



**Cabinet of Ministers of the Republic of Azerbaijan**

**Resolution No. 220**

**On approving the Regulations for transporting hazardous goods by air transport**

***Baku city, 13 December 2000***

In order to ensure the execution of Decree No 165 of the President of the Republic of Azerbaijan «On enforcing the Law of the Republic of Azerbaijan on transport» dated 27 July 1999, the Cabinet of Ministers of the Republic of Azerbaijan hereby resolves as follows:

1. To approve the Regulations for transporting hazardous goods by air transport (attached<sup>\*</sup>).
2. The present Resolution shall become effective from the date of signing.

***Prime Minister of the Republic of Azerbaijan***

***Artur RASI-ZADEH***

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**Approved**  
by Resolution No 220  
of the Cabinet of Ministers  
of the Republic of Azerbaijan  
dated 13 December 2000

## **Regulations for transporting hazardous goods by air transport**

### ***Basic provisions***

1. The present Regulations establish appropriate requirements on ensuring safety in the transportation of hazardous goods by air transport\*\* in accordance with the Chicago Convention on International Civil Aviation, the Instructions adopted by the International Civil Aviation Organization on the basis of the Chicago Convention, *the Law of the Republic of Azerbaijan "On aviation"*, the Law of the Republic of Azerbaijan «On transport» and other regulatory and legal acts.

*\*\* Key information about substances, products and hazardous goods which pose a risk to people, other living things and the environment is provided in the table.*

The present Regulations establish special conditions for the transportation of hazardous goods by air transport and serve as a mandatory regulatory and legal document for organizations and physical and legal entities associated with the transportation of hazardous goods by air transport.

2. The special requirements and instructions of the present Regulations do not apply to the transportation of hazardous goods of military nature.

3. State control over the transportation of hazardous goods by air transport is exercised by the State Committee of the Republic of Azerbaijan for Control over Safety in Industry and Mining in accordance with the Law of the Republic of Azerbaijan «On aviation» and «On technical safety» and in line with the procedures established by other regulatory and legal acts of the Republic of Azerbaijan.

4. The legal and physical entities regardless of their form of ownership and organization and legal status are allowed to engage in activities associated with the transportation of hazardous goods by air transport after receiving a special permit (license) from the State Committee of the Republic of Azerbaijan for Control over Safety in Industry and Mining in accordance with the procedure established by laws of the Republic of Azerbaijan.

*The Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan grants permission to aircrafts for the carriage of dangerous goods over the airspace of the country.*

5. If the instructions and conditions for the transportation of hazardous goods have been developed by state and non-governmental organizations or physical and legal entities engaged in the transportation of such goods, they shall be approved by the State Committee of the Republic of Azerbaijan for Control over Safety in

\* signed on December 7, 1944 in Chicago by 52 countries.

\*\* *Substances, items and products dangerous to people, other living creatures and the environment, lists of dangerous goods and basic information about them are given in the relevant tables.*

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6. Legal and physical entities (entities engaged in the transportation, loading, offloading and storage of hazardous goods) are required to ensure safety of work in accordance with the present Regulations and safety standards.

In cases envisaged under safe transportation or license, the forwarder, shipper or consignee of certain hazardous goods may appoint a responsible officer and a guard.

7. Legal and physical entities (entities engaged in the transportation, loading, offloading and storage of hazardous goods) are to submit a safety declaration on the basis of a requirement of appropriate bodies of executive authority in accordance with the procedure established under the Law of the Republic of Azerbaijan «On safety».

8. Forwarders (shippers or consignees) shall communicate initial information about any emergency situations occurring during the transportation of hazardous goods to the *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies* and the State Committee of the Republic of Azerbaijan for Control over Safety in Industry and Mining.

9. It is prohibited to load onto aircraft the radioactive and toxic wastes for delivery to the republic by physical and legal entities in accordance with laws of the Republic of Azerbaijan.

10. The availability of appropriate certificates confirming preparedness of civil aviation enterprises engaged in the transportation, loading, offloading and storage of hazardous goods by air transport, as well as managers and personnel of squadrons, civil airports and production associations, compliance with safety regulations and improvement of qualification in accordance with appropriate requirements is ensured by the *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan*.

11. Safety requirements consist in the present Regulations, other regulatory and legal acts of the Republic of Azerbaijan, as well as the safety conditions established by technical and regulatory documents and adopted in accordance with the existing procedure, mandatory prohibitions, restrictions and other requirements.

Safety requirements shall comply with state standards, labor protection regulations, norms on environmental and fire safety, protection of the environment, industrial and construction norms, sanitary and epidemiological norms, and norms on the protection of the population and territories from emergency situations.

12. Technical facilities, machinery and hardware used at potentially hazardous facilities are certified in an order established by legislation of the Republic of Azerbaijan from the standpoint of their compliance with safety requirements. The list of certified technical facilities used at potentially hazardous facilities is approved by the State Committee of the Republic of Azerbaijan for Control over Safety in Industry and Mining following a motion by the *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan*.

13. The responsibilities of employees during the transportation, offloading, loading and storage of hazardous goods are as follows:

- to observe the requirements of regulatory and legal documents establishing the rules for working at potentially hazardous facilities and actions in the conditions of an emergency or an accident;
- to pass medical examination and attestation in a due manner;
- in the event of an emergency or an accident at a potentially hazardous facility, to suspend all work in an order established by legislation of the Republic of Azerbaijan, immediately inform the management or an authorized person of the emergency or accident.

14. The physical and legal entities engaged in the transportation of hazardous goods shall, in order to prevent emergency situations which may occur at facilities and to eliminate their consequences, carry out the following:

- prepare and implement systematic measures;
- organize systematic control with the aim of preventing possible emergencies;
- immediately stop work in the event of an emergency or an accident;
- fulfill other obligations arising from the present Regulations, other regulatory and legal acts, technical documents establishing procedures for emergency situations.

15. The *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan*, enterprises of the civil aviation, joint aviation groups, joint squadrons, independent airports, legal and physical entities, officers dealing with the transportation, loading, offloading and storage of hazardous goods on aircraft shall:

- ensure registration of explosive and radioactive substances, explosive materials and sources of ionizing radiation, their storage, loading, safe transportation in an order meeting the requirements of regulatory and legal acts;
- follow appropriate instructions, resolutions and instructions of the *Ministry of Emergency Situations of the Republic of Azerbaijan*;
- the *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan* shall

submit to the *Ministry of Emergency Situations of the Republic of Azerbaijan* the information about employees authorized to organize and implement in-house control over compliance with safety requirements.

16. Protection of the environment and ecological balance in the storage, loading, transportation and offloading of hazardous goods is ensured in an order established by Laws of the Republic of Azerbaijan «On the protection of the environment», «On environmental safety» and other regulatory and legal acts.

### **Key definitions**

*Aviation enterprise (freight forwarder)* — an enterprise of civil aviation, production associations, joint aviation groups, joint squadrons and independent civil airports engaged in the transportation of passengers, luggage, goods, including hazardous goods and mail.

*Explosive substance* — a substance capable of spontaneously developing a chemical reaction generating temperature, pressure, emission of gases in quantities causing damage to surrounding objects. Pyrotechnical substances belong to explosive substances (the substances which are not explosive but are capable of creative explosive gas, vapors or dust do not belong to explosive substances).

*Explosive product* — a product containing one or several explosive substances.

*Inner (outer) container* — a type of container for combined packaging which is placed inside a transportation or intermediate container for accumulation and transportation.

*Transportation of goods by air* — transportation of goods by air on the part of aviation enterprises in an established order, including their transportation by overland transport vehicles.

*Air-tight container* — a container in which a process of exchange between the container and the environment does not take place.

*Cargo aircraft* — aircraft transporting goods or property without passengers.

*Cargo place* — an end product of operation on packaging of a container and the goods contained therein and prepared for transportation.

*Shipping document* — a document certifying that an agreement on transportation has been signed and the goods have been accepted for transportation.

*Cargo dispatch* — one or several cargo places which have been simultaneously accepted by the freight forwarder from one consigner and are proceeding on the basis of one shipping document to the address of the consignee.

*Gel* — a colloidal thick mass (jelly) of homogenous composition possessing certain properties of solid bodies.

*Detonation* — an instantaneous explosion of an explosive substance as a result of an explosion of another explosive substance or percussion, impact or friction.

*Deflagration* — burning of explosive substances without an explosion.

*Individual container* — a container intended for a single product.

*Initiative (causative) substances* — explosive substances extremely sensitive to external impacts (blow, puncture, friction, etc.) and possessing a detonating capacity in other explosive substances.

*Combined containers* — containers made of two or more materials, installed or placed inside an external container and filled, stored, transported and offloaded as one container, organizing a single transport package in one place.

*Combined package* — packages consisting of a transport package in which one or several inner and, if necessary, intermediate and auxiliary packages are placed.

*Gross weight* — mass of the package and the substance contained in it.

*Net weight* — net weight of a mass in one package.

*External container* — external protection of a combined container or package with any absorbing or interlaying (amortization) material and other components required for the storage and protection of the inner container.

*Compatibility* — a term used to hazardous goods which, when mixed, may cause a dangerous temperature or emit gas or cause corrosive substances.

*Number on UN list* — a 4-digit number awarded by a UN expert committee to designate substances attributed to a specific group of hazardous cargo.

*Hazardous cargo* — goods, substances or installations, which, during the transportation, loading or storage on aircraft, may endanger the life and health of people or other living organisms, flight safety and protection of property, including possible diseases and death.

*Name of goods* — name used in transportation documents and in designating hazardous goods.

*Consigner* - physical and legal entities indicated on the shipping document as consigners which have signed an agreement with the aviation enterprise.

*Passenger aircraft* — aircraft engaged in passenger transportation. According to the present Regulations, members of crew, senior officers of aviation enterprises and other organizations, including persons accompanying hazardous goods, are not included in passenger lists.

*Pyrotechnical substance* — compounds or mixtures of substances possessing the capacity to create the effect of heat, light, sound, gas, smoke or their combination as a result of self-supported and non-detonating exothermic chemical reaction.

*Pyrophoric liquid* — a liquid possessing the capacity of instantaneous combustion after contact with air and with a temperature of combustion of 55°C or less.

*Consumer's container* — a container not serving the function of a transportation package and delivered to the consumer with the product.

*Intermediate container* — a type of combined package containing a substance and intended for placement in inner container and inside a transportation container.

*Packing means* — any types of cargo containers, aviation containers, meshed aviation pallets or meshed aviation pallets on a protection lid.

*Container* — a product used as a packaging element for placement of a substance.

*Temperature of combustion* — the lowest temperature at which the substance in a trial container, in the conditions of sufficient concentration and in contact with a source of combustion in air, emits highly inflammable vapors possessing the capacity of instantaneous combustion.

*Transportation container* — containers forming a free transport unit.

*Package* — a means or a set of means to ensure protection of substances from loss and pollution of the environment, simplifying their transportation, storage (including loading and offloading) and circulation.

*Packaging* — preparation of substances for transportation, storage, loading, offloading using the package.

### ***Abbreviations used in the Regulations***

ES — explosive substance;

AC — aircraft;

HIG — highly inflammable gases;

HIL — highly inflammable liquids;

HISS — highly inflammable solid substances;

NFG — non-flammable gases;

OHG — other hazardous goods;

TOS — transportation organization service;

MCTS — mailing and cargo transportation service.

**Note.** The text of the Regulations, the information about the activities and responsibility of public officers indicates a responsible officer of the *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan*.

## **1. Application of the Regulations**

1.1. The present Regulations regulate operations involving the transportation of hazardous goods on civil aviation aircraft in the Republic of Azerbaijan on the part of aviation enterprises dealing with the transportation of hazardous goods, consigners, consignees of hazardous goods and transportation and forwarding organizations.

1.2. The present Regulations apply to the transportation of hazardous goods on the territory of the Republic of Azerbaijan by aircraft of the Republic of Azerbaijan, to the transportation of hazardous goods on international airlines by aircraft of the Republic of Azerbaijan while they are outside the borders of the Republic of Azerbaijan and to transportation on or through the territories of foreign states unless laws of such countries envisage otherwise.

International transportation of hazardous goods by air is carried out in accordance with international regulations applied in the Republic of Azerbaijan.

1.3. In cases when it is impossible to use another type of transport vehicles or it is necessary to deliver hazardous goods without delay, the *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan* may decide to by-pass provisions of the present Regulations only if it ensures safe transportation of hazardous goods by aircraft.

1.4. The hazardous goods placed in transportation containers (boxes, fuel cans, barrels, balloons, etc.) shall be transported in accordance with the present Regulations and the requirements for operating appropriate aircraft.

Tanks, facilities and hardware containing substances attributed to hazardous goods in their structures or systems shall be transported in accordance with the present Regulations and the requirements for operating appropriate aircraft.

The transportation of certain hazardous goods is regulated by special instructions of the *State Civil Aviation Administration of the Republic of Azerbaijan* in accordance with the present Regulations.

1.5. The rights and job descriptions of the heads, public officers and engineering and technical personnel of organizations engaged in the transportation of hazardous goods, as established by the present Regulations and regulatory and legal acts of the *Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan*, are established by their job description.

1.6. Organization of in-house control over compliance with the requirements of the present Regulations rests with the director of the *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan* and managers of aviation enterprises.

1.7. General control over compliance with the requirements of the present Regulations is exercised by the main inspectorate for flight safety under the *State Civil Aviation Administration under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan* and the inspectorate of the State

Committee of the Republic of Azerbaijan for Control over Safety in Industry and Mining.

## **2. Regulations for issuing permits for the transportation of hazardous goods by aircraft**

2.1. The storage, loading/offloading of hazardous goods and their transportation by aircraft may be carried out physical and legal entities holding a *special permit (license)* to engage in such activities.

A note on whether an aviation enterprise has a special permit (license) to engage in activities involving hazardous goods shall be made in the certificate of the company operating aircraft of the Republic of Azerbaijan or in the compliance certificate of a civil aviation entity engaged in the storage, loading, offloading and transportation of hazardous goods.

Employees of civil aviation enterprises engaged in ground services and crews of aircraft transporting hazardous goods shall undergo appropriate training, and specialist certificates shall have qualification remarks concerning the availability of a permit to engage in activities involving hazardous goods.

2.2. The special permit (license) is issued by the State Committee of the Republic of Azerbaijan for Control over Safety in Industry and Mining to aviation enterprises transporting hazardous goods, civil aviation entities engaged in the storage of hazardous goods, loading/offloading activities in accordance with applicable legislation.

Civil aviation entities of the Republic of Azerbaijan are not allowed to engage in activities involving hazardous goods without a special permit (license).

If there is a special permit (license), subsequent permits for the transportation of hazardous goods, in accordance with Chapter 9 of the present Regulations, is issued by the director of the aviation enterprises on the basis of the consigner's application.

2.3. Hazardous goods are accepted from consigner organizations, citizens and at their addresses on the basis of an agreement on transportation of hazardous goods by air.

In addition to that, the consigner and the consignee are required to have a special permit (license) regarding activities involving hazardous goods.

The consigner of hazardous goods, while signing an agreement on the storage, loading/offloading and transportation of hazardous goods with civil aviation entities, shall submit a copy of the special permit (license) issued by the authorized State Committee of the Republic of Azerbaijan for Control over Safety in Industry and Mining.

The acceptance of hazardous goods for transportation and storage from the consigner not holding a special permit (license) is not allowed.

2.4. The permission for transportation of hazardous goods, in line with Chapter 9 of the present Regulations, is issued by the head of the aviation enterprise on the basis of the consigner's application.

2.5. The hazardous goods mentioned on the List of hazardous goods (Table 5.1) are accepted for transportation if their packaging and marking, as well as transportation documents, meet the requirements of the present Regulations.

2.6. It is not allowed to accept goods the packaging and marking of which does not meet the requirements of the present regulations for transportation by air.

2.7. The goods not mentioned on the List of hazardous goods but which, for their physical and chemical properties, are included in the list of hazardous goods, may be accepted for transportation by air transport after they have been attributed to certain classes (sub-classes) by the ministry, organization or department to which the legal entity or the enterprise is subordinated.

2.8. To decide on the possibility and conditions of transportation of new hazardous goods by air, the consigner, along with the required documents, shall also submit characteristics of the new hazardous goods.

This document shall contain the following and be executed in three copies:

- correct technical description of the goods and its most widespread synonym, conditional names of goods of class I and goods sent by enterprises under a conditional name of «P.O. Box»;
- number of state standard (industrial standard) or technical specification, when and which organization it was approved by; UN number (if any);
- physical and chemical properties, aggregate condition and other indicators (e.g. color, smell, density, grain composition, consistence) of substances (gas, liquid, solid substance);
- information about impacts which are unacceptable and dangerous for the goods (impact, friction, heating, dampness, cooling, etc.);
- information about hazards posed in loading, offloading, storage and transportation by air;
- information about impact on human organism on inhalation of vapors or dust, contact with skin or accidental consumption, and the allowed concentration limit;
- description of the container and packaging, with the indication of mass (net, gross) of different cargo places and capacity of the container;
- handling instructions for loading, offloading, temporary storage, including the description of necessary safety and caution measures;
- instructions on compatibility of the goods with other hazardous and conventional goods in transportation and storage;
- methods for neutralization and treatment of hazardous goods which have fallen apart (been scattered);
- fire safety measures, recommended and banned fire extinguishing means;
- first aid measures in the event of accidents.

Also to be indicated is the following:

- for gases:

- condition (compressed, liquefied or dissolved);
- characteristics (flammable, toxic, corrosive, etc.);
- boiling temperature;
- critical temperature and pressure;
- working temperature of the balloon and filling norm;
- for liquids:
  - boiling and fusing (freezing) temperature;
  - temperature of combustion;
  - elasticity of vapors at 0.20 and 50° C, viscosity of liquids;
  - explosive concentration of vapors.

2.9. The consigner hands one of the three copies of the said characteristic of new hazardous goods to the director of the aviation enterprise transporting the goods, another copy to the head of the ground services division of air transport and the other to the ministry, state committee, organization, legal entity or department producing the goods.

2.10. The ministry, organization, state committee, legal entity or department, on the basis of the characteristic of the new hazardous goods, prepare a conclusion on the possibility or impossibility of transporting the said goods by air. If the decision is reached to allow the transportation of the goods by air, the conclusion shall state the following:

- description and chemical formula of the substance;
- main type of hazard or characteristics of the goods and their physical condition;
- approved state standard (industrial) or class (subclass of technical specification);
- number on UN list;
- transportation conditions;
- maximum net weight (pure weight) of the substance in one pack allowed for transportation by passenger and cargo aircraft;
- types of container and package, signs of hazard on the surface of the external container;
- recommended fire extinguishing means; protective equipment, first aid means, other information required for inclusion of the goods on the list of hazardous goods.

The conclusion allowing the transportation of hazardous goods with a new name by air is sent to:

- consigner;
- director of the aviation enterprise at the destination of the goods;
- head of the ground services department of air transport.

In case of a negative conclusion, the director of the aviation enterprise does not accept the goods from the consigner. In case of a positive conclusion, the permit for transportation of hazardous goods by air is issued by the *Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan* and the State Committee of the Republic of Azerbaijan for Control over Safety in Industry and Mining.

2.11. The transportation of hazardous goods by air is allowed if the net weight in one pack does not exceed the limit indicated on the list of hazardous goods.

It is allowed to transport hazardous goods which may be transported by aircraft together with others.

In this case, the goods shall be grouped considering the possibility of applying fire extinguishing means of a similar type.

It is prohibited to transport goods which are not allowed for transportation together with others (Attachment No 1).

2.12. Polymerized materials which, in the conditions of conventional transportation, may enter into a reaction and generate dangerous quantities of gas and heat, are allowed for transportation only in a sufficiently stabilized or inhibited (phlegmatized) condition. It is prohibited to use cooling as a means of stabilization and inhibition.

2.13. The transportation of hazardous goods is carried out by aircraft performing direct flights to the destination.

The acceptance for transportation of hazardous goods involving the loading (offloading) at intermediate airports is performed in exceptional cases and only against approval of:

- director of civil aviation department within the boundaries of a subordinated territory;
- management of appropriate civil aviation enterprises within the boundaries of several departments.

2.14. The consigner, depending on the type of hazard posed by the packaging and mass of the goods, shall, together with the goods, provide the necessary materials, property and means, including personal protective equipment, for safe transportation, loading, fixing and offloading of the goods (unless they are part of the aircraft and airport provision set).

### ***3. Restrictions on transportation of hazardous goods by aircraft***

3.1. The following goods shall be prohibited for transportation by aircraft:

- explosive substances igniting or splitting at 75° C within 48 hours;
- explosive substances containing chlorate, including ammonium salt;
- explosive substances containing a mixture of phosphorus chlorate;
- solid explosive substances classified as substances with high sensitivity to mechanical impacts;
- liquid explosive substances classified as substances with low sensitivity to mechanical impacts;
- any substance proposed for transportation by air which, in normal conditions, is capable of emitting a small quantity of heat and gas;
- pyrophoric radioactive liquid substances;
- as trials show, highly inflammable solid substances and organic peroxides, due to their inclination to explosions, shall be packed so that rules shall

envisage the use of a sign of explosion hazard as an additional sign of hazard.

Some hazardous goods possessing the above properties and peculiarities are included on the list of hazardous goods and marked with the word «Prohibited» in columns 2 and 3.

Considering the impossibility of listing all hazardous goods which are prohibited for transportation by air, the acceptance of hazardous goods possessing the properties and peculiarities listed in clause 3.1 for transportation is prohibited.

3.2. The hazardous goods which are prohibited for transportation by air if there is no permission to deviate from provisions of the Regulations

It is prohibited to transport the following hazardous goods by air in accordance with clause 1.3 if there is no permission to deviate from provisions of the present Regulations, including:

- items and substances marked with the word «Prohibited» in columns 7 and 8 of the List of hazardous goods (including items and substances marked as «not specified»);
- radioactive and explosive substances at the same time;
- infected animals.

3.3. The hazardous goods to which the present Regulations do not apply:

- items and substances available on board the aircraft to ensure its normal operation and requiring replacement upon landing at interim ports or during flight;
- alcoholic beverages, colognes and perfumes transported on board the aircraft by the aviation enterprise for sale or use in a passenger saloon of aircraft during a flight;
- alcoholic beverages registered and not registered\* by passengers or crew as luggage, but with a total quantity of not more than 5 liters;
- registered and not registered as luggage non-radioactive medicines and personal care items, registered aerosols for use in domestic and sporting purposes and not possessing additional security if their net weight does not exceed 2 liters (2 kg) per passenger or crew member and 0.5 liters (0.5 kg) in different items (this category of goods also includes hair sprays, perfumes, colognes and medicines containing alcohol);
- small oxygen balloons with gas or air used for medical purposes;
- hunting and sporting cartridges of 1.4 S category and securely packed in boxes, except for explosive and inflammable ammunition registered as luggage with the permission of the transporter but not exceeding 5 kg (gross) per passenger;
- dry ice in unregistered luggage intended for cooling food and drinks, including perishable products, but not exceeding 2 kg per passenger of aircraft;
- heart muscle stimulator with radioactive composition, e.g. plutonium batteries inserted by a surgical method;
- wheel-chairs for transporting people (handicapped) transported with the permission of the transporter in registered luggage and fitted with leak-proof

batteries, provided that the batteries are switched off, their clamps insulated and the battery tightly fixed to the chair;

- wheel-chairs transported with the permission of the transporter in registered luggage and fitted with leak-proof batteries, provided that the batteries are switched off, clamps insulated and the batteries tightly fixed to the chair, and it is possible to load, place and offload it in a vertical condition;
- if a wheel-chair cannot be loaded, placed and offloaded only in a vertical condition, it is necessary to remove the battery and transport the wheel-chair without limitations as registered luggage, while the removed battery shall be transported in a secure and solid container.

In addition to that:

- individual containers shall rule out any leaks and prevent battery opening; it is also to protect them from upsetting by way of their fixing with tents stretched between cargo pallets or cargo sections, pillars and tampers (except for fixing to the goods and luggage);
- batteries shall be protected from short circuits and fixed in individual containers in a vertical condition, wrapped in a material capable of fully absorbing the liquid contained in them;
- the sign «Do not turn over», the mark «Liquid battery of a wheel-chair» and the «Corrosive substance» danger sign shall be attached to individual containers in accordance with state and international standards, the commander of the aircraft shall be informed of the location of the wheel-chair with an inserted battery or a packed battery;
- as far as reasonably possible, to use clamps preventing leaks in leaking batteries and enabling ventilation and air vent;
- pincers with hydrocarbon concentration used in hairdressing provided there is a secure lid of the heating element, as registered luggage (transportation of elements for filling gas in such pincers as registered or unregistered luggage is prohibited);
- mercury barometers transported as unregistered luggage by representatives of the state committee of hydrometeorology in accordance with the instructions for transportation of such goods by air;
- pyrotechnical means used in aircraft in sending alarm signals or performing a flight instruction.

### 3.4. Hazardous goods in small packaging

The hazardous goods packed in small packages pose the following hazards and special regulations may apply to their transportation.

The hazardous goods in small packaging meeting the requirements of this clause may be allowed for transportation by air without compliance with provisions of the present Regulations, except for the following:

- criteria for classification and packaging group;
- ban on loading onto passenger saloons or crew cabins.

The following hazardous goods, as hazardous goods in small packaging, shall not be allowed for transportation by aircraft:

- hazardous goods banned for transportation in any case in line with clause 3.1;
- hazardous goods banned for transportation by passenger aircraft in line with Table 5.1;
- hazardous goods except for temperature conductors placed inside safe devices which are part of a product or installation;
- products and substances of class 1;
- substances of class 2 posing additional hazard;
- substances possessing main and additional types of hazard of class 4, substances of the 1<sup>st</sup> group of packaging and substances spontaneously entering into reaction;
- substances posing main and additional types of hazard of class 5, 1<sup>st</sup> group of packaging;
- substances posing hazard of sub-class 6.1, 1<sup>st</sup> group of packaging, posing inhalation hazard due to their toxicity;
- infectious substances of sub-class 6.2;
- if there is no permission for deviation from provisions of the Regulations, transportation of any hazardous goods is prohibited;
- magnetized material of class 9.

While transporting hazardous goods in small packaging by air, the following volumes shall be observed:

- the maximum volume of hazardous goods in an external container shall be limited to the following:
  - 1 ml or 1 gram, 1<sup>st</sup> and 2<sup>nd</sup> group of packaging for liquid or solid substances, posing the main or additional hazard of sub-class 6.1;
  - except for those mentioned in the previous clause, 30 grams or 30 ml for solid and liquid substances, for gases — 30 ml in containers for water;
  - gross weight — weight of hazardous goods stored in a combined package shall be limited to the following:
    - for goods except for class 2:
      - in packaging of the 1<sup>st</sup> group — 300 g or 300 ml;
      - in packaging of the 2<sup>nd</sup> group — 500 g or 500 ml;
      - in packaging of the 3<sup>rd</sup> group — 1 kg or 1 liter;
      - For class 2 — 1 liter.

While transporting hazardous goods in small packaging, high-quality containers shall be used, including a packaging (covering) facility. In case of direct contact of the material of which the container is made with hazardous goods, intermediate and absorbing materials shall be inert to it and shall not create hazardous products and be subjected to looseness, softening or other damage during transportation by air, among them the impact on the characteristics of such goods. In addition,

- the internal container shall be made of plastic or glass, porcelain and metal at least 0.2 mm thick. It shall have lids and corks closing tightly by means of a wire, band or other secure means;
- except for temperature conductors, at a temperature of 55° C the liquid shall not fill the internal container;
- when placing the internal container inside an intermediate container, the goods shall be packed with a material which, in the event of damage or leak, may fully absorb the leaking substance regardless of the placement of the

goods; the intermediate container for hazardous goods shall have absorbing material capable of fully absorbing (sucking in) the whole substance from the internal container: in this case the absorbing material may serve as an interim layer;

- the intermediate container shall be securely packed inside a durable transport container (which shall be made of wood, plywood or another strong material);
- a cargo place shall be able to pass trials described in clause 7.17 of Chapter 7;
- if hazardous goods in small packaging may enter into reaction with each other with subsequent combustion or radiation of a considerable amount of heat, highly inflammable or carbon oxides, corrosive or variable substances, their packing in transport containers together with other goods is prohibited;
- the quantity of different hazardous goods stored in one transport container shall be determined by the following formula:

where  $n_1, n_2, \text{etc.}$  is the net mass of different hazardous goods stored in one transport container;

$M_1, M_2, \text{etc.}$  is the maximum net mass of hazardous goods which are allowed for transportation in one combined package for an appropriate packaging group;

Any cargo place shall have the dimensions enabling the fixing of all marking signs.

The consignment note shall have an additional entry «Hazardous goods in small packaging». The same entry is made on the transport container in addition to the marking established by the present Regulations.

It is prohibited to transport hazardous goods in small packaging as registered luggage or mail on aircraft.

#### **4. Classification of hazardous goods**

All hazardous goods in accordance with expert recommendations of the International Civil Aviation Organization (ICAO) are divided in the following classes:

- |         |   |   |
|---------|---|---|
| Class 1 | — | explosive substances;                                     |
| Class 2 | — | compressed, liquefied and dissolved under pressure gases; |
| Class 3 | — | highly inflammable gases;                                 |
| Class 4 | — | highly inflammable solid substances and materials;        |
| Class 5 | — | oxidizing substances and organic peroxides;               |
| Class 6 | — | toxic and infectious substances;                          |
| Class 7 | — | radioactive substances;                                   |
| Class 8 | — | eroding and corrosive substances;                         |
| Class 9 | — | other hazardous substances.                               |

Every class of hazardous goods is further divided into sub-classes. Hazardous goods are attributed to classes and sub-classes based on the following indicators for each class. Except for the substances attributed to classes 1, 2, 7 and sub-

classes 5.2 and 6.2, all hazardous goods are divided in groups by the degree of their hazard.

Packaging requirements of hazardous goods directly depend on the degree of hazard.

Therefore, depending on the degree of hazard of substances, the packaging of hazardous goods is also divided in three groups. Thus, the division of hazardous goods by the degree of their hazard and packaging is as follows:

1 — high degree of hazard — I group of packaging;

2 — medium degree of hazard — II group of packaging;

3 — low degree of hazard — III group of packaging.

The criteria of a hazard degree are shown in the description of indicators of substances of classes 3, 6 and 8 with specification of groups of packaging. The degree of hazard of substances of classes 4, 5 and 9 is determined by similarity with substances of another class considering the existing practices. The packaging of specific goods is shown in the List of hazardous goods attached to the present Regulations (Table 5.1). Explosive substances are divided in conformity groups depending on their properties (Table 4.1).

Substances of class 2 are divided in groups depending on their physical properties. Substances of class 7 are divided in groups depending on the packaging category.

*Table No 4.1*

### **Conformity groups of substances of class 1 (explosive substances)**

Conformity group	Description of the substance and product	Sub-class				
		1.1	1.2	1.3	1.4	1.5
1	2	3	4	5	6	7
A	Primary (initiating) ES	1.1A	—	—	—	—
B	Substances containing initiating ES	1.1B	1.2B	—	1.4B	—
C	Propellant and other ES or other products containing them	1.1J	1.2J	1.3J	1.4J	—
D	Detonating ES without без means of initiation and propellant charges, smoke powder or products containing detonating ES	1.1D	1.2D	—	1.4D	1.5D
E	Products without initiation but with metal charges containing detonating ES (except for those containing highly inflammable and spontaneously inflammable liquids)	1.1E	1.2E	—	1.4E	—
F	Substances containing detonating ES, with initiation and propellant charge (except for those containing highly	1.1F	1.2F	1.3F	1.4F	—

	inflammable and spontaneously inflammable liquids) or propellant substances without charges					
G	Products containing pyrotechnical substances and pyrotechnical substances, including those containing both ES and lighting, incendiary, tear or smoke substances (except for substances activated with water of HIL or gels containing phosphorus and phosphides)	1.1.G	1.2G	1.3G	1.4G	—
H	Substances containing ES and white phosphorus	—	1.2 H	1.3 H	—	—
J	Substances containing ES and HIL or gels	1.1 J	1.2J	1.3 J	—	—
K	Substances containing ES and toxic chemical agents	—	1.2K	1.3K	—	—
L	Explosive substances or products containing ES, of high hazard and requiring isolation from each other	1.1L	1.2L	1.3L	—	—
S	Substances or made products packed in a form limiting their hazardous impacts if their container is destroyed under temperature. The explosion or dispersion effect is limited so that not to hamper emergency measures or fire fighting in the immediate vicinity of the package.	—	—	—	1.4S	—

**Note.** It is allowed to collectively transport explosive substances attributed to different groups but of the same conformity group, except for conformity group L.

#### 4.1. Explosive substances of class 1.

The hazardous goods of class 1 include devices and explosive agents intended for the burning or pyrotechnical effect in blasting works, or substances which, due to their properties, may be attributed to explosive ones.

##### Substances of class 1 are sub-divided in five classes:

**Sub-class 1.1.** Substances and products capable of exploding with the whole mass; it is an explosion whereby the explosive substance spreads to all goods almost immediately;

**Sub-class 1.2.** Pyrotechnical substances and products not exploding with the whole mass but causing the threat of serious damage and dispersion to surrounding objects;

**Sub-class 1.3.** Explosive substances and products which, while burning, emit a large quantity of heat and ignite one after another by means of dispersion;

**Sub-class 1.4.** Substances and products not posing a high risk except for the danger of a minor explosion in case of combustion or initiation impact during transportation; the explosion is limited to the package; the dispersion of large items and elements is not expected to cover a large distance and the external source of combustion (flame) does not cause an immediate explosion of the package contents;

**Sub-class 1.5.** So insignificant that there is little likelihood of initiation or detonation from combustion during normal transportation conditions. Substances and items of this sub-class at least should not explode when tried with fire.

#### **4.2. Class 2 — compressed, liquefied and dissolved under pressure gases**

##### **Class 2 includes:**

- permanent gases — gases not subjected to liquefying in environmental temperature;
- liquefied gases — gases which may pass into a liquefied state under pressure and in environmental temperature;
- dissolved gases — gases dissolved under pressure in a solvent and capable of being absorbed into spongy material;
- deeply cooled conventional gases — e.g., liquid air, oxygen, etc.

Substances of this class are gases transported in a compressed, liquefied or dissolved condition and requiring special reliability and air-tightness. Some gases are transported in a liquefied state in low temperatures.

The following dangerous situations may occur during gas transportation:

- mechanical damage to surrounding objects as a result of explosion of the gas package;
- formation of mixtures with the danger of combustion, explosion, including intoxication, bodily injuries, corrosion of metal, spontaneous combustion of some substances and continued combustion;
- choking as a result of reduced oxygen or excessive accumulation of certain gases in the air;
- narcotic impact of many gases which sometimes have small concentrations, emission of toxic mixtures during burning and decomposition of some gases.

Gases have different density to air. Gases which are heavier than air penetrate the cargo cabin or the lower section (place), while the gases which are lighter than air rise and spread more actively.

Gases belonging to class 2 shall meet at least one of the following conditions:

- at a temperature of 20° C pressure shall be equal or above  $1 \times 10^5$  Pa (1 kg/cm<sup>2</sup>);
- at a temperature of 50°C the pressure of vapors shall be equal or above  $3 \times 10^5$  Pa (3 kg/cm<sup>2</sup>);
- critical temperature shall be lower than 50° C.

Class 2 also includes «aerosols». This term is used to refer to a container with compressed, liquefied or dissolved with or without a liquid gases, pastes or powder made of metal, glass or plastic which is not to be re-filled / emptied and possessing a cap spraying the contents in the form of foam, paste, powder, liquid or gas.

Substances of class 2 are sub-divided into four sub-classes:

- **sub-class 2.1** — highly inflammable liquefied and toxic gases; other gases posing additional threat (oxidizing, corrosive);
- **sub-class 2.2** — toxic non-combustible gases;
- **sub-class 2.3** — highly inflammable toxic gases. Highly inflammable toxic gases are gases with the lower concentration limit for combustion (by volume) is above 13% or, regardless of the lower limit, the combustion area is above 12%;
- **sub-class 2.4** — simultaneously highly inflammable and toxic gases.

#### 4.3. Class 3 — highly inflammable liquids

Class 3 includes liquids, mixtures of liquids and liquids containing solid substances or suspensions which, in a closed container and in a temperature of 61° C or less and in an open container in a temperature of 65° C, emit highly inflammable vapors and which, due to their properties, cannot be attributed to other classes. The substances of this class are highly inflammable liquids, and the most dangerous property of these liquids is their quick inflammability from any external source of combustion (open flames, spark, electric charge, etc.). The vapors of most HIL may create explosive mixtures which may lead to major and powerful explosions.

Most substances of this class have saturated vapors with high pressure. For this reason, if the temperature in the container filled with them is increased to 50-60° C within operational limits, the increase of pressure occurs.

The boiling temperature of some substances of this class in the atmospheric pressure is less than 15-20° C. As a result, in certain operational conditions these substances become gaseous.

When the aircraft ascends, the excessive pressure in the container shall rise in proportion to the reduction of the atmospheric pressure.

Insufficient air-tightness of the container leads to the release of vapors, while insufficient reliability of the container may lead to its destruction.

The vapors emitted by all substances of class 3 have partly narcotic effects. Sustained inhalation of such vapors may leads to unconsciousness. Deep and sustained narcosis may cause death.

Some highly inflammable liquids have strong toxic properties, while others have the polymerization capacity with emission of heat and gases. As a result of this the container may be destroyed. Such substances include the following:

- polymerized hydrocarbons;
- polymerized ethers;
- polymerized substances.

The said HIL cannot be transported by air in their pure state. They may be allowed for transportation in an inhibited state.

Medicines, perfumes and mixtures of other purposes containing HIL and attributed to this class due to their properties belong to hazardous goods.

The liquids belonging to class 3 are divided in three sub-classes:

- sub-class 3.1 — HIL with a temperature of inflammation in a closed cup of less than 18° C;
- sub-class 3.2 — HIL with a temperature of inflammation in a closed cup of 18° C or higher, but less than 23° C;
- sub-class 3.3 — HIL with a temperature of inflammation in a closed cup of 23° C and higher, but less than 61° C.

*Table No 4.2*

### Criteria of HIL hazard degrees

Hazard degree	Packaging group	Temperature of inflammation (in a closed container), °C	Initial boiling point, °C
High	I	—	35° C
Low	II	<23° C	>35° C
Relatively low	III	23° C <61° C	>35° C

It is allowed to attribute to a low hazard degree (packaging group III) such highly inflammable viscous (thick) liquids with a temperature of inflammation of less than 23° C as paints, enamels, dyes, glues and polishes if:

- not more than 3% of the solvent exfoliates during a 24-hour exfoliation test;
- the mixture contains 5% of the substance belonging to packaging group I or II of sub-class 6.1 or class 8 or 5% of substances belonging to packaging group I of class 3 and requiring signs of additional hazard of sub-class 6.1 and class 8;
- the concentration and temperature of inflammation corresponds to the limits indicated in table 4.3;
- the capacity of the container used does not exceed 30 liters.

*Table 4.3*

### Concentration and temperature limits of inflammation

Indicator	Diameter of openings (mm)		Temperature °C
	4	8	
Time, seconds	20	—	17
—" —	60	—	10
—" —	100	—	5
—" —	160	—	- 1

—" —	220	17	- 5
—" —	—	40	Lower boundary is not limited

#### 4.4. Class 4 — highly inflammable substances and materials

Class 4 includes substances which, while in transportation, are highly inflammable and may cause fire, except for substances classified as explosive. All substances of this class are dangerous from the standpoint of fire safety. During their transportation, loading, offloading and storage, safety measures described in the present Regulations shall be followed.

Class 4 is divided in three sub-classes:

Sub-class 4.1 — highly inflammable solid substances (HISS) with a capacity of quick inflammation and active burning from such external sources of inflammation as spark, flash and friction;

Sub-class 4.2 — substances with a capacity of self-heating and spontaneous combustion in the conditions of conventional transportation; some substances are more inclined to spontaneous combustion when moistened with water or in contact with moist air;

Sub-class 4.3 — substances with a capacity of emitting highly inflammable gases in contact with water; in some cases these gases are inclined to spontaneous combustion under the impact of heat generated as a result of a reaction, while others emit toxic gases after contact with water and acids.

Some substances of this class are toxic.

#### 4.5. Class 5 — oxidizing substances and organic peroxides

All substances of class 5 can lead to the inflammation of inflammable substances and continuation of the burning process. Some substances of this class can cause explosive mixtures or in certain conditions become explosive themselves.

Most oxidizing substances are in intensive interaction with powerful liquid acids and emit extremely toxic gases. Some oxidizing substances are toxic and corrosive (see Table 5.1).

Most organic peroxides burn well and are sensitive to heating. Some of them are sensitive to friction and impacts. In order to reduce the sensitivity of peroxides below the safety level, they are transported in an inhibited, dissolved or moistened condition.

Some organic peroxides may gradually decompose in a temperature of 20°C. As the temperature increases, so does the rate of decomposition. Some substances of this class have a critical temperature limit. If the temperature exceeds it, the chain reaction causes intensive decomposition of the substance. If necessary (before the goods are submitted for loading), the critical temperature of the substance may be reduced by adding the inhibitor. Some inhibitors or non-volatile

solvents shall be inert for organic peroxides and have a temperature of inflammation of at least 100°C and boiling temperature of at least 150°C. Inhibitors and solvents shall be mixed in equal volumes or spread to the entire substance. Intensive decomposition of organic peroxides may be caused by a small quantity of acids, metal oxides and amides entering them. Some peroxides, when decomposed, may emit toxic and highly inflammable gases. Contact with organic peroxides may be hazardous for skin and especially for eyes, because it leads to serious damage to pupils. Such substances are marked with «I» in the List of hazardous goods attached to the present Regulations.

Some organic peroxides may become dangerous if mixed in sufficiently large proportions with some inhibitors, plasticizers or inert solid substances. In such cases, the consigner shall provide the transporter with a written guarantee.

Class 5 is divided into 2 sub-classes:

Sub-class 5.1 — oxidizing substances which are not inflammable but may cause combustion of other substances and which easily emit oxygen while burning and increase the intensity of fire.

Sub-class 5.2 — organic peroxides which in many cases have inflammable and oxidizing impact and dangerously affect other substances. Most of them are highly inflammable and sensitive to impacts and friction.

#### 4.6. Class 6 — toxic and infectious substances

Substances of class 6, when inhaled and on entry inside or on skin surface, may seriously harm the health of people and animals. Toxic substances may be in a gaseous, solid (powder) and liquid states.

This class includes substances possessing toxic properties. Toxic substances possessing other properties, e.g. easy inflammation, were attributed to other classes. All substances of this class, while burning or decomposing, emit toxic gases. Unstable toxic substances may be transported by air only in a stabilized condition.

The procedures established under applicable legislation apply to the sale, acquisition, release, storage, registration and transportation of the above powerful toxic substances:

- Nitrile acrylic acid;
- Arsenic anhydride;
- Brucite;
- Dieldrin;
- Nicotine;
- Carbonic sulfur;
- Cyanic acid salts;
- Strychnin;
- Mercuric chloride;
- Cinchonine;
- Ethyl mercuric phosphate;
- Ethyl mercuric chloride;

- Arsenic anhydride;
- Cyanic acid;
- Chloropicrin.

Class 6 is divided into two sub-classes:

Sub-class 6.1 — toxic (contagious) substances which, when inhaled, swallowed or applied to skin, may cause death, paralysis or undermine health;

Sub-class 6.2 — infectious substances which are contagious for people and animals and considered as such, possessing living micro-organisms or their poisons.

Substances of sub-class 6.1, including pesticides, are divided in three packaging groups depending on their hazard degree (Table 4.4).

*Table No 4.4*

**Criteria of hazard degrees of toxic substances (except for inhalation of vapors)**

Criteria	Packaging group by hazard degree		
	High/I	Medium/II	Low/III
Toxicity if swallowed not more than LD <sub>50</sub> , mg/kg	5	50	Solid substances 200 Liquids 500
Toxicity on contact with skin not more than LD <sub>50</sub> , mg/kg	40	200	1000
Toxicity on swallowing of dust or air and dust mixture not more than LK <sub>50</sub> , mg/l	0,5	2	10

Notes.

1. LD<sub>50</sub> — dose of lethal contamination on swallowing or contact with skin and sustained stay on skin for 24 hours causes death of 50% of animals within 14 days. The concentration is expressed in milligrams per kg of animal mass.

2. LK<sub>50</sub> — continuous inhalation of vapors, gases, air and dust mixtures and dust concentrate of the substance for one hour causes death of 50% of animals within 15 days. The concentration for dust and air and dust mixture is expressed in milligrams per liter of air, while for vapors in millimeters per cubic meter of air.

3. If a substance shows different hazard degrees on different categories, it shall be attributed to the highest of them. The hazard degree of inhalation of vapors is determined by a concentration of saturated vapors of the substance at air temperature of 20° C and standard air pressure, V ml/m<sup>32</sup>, including:

- for high hazard degree (packaging group I)

$$V \geq 10 \text{ LK}_{50} \text{ and } V \geq 1000 \text{ ml/m}^3$$

- for medium hazard degree (packaging group II)
 

V 10 LK<sub>50</sub> and LK<sub>50</sub> 3000ml/m<sup>3</sup>
- and the criteria of high hazard degree is observed; for low hazard degree (packaging group III)
 

V 10 LK<sub>50</sub> and LK<sub>50</sub> 5000ml/m<sup>3</sup>
- and criteria of high and medium hazard degrees are not observed.

The hazard degree of the substance may be determined for inhalation of vapors, including the chart below.

Figure 1. Chart of determining hazard degree for inhalation of vapors of the substance



#### 4.7. Class 7 — radioactive substances

Class 7 includes radioactive substances with special activity of 74 kBq/kg (0.002 nCu/g). The conditions for safe transportation of such goods by air are established under special regulations of the *Ministry of Transport, Communications and High Technologies by agreement with the State Civil Aviation Administration of the Republic of Azerbaijan*.

#### 4.8. Class 8 — caustic (corroding) and corrosive substances

Class 8 includes all caustic and corrosive substances which, in case of damage to the package, may cause skin burns, damage to the mucous membrane of crew members and personnel engaged in the loading and offloading of such substances, and cause fire and corrosion of the structure and equipment of the aircraft.

Caustic and corrosive substances (anthracene, sulfuric barium, hypochloride, chloride lime, caustic alkali, acids, etc.) have toxic properties and, if inhaled, may cause intoxication. Most of such substances, on interaction with water, emit irritating and corrosive vapors (in the form of smoke), heat and destroy metals and tissues. Some of them destroy glass and other silicium materials.

Some substances of this class are powerful oxidizers, and if they interact with oil products (fuel, oil), sawdust, paper, cotton wool, fibrous organic materials, including some intermediate materials, this may lead to their spontaneous combustion. Substances of this class with a temperature of combustion in a closed cup of 61° C and above are highly inflammable liquids.

If a substance is indicated on the List of hazardous goods as stabilized, it shall not be transported in a non-stabilized condition. If the list stipulates the percentage of a substance or its active component and the percentage being transported, the composition shall also be indicated in percentage to the mass of this substance.

Class 8 is divided in three sub-classes:

- sub-class 8.1 — acids and substances affecting living tissue or metals by acid mechanism;
- sub-class 8.2 — substances affecting living tissue and metal by connection mechanism;
- sub-class 8.3 — substances not belonging to sub-classes 8.1 and 8.2; these substances have corrosive impact on living tissue or metals.

The hazard degree of caustic and corrosive substances is determined by the criteria provided in Table No 4.5.

*Table No 4.5*

**Criteria of hazard degrees of caustic and corrosive substances**

Criteria	Hazard degree		
	High (packaging group I)	Medium (packaging group II)	Low (packaging group III)
Necrosis of living tissue of skin, time of contact not more than one minute	3	60	240
Metal corrosion indicator, at least mm /gram	6.35	3	1

4.9. Class 9 — other hazardous goods

Class 9 includes substances with a relatively low hazard degree, not attributed to any of the above mentioned classes, but which possess hazardous properties (toxicity, aggressiveness, inflammability) and requiring the application of the present Regulations during transportation.

Substances possessing minor inflammation, toxic and corrosive properties and which cannot be attributed to other classes but which are to some extent hazardous in transportation shall be considered to be substances of relatively low hazard.

Class 9 is divided into two sub-classes:

- sub-class 9.1 — substances which, due to their properties, have not been attributed to other classes in packaging for transportation by air, including magnetized materials with magnetic field strength at a distance of 2.1 meters from any point on the surface of the cargo place is 0.159A/m or above;
- sub-class 9.2 — liquids and fibers with a relatively low hazard degree and with a temperature of combustion in a closed cup from 61° C to 100° C and other similar substances, materials which may become caustic, corrosive, toxic and initiating in some conditions (if moistened, in case of fire, interaction with other substances, etc.).

*Table No 4.6*



6.1.I	4.3.I	4.3.II		8.I	8.I	4.3.II	4.3.II	4.3.II	4.3.II
6.1.I	6.1.I	6.1.II		8.I	8.I	8.II	8.II	4.3.III	4.3.III
6.1.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
6.1.I	5.1.I	5.1.II		8.I	8.I	5.1.II	5.1.II	5.1.II	5.1.II
6.1.I	6.1.I	6.1.II		8.I	8.I	8.II	8.II	5.1.III	5.1.III
				6.1.I	6.1.I	6.1.I	6.1.I	6.1.I	6.1.I
				8.I	6.1.I	6.1.I	6.1.I	6.1.I	6.1.I
				8.I	6.1.I	6.1.I	6.1.I	6.1.I	6.1.I
				8.I	6.1.I	6.1.II	6.1.II	6.1.II	6.1.II
				8.I	6.1.I	8.II	6.1.II	6.1.II	6.1.II
				8.I	8.I	8.II	6.1.II	6.1.II	6.1.II

(l) — liquid

(resp) — respiratory passages

(inside) — inside

(s) — solid

(skin) — skin

(—) — impossible combination

This table has been prepared on the basis of the UN table «Prioritization of hazardous properties».

#### 4.10. Classification of hazardous goods posing several types of hazard

If the name of goods is not on the list of hazardous goods and they pose two types of hazard established for due determination of classes 3, 4, 8 or sub-classes 5.1 (solid substances) and 6.1, then such goods shall be classified with the determination of the main of two hazard degree and packaging groups using the table «Prioritization of hazardous properties and packaging groups (table 4.6). Packaging groups shall be determined using the criteria provided for the class being considered for each hazard type. The packaging group for any hazardous goods is selected using strict limitations.

The rules for determining the main and additional hazard and packaging group are provided in the following example:

*Example.* Hazardous goods has two types of hazard: 6.1.1 (internal) and 4.3.11. The main of the two hazard types is determined in the following order by Table 4.6

The crossing point of the vertical line originating from sub-class 6.1.1 (internal) indicated in the headline of Table 4.5, and the horizontal line of sub-class 4.3.11 shown in the first column points to the need for using the main hazard and packaging group. In this example, it is 4.3.1;

An additional hazard type, i.e. another type, will be 6.1; packaging group I is taken as strict limitation on two hazard types of these hazardous goods.

If hazardous goods have several hazard types one of which is less hazardous on sub-class 6.1 (packaging group III), this hazard type shall be taken into consideration when classifying these hazardous goods (except for pesticides). If pesticides have hazard of class 3 (packaging group III) and sub-class 6.1 (packaging group III), the hazard of sub-class 6.1 (packaging group III) shall be considered to be the main hazard type.

Table 4.6 does not include goods with moistened explosive and spontaneously reacting substances which, in addition to other hazard types, meet the hazard criteria of classes 1, 2 and 7 or sub-classes 5.2 and 6.2, or sub-class 4.1, or pyrophoric substances of sub-class 4.2, because such classes and sub-classes always have an advantage.

Infectious substances contained in other hazardous goods shall always be attributed to sub-class 6.2 and indicate their highest additional hazard.

Radioactive substances posing additional hazard types besides those to which established regulations do not apply and which have other priority hazard types, shall always be attributed to class 7.

If the name of hazardous goods is not on the List of hazardous goods and the goods proper are a hazardous liquid belonging to sub-class 5.1 or have three or four hazard types, Table 4.6 shall not apply to them.

In this case the main and additional hazard is determined by the producer of hazardous goods, specifying its necessary indicators in the duly approved technical document (technical specifications, state standards).

## **5. List of hazardous goods**

### 5.1. General requirements

The List of hazardous goods (Table No 5.1) includes goods often submitted for transportation by air. The name of the shipment is indicated in the headline in bold. Different explanations (definitions) separated by commas and brackets, shall not be indicated when marking transport containers and in transportation documents.

**Example.** Table No 5.1 contains the name of hazardous goods: «Acetic acid — solution, concentration higher than 1% but not more than 80% by mass», while the name of the shipment shall look as follows: «Acetic acid — solution».

The List of hazardous goods contains names of a number of substances and products banned for transportation by air, and typical substance groups indicated as «not specified».

### 5.2. Unspecified hazardous goods

It is practically impossible to include all products and substances submitted for transportation by air in Table 5.1. To enable registration of all such goods in the List of hazardous goods, there are many typical cases. It is intended for typical groups or «unspecified» substances.

When submitting hazardous goods the names of which are not in Table 5.1 for transportation by air, the consigner shall do the following for them to be accepted:

- to classify the goods by comparing its appropriate properties with the criteria listed in Chapter 4;
- if properties of several classes are present, to determine the class corresponding to the main hazard (see Table No 4.6);

- to award names of unspecified substances in Table 5.2 considering the class established for the most typical main hazard.

The name indicated in Table 5.2 as «unspecified» shall be treated as the name of shipment. For example, a substance from class 3 whose name is not specified in Table 5.1 but which is known as alcohol, shall be marked not as «highly inflammable liquid, unspecified», but as «alcohol, unspecified».

On the other hand, the names of substances not specified in Table 5.2, after a shortened expression «unspecified», shall be supplemented in brackets with the technical name of a substance in accordance with state standards and technical specifications.

**Example.** Chlorinated capryl is not included in Table 5.1. Being corrosive, this substance is attributed to class 8, and since it does not pose additional hazard, it shall be marked as «Corrosive substances, unspecified (chlorinated capryl)».

### 5.3. Mixtures and solutions containing hazardous substances

Mixtures and solutions containing hazardous substances shall be treated as hazardous substances due to the properties of hazardous goods contained in them.

If Table 5.1 provides two or several unspecified hazard types for mixtures and solutions, then it is necessary to supplement with technical (chemical) names at least two components determining the highest hazard of a solution or mixture.

One of the technical names in brackets shall correspond to the additional hazard mark. Technical names are selected from Table 5.2.

**Example.** The mixture intended for adjusting engines is absent from Table 5.1. This liquid, consisting of a mixture of petrol with a temperature of combustion of less than 23° C and tetrachlorinated carbon, is toxic. It is classified as a highly inflammable substance of class 3, posing additional hazard of sub-class 6.1. It is indicated as unspecified highly inflammable liquid (petrol / tetrachlorinated carbon).

### 5.4. Compilation of the List of hazardous goods

The List of hazardous goods is divided in 8 columns:

- the 1<sup>st</sup> column — «name of goods» — provides the list of hazardous goods in the alphabetical order according to the name of shipment; besides main names, the List also contains synonyms of numbers, to facilitate their quick search\*;
- in the 2<sup>nd</sup> column — «Number on UN list approved by UN» — the substance or product are provided with a number in line with the classification system;
- if a number has not been provided on the UN list, a line is put in the 2<sup>nd</sup> column. The word «prohibited» in the 2<sup>nd</sup> and 3<sup>rd</sup> columns indicates that in any case the transportation of these hazardous goods by air is prohibited (see chapter 3, clause 3.1);

- the 3<sup>rd</sup> column — «class and sub-class» — shows the class or sub-class, while for conformity group of class 1, in accordance with the classification law mentioned in chapter 4, contains a class or sub-class number provided to this substance or product;
- the 4<sup>th</sup> column — «Additional hazard» — according to chapter 4 shows class and sub-class number which poses additional hazard;
- the 5<sup>th</sup> column — «Marks of hazard» — shows the name of the hazard mark to be fixed onto the transport container and containing brief description and physical condition of the hazardous goods;
- the 6<sup>th</sup> column — «Packaging group» — shows numbers of packaging groups (I, II or III) established in accordance with criteria shown in chapter 4;
- the 7<sup>th</sup> and 8<sup>th</sup> columns — «Maximum net mass (volume) per package» — maximum net mass allowed for transportation in one container (by volume or mass); 7<sup>th</sup> column for passenger and 8<sup>th</sup> column for cargo aircraft. Total mass is shown in these columns with letter G.

*\* Synonyms are shown in bold under the shipment name without filling out the main columns.*

Hazardous goods not allowed for transportation by air without deviation from the present Regulation shall be marked with the word «Prohibited» in the 7<sup>th</sup> and 8<sup>th</sup> columns for passenger and cargo aircraft respectively.

If the requirements of the present Regulations do not apply to the said products or substances, the «without restrictions» mark is put in the 7<sup>th</sup> and 8<sup>th</sup> columns.

Synonyms are provided for the name of the shipment without filling out the main columns.

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