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Air cargo: the AWB and chargeable weight

Which weight is freight charged on, how do you read an AWB number, and what is the difference between a MAWB and a HAWB?

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Online interactive version: **https://ozgurkonakci.com/en/guide/air-cargo-awb-chargeable-weight/**

SHORT ANSWER

Air freight is charged on chargeable weight: the greater of the shipment's gross weight and its volumetric weight. In air cargo, volumetric weight is usually (length × width × height in cm) ÷ 6,000; express couriers such as DHL Express and UPS use 5,000. The carriage is documented by an air waybill (AWB). An AWB number has 11 digits: a 3-digit airline prefix, a 7-digit serial number and a check digit. The AWB is prima facie evidence of the contract and of acceptance of the cargo; unlike a bill of lading, it is not a document of title.

What is air freight charged on?

In air cargo, what fills the aircraft is often volume rather than weight. So the carrier looks at two weights:

- **Gross weight:** what the cargo weighs on the scale, packaging included.
- **Volumetric weight:** the space the cargo takes up, converted to weight with a factor.

The **greater of the two is the chargeable weight**. Freight is the chargeable weight multiplied by the applicable rate. For light but bulky cargo (textiles or foam-packed goods, for example) the volumetric weight decides; for dense cargo (such as metal parts) the gross weight does.

How is volumetric weight calculated?

Air cargo (IATA): According to training material that cites IATA's tariff rules (TACT), the standard ratio is **6,000 cm³** per kilogram:

Volumetric weight (kg) = length × width × height (cm) × number of pieces ÷ 6,000

On that basis 1 m³ of cargo counts as about **166.67 kg** (1,000,000 ÷ 6,000). Different ratios can apply to some commodities and routes; check your quote.

Express couriers: DHL Express and UPS state on their own pages that they use a divisor of **5,000**. DHL adds that the divisor may vary. FedEx says the divisor varies by carrier and that the most common metric divisor is 5,000. The same box therefore counts as heavier when sent by courier than as air cargo.

Service	Divisor	1 m³ counts as
Air cargo (IATA)	6,000	≈ 166.67 kg
Express courier (DHL Express, UPS)	5,000	200 kg
Domestic parcel carriers in Türkiye	Varies by company	Ask your carrier

Rounding

UPS states that it rounds both actual and volumetric weight **up to the next 0.5 kg**. Training material citing IATA rules gives a similar rule for air cargo: dimensions are rounded to the nearest whole centimetre and volumetric weight up to the next 0.5 kg. Rounding can differ between carriers, so compare the result with your quote.

Example

One box: 62 × 41 × 33 cm, gross weight 9.3 kg.

Step	Air cargo (÷ 6,000)	Express courier (÷ 5,000)
Volume	62 × 41 × 33 = 83,886 cm³	83,886 cm³

Step	Air cargo (÷ 6,000)	Express courier (÷ 5,000)
Volumetric weight	83,886 ÷ 6,000 = 13.98 kg	83,886 ÷ 5,000 = 16.78 kg
Rounded up to next 0.5 kg	14.0 kg	17.0 kg
Gross weight (rounded)	9.5 kg	9.5 kg
Chargeable weight	**14.0 kg**	**17.0 kg**

Although the box weighs 9.3 kg, it is charged as 14 kg by air cargo and 17 kg by courier.

Step	Calculation	Result
Volume	4 × 120 × 80 × 100 cm	3.84 m^3
Volumetric weight	4 × 120 × 80 × 100 ÷ 6000	640 kg
Gross weight	4 × 95 kg	380 kg
Chargeable weight	the greater of the two	640 kg

What does "desi" mean?

In Turkish cargo practice, **desi** is used to mean volumetric weight. There is no single definition, though; the divisor depends on the context:

- The Turkish Ministry of Trade's e-export training module calculates desi with a divisor of **5,000** for international express shipments. In its example a 60 × 40 × 40 cm box is 19.2 desi and is rounded up to the next step on the invoice.
- In IATA air cargo the ratio is **6,000**. In that context it is more accurate to speak of **volumetric weight** or **chargeable weight** than of desi.
- Domestic parcel carriers may use other divisors. Ask your carrier which one applies to your shipment.

When comparing quotes, ask "which divisor?" as well as "how many desi?". For small export shipments from Türkiye, see **E-export and micro-export from Türkiye**.

Rate tiers (general information)

The structure below comes from a training document that cites IATA's tariff rules (TACT). Tiers and breakpoints vary by carrier and route; go by the structure in your quote.

Code	Meaning
M	Minimum charge: the floor charged per shipment when the calculated amount falls below it
N	Normal general cargo rate: usually for under 45 kg
Q	Quantity tiers (e.g. 45, 100, 250, 500, 1,000 kg): the rate per kg falls as weight rises
SCR	Specific commodity rate for certain goods on certain routes
Class rates	A percentage of the general rate; a surcharge for cargo needing special handling, a reduction for some other cargo

According to the same source, published rates are often a reference and open to negotiation. Moving up a tier is sometimes cheaper: if the 500 kg tier costs 2.10 per kg and the tier below costs 2.35, then above 500 × 2.10 ÷ 2.35 ≈ **447 kg** it pays to be charged at 500 kg.

How fuel and security surcharges are applied, on which weight and against which index, **varies by carrier**. Korean Air Cargo, for example, charges its fuel surcharge per kg of chargeable weight, indexed to the jet fuel price. Ask what each surcharge is based on; see **Freight quotations and surcharges** for more.

The air waybill (AWB)

The AWB is the transport document issued for carriage by air. Under the Montreal Convention:

- **Evidential value (Art. 11):** The AWB is prima facie (rebuttable) evidence of the conclusion of the contract, of acceptance of the cargo and of the conditions of carriage stated in it. Statements on weight, dimensions, packing and number of pieces are also prima facie evidence. Statements on quantity, volume and condition are not evidence against the carrier unless the carrier checked them in the shipper's presence and recorded that.

- **A defective document does not void the contract (Art. 9):** Even if the AWB does not comply with the rules, the contract of carriage remains valid and subject to the Convention, including its limits of liability.
- **Not a document of title:** According to industry sources such as Maersk, the AWB is non-negotiable and, unlike an ocean bill of lading, does not represent title to the goods. The Montreal Convention itself contains no express provision on this. The cargo is delivered to the consignee named on the AWB.

How to read an AWB number

An AWB number has **11 digits**:

Part	Digits	Meaning
Airline prefix	3	The numeric code of the airline issuing the AWB
Serial number	7	The airline's running number
Check digit	1	The remainder when the serial number is divided by 7

According to the Australian Border Force technical specification, the check digit is calculated from the 7-digit serial number only; the airline prefix is not included.

Example: Serial number 1234567. 1,234,567 = 7 × 176,366 + **5**. The check digit is 5 and the number is written **XXX-12345675**. A mistyped digit usually makes the check digit inconsistent, which is an easy way to catch typing errors in documents.

MAWB and HAWB

Consolidated shipments have a two-layer document structure:

	MAWB (master)	HAWB (house)
Issued by	The airline or its agent	The forwarder
Covers	The whole consolidated load	One shipment within the consolidation
Contract between	Airline and forwarder	Shipper and forwarder

The shipper named on the HAWB is not a direct party to the MAWB contract with the airline. The structure mirrors the MBL–HBL relationship in ocean freight; for the parties involved see **The parties in trade and logistics**.

Three originals

Under Article 7 of the Montreal Convention, the **shipper** makes out the AWB in three original parts:

1. **For the carrier:** signed by the shipper.
2. **For the consignee:** signed by the shipper and the carrier; travels with the cargo.
3. **For the shipper:** signed by the carrier and handed to the shipper after the cargo has been accepted.

Signatures may be printed or stamped. If the carrier makes out the AWB at the shipper's request, it is deemed to do so on the shipper's behalf unless proven otherwise.

e-AWB

Article 4 of the Montreal Convention allows any other means that preserves a record of the carriage to be used instead of an AWB; if the shipper asks, the carrier then issues a **cargo receipt**. This is the legal basis of the e-AWB.

- **IATA Resolution 672 (Multilateral e-AWB Agreement):** By signing once with IATA, parties can use the e-AWB without separate bilateral agreements with every other participant. The contract is concluded when the carrier accepts the cargo and issues the cargo receipt.
- **Default method:** According to IATA, since 1 January 2019 the e-AWB has been the default contracting method on feasible trade lanes; a paper AWB is used if the parties agree. A feasible lane is one where both the origin and destination countries have ratified the Montreal Convention or Montreal Protocol 4.

Where a lane does not meet that condition, a paper AWB may be needed; ask your forwarder and the airline at booking whether they work with the e-AWB.

Liability limit and notice periods

Issue	Montreal Convention
Limit of liability (Art. 22(3))	**26 SDR/kg** (since 28 December 2024 following ICAO's review; 17 SDR in the original text, 22 SDR after the 2019 review)
Breaking the limit	If the shipper makes a special declaration of interest at handover and pays any supplementary sum, the declared amount applies
Damage complaint (Art. 31)	In writing, as soon as discovered and at the latest within **14 days** of receipt
Delay complaint (Art. 31)	In writing, within **21 days** of the cargo being placed at the consignee's disposal
Time bar (Art. 35)	**2 years** from arrival (or from the date the aircraft ought to have arrived or the carriage stopped)

Without a timely complaint no action lies against the carrier, except in the case of fraud. ICAO reviews the limits every five years. If the cargo is worth more than the limit, you need insurance; see **Carrier liability and cargo insurance** and **Cargo damage and the claims process**.

Security: regulated agents and known consignors

ICAO Annex 17 requires air cargo and mail to be subjected to security controls and protected from unauthorised interference before being loaded onto an aircraft. This is done through a **secure supply chain**: the state's appropriate authority approves and oversees certain entities, and cargo that has passed through their hands can be loaded without further screening.

Turkish rules (SHGM, SHT-17.6 Air Cargo and Mail Security Instruction) use these terms:

Turkish term	Meaning
Yetkili acente, group A (regulated agent)	An entity that performs security controls or screening, or is part of the secure supply chain (logistics company, airline, forwarder, ground handler); approval is per facility
Yetkili acente, group B	An entity that hands cargo to a group A agent without screening it and is not part of the secure supply chain
Bilinen gönderici (known consignor)	A shipper that originates cargo on its own account, meets the security standards and is authorised by the Directorate General
Güvenli kargo (secure cargo)	Cargo screened by a regulated agent or known consignor and protected from unauthorised interference

As a rule, all cargo is screened before loading; the exception is cargo secured by a regulated agent or known consignor and protected until loading. If an airline did not perform the controls itself, it may not accept the cargo without confirming that an authorised entity did. Screening can also appear as a separate terminal charge; Turkish Cargo's Istanbul export terminal tariff, for example, lists X-ray and other security services per kg with a minimum charge.

According to sources reproducing its text, the Civil Aviation Security Regulation (SHY-GÜVENLİK) published in the Official Gazette on 22 May 2026 uses the same terms. We could not confirm whether it amends the instruction; check the current version with SHGM.

ULDs: unit load devices

Air cargo is mostly loaded onto aircraft on pallets and containers called **ULDs** (unit load devices). Two common examples from Lufthansa Cargo's brochure (09/2023):

Type	Dimensions	Maximum gross weight
PMC pallet	Base 318 × 244 cm; usable area 304 × 231 cm. Loading height depends on aircraft and deck: 163 cm on the lower deck, up to 300 cm on the B777F main deck	Lufthansa: 6,804 kg
AKE (LD3 type) container	External base 156 × 153 cm, height 163 cm; internal volume about 3.8 m^3	Lufthansa: 1,588 kg

Maximum weight depends on the aircraft type: Condor, for example, gives 5,102 kg for a PMC on the B767. When planning a load, ask about the aircraft type and the airline's own limits.

Dangerous goods

For dangerous goods by air, airlines apply the **IATA Dangerous Goods Regulations (DGR)**. According to IATA, the **67th edition has applied since 1 January 2026** and is aligned with the 2026–2027 edition of the ICAO Technical Instructions. The DGR is renewed every year; check the edition in force on your shipping date. See **Dangerous goods transport: IMDG and ADR** for more.

Customs at the airport: the summary declaration

According to Türkiye's Ministry of Trade, the entry summary declaration for air cargo is lodged by the carrier that brings the goods or takes responsibility for their carriage. A representative or third party may lodge it instead, in which case the carrier obtains an undertaking that the deadline will be met.

Flight time	Entry summary declaration due
Under 4 hours	By the time the aircraft takes off at the latest
Over 4 hours	At least 4 hours before landing at the first airport in Türkiye

When the aircraft arrives, the carrier sends an electronic **arrival notification**. For customs procedures see **HS codes and customs procedures in Türkiye**.

Test yourself

1. A 100 × 80 × 60 cm box weighing 45 kg is going by air cargo. What is the chargeable weight? *(Answer: 100 × 80 × 60 ÷ 6,000 = 80 kg. The volumetric weight exceeds the gross weight, so it is charged at 80 kg.)*
2. If an AWB's serial number is 8114074, what is the check digit? *(Answer: 3. 8,114,074 = 7 × 1,159,153 + 3; the remainder is 3 and the number is XXX-81140743.)*
3. You notice damage on an air shipment 10 days after delivery. Is there still time to complain to the carrier? *(Answer: Yes. Under the Montreal Convention, a written damage complaint must be made within 14 days of receipt at the latest; report it as soon as you discover it.)*

Frequently asked questions

How is air cargo chargeable weight calculated?

First work out the volumetric weight: multiply the dimensions in centimetres, multiply by the number of pieces and divide by 6,000. Then compare it with the gross weight; the greater figure is the chargeable weight. With the 6,000 divisor, 1 m^3 of cargo counts as about 166.67 kg. Carriers usually round up to the next 0.5 kg; check the rule in your quote.

Is desi the same as volumetric weight?

In Turkish parcel and cargo practice, desi is used to mean volumetric weight. The divisor depends on the context, though: the Turkish Ministry of Trade's e-export training module uses 5,000 for international express shipments, IATA air cargo uses 6,000, and domestic couriers may use other divisors. Ask your carrier which one applies.

What does the last digit of an AWB number mean?

It is the check digit. The 7-digit serial number that follows the 3-digit airline prefix is divided by 7, and the remainder is the check digit. The airline prefix is not part of the calculation. For serial number 1234567 the remainder is 5, so the number is written XXX-12345675.

How long do I have to report damage on an air shipment?

Under the Montreal Convention, a written complaint must reach the carrier as soon as the damage is discovered and at the latest within 14 days of receipt; for delay, within 21 days of the cargo being placed at the consignee's disposal. Without a timely complaint no action lies against the carrier, except in the case of fraud. The right to damages is lost if no action is brought within 2 years.

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