLASSIFICATION

Radioactive material means any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values permissible for Radioactive Materials transportation (Refer to IATA DGR Manual section 10.3.2).

Radioactive materials are classified as either "special form" or "other than special form" when being prepared for air transport.

1. Special form refers to radioactive contents that are insoluble and non-dispersible, such as encapsulated sources. This makes them less hazardous.
2. Other than special form covers radioactive contents that are more soluble or dispersible. This makes them a greater hazard.

Packaging activity limits are based on these two categories:

1. A1 is the activity limit for special form radioactive material. It is set at a higher level due to the reduced hazard.
2. A2 is the lower activity limit for other than special form radioactive material. The greater hazard requires more restrictive limits.

IATA Dangerous Goods Regulations, which are based on the International Atomic Energy Agency (IAEA) outline detailed classification of Radioactive materials. Major classifications are described in the following sections.

5.3.1 Special Form Radioactive Material

Special form radioactive material refers to sources that are designed and constructed to be very stable and leak resistant if damaged.

1. It can be a solid radioactive material made insoluble and non-dispersible.
2. Or it can be a sealed capsule containing radioactive material.

To qualify as special form, it must meet specific design requirements and pass rigorous testing:

1. withstand impact, bending, percussion, heat without breaking, melting, or leaking.
2. very limited radioactivity released if subjected to leaching assessments.
3. very low leakage from capsules based on volumetric tests.

Special form sources must get unilateral approval, verifying they meet performance standards. The stringent design and testing ensure enhanced containment of radioactive contents.

5.3.2 Low Specific Activity (LSA) Material

LSA refers to radioactive material with inherent limits on its specific activity, or radioactivity concentration per mass. It is categorized into three groups:

LSA-I

1. Uranium/thorium ores and concentrates.
2. Unirradiated natural/depleted uranium/thorium.
3. Unlimited A2 value material like tritium and carbon 14.
4. Other material with average specific activity ≤ 30x activity limit.

LSA-II

1. Water with tritium ≤ 0.8 TBq/L.
2. Other material with average specific activity ≤10-4 A2/g (solids/gases) or ≤10-5 A2/g (liquids).

LSA-III

1. Solids with uniform distributed radioactivity.
2. Average specific activity ≤ 2 x 10-3 A2/g.

LSA classification is based on the radioactive material's inherent properties and concentration limits. Proper categorization ensures radioactive contents with lower hazard are identified. External shielding is not considered.

5.3.3 Surface Contaminated Object

Surface Contaminated Object (SCO) means a solid object which is not elementally radioactive, but which has radioactive material distributed on its surfaces.

5.4 IDENTIFICATION

Radioactive material must be assigned to one of the proper shipping names/UN numbers according to their classification.

Each of the packages will be provided with a Certificate of Conformity from the manufacturer and a Radioactive Material, Excepted Package label affixed.

Figure 15: Radioactive Material, Excepted Package

5.5 PACKING

The shipper is responsible for all aspects of the packing of radioactive materials in compliance with International Air Transport Association Dangerous Goods Regulations (IATA DGR).

5.6 MARKING AND LABELLING

The shipper is responsible for all necessary marking and labeling of each package, overpack or freight container containing radioactive material in compliance with IATA DGR.

All markings must be so placed on the packaging or overpacks to ensure they are not covered or obscured by any part of or attachment to the packaging or overpack or any other label or mark. The required mark must not be located with other package marks that could substantially reduce their effectiveness.

Markings and labels should be written in English in addition to the language which may be required by the State of origin.

Label	Description
	Name: Radioactive Cargo Imp Code: RRY Minimum dimensions: 100 × 100 mm Symbol (trefoil): Black Background: Top half Yellow (Pantone Colour No. 109U) with White border, bottom half White
	Name: Radioactive Cargo Imp Code: RRY Minimum dimensions: 100 × 100 mm Symbol (trefoil): Black Background: Top half Yellow (Pantone Colour No. 109U) with White border, bottom half White
	Minimum dimensions: 100 × 100 mm Text (mandatory): "FISSILE" in black on white in upper half of label

Table 8 Marking and Labelling Details of Radioactive Material

5.7 DOCUMENTATION

The shipper is responsible for providing information applicable to a consignment of dangerous goods to the operator. The information may be provided on a prescribed declaration form, "Shipper's Declaration for Dangerous Goods" or, where an agreement exists with the operator.

The declaration form must be completed in the English language. The wording in English may be accompanied by an accurate translation in another language.

Specific information must be provided in each box of the Declaration Form:

1. Shipper: Full name and address of shipper
2. Consignee: Full name,
3. Air Waybill Number: Number of the Air Waybill to which the declaration form will be attached,
4. Page ... of ... pages
5. Aircraft Limitations: Passenger or cargo,
6. Airport of Departure,
7. Airport of Destination,
8. Shipment Type,
9. Nature and Quantity of Dangerous Goods,
10. First Sequence—Identification: Refer to IATA DGR manual for instructions,
11. Second Sequence—Quantity and Type of Packing: Refer to IATA DGR manual for instructions,
12. Third Sequence—Packing Instructions: Refer to IATA DGR manual for instructions,
13. Fourth Sequence—Authorizations: Refer to IATA DGR manual for instructions,
14. Additional handling information.

5.8 HANDLING

Radioactive material must be segregated sufficiently from workers and from members of the public. During acceptance and handling, exposure to radiation should be kept as low as reasonably achievable.

5.9 RADIOACTIVE MATERIALS INCIDENT REPORTING

Should an accident or incident occur that involves radioactive materials, do not move the package from its location. If there is suspicion of a leak from any package, and it is exposed, ensure it is covered to hinder the spread of any materials within (such as into surface water drains or the soil). Maintain a distance of at least ten meters from the affected package(s). In the event that the damage is discovered within the aircraft's hold, vacate the area at once.

Immediately communicate the incident to the 24-hour OCC emergency at (Contact Number: TBA)

Refer to Chapter 6.

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6 EMERGENCY HANDLING OF DANGEROUS GOODS

ICAO Doc 9481

6.1 GENERAL PROVISIONS

Dangerous Goods Incidents

Dangerous Goods Incidents, other than Accidents, are any occurrences associated with air transport of hazardous materials. This includes issues found after check-in or security screening.

All incidents and accidents must be reported and recorded as per Riyadh Air's Emergency Response Manual.

Examples of Dangerous Goods Incidents:

1. Spillage, leakage, or emissions from packages or passenger baggage,
2. Failure of receptacles and containment,
3. Radiation leakage,
4. Damage to property/equipment from contents,
5. Injury to persons from contents,
6. Undeclared/mis declared shipments,
7. Contrary to regulations aircraft stowage,
8. Unnotified cargo,
9. Short shipped cargo discrepancies,
10. Evidence of compromised package integrity.

Dangerous Goods Accidents

Dangerous Goods Accidents involve a fatality, serious injury, or major property damage related to air transport of hazardous materials.

GACAR, Part 109.81(a) requires Riyadh Air to provide information to enable flight crew members to respond to emergencies involving dangerous goods.

6.2 EMERGENCY RESPONSE REQUIREMENTS

The ICAO Document 9481, titled "Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (ERG)," provides instructions on managing events related to dangerous goods that occur during flight.

This chapter outlines the application of emergency response drill codes found in the ERG. Dangerous goods are each allocated a specific drill code, and occasionally, an associated hazard letter. For guidance on handling a particular dangerous substance, one can consult the corresponding drill code and hazard letter in the list of Emergency Response Drills.

When a procedure requires identification of the emergency response drill code, the subsequent steps should be followed to determine the code.

6.2.1 Emergency Response Drills

Refer to ICAO Emergency Response Guidance (ICAO Doc 9481) for reference. The appropriate aircraft emergency procedures for each drill code can be found in the below table.

Drill Code	Inherent Risk	Risk to Aircraft	Risk to Occupant	Spill or Leak Procedures	Firefighting Procedures	Additional Consideration
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, nonflammable: 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

Table 9 Emergency Response Drills Pg 1 of 3

Drill Code	Inherent Risk	Risk to Aircraft	Risk to Occupant	Spill or Leak Procedures	Firefighting Procedures	Additional Consideration
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
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

Table 10 Emergency Response Drills Pg 2 of 3

Drill Code	Inherent Risk	Risk to Aircraft	Risk to Occupant	Spill or Leak Procedures	Firefighting Procedures	Additional Consideration
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 an maintain maximum ventilation; no smoking; minimum electrics	All agents, according to availability	Possible abrupt loss of pressurization
11	Infectious substances: May affect humans or animals if inhaled, ingested, or absorbed through mucous membrane or an open wound	Contamination with infectious substances	Delayed infection to humans or animals	Do not touch; minimize recirculation and ventilation in affected area	All agents, according to availability; no water on “Y” drill letter	Call for a qualified person to meet the aircraft
12	Fire, heat, smoke, flammable vapor, explosion	Fire and/or explosion	Smoke, fumes, heat	Use 100% oxygen; establish and maintain maximum ventilation	All agents, according to availability; use of water, if available	Consider landing immediately

Table 11 Emergency Response Drill Pg 3 of 3

6.2.2 Emergency Drill Letters

Drill Letter	Additional Hazard	Drill Letter	Additional Hazard
A	Anesthetic	S	Spontaneously combustible or pyrophoric
C	Corrosive	W	If wet gives off toxic or flammable gas
E	Explosive	X	Oxidizer
F	Flammable	Y	Depending on the type of infectious substance, the appropriate national authority may be required to quarantine individuals, animals, cargo, and the aircraft
H	Highly ignitable	Z	Aircraft cargo fire suppression system may not extinguish or contain the fire; consider landing immediately
I	Irritant/Tear producing		
L	Other hazard low or none		
M	Magnetic		
N	Noxious		
P	Toxic (poison)		

Table 12 Emergency Drill Letters

Dangerous Good drill codes have the following format in the ICAO Doc 9481:

UN Number	Drill Code	Proper Shipping Name
3374	10L	Acetylene, solvent free
3090	12FZ	Lithium metal batteries

Table 13 UN Number and Drill Codes

6.3 GENERAL EMERGENCY RESPONSE CONSIDERATIONS

The following general considerations should guide Riyadh Air's response to any Dangerous Goods Incident or Emergency (Refer to ICAO Doc 9481, Section 2.1):

1. Landing at the nearest appropriate airport should be prioritized as soon as possible. Air traffic control will be informed of any dangerous goods on board.
2. Approved emergency procedures for smoke or fire should be executed, including use of crew oxygen and maximum cabin ventilation.
3. The effect of altitude changes on any fire, explosion risk or rate of leakage should be evaluated. Consider keeping differential pressure low if structural damage exists.
4. Ventilation should be maximized - reducing ventilation to extinguish a fire will not be effective and will risk passenger suffocation.
5. Gas-tight breathing equipment must be worn when responding to any smoke or fumes. Therapeutic oxygen masks should not be relied upon.
6. Water should generally not be applied directly to spills or vapors as it may spread material or increase fuming. Consider electrical hazards when using water extinguishers.
7. Improvise with available items like gloves, bags, blankets when responding. Avoid touching suspicious packages without hand protection.
8. Ensure compatibility before using absorbents on spills. Cover powders and do not disturb.
9. Cool packages after fire is suppressed to prevent reignition.
10. Implement an immediate no smoking ban where vapors or fumes are present.
11. The Pilot-In-Command shall ensure the dangerous goods notification is immediately provided to rescue and firefighting personnel.
12. Consult national chemical emergency response centers for substance-specific incident response advice.

Riyadh Air personnel will be trained to consider these factors during any dangerous goods emergency response. Refer to Chapter 8 .

6.4 ACCIDENTS AND INCIDENTS REPORT OF DANGEROUS GOODS

Riyadh Air must report Dangerous Goods Accidents or Incidents to GACA and the State in which the accident or incident occurred, in accordance with the reporting requirements of those appropriate authorities.

This includes reporting any occasion when undeclared or mis declared dangerous goods are discovered in cargo or mail. Such a report must be made to GACA and the State in which this occurred.

Riyadh Air must also report any occasion when dangerous goods not permitted under Section 3.3 are discovered by the airline or is advised by the entity that discovers the dangerous goods, either in the baggage or on the person of passengers or crew members. Such a report must be made to the appropriate authority of the State in which this occurred.

Reporting Accidents and Incidents:

1. Any Dangerous Goods Accident or Incident must be reported to authorities of the State where it occurred and GACA per their reporting requirements.
2. Undeclared or mis declared dangerous goods discovered in cargo/mail must also be reported.
3. Dangerous goods found with passengers/crew contrary to regulations must be reported.

Information Provided in Accidents/Serious Incidents:

1. For Aircraft Accidents or Serious Incidents involving Dangerous Goods Cargo, the operator must immediately provide emergency responders information about the hazardous materials on board as per pilot's notification.
2. This information must also be provided as soon as possible to authorities of the State where it occurred and GACA.

When time permits, as much of the following information should be communicated to ATC, ground personnel and emergency services, as appropriate:

1. Proper shipping name of the item,
2. UN number,
3. Class/Division number,
4. Quantity, and
5. Loading location.

Note: Dangerous Goods may be carried into the cabin by passengers who are unaware of, or deliberately ignore, the requirements of the ICAO Technical Instructions concerning passengers and their baggage. It

is also possible that an item to which a passenger is legitimately entitled (e.g. an item for medical purposes) may cause an incident.

6.5 EMERGENCY RESPONSE PROCEDURES IN AIR

In case of emergency during flight, the following procedures shall be followed (Reference ICAO Doc 9481 chapter 3):

Phase	Action
Initial Action	1. Pilot-in-command to immediately notify ATC of the emergency, request handling instructions and prioritize landing. 2. Set seat belt sign on. 3. Flight crew don protective equipment as needed, based on hazards — smoke goggles, oxygen masks, aprons, gloves, etc. 4. In case of fire, smoke, fumes, or leakage, identify source and extent. Attempt to contain situation. Apply smoke procedures, as applicable. 5. Assess damage to aircraft systems and possible risks. 6. Turn off unnecessary electrical equipment.
Mitigation Procedures	1. Move passengers/crew away from affected area per evacuation protocols, if required. 2. Attempts to contain/suppress fire/leakage. Use available on-board firefighting/containment resources. 3. Administer first aid to injured persons
Landing and Emergency Ground Assistance	1. Declare emergency landing to destination airport. Request Aircraft Rescue and Fire Fighting (ARFF) and emergency services readiness. 2. Brief passengers and prepare for emergency landing/evacuation. 3. Coordinate handling plan with destination airport. Take actions to mitigate further risks. 4. After landing, implement emergency evacuation if required. ARFF to control aircraft hazards.
Documentation and Reporting	1. Make an appropriate entry in the Aircraft Technical Log. 2. Flight crew must record details of incident, damage and actions taken. 3. Report Accident/Incident to authorities as per Riyadh Air Emergency Reporting requirements. 4. Retain on-board documents, photos and evidence pending investigation.

Table 14 Emergency Response Procedures in AIR

6.6 EMERGENCY RESPONSE PROCEDURES OF DANGEROUS GOODS ACCIDENT OR INCIDENT ON THE GROUND

In case a DGR incident or accident occurs on ground, the following procedures should be followed:

Phase	Action
Initial Assessment and Mitigation	1. Ground Operations personnel assess scene, identify hazards and establish Initial Exclusion Zone. 2. Ground Operations personnel to alert nearby workers to evacuate area and assemble upwind. 3. ARFF and airport emergency responders don PPE and attempt to contain fires or leaks.
Notification and Coordination	1. Flight crew notify ATC and airport emergency services, provide details on hazards and location. Riyadh Air IOCC shall also be notified. 2. Cabin crew account for all passengers and crew members, provide medical assistance. 3. Ground Operations share documentation like NOTOC with Emergency Commanders. 4. Airport Operations Center coordinates overall response plan per airport procedures.
Mitigation and Recovery	1. ARFF continues hazard mitigation per Emergency Commander's direction. 2. Airport Operations adjusts Exclusion Zones, coordinates decontamination and ventilation. 3. Ground Operations preserves evidence and damaged packages. 4. Maintenance inspects/repairs any contaminated equipment or facilities. 5. Airport Operations confirms area safe before return to normal activity.
Documentation	1. Incident report should be submitted as per Riyadh Air reporting procedures.

Table 15 Emergency Response Procedures on the Ground

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7 DANGEROUS GOODS SECURITY

GACAR § 109.9

7.1 SECURITY RESPONSIBILITIES

Riyadh Air is committed to maintaining robust security measures for the protection of dangerous goods transport from potential unlawful interference.

Ultimate accountability for Riyadh Air's security program lies with the VP of Safety, Security and Environment. This includes establishing policies, procedures, and oversight of dangerous goods security.

The Director of Security holds responsibility for day-to-day execution of security measures related to acceptance, storage, processing and loading of dangerous goods cargo and baggage.

The Director of Security will coordinate closely with the VP of Ground Operations when security policies or procedures impact dispatch, ramp handling, or other flight-related operational areas.

All Riyadh Air employees involved in transport of dangerous goods have a duty to remain vigilant and report any suspicious items, activity or breaches of security protocols.

As a non-carry operator, Riyadh Air will only carry items in Section 3.4 .

7.2 FACILITY SECURITY

Refer to Aircraft Operator Security Program (AOSP), Chapter 7.

All entities involved in Riyadh Air's cargo supply chain (including handling contractors, authorized shipping agents, etc.) must comply with necessary procedures and measures to ensure aviation security as per regulations.

Riyadh Air is responsible for regularly auditing its contracted cargo service providers to ensure their compliance with all relevant security regulations and implementation of best practices. Any identified deficiencies must be addressed in a timely manner.

7.3 CARGO SECURITY PROCEDURES

Refer to AOSP, Section 7.2.

Riyadh Air utilizes the following cargo screening methods that align with industry best standards:

1. **X-ray screening:** Dual-view x-ray systems provide operators with images of cargo contents from different angles to identify prohibited items. Systems can penetrate dense cargo with high resolution. Operators are trained in image interpretation.
2. **Explosive detection systems (EDS):** EDS equipment analyzes cargo with automated algorithms to detect traces of explosives. Advanced systems can detect minute particles or vapor.
3. **Explosive trace detection (ETD):** ETD uses swabs rubbed over cargo surfaces which are chemically analyzed to detect microscopic traces of explosives. ETD is highly sensitive and supplements other methods.
4. **Physical searches:** Manual searches of cargo contents are conducted by trained personnel for accessible shipments. Search protocols ensure systematic coverage.
5. **Canine teams:** Trained explosive-detection dogs screen cargo by sniffing exteriors and interiors of shipments when opened. Their acute sense of smell complements other methods.
6. **Visual checks:** Inspections of cargo exteriors, documentation, labels, seals, and other markings to identify any anomalies.

Screening protocols consider shipment size, type, assessed risk, and combine multiple methods to provide layered detection. All staff are trained and certified in equipment operation and interpretation.

7.4 PERSONNEL SECURITY AND TRAINING

Refer to AOSP, Chapter 13.

7.5 PRE-BOARD INSPECTION OF PASSENGERS

Riyadh Air must inspect all passenger baggage and carry-ons prior to allowing boarding to identify any unauthorized dangerous goods. Agents should look for:

1. Chemical or hazardous materials labels, markings, and shipping names,
2. DG hazard class labels like flammable, explosive, corrosive, etc.,
3. Cylinders or canisters that may contain gases, propellants, or fuel,
4. Evidence of loose powders, liquids, batteries, and magnetized materials,
5. Damaged, defective, or recalled lithium batteries,
6. Homemade or modified electronic devices,
7. Weapons, ammunition, flares, pepper spray, and electroshock devices,
8. Strike-anywhere matches, fuel, solvents and adhesives,
9. Unidentified liquids in quantities over 100 ml without exemptions.

Passengers must be asked at the counter if they are transporting any hazardous materials in checked or carry-on baggage. Declaration requirements apply to most Dangerous Goods (DG) items.

If dangerous goods are discovered, passengers must be informed that such materials are forbidden on-board aircraft. Items must be denied for loading until removed and cleared. Exceptions only apply to the limited DG items passengers are permitted to carry under regulations.

Under no circumstances can unauthorized or undeclared dangerous goods be knowingly allowed on Riyadh Air flights. All baggage and passengers must undergo inspection to enforce DG restrictions before final boarding.

These labels help Riyadh Air team or contractors identify the type of hazard and classify the dangerous goods.

Dangerous Goods Labels	Class/Category
	**Class 1 Explosives:** Explosive substances, explosive articles, pyrotechnic devices. Includes ammunition, fireworks, detonators, toy gun caps, etc. Division 1.4 S of this class is the only division transported by passenger aircraft. It consists of articles and substances which present no significant hazard (e.g. cartridges for weapons).

	**Class 2 Gases:** Transported as compressed, liquefied, refrigerated liquefied, or gas in solution. Includes aerosols. This class has three divisions: Division 2.1: Flammable gases, i.e. butane, propane, camping gas cylinders, gas refills for lighters. Division 2.2: Non-flammable, non-toxic gases, i.e. oxygen, liquid nitrogen, compressed air (aqualungs). Division 2.3: Toxic gases, i.e. chlorine, coal gas, Halon fire extinguishers.
Dangerous Goods Labels	**Class/Category**
	**Class 3 Flammable liquids:** Includes liquids with a boiling point of 35 degrees C or less, or a flashpoint of 60 degrees C or less. Examples are petrol, alcohol, varnish, paint (and thinners), lighter fluid, many adhesives, methylated spirits, ether, turpentine.
	**Class 4 Flammable solids:** Substances liable to spontaneous combustion and substances which, when in contact with water, emit flammable gases. Class 4 has 3 divisions: **Division 4.1:** Flammable solids such as hexamine solid fuel tablets for camping stoves, self-reactive substances, and desensitized explosives. **Division 4.2:** Substances liable to spontaneous combustion under normal conditions encountered in air transport, such as phosphorus which burns when exposed to air. **Division 4.3:** Substances that when in contact with water emit flammable gases, i.e. "Dangerous when wet". Examples are sodium, zinc particles, etc.
	**Class 5.1 Oxidizing substances**: Substances which themselves are not necessarily combustible, but which by yielding oxygen may cause or contribute to the combustion of other material. An example is generators which produce oxygen by chemical reaction, and bleaching agents. **Class 5.2 Organic peroxides:** These are thermally unstable substances that may undergo heat-generating, self-accelerating decomposition, which may be

	explosive, rapid, sensitive to impact or friction, or react dangerously with other substances. An example is hydrogen peroxide.
	**Class 6.1 Toxic substances:** Those substances which are liable to cause death or injury if swallowed, inhaled, or absorbed through the skin. Examples are pesticides and poisons (cyanides, arsenic). **Class 6.2 Infectious substances:** Those known to contain, or reasonably expected to contain, pathogens (live virus materials, bacteria, blood, feces, urine).
Dangerous Goods Labels	**Class/Category**
	**Class 7** Radioactive material: Substances for medical diagnoses or treatment, certain pacemakers, several types of measuring instruments.
	**Class 8 Corrosives:** Substances which, in the event of leakage, can cause severe damage by a chemical reaction when in contact with living tissue or materially damage other freight, containers, or aircraft. Examples are mercury (thermometers), nitric acid, sulfuric acid, battery acids, photo developers, drain cleaners, ammonia, oven cleaners, alkaline.
	**Class 9 Miscellaneous:** Includes magnetic articles, which can have an impact on the aircraft's compass, internal combustion engines, dry ice (solid carbon dioxide), retail packaging of perfumes, eau de cologne, acetone, nail polish remover.

Table 16 Dangerous Goods Labels and Class

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8 TRAINING

GACAR § 109 Subpart F

IATA DGR Section 1.5

8.1 PURPOSE AND SCOPE

The purpose of Riyadh Air's Dangerous Goods Training Program is to ensure personnel are competent enough to perform any function involving the transport of dangerous goods by air, in accordance with ICAO Technical Instructions, Chapter 4 and GACAR, Part 109, Subpart F.

As a non-carry operator, Riyadh Air's training curriculum will align with the requirements in GACAR, Part 109, Appendix B, Table B2 for operators not authorized to carry dangerous goods. This section outlines required training topics tailored to specific personnel functions regarding handling cargo, baggage, and passengers where undeclared dangerous goods may be present.

In developing this training program, IATA's Dangerous Goods Training Guidance – Competency-Based Training and Assessment Approach provides a valuable industry framework aligned with International Civil Aviation Organization (ICAO) standards for establishing effective function-specific competency-based training. The Guidance outlines best practices for training methodology, delivery techniques, assessment, and program evaluation that will help ensure Riyadh Air personnel achieve appropriate dangerous goods competencies.

The training program scope encompasses all Riyadh Air personnel involved in handling cargo, passenger baggage, company material, and passengers. It is designed to provide familiarity with general dangerous goods requirements, function-specific knowledge to perform duties, and awareness of hazards and emergency response procedures. Assessment procedures will validate personnel competencies.

8.2 TRAINING METHODOLOGY

8.2.1 Delivery Methods

Riyadh Air will utilize a combination of classroom instruction, computer-based training, on-the-job training, and practical exercises/simulations to deliver dangerous goods training.

The training delivery methods will be selected based on the most effective approach for each personnel function and the complexity of required competencies. A blended training approach ensures instructors calibrate their techniques based on audience and objectives.

8.2.1.1 Classroom Instruction

Classroom instruction will provide fundamental knowledge acquisition for personnel through instructor-led training sessions. This is well-suited for flight crew, cabin crew, and flight operations functions where hands-on tasks are limited.

It is also encouraged for initial training.

8.2.1.2 Computer/Web-Based Training

Self-paced online modules will supplement classroom training for administering consolidated assessment and reinforcing retention. This enables personnel to refresh knowledge at any time. Web-based training is mainly used for recurrent training.

8.2.1.3 Job Shadowing and On-the-Job Training

Per International Air Transport Association (IATA) guidance, on-the-job shadowing and hands-on practice is critical for Ground Handling Personnel to gain real-world dangerous goods experience. This will be overseen by Supervisors following classroom and online training.

8.2.1.4 Simulations/Practical Exercises

Simulated dangerous goods handling scenarios and facilitated exercises will provide risk-free practice and skills assessment for ground personnel accepting/handling cargo and passenger baggage.

8.2.2 Training Environment and Tools

To facilitate effective dangerous goods training delivery, Riyadh Air should obtain and utilize the tools and equipment outlined in the following sections.

8.2.2.1 Facilities and Equipment

1. Dedicated training facilities equipped with classroom spaces configurable for lectures, small groups, and hands-on activities.
2. Computer lab for web-based training modules and knowledge testing.
3. Mock cargo warehouse area to simulate real-world handling scenarios.
4. Camera systems to record and review personnel hands-on proficiency.
5. Dangerous goods shipment examples across all classes for observation and handling.
6. Packing, labeling, and marking supplies to construct training shipments.
7. Safety gear like gloves, goggles and protective clothing for realistic practice.

8.2.2.2 Training Aids

1. PowerPoint presentations, manuals, job aids, and quick reference guides tailored to each function.
2. Interactive e-learning modules with embedded quizzes and videos.
3. Example dangerous goods transport documents for review and completion.
4. Checklists for acceptance, packing, labeling, loading, etc.
5. Dangerous goods identification job aids organized by class and division.

8.2.2.3 Practice Shipments

1. Inert replicas allowing realistic handling without hazard exposure.
2. Simulated leaking or damaged packages to practice emergency response.
3. Partially prepared shipments for personnel to complete required actions.
4. Mock improper shipments with errors for personnel to identify and correct.
5. Sample NOTOCs, Dangerous Goods Declarations (DGDs) covering a wide variety of scenarios and classes.

8.3 TRAINING CURRICULUM

8.3.1 Flight Crew

Flight crew initial and recurrent training will cover familiarity with general provisions for air transport of dangerous goods, aircraft limitations, emergency procedures, and other topics outlined in GACAR 109, Appendix B, Table B2 (for Riyadh Air as a non-carry operator).

Per IATA's Dangerous Goods Training Guidance – Competency-Based Training and Assessment Approach, training topics and delivery methods will be tailored to flight crew functions and competency requirements, focused on:

1. Hazard awareness and risk mitigation,
2. Interpreting the NOTOC,
3. Responding to dangerous goods incidents in flight,
4. Communicating with dispatch, Air Traffic Control (ATC) and emergency services.

The curriculum will utilize a blended approach including classroom, web-based, simulations and practical drills.

Upon completing training, flight crew will demonstrate the ability to competently perform duties related to transport of dangerous goods.

Per GACAR, 109, flight crew must complete recurrent dangerous goods training within 24 months of their previous training to maintain qualification. If recurrent training is completed within the final three months of validity, the new validity period extends 24 months from the prior expiry date.

8.3.2 Ground Handling Personnel

Ground handling personnel training will cover topics outlined in GACAR, 109, Appendix B, Table B2 relevant to their specific function and relevant to Riyadh Air as a non-carry operator. Training delivery and tools will focus on building competencies through hands-on instruction. Initial and recurrent training will be provided.

Recurrent training will be provided within 24 months to maintain qualifications.

8.3.2.1 Dangerous Goods Acceptance

Personnel accepting cargo will be trained on:

1. Identifying undeclared dangerous goods,
2. Completing Acceptance Checklists,
3. Verifying shipper's declaration and package marking/labels,
4. Documentation requirements and recordkeeping.

Delivery: Classroom instruction, on-the-job shadowing, practical exercises with example shipments
Tools: Acceptance checklists, example Dangerous Goods Declarations (DGDs), and simulated leaking packages

Recurrent training will emphasize new regulations and reinforce skills through practical exercises.

8.3.2.2 Cargo and Baggage Handling

Personnel handling cargo and baggage will be trained on:

1. Recognizing undeclared dangerous goods,
2. Safely loading, unloading, and transporting shipments,
3. Segregating incompatible dangerous goods,
4. Securing packages and verifying marks/labels.

Delivery: On-the-job instruction, warehouse simulations, and team practical exercises
Tools: Job aids, videos, and example build-up shipments

8.3.2.3 Passenger Handling

Personnel assisting passengers will be trained on:

1. Identifying prohibited dangerous goods items,
2. Explaining passenger provisions and duty to declare,
3. Approval requirements for passenger exceptions,
4. Reporting undeclared or non-compliant dangerous goods.

Delivery: Classroom instruction, self-paced online modules, and practical exercises at check-in/boarding gates
Tools: Prohibited Items job aid, Dangerous Goods quick reference guide, and example passenger items

Recurrent training will reinforce knowledge through online refresher modules and evaluation of real-world passenger items.

8.3.3 Flight Operations and Dispatch

Flight Operations and Dispatch personnel training will cover topics outlined in GACAR, 109, Appendix B, Table B2 relevant to their functions. Initial and recurrent training will focus on:

1. Identifying and verifying Dangerous Goods,
2. Completing NOTOC and ensuring Captain receives information,
3. Responding to Dangerous Goods Incidents or emergencies,
4. Coordinating with ground staff, ATC, and emergency services.

Training delivery methods will include:

1. Classroom lectures on regulations and operational procedures,
2. Web-based training for recurring knowledge checks,
3. Simulated dispatch scenarios involving dangerous goods situations,
4. Communication drills to practice relaying details to flight crew.

Upon training completion, Dispatch personnel will demonstrate competency in:

1. Recognizing Undeclared or Non-compliant Dangerous Goods,
2. Completing accurate NOTOCs and providing crew notification,
3. Applying emergency procedures and contacting appropriate parties,
4. Communicating clearly with flight crew, ground staff, ATC, and authorities.

8.3.4 Cabin Crew

As the last line of defense identifying Undeclared or Non-Compliant Dangerous Goods brought on board by passengers, cabin crew training will be robust and focused on building the following competencies:

1. Identifying prohibited dangerous goods that are absolutely forbidden for air transport,
2. Recognizing restricted items that require approval and proper packaging,
3. Verifying passenger exceptions, like medical supplies, meet approval requirements,
4. Taking appropriate actions for suspicious items or non-declarations,
5. Applying emergency procedures for Dangerous Goods Incidents in flight,
6. Communicating clearly with flight crew during dangerous goods situations.

Training topics outlined in GACAR, 109, Appendix B, Table B2 will be covered through:

1. Classroom lectures on identification and passenger provisions,

2. Web-based modules reinforcing restricted vs prohibited items,
3. Extensive practical exercises and simulations including:
    a. Identifying prohibited items in mock passenger bags,
    b. Interviewing volunteer passengers with mock exceptions,
    c. Applying emergency procedures for spill/leak scenarios,
    d. Communicating with flight crew during simulated incidents.

Recurrent training will utilize web modules and practical evaluations at the boarding gate to maintain qualifications. Records of items identified, and actions taken will be maintained for program review.

8.4 PROGRAM DEVELOPMENT

8.4.1 Training Needs Analysis

A Training Needs Analysis will identify:

1. Regulatory requirements for each personnel function,
2. Operational procedures involving transport of dangerous goods,
3. Desired competencies and performance outcomes,
4. Potential gaps in knowledge, skills, and abilities.

This will inform curriculum design, tools, and delivery methods tailored to address needs.

8.4.2 Program Design

8.4.2.1 Assessment Plan

Assessment strategies will be developed for initial and recurrent evaluations, including:

1. Written knowledge tests,
2. Practical skills observations,
3. Simulated scenario exercises,
4. On-the-job performance appraisals,
5. Passing scores will be determined and documentation procedures established.

8.4.2.2 Material Development

Instructional materials will be developed for each training delivery method:

1. Presentations, manuals and job aids for classroom sessions,
2. Interactive e-learning modules for online learning,
3. Practical exercises and operational simulations,
4. Checklists and quick references for on-the-job needs.

Subject Matter Experts (SMEs) will review to validate training content and effectiveness.

8.5 ASSESSMENT PROCEDURES

Robust assessment strategies will evaluate personnel competency and program effectiveness.

Initial and recurrent training:

1. Written exams will assess knowledge comprehension,
2. Practical exercises will appraise skill application,
3. On-the-job observations will gauge real-world proficiency.

Competency benchmarks:

1. Passing scores will be set for written and proficiency assessments,
2. Actions will address personnel not meeting benchmarks:
    a. Retraining and re-evaluation,
    b. Temporary duty restrictions,
    c. Disqualification from dangerous goods functions.

Program metrics

1. Training records will be analyzed to identify strengths and opportunities,
2. Competency scores and trends will inform program adjustments,
3. Feedback surveys will provide input on experiences.

Instructors

1. Instructor capabilities will be evaluated through monitoring of training sessions,
2. SMEs will ensure accurate knowledge transfer,
3. Training the trainer programs will enhance facilitation skills.

8.6 INSTRUCTOR QUALIFICATIONS

Dangerous goods training instructors will meet qualification requirements in accordance with GACAR, Part 109, Subpart F:

1. Complete relevant dangerous goods training program,
2. Demonstrate competence in training topics through evaluation,
3. Possess instructional skills validated by SMEs,
4. Undergo recurrent training within 24 months to maintain qualifications.

Specific selection criteria will include:

1. Experience performing the related technical functions,
2. Familiarity with Riyadh Air operational procedures,
3. Strong communication and facilitation abilities,
4. Knowledge of adult learning techniques and tools,
5. Motivation to improve training program effectiveness.

Initial instructor training will develop skills through methods such as:

1. Mentoring programs with experienced instructors,
2. Ground/flight instructor training and certification courses,
3. Hands-on practice teaching sessions with evaluator feedback.

Recurrent instructor training will provide:

1. Refreshers on curriculum, delivery techniques and tools,
2. Updates on changing regulations and operational procedures,
3. Reinforcement of facilitation skills through observed practice sessions.

8.7 RECORDKEEPING

Complete and accurate records will be maintained for the Dangerous Goods Training Program. This includes:

1. **Individual Training Files** - Details on courses completed, scores achieved, skills observed, qualifications attained and recurrent training status for each employee.
2. **Instructor Files** - Courses taught, techniques utilized, evaluations received and recurrent qualifications for each approved instructor.
3. **Program Administration Files** - Curriculum materials, proficiency metrics, feedback surveys, and overall training program reviews and revisions.

Records will be:

1. Readily accessible to instructors and program administrators.
2. Secure with access controls to ensure confidentiality.
3. Backed up regularly with off-site storage for redundancy.
4. Compliant with data privacy regulations.

Detailed, well-organized records will enable training analysis, program adjustments, and regulatory compliance audits. Refer to CPM section 4.9.

8.8 EVALUATING PROGRAM EFFECTIVENESS

Several methods will be utilized to evaluate and enhance training program effectiveness:

1. **Personnel Feedback** - Anonymous surveys will collect input on experience, and areas for improvement.
2. **Instructor Observations** - Suggestions to update curriculum, tools, and techniques.
3. **Training Analysis** - Identifying topics with frequent failures to adjust training methods.
4. **Operations Review** - Assessing actual Dangerous Goods Incidents and how personnel responded.
5. **External Audit** - Third-party expert review against regulations and industry best practices.
6. **Recurrent Enhancements** - Regular content updates, delivery improvements, and tool revisions.

Evaluations will inform continuous program improvement regarding relevance, comprehension, retention, and results for personnel dangerous goods competencies.

9 APPENDIX

9.1 SAUDI DANGEROUS GOODS REGULATIONS (DGR) VARIATION

IATA DGR-Section 2.8

SAG – Saudi Arabia DGR variation is a more restrictive version of the international regulations. They have precedence for Riyadh Air operations.

SAG-01 The transport of alcoholic beverages for delivery to or through any destination in Saudi Arabia is prohibited.

SAG-02 The shipper of any dangerous goods by air shall provide a written undertaking to re-ship the consignment, at the shipper's cost and risk, if the shipment is not cleared and received by the consignee within ten working days from the arrival of the consignment to any destination in Saudi Arabia.

SAG-03 Name, address and telephone number of consignee must be written in full on the Air Waybill for dangerous goods to any destination in Saudi Arabia.

SAG-04 Prior permission is required from the concerned government departments for the importation of the following:

1. Explosives and munitions of war, which require further approval from:
    a. General Authority of Civil Aviation (GACA)
    b. Riyadh - King Abdulaziz Center For National Dialogue
    c. Safety, Security & Air Transport
    d. Riyadh - King Abdulaziz Center For National Dialogue

       P.O. Box 47360,

       Riyadh Area Code 11552,

       SAUDI ARABIA.

       Tel: Fax: (+966) 8001168888.

       Tel: Fax: +966 (11) 5253303.

       email: Safety-ecoreg@gaca.gov.sa.
2. Chemical products except for perfumery products, cosmetics, and dry ice.
3. Radioactive material: The final destination of radioactive material must be Jeddah, Riyadh, or Dammam only, except those intended for medical purposes, which may be imported to any point in Saudi Arabia.

SAG-05 Radioactive materials final destination must be Jeddah, Riyadh, or Dammam only except those intended for medical purposes may be imported to any point in Saudi Arabia unless purpose is reflected in the Shipper's declaration.

SAG-06 Name, address and telephone number of consignee must be written in full on each package of dangerous goods shipments to any destination in Saudi Arabia.

9.2 RIYADH AIR DANGEROUS GOODS REGULATIONS VARIATION

9.2.1 Introduction

In accordance with paragraph 6.6 of Cargo Services Conference Resolution 619, any airline wishing to operate itself in a more restrictive manner than the requirements of these Regulations must advise the IATA Secretariat promptly of such exception for publication as an operator variation.

Riyadh Air complies with state variations stated in Appendix 9.1.

9.2.2 DGR Variation

RESERVED.

9.3 FORMS

9.3.1 NOTOC

DANGEROUS GOODS MANUAL

NOTIFICATION TO CAPTAIN

Issue: 0
Revision: 0
Date: 18 FEB 2024

Station of Loading																	
24 Hours Contact				prepared by								A/C Reg					
Station of Unloading	Air Waybill	UN / ID Number	Proper Shipping Name	Class / Div (Compatibility Group for Class 1)	Subsidiary Risk	Number of Packages	Number of Overpack all pack in one (Same package)	Smallest Quantity per Shipment	Largest Quality per Shipment	Net Quantity per Shipment / Total Quantity / TI for Radioactive	Unit of Measure	UN Packing Group / Radioactive Material Category	CAO (X)	ERG Codes	LOADING		
															ULD ID	POSTN	
ULD Loaded by : (To be signed by Cargo Staff)				AIRCRAFT Loaded by: (To Be Signed by Loading Supervisor)									Captain's Signature		Other Information:		
Note: 1-There is no evidence that any damaged or Leaking packages containing Dangerous Goods have been loaded																	
Note: 2. On multisector fights For Dangerous Goods transiting any station. One full extra set of NOTOC must be placed on board for every Transit Station															Segregation Required: Yes / No		

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Figure 16 NOTOC Form

9.4 HIDDEN SHIPMENT INDICATORS

Cargo and baggage that are offered under a general description might have hazards that are not apparent. Some of these consignments have caused incidents that could have seriously endangered the safety of the aircraft and/or its passengers.

Name	Remarks
Aircraft parts/COMAT	May indicate the presence of chemical oxygen generators, flammable liquids/solids, corrosives, compressed gases, radioactive materials in aircraft parts and accessories, or general company materials
Automobile parts	May contain cellulose paints, wet batteries, shocks/struts with nitrogen, air bag inflators/air bag modules, etc.
Breathing apparatus/SCUBA	May indicate compressed air or oxygen cylinders
Bull semen (or other animals)	May involve the use of refrigerant (Ex. liquid nitrogen)
Camping equipment	May contain flammable liquids, gas, or solids
Chemicals	Often found to be hazardous
Cryogenic (liquid)	Indicates low temperature, low pressure, or non-pressurized gas such as argon, helium, neon, and nitrogen
Cylinders	May contain compressed gas
Dental apparatus	May contain hazardous chemicals such as resins or solvents
Electrical equipment	May contain magnetized materials or mercury in switch gear and electron tubes
Frozen fruits/vegetables	May be packed in dry ice
Household goods	May contain hazardous materials such as paint, aerosols, bleaching powder, etc.
Instruments	May conceal barometers, manometers, mercury switches, rectifier tubes, thermometers containing mercury
Laboratory/testing	May contain various hazardous chemicals
Medical supplies/equipment (test kits)	May contain various hazardous chemicals
Pharmaceuticals	May contain various hazardous chemicals
Repair kits	May contain various hazardous chemicals

Samples for testing	May contain various hazardous chemicals (including infectious substances)
Swimming pool supplies	May contain acid, chlorine
Vaccines	May be packed in dry ice

Table 17 Hidden Shipment Indicators