AIRBRIDGECARGO

We love
to make it happen.

abc | DGLi

For lithium batteries

IATA | Member

IOSA Registered Operator

CARGOiQ

Empowered to deliver.

In our tech-savvy world lithium batteries are commonly used in a variety of consumer goods, from **consumer goods, such as laptop computers, tablets, smartphones, household goods and children's toys, up to airplane equipment and machinery**. Providing an important advantage of relative lightweight, lithium batteries are not flawless. Their transportation comes with a number of restrictions and requirements in terms of safety and consistency. ABC team provides delivery solutions for lithium batteries, which are classified as Dangerous Goods (Class 9) due to possible spontaneous inflammation, in strict compliance with the latest industry standards and regulations. With ABC, you can fully count on finding experienced support and expertise your shipment needs. ***Always. Worldwide.***

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Your benefits at a glance

Acceptance of all types of lithium metal and lithium ion batteries, both single and inside/with equipment, throughout entire ABC network, including batteries under special provisions A88, A99, etc.

Full compliance with IATA Dangerous Goods Regulations and ICAO Technical Instructions Doc 9284 AN/905

Highly customized logistics solutions with personal attention

24/7 surveillance of shipments

Certified and skilled specialists with the right knowledge of dangerous goods and lithium batteries transportation

Possibility to use the whole aircarft capacity for transportation of lithium batteries. No additional loading restrictions on transportation

Transportation of electric-powered vehicles (BEV, HEV, PHEV)

Special assistance in obtaining approvals for carriage of certain types of batteries

Assistance with testing for safe transportation and obtaining of respective report (UN Manual of Tests and Criteria, Part III, subsection 38.3)

Special training course 'Transportation of lithium batteries' by certified trainers

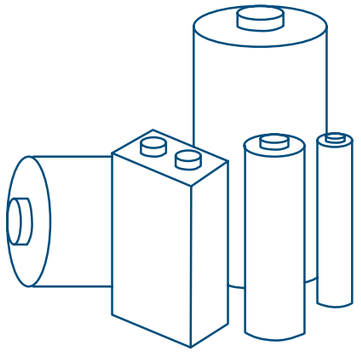
Advisory support with respect to ready-for-carriage procedures

User-friendly Operator Variations

What kinds of Lithium batteries do we transport?

Lithium ion batteries are the types of rechargeable batteries that use lithium ions as a key component of its electrochemistry. They are characterized by the transfer of lithium ions between the electrodes during the charge and discharge reactions and are applicable for portable and home electronic tools. Lithium ion batteries are used for smartphones, laptops, photo and video equipment and surveillance devices, and are the growth driver for emerging development of electric vehicles.

Lithium metal batteries have lithium as an essential component. These high charge density batteries are non-rechargeable, and are mostly used in remote control tools, and watches.



AirBridgeCargo is one of the few well-known airlines in the world, that still transports every type of batteries, permitted for carriage by air that is allowed by IATA: **from mobile phones to electric cars batteries.** This became possible only due to strict compliance with all the regulatory requirements and adherence to own risk-mitigation program. To provide safe transportation of lithium batteries AirBridgeCargo issued Operator Variations RU-02, RU-03 and RU-04 enshrined in IATA Dangerous Goods Regulations.

Why is this *important?*

Nowadays lithium batteries are an indispensable part of our fast-developing world. They are becoming increasingly widespread in multiple areas: **from mobile phones and laptops to electric cars and aircraft equipment.**
However, the transportation of lithium batteries by air became one of the biggest challenges in aviation industry, especially in e-commerce goods. For the past years, aviation authorities developed numerous regulations to ensure safe and secure transportation of lithium batteries. However, many stakeholders are not aware of these regulations, jeopardizing the whole supply chain.

Lithium batteries cause spontaneous ignition and uncontrollable fire. Un- and mis-declaration, wrong packaging, absence of labelling lead at least to refusal in transportation. At worst cases, this may even cause aviation accidents.

To eliminate such mistakes and to provide safe and secure transportation every participant of transportation process should follow simple rules:

Be responsible. Only commitment of all stakeholders involved in the transportation process can ensure safe and secure transportation.

Be aware of counterfeit or damaged products.

Be aware of State of Charge (SoC). Make sure your standalone batteries have SoC less than 30%. Higher charge can lead to unpredictable consequences.

Declare properly. Proper documentation provides transparency of the process and appropriate procedures on board.

Pack and label properly. Strictly follow packing instructions for your batteries in accordance with TI ICAO/ DGR IATA.

Training is crucial. Ensure people working with dangerous goods are trained and have valid certificates.

Stay informed. Regulations are very dynamic – be informed of international, regional rules and airlines variations.

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What are the Operator Variations *RU-02, RU-03 and RU-04?*

These are endorsement procedures, helping to identify quality level of the battery, state of charge, correctness of the declaration, training of the personnel and shipper's confirmation of compliance with IATA regulations by checking documents prior the transportation. Without this information, the airline cannot safely follow loading, handling and emergency procedures. In this case, the whole transportation process becomes very vulnerable to hazards. RU-02, RU-03, RU-04 procedures are the crucial step to provide secure and uninterrupted process of lithium batteries transportation.

The following types of batteries fall under the procedures:

RU-02 | Lithium metal batteries under UN 3090 section IA and Lithium metal batteries with/in equipment under UN 3091 section I

RU-03 | Lithium ion batteries under UN 3480 section IA and Lithium ion batteries with/inequipment under UN 3481 section I

RU-04 | Lithium metal or lithium ion batteries under UN 3480/3090 section IB, II, and Lithium metal or lithium ion batteries with/in equipment under UN 3481/3091 section II.

I	RLI	Ja		5 kg	5 kg
II	ELI	Nein		5 kg	35 kg
IA	RBM	Ja		5 kg	5 kg
IB	RBM	Ja		verboten	35 kg
II	EBM	Nein		verboten	2,5 kg
I	RLM	Ja		verboten	Tabelle 968-II
II	ELM	Nein		5 kg	35 kg
I	RLM	Ja		5 kg	5 kg
I	ELM	Nein		5 kg	35 kg

Tabelle 965-II

/oder energie h	Lithium-Ionen-Zellen mit einer Nennenergie von mehr als 2,7 Wh aber höchstens 20 Wh	Lithium-Ionen-Batterien mit einer Nennenergie von mehr als 2,7 Wh aber höchstens 100 Wh
	8 Zellen	2 Batterien
	nicht anwendbar	nicht anwendbar

What documents should be provided?

For RU-02 and RU-03 procedures, the shipper should forward the following documents to e-mail address **dg@airbridgecargo.com**:

- **Copy of the air waybill**, if issued
- **Shipper's Declaration for Dangerous Goods** completed and signed in accordance with IATA DGR
- **Documents confirming the batteries were tested** in compliance with the requirements set forth in Subsection 38.3 Part III of UN Manual of Tests and Criteria
- **Document confirming the nature of the cargo being transported** (invoice, packing list)
- **Certificate of the person who signed dangerous goods declaration** (ICAO/IATA training categories 1,3 or 6) (or a letter from the organization confirming completion of such training)
- **For UN 3480 only:** document confirming that the state of charge of the battery does not exceed 30% (the information may be specified in MSDS or in the Customer's Declaration for Dangerous Goods). + any other document may be required by abc | DG team such as QMS and MSDS

For transportation of prototypes of batteries (Special Provision A88) or batteries, weighing more than 35 kg (Special Provision A99), in addition to above documents shipper should provide:

- **Type of packaging with its specification**
- **Approval from appropriate authority of State of Origin**
  (additional documents may be required according to state variations in IATA DGR/TI ICAO)

All the requests are processed within the shortest possible timeframes.

For RU-04 procedure, the shipper only needs to attach completed and signed "Shipper's Declaration for Lithium Batteries or it's equivalent" to airwaybill.

The recommended version of the **"Shipper's Declaration for Lithium Batteries"**, overview of packing requirements and declaration instructions can be obtained by request or on ABC official website.

How to prepare
lithium batteries for carriage

1. **Determine the type** (lithium ion, lithium metal or hybrid)
2. **Define the quantity** of lithium in cell/battery (for lithium metal) or Watt-hour Rating (for lithium ion)
3. **Determine the type of battery** (installed in equipment, with equipment or standalone) and the proper UN Number, section and packing instruction
4. **Calculate the weight** on package and Watt-hour Rating to determine packing instruction
5. **Prepare all documentation** for battery and check its accordance with ABC Operator Variations mentioned above
6. **Use proper package**, marking and labelling
7. **Send the relative documents to dg@airbridgecargo.com** for RU-02/RU-03 shipments for approval. For RU-04 shipments please proceed as usual with shippers' declaration
8. **Wait for "Ok to forward"** for RU-02/RU-03. We do our best to process all the requests within the shortest possible timeframes
9. **Enjoy** developing and powering up your business with AirBridgeCargo!

Should the documents be provided every time?

No, in some cases simplified endorsement procedures can be held.

More information at
www.airbridgecargo.com/en/page/94/abc-dg-li

Transportation of electric vehicles with installed batteries is regulated by Technical instruction of ICAO and IATA DG regulations and falls under UN3171, PI 952 (battery-powered vehicle).

We encourage customers to follow the standard request procedure with the following documents to be provided:

Mandatory: Dangerous Goods Declaration

Recommended (battery must meet that standards):

1. UN Manual of Tests and Criteria, Part III, subsection 38.3
2. Battery must manufacture under QMS (copy to be provided)
3. Certificate for DG training of the person who signed DGD
4. Battery incorporates a safety venting device or its designed to preclude a violent rupture under conditions normally incident to transport
5. Battery is equipped with effective means of preventing external short circuits
6. Battery is equipped with effective means as necessary to prevent dangerous reverse current flow

Do not hesitate to contact us! Qualified specialists of AirBridgeCargo will answer any of your questions regarding lithium batteries transportation. Just contact local airline office or reach us via e-mail **dg@airbridgecargo.com** and you will obtain full information about how to transport lithium batteries properly and safely.

LITHIUM ION BATTERIES

UN 3481 (RLI, ELI)

Lithium ion batteries contained in equipment

	RLI (RU-03):	ELI (RU-04):
LABELLING	Cells: more than 20 Wh Batteries: more than 100 Wh 	Cells: not more 20 Wh, Batteries: not more 100 Wh
PACKING INSTRUCTION	**PACKING INSTRUCTION 967**	
	Section I Package limit (net quantity of cells/batteries): **PAX = 5 kg, CAO = 35 kg**	**Section II** Package limit (net quantity of cells/batteries): **PAX = 5 kg, CAO = 5 kg**
REQUIRED DOCUMENTATION		
	Dangerous goods declaration 	**Dangerous goods declaration is not required** The words "Lithium ion batteries in compliance with Section II of PI 967" must be included in AWB

LITHIUM ION BATTERIES

UN 3480 (RBI-CAO, EBI-CAO)

Lithium ion batteries

	RBI-CAO (RU-03):	RBI-CAO (RU-04):	EBI-CAO (RU-04):
LABELLING	Cells: more than 20 Wh, Batteries: more than 100 Wh 	Cells: not more 20 Wh, Batteries: not more 100 Wh 	Cells: not more 20 Wh, Batteries: not more 100 Wh
PACKING INSTRUCTION	**PACKING INSTRUCTION 965**		
	Section IA Package limit: **CAO = 35 kg** UN– package required(PG II performance standard)	**Section IB** Package limit: a) **10 kg and 8 cells** b) more than **≤ 20 Wh** with **> 2,7 Wh** **2 batteries** or more than **≤ 100 Wh** with **> 2,7 Wh**	**Section II** Package limit: **CAO** a) not more **2,5kg** cells/batteries with **≤ 2,7 Wh or** b) not more 8 cells with **> 2,7 Wh ≤ 20 Wh or** c) not more 2 batteries with **> 2,7 Wh ≤ 100 Wh**
REQUIRED DOCUMENTATION			
	Dangerous goods declaration 	**Dangerous goods declaration** 	**Dangerous goods declaration is not required** The words "Lithium ion batteries in compliance with Section II of PI 965-CAO" must be included in AWB

LITHIUM ION BATTERIES

UN 3481 (RLI, ELI)

Lithium ion batteries packed with equipment

	RLI (RU-03):	ELI (RU-04):
LABELLING	Cells: more than 20 Wh, Batteries: more than 100 Wh 	Cells: not more 20 Wh, Batteries: not more 100 Wh
PACKING INSTRUCTION	**PACKING INSTRUCTION 966**	
	Section I Package limit (net quantity of cells/batteries): **PAX = 5 kg, CAO = 35 kg** UN– package required (PG II performance standard)	**Section II** Package limit (net quantity of cells/batteries): **PAX = 5 kg, CAO = 5 kg**
REQUIRED DOCUMENTATION		
	Dangerous goods declaration 	**Dangerous goods declaration is not required** The words "Lithium ion batteries in compliance with Section II of PI 966" must be included in AWB

Please note

RU-03: UN 3480, Section IA of PI965 and UN 3481, Section I of PI966 and PI967 is accepted for carriage upon prior approval of the airline. Request for approval must be send via email to dg@airbridgecargo.com

RU-04: UN 3480 Section IB, II of PI965, UN 3481 Section II of PI966 and PI967, UN 3090 Section IB, II of PI968 and UN 3091, Section II of PI969 and PI970 is accepted for carriage only with a completed and signed "Shipper's Declaration for Lithium Battery" form. This form can be obtained from local airline offices or via email to **dg@airbridgecargo.com**

Spreading power over continents.

abc | DGLi

LITHIUM METAL BATTERIES

UN 3091 (RLM, ELM)

Lithium metal batteries contained in equipment

LITHIUM METAL BATTERIES

UN 3090 (RBM-CAO, EBM-CAO)

Lithium metal batteries

LITHIUM METAL BATTERIES

UN 3091 (RLM, ELM)

Lithium metal batteries packed with equipment

	RLM (RU-02):	ELM (RU-04):	RBM-CAO (RU-03):	RBM-CAO (RU-04):	EBM-CAO (RU-04):	RLM (RU-02):	ELM (RU-04):
LABELLING	Cells: more than 1g, Batteries: more than 2g	Cells: not more 1g, Batteries: not more 2g	Cells: more than 1g, Batteries: more than 2g	Cells: not more 1g, Batteries: not more 2g	Cells: not more 1g, Batteries: not more 2g	Cells: more than 1g, Batteries: more than 2g	Cells: not more 1g, Batteries: not more 2g
PACKING INSTRUCTION	**970**		**968**			**969**	
	Section I Package limit (net quantity of cells/batteries): **PAX = 5 kg, CAO = 35 kg**	**Section II** Package limit (net quantity of cells/batteries): **PAX = 5 kg, CAO = 5 kg**	**Section IA** Package limit: **CAO = 35 kg** UN– package required(PG II performance standard)	**Section IB** Package limit **CAO**: a) **2,5 kg and** b) more than **8 cells** with **> 0,3 g ≤ 1 g** or more than **2 batteries** with **> 0,3 g ≤ 2 g**	**Section II** Package limit **CAO**: a) not more **2,5kg** cells/batteries with **≤ 0,3 g or** b) not more **8 cells** with **> 0,3 g ≤ 1g or** c) not more **2 batteries** with **> 0,3 g ≤ 2 g**	**Section I** Package limit: **PAX = 5 kg,** **CAO = 35 kg** UN– package required(PG II performance standard)	**Section II** Package limit: **PAX = 5 kg,** **CAO = 5 kg**
REQUIRED DOCUMENTATION	**Dangerous goods declaration**	**Dangerous goods declaration is not required** The words “Lithium metal batteries in compliance with Section II of PI 970” must be included in AWB	**Dangerous goods declaration**	**Dangerous goods declaration**	**Dangerous goods declaration is not required** The words “Lithium metal batteries in compliance with Section II of PI 968-CAO” must be included in AWB	**Dangerous goods declaration**	**Dangerous goods declaration is not required** The words “Lithium metal batteries in compliance with Section II of PI 969” must be included in AWB

Please note

RU-02: UN 3090, Section IA of PI 968 and UN 3091, Section I of PI 969 and PI 970

RU-04: UN 3480 Section IB, II of PI965, UN 3481 Section II of PI966 and PI967, UN 3090 Section IB, II of PI968 and UN 3091, Section II of PI969 and PI970 is accepted for carriage only with a completed and signed “Shipper’s Declaration for Lithium Battery” form.

This form can be obtained from local airline offices or via email to **dg@airbridgecargo.com**

abc | DG

abc Service
for dangerous goods

Safe, consistent and reliable. From simple consumer goods (aerosols, paints and perfumery products) up to highly radioactive materials used in manufacturing and medicine - we understand that certain cargo has special shipping requirements. At ABC, we are fully equipped to handle and deliver dangerous cargo, and are able to offer customized logistics solutions tailored to the needs of each shipment based on our experience and knowledge of regulations for transportation of dangerous goods. ***Always. Worldwide.***

Knowledge, experience and expertise
three pillars we lean on for DG transportation

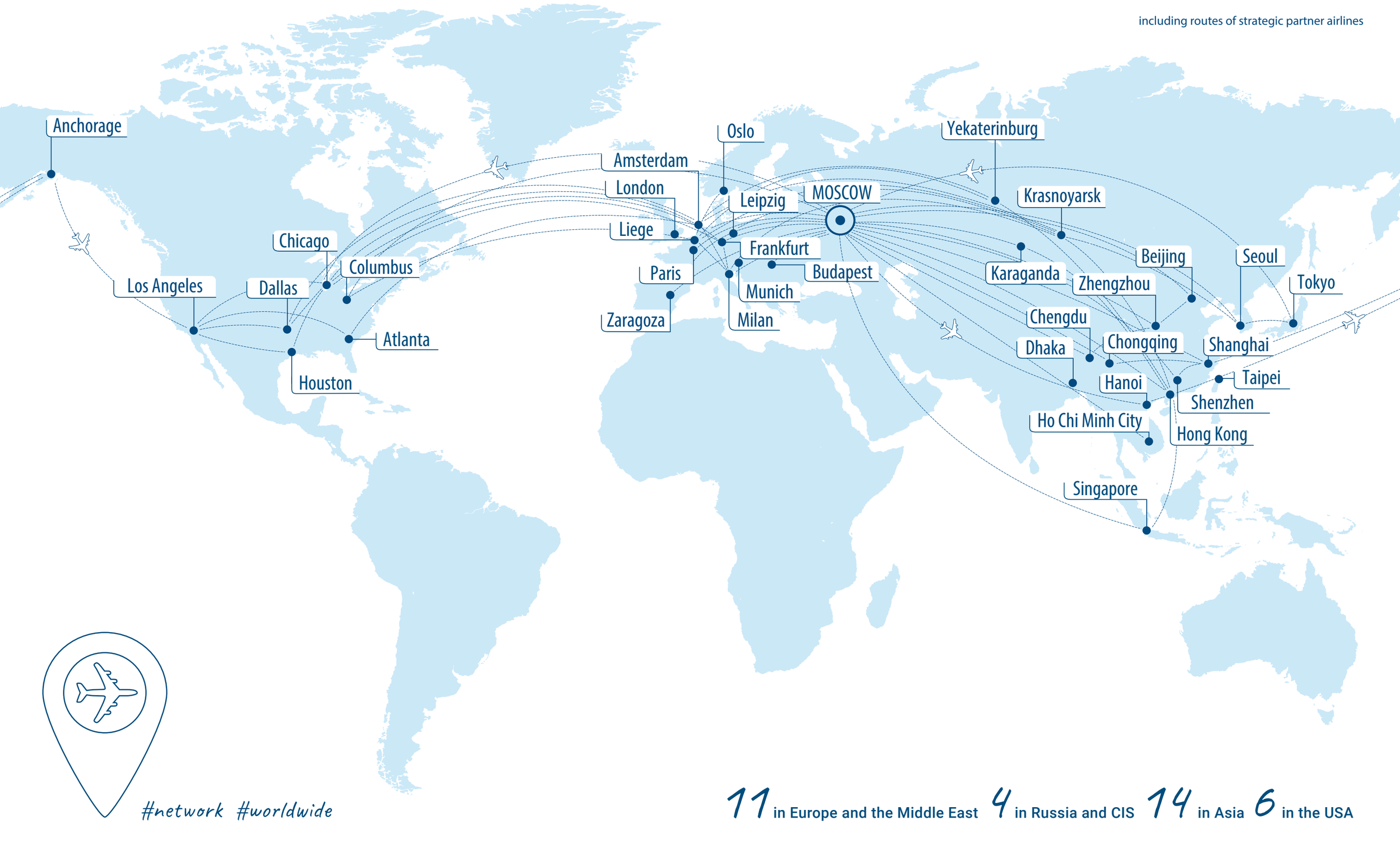
Dangerous goods transportations are organized and handled by certified and fully trained logistics practitioners across entire ABC network. Our cargo experts go through ongoing, special training to ensure they keep up with all the latest safety regulations and technologies. Compliant with strict internal, external and industry regulations, we can make sure no one is ever put at risk during the handling and shipping of dangerous goods – whether it is your cargo, our staff or the environment. ***That's our promise.***

Logistic solutions based on *your needs*

- Full compliance with IATA Dangerous Goods Regulations and ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air, Doc 9284 AN/905
- Fully certified to transport all Classes of dangerous goods
- License for transportation of radioactive materials and fissile materials - Uranium/Plutonium (class 7)
- Acceptance of all types of lithium metal and lithium ion batteries, both single and in/with an equipment, including cases under special provisions A88, A99, etc
- Transportation of electric-powered vehicles (BEV, HEV and PHEV)
- Special assistance in obtaining approvals for carriage of certain goods
- Certified and trained personnel across the entire ABC network
- Highly customizable logistics solutions
- 24/7 surveillance of shipments

Unlimited connectivity options for your cargo.

including routes of strategic partner airlines



#network #worldwide

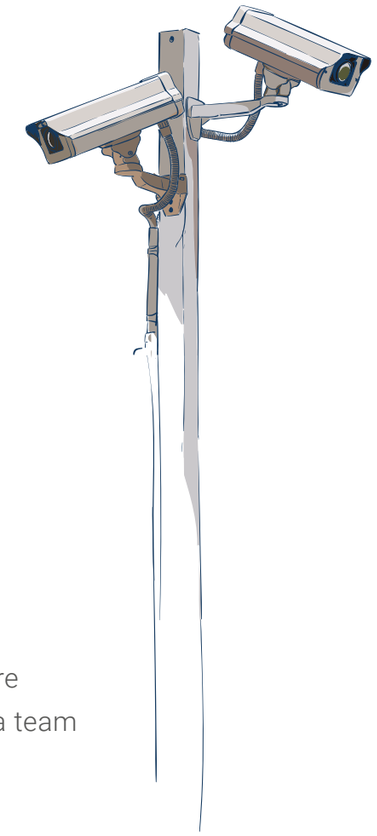
11 in Europe and the Middle East **4** in Russia and CIS **14** in Asia **6** in the USA

A partner you can trust in.

AirBridgeCargo is the leading all-cargo carrier in Russia that operates among the top ten international cargo airlines worldwide.

Quality focus

- IATA and IOSA certified, full compliance with all international/internal safety guidelines and quality standards (Cargo iQ)
- Member of Cool Chain Association
- IATA CEIV (pharma) and QEP certified stations
- Qualified and certified team of logistics practitioners for transportation of general and special cargoes
- 24/7/365 Control Tower (CT) operation to monitor and manage transportation of special cargo consignments



Special attention for special cargo

CONTROL TOWER

AirBridgeCargo Airlines has established a new 24/7/365 Control Tower (CT) operation to monitor consignments of special cargoes and to proactively respond to service disruptions to ensure it consistently meets customers' delivery deadlines. Managed by a team of fully trained supply chain specialists and based in Moscow, HQ the Control Tower provides:

- Real-time, round-the-clock monitoring of all cargo movements throughout the entire transportation process across ABC's network
- Checkup of ABC's fleet technical condition (temperature control system, cargo handling system readiness)
- Schedule alignment and control for priority delivery of special cargo
- Communication with ABC specialists from different departments and customers in case of deviations for prompt response
- Cargo status updates and reports
- CT personnel availability 24/7 via e-mail, skype or direct phone line

Achievements and advantages

- More than 15 years of consecutive growth
- Over 30 airfreight destinations with effective connectivity options through hub in Moscow and 48 hour delivery time
- 1,300 cargo professionals worldwide
- Customized logistics solutions for transportation of general and special cargo
- State-of-the-art Boeing 747 fleet
- Logistics solutions, complemented by the extensive network of ABC interline partners and trucking companies worldwide

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Your personal notes

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ABC 15

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to deliver for you.

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