Folkhälsomyndigheten

Note! This is a translation of the Swedish guide ”Packa provet rätt” from Folkhälsomyndigheten, performed by Karolinska Institutet. The Swedish version is the official version and in the event of any discrepancy between the versions, the Swedish wording is the correct wording.

How to Pack Specimens Correctly

Version 20: Valid from 2023-01-23

About the publication

Transporting infectious substances is subject to certain risks. International and national regulations govern what can be sent and how the goods shall be packaged and otherwise handled.

How to Pack Specimens Correctly is a compilation of the regulations for transporting infectious substances contained in the regulatory framework covering the transport of dangerous goods by road and off-road (ADR-S), and by air (IATA-DGR). It is primarily designed to be a practical guide for the transport of samples sent for microbiological analysis at the Public Health Agency of Sweden (Folkhälsomyndigheten) and is aimed at those who use this service.

How to Pack Specimens Correctly can be used as support for transporting other infectious substances, but is not an exhaustive review of all regulations relating to such transport. It is always the consignor's responsibility to ensure that the goods are correctly classified, packaged and labelled, and that the proper documentation is included. If you are unsure about anything, contact your safety advisor for the transport of dangerous goods.

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The original Swedish title “Packa provet rätt” can be downloaded from: www.folkhalsomyndigheten.se/publicerat-material/. Some of Folkhälsomyndighetens titles can also be ordered as a printed copy from Folkhälsomyndigheten's publication service, publikationsservice@folkhalsomyndigheten.se.

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Version 20

Definitions

- ADR-S consists of the regulations for the transport of dangerous goods on road and off-road that apply in Sweden and the EU.
- Dangerous goods is a collective term for substances and objects that have such dangerous properties that they can cause damage to people, the environment or property, if they are not handled correctly during transport.
- ICAO-Ti consists of the regulations on the transport of dangerous goods by air that apply in Sweden as well as internationally. Postnord requires that infectious substances in Category B (UN 3373) that are submitted to them comply with these regulations when aircraft are also used as a means of transport in certain domestic postal deliveries.
- IATA-DGR consists of the regulations from IATA, the International Air Transport Association, on the transport of dangerous goods that apply to all airlines affiliated to IATA. The majority of the commercial airlines are members of IATA. In addition to the provisions of ICAO-Ti, the regulations contain additional provisions. The regulations for air transport described in How to Pack Specimens Correctly are based on the regulations in IATA-DGR.
- Cultures are the result of a process in which pathogens are intentionally propagated (grown).
- Patient samples are samples taken directly from humans or animals that include, but are not limited to, excrement, secretion, blood or blood components, tissue, test swabs, tissue samples and body parts that are transported for research or diagnosis purposes, for examination, treatment or prophylaxis.
- Pathogens are microorganisms (including bacteria, viruses, parasites and fungi) or other infectious substances, such as prions, that can cause disease in humans or animals.
- Infectious substances are substances that are known to or likely to contain pathogens.
- Infectious substances in Category A are infectious substances that are transported in a form that can cause permanent disability, or life-threatening or fatal disease in otherwise healthy humans or animals in the event of exposure to them.
- Infectious substances in Category B are infectious substances that do not meet the criteria for inclusion in Category A.
- A safety adviser for the transport of dangerous goods must, under the responsibility of the management, work to prevent damage in connection with transport. More information on the role of the safety adviser can be found in Appendix 2.
- Transport refers to the movement of goods by all means of transport (including vehicles that are not motorized). Loading and unloading as well as storage and other handling in connection with transport are also included in the definition.
- Exempt human specimens are samples taken from humans in which there is a minimal likelihood that pathogens are present.

Classification

The purpose of classification is to determine whether the material to be sent consists dangerous goods. Depending on the properties of the substances, they are divided into different classes and assigned a four-digit UN number. The correct classification and assignment of UN numbers is important as they are the starting point for the choice of packaging, marking and documentation, among other things.

Infectious substances

Classification of infectious substances is based on the WHO document, Guidance on Regulations for the Transport of Infectious Substances, that is revised every two years. A quick reference guide is available for assistance in the classification of infectious substances (Figure 1).

Substances that are known or are reasonably expected to contain pathogens shall be classified as Class 6.2 infectious substances. The term pathogens refers to microorganisms (including bacteria, viruses, parasites and fungi) or other infectious substances, such as prions, that can cause disease in humans or animals. Infectious substances are divided into two categories, A and B, depending on the risk they pose during transport, and the category determines which UN number they shall be assigned.

Infectious substances, Category A

Infectious substances shall be classified as Category A, if transported in a form that can cause permanent disability, or life-threatening or fatal disease in otherwise healthy humans or animals in the event of exposure to them.

Materials that contain, or are suspected to contain, pathogens that meet the criteria for Category A for humans shall be assigned to UN 2814 - Infectious substances affecting humans.

Note that whether a pathogen shall be assigned to Category A is not only determined by how dangerous it is. The nature of the substance containing the pathogen must also be taken into account, as quantity and concentration of the pathogen also affect the risk.

Examples of pathogens that shall be classified as Category A and assigned UN 2814 are listed in Tables 1a, 1b and 1c. Pathogens in Table 1a shall always be classified as Category A. Pathogens in Table 1b shall be classified as Category A if they are transported in concentrated form, for example, in the form of a culture (such as incubated blood culture bottles or pure culture of bacteria). If they are sent in a less concentrated form, such as samples taken directly from humans, they can be classified as Category B.

For pathogens in Table 1c, there is an exemption in the regulations for the transport of dangerous goods by road and rail that allows cultures of these pathogens to be classified as Category B if they are intended for clinical or diagnostic purposes. If cultures of these pathogens are sent by air or sea transport, or if they are sent by road or rail for research purposes, for example, they shall be assigned to Category A.

Table 1a. Examples of pathogens classified as Category A, UN 2814, in the form of both patient samples and cultures (cultured material).

All viruses in risk class 4(i)	Some viruses in risk class 3(i)
Ebola virus	Monkey pox virus(ii)
Guanarito virus	Flexal virus
Crimean–Congo hemorrhagic fever virus	Hantaan virus
Hendra virus	Hantavirus, causing haemorrhagic fever with renal syndrome
Junin virus	Omsk hemorrhagic fever virus
Lassa virus	Kyasanur Forest disease-virus
Machupo virus	
Marburg virus	
Nipah virus	
Sabia virus	
Smallpox virus	

(i) classification according to AFS 2018:4 Provisions on risks of infection)
(ii) until 2025-12-31 , patient samples containing monkey pox virus are classified as category B, UN 3373 for road and national air transport according to agreement (M347) and the Swedish Transport Agency's decision (TSL 2022-3957).

Table 1b. Examples of pathogens classified as Category A, UN 2814, when in the form of cultures (cultured material) but classified as Category B when in the form of patient samples.

Virus	Bacteria	Fungi
Dengue virus	Bacillus anthracis	Coccidioides immitis
Chikungunya virus	Brucella abortus	
Tick-borne encephalitis virus (TBE)	Brucella melitensis	
Yellow fever virus	Brucella suis	
Hepatitis B-virus	Burkholderia mallei	
Herpes B-virus	Burkholderia pseudomallei	
HIV	Chlamydia psittaci	
Highly pathogenic avian influenza	Clostridium botulinum	
Japanese encephalitis virus	Coxiella burnetii	
MERS Coronavirus	Francisella tularensis	
Poliovirus	Rickettsia prowazekii	
Rabies virus	Rickettsia rickettsii	
Rift Valley fever virus	Yersinia pestis	
Russian summer-spring encephalitis virus		
SARS Coronavirus		
SARS Coronavirus 2		
Venezuelan equine encephalitis virus		
West Nile virus		

Table 1c. Pathogens that may, in cultures intended for diagnostic or clinical purposes, be classified as infectious substances in Category B, UN 3373, by road and rail transport. Otherwise, cultures of these pathogens shall be classified as Category A, UN 2814.

Bacteria
Escherichia coli, verotoxigenic
Mycobacterium tuberculosis
Shigella dysenteriae type1

The regulations contain a table corresponding to Table 1 for pathogens that only affect animals. Materials containing or suspected to contain these pathogens shall be assigned to UN 2900 - Infectious substances affecting animals only.

Note that these lists are examples only. When pathogens not included in the list are to be transported, the consignor must classify them based on the criteria available for Category A and Category B in accordance with these examples, and if they meet the criteria for Category A, then the consignor must assign them this category. This also applies to new or newly discovered pathogens.

As in list 1b, the classification may differ between different materials. The examples in lists 1a and 1b shall be used to support the interpretation of the criteria. One example of this could be Lujo virus which causes a very serious disease reminiscent of Lassa fever, but with higher mortality. Both patient samples and cultures of Lujo virus should be classified as Category A even though the virus is not included in Table 1a. Another example could be a culture with Hepatitis C virus that is considered to pose approximately the same risk as Hepatitis B virus. Cultures of Hepatitis C virus should then be classified as Category A while patient samples should be classified as Category B.

Infectious substances, Category B

Infectious substances that do not meet the criteria for Category A shall be classified as Category B and assigned UN 3373 - Biological Substance, Category B. Examples of this are patient samples that contain, or are suspected to contain, pathogens in Table 1b and Table 1c as well as cultures with lower risk pathogens than the examples in the lists. For example, both a patient sample and a culture of common seasonal flu are classified as Category B.

Infectious waste

Special UN numbers with their own provisions are available for infectious waste in each category. Regulations for the transport of infectious waste are not covered in How to Pack Specimens Correctly.

Exempt human/animal specimen

Samples taken from humans in which there is a minimal likelihood that pathogens are present may be sent as exempt human specimen. For example, this may concern serum samples for antibody titration in connection with vaccination, or screening samples from individuals without known or suspected infectious disease.

Samples taken from animals in which there is a minimal likelihood that pathogens are present shall be sent as an exempt animal specimen.

Exempt human/animal specimens are not covered by the regulations for transport if they are packaged and labelled in accordance with the regulations as described on page 17.

Inactivated pathogens

Pathogens, or materials that contain or are suspected to contain pathogens, which have been inactivated using a validated method, are not classified as dangerous goods and are therefore not covered by the regulations for transporting dangerous goods.

Inactivated samples should be packaged in such a way that they do not leak, for example according to the provisions for exempted medical sample on page 17 but without the label.

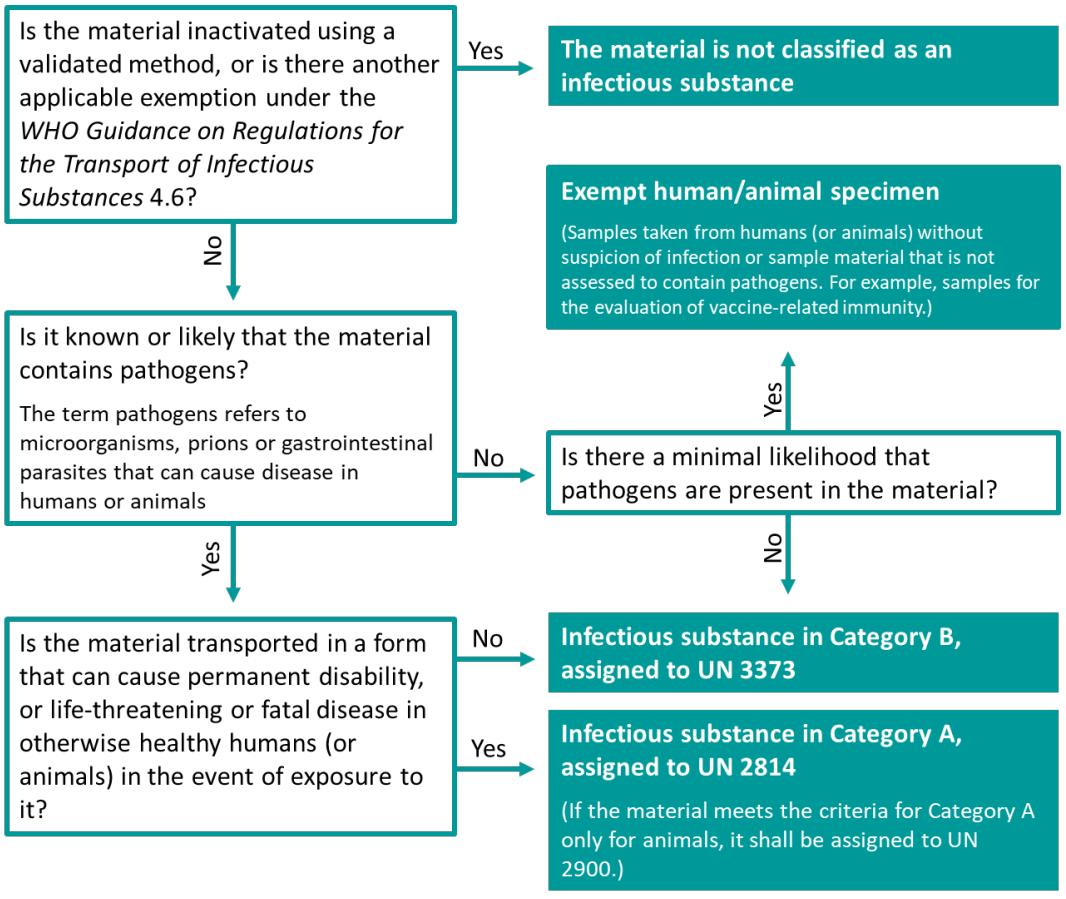
Exemption under the WHO document, Guidance on Regulations for the Transport of Infectious Substances 4.6

These exemptions, which are not covered by the regulations for the transport of dangerous goods, include, among other things:

- blood, blood products and organs for transfusion or transplantation,
- samples for screening blood in faeces, and
- samples consisting of dried blood drops.

Quick reference guide for classification of infectious substances

Figure 1. Quick reference guide for classification of samples from human.



Regulations for transport

General regulations

Unless otherwise stated in the specific sections below, the following applies:

Disinfection

The outside of the packaging must not be contaminated with pathogens. Packages handled in such way that they may have become contaminated shall therefore be disinfected with a disinfectant that is effective for the pathogens in question.

Packages

The packages must be of sufficiently good quality to withstand the shocks and the load they may be subjected to while being transported. They must be manufactured and sealed in such a way that they do not leak in normal transport conditions. Any leakage must not impair the function of the package.

The packages must consist of at least three layers. The infectious substance is placed in an internal vessel called the primary receptacle. The primary receptacle is then placed in a second layer called secondary packaging, which in turn is placed in a third layer called outer packaging.

If several primary receptacles are carried in secondary packaging, they shall be individually wrapped with shock-absorbing material or separated from each other in order to prevent contact. The secondary packaging must be secured in the outer packaging, e.g. using shock-absorbing materials, so that they are unable to move freely.

Marking and labelling

The goods must be legibly and durably marked. The text must be at least 6 mm high (at least 12 mm high for dangerous goods with a net weight above 30 kg or a net volume of 30 litres). Outer packaging for primary receptacles containing fluid exceeding 50 ml must be labelled with directional arrows on two opposite sides.

Labels must be at least 100 x 100 mm, unless otherwise stated in the specific sections, and otherwise meet the requirements of the regulations. If possible, marking and labelling must be positioned adjacent to each other on the same side of the goods (does not apply to directional arrows).

The name of the pathogen should not be printed on the packaging for transport safety reasons.

Regulations for the transport of UN 2814: Infectious substances affecting humans

Requirements for a Safety Advisor for the transport of dangerous goods

When transporting UN 2814, consignors and carriers must have a safety advisor for the transport of dangerous goods who is registered at the MSB. More information about security advisors can be found in Appendix 2.

Requirements for a security plan

When transporting UN 2814, consignors and carriers must have drawn up a security plan in accordance with the requirements for transport security (1.10 in ADR-S or 1.7.4 in IATA-DGR) in order to minimise theft and unauthorised methods in connection with the consignment.

Education requirements

Personnel (consignors, carriers, consignees, etc.) who are involved in the transport of infectious substances in accordance with UN 2814 must have training (1.3 in ADR-S or 1.5 in IATA-DGR) in the requirements imposed on their work and responsibility areas by the transport of dangerous goods. The training shall also include transport security. Drivers must have a valid ADR certificate.

Packaging

The packaging must consist of:

1. One or more sealed primary receptacles (e.g. glass or plastic tubes). Effective means of ensuring airtight closing systems shall be available, e.g. screw caps should be reinforced with tape or similar.

   With the exception of infectious solids, a quantity of absorbent materials sufficient to absorb the full specimen volume must be fitted between the primary receptacles and the secondary packaging.

2. A sealed secondary packaging.

3. A rigid outer packaging whose minimum outer dimensions must not be less than 100 mm (that is, neither the length, width or height of the package must not be less than 100 mm).

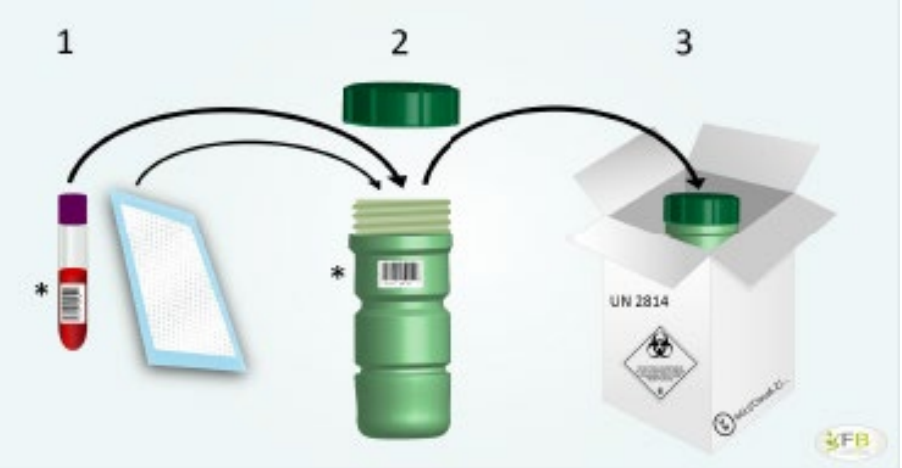
   The outer- and secondary packaging must be type-approved for class 6.2 by an accredited testing laboratory. The layers are approved together and the accompanying instructions state which outer- and secondary packaging can be combined. Approved packaging is marked with a type approval mark for Class 6.2, for example:

   UN **4GU/Class 6.2/12/S/SP-319508**

For air transport, an itemised list of contents written in English, e.g. a referral, must be included between the secondary and outer packaging.

For air transport on passenger aircraft, the total contents of an outer package may not exceed 50 ml (g). Larger quantities, up to 4 litres (kg) per outer package, may be transported by air - but then only by air cargo.
The packaging only allowed by air cargo must be labelled with a “cargo only label” (see IATA-DGR 7.4.2)

Figure 2: Example of packaging of goods assigned to UN 2814 for transport by road.



* Samples sent to the Public Health Agency of Sweden (Folkhälsomyndigheten) for analysis must be labelled with ProvID (label and barcode) on both primary receptacles and secondary packaging.

Marking and labelling

For **road transport**, the outer packaging is marked on the same side with:

- UN 2814
- Label for class 6.2 (see figure to right). For small packages, it is sufficient that the label is 50 x 50 mm.

For **air transport**, the outer packaging is marked on the same side with:

- UN 2814
- Infectious substance, affecting humans,
- Label for class 6.2 (see figure to right). For small packages, it is sufficient that the label is 50 x 50 mm.
- Net weight or volume of the sample (if the consignment contains more than one package with different net quantities)
- The consignor's name and address
- The consignee's name and address
- Name and telephone number of responsible person

Documentation

A consignment by road transport must be accompanied by a goods declaration with the following information:

- In the order listed: “UN 2814, Infectious substances, affecting humans”, followed by the full biological name of the pathogen in parentheses **or**, if the pathogen is unknown, "Suspected Category A Infectious Substance". Thereafter, 6.2 (number on model label), (E) (a large “E” in paranthesis for the tunnel restriction code), quantity and type of package, as well as total net amount.
- The consignor's name and address.
- The consignee's name and address.
- Responsible person and telephone number to him/her (must be able to answer questions about the goods in the event of an accident, for example).

An example of a goods declaration in Swedish is available in Appendix 3. For transport in Sweden, the goods declaration is written in Swedish. For international transport, the information must also be provided in English, German or French. A copy of the goods declaration must be kept by the consignor as well as by the carrier for at least 3 months.

For air transport, a Shipper’s Declaration written in English is required. This is submitted to the carrier in two signed copies. One signed copy is kept by the consignor for at least 3 months. For the road transport to the airport for continued transport by air, the Shipper’s Declaration may replace the goods declaration. More information on the Shipper's Declaration is available at IATA.com.

Carrier

Please note that goods in accordance with UN 2814 must not be sent by normal post (Postnord). A carrier with special trained drivers must be hired.

Regulations for the transport of UN 3373: Biological substance, Category B

Packaging

The packaging must consist of at least three components:

1. One or more sealed primary receptacles (e.g. glass or plastic tubes).

   For fluids, a quantity of absorbent materials sufficient to absorb the full specimen volume in the primary receptacles must be fitted between the primary receptacles and the secondary packaging.

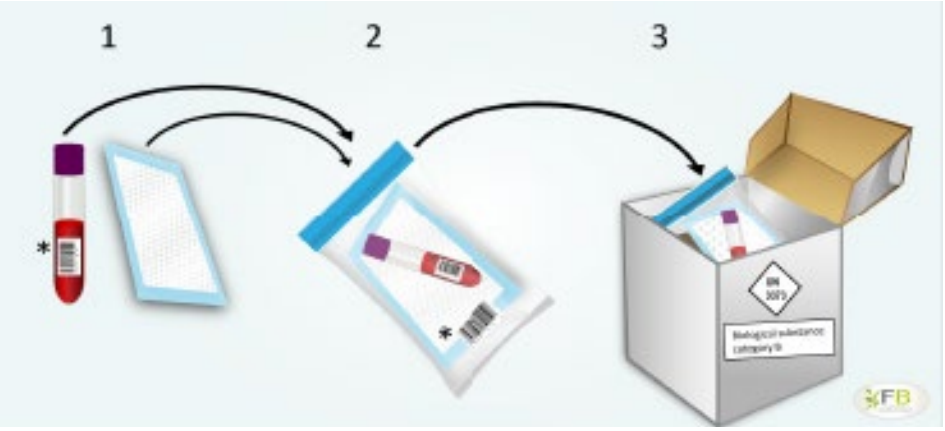
2. A sealed secondary packaging (e.g. a sample tube or a plastic bag with airtight tape seal).

3. An outer packaging. At least one of the sides of the outer packaging must have at least the dimensions 100 mm x 100 mm (e.g. the height of the outer packaging can be 20 mm if both the length and the width are over 100 mm).

For road transport, either secondary or outer packaging must be rigid. For air transport and postal items, the outer packaging must be rigid. The primary receptacle or secondary packaging must be capable of withstanding an internal pressure of 0.95 kPa (0.95 bar).

For air transport and postal items, the contents of a primary receptacle may not exceed max. 1 litre (kg) and the total contents of an outer package max. 4 litres (kg).

Figure 3. Example of packaging of goods classified as UN 3373 for transport by air or postal delivery. In this example, a plastic bag with airtight tape seal is used as secondary packaging and a rigid cardboard box as outer packaging.



* Samples sent to the Public Health Agency of Sweden (Folkhälsomyndigheten) for analysis must be marked with ProvID (label with barcode) on both primary and secondary packaging.

Marking and labelling

For road transport, the outer packaging is marked with:

- Biological substance, Category B
- Label UN 3373, see figure to right.

The label must be at least 50 x 50 mm.

For air transport/postal items, the outer packaging is marked with:

- Biological substance, Category B
- Label UN 3373, see figure to right
- The consignor's name and address
- The consignee's name and address
- Responsible person and telephone number to him/her (must be able to answer questions about the goods in the event of an accident, for example). If information about responsible person and telephone number can be found on the air waybill (a document normally issued by the carrier), it does not need to be written on the outer packaging.

Documentation

When transporting UN 3373, no goods declaration or Shipper’s Declaration is required.

For air transport, an itemised list of contents written in English, e.g. a referral, must be included between the secondary and outer packaging. This is not a requirement for postal items.

Carrier

Goods in accordance with UN 3373 can be sent by normal post (Postnord) within Sweden. A new explicit requirement from Postnord since 2017 is that all goods in accordance with UN 3373 must comply with the provisions of the packaging instruction PI650 in the ICAO-Ti. This means that the instructions for air transport above must be followed. Other regulations may apply for postal items outside Sweden.

Regulations for the transport of exempt human specimens

Exempt human/animal specimens are not covered by the provisions of ADR-S provided that they are packaged and marked as follows:

Packaging

The packaging must consist of three components:

1. One or more sealed primary receptacles.

   For fluids, a quantity of absorbent materials sufficient to absorb the full specimen volume must be fitted between the primary receptacles and the secondary packaging.

2. A sealed secondary packaging (e.g. a sample tube or a plastic bag with airtight tape seal).
3. An outer packaging. At least one of the sides of the outer packaging must have at least the dimensions 100 mm x 100 mm (e.g. the height of the outer packaging can be 20 mm if both the length and the width are over 100 mm).

Figure 4. Example of packaging of goods sent as exempt human/animal specimen. In this example, a plastic bag with airtight tape seal is used as secondary packaging and a padded envelope as outer packaging.

* Samples sent to the Public Health Agency of Sweden (Folkhälsomyndigheten) for analysis must be marked with ProvID (label with barcode) on both primary and secondary packaging.

Marking and labelling

The packaging must be marked with the text "Exempt human specimen" or "Exempt animal specimen", as appropriate.

Documentation

When transporting an exempt human/animal specimen, no goods declaration or Shipper's Declaration is required.

Carrier

The exempt human/animal specimen can be sent by normal post (Postnord) within Sweden, provided that the sample is packed and marked as above.

Regulations for the transport of refrigerated and frozen specimens

For air transport, consignors of dry ice must have undergone the appropriate training.

Packaging

Infectious substances and exempted medical samples sent refrigerated or frozen must be packed in accordance with the provisions of the UN number to which they belong. Ice or dry ice (carbon dioxide ice) must be packed around the secondary packaging, or alternatively in an overpack (an enclosure around one or more packages that is used to form one unit to make it easier to handle). The secondary packaging must be secured internally in order to remain in place when the ice melts or the dry ice has evaporated. When using ice, the outer packaging or overpack must be sealed.

Dry ice (carbon dioxide ice) constitutes dangerous goods and must therefore comply with certain regulations. When using dry ice, the packaging must be designed in such a way so as to permit the carbon dioxide gas formed to be released from the outer packaging or overpack so that this is not damaged.

Marking and labelling for carbon dioxide ice

For **road transport**, the packaging is marked with:

- ”torris, som kylmedel” or ”koldioxid, fast som kylmedel” ("carbon dioxide, solid used as refrigerant").

For **air transport and postal items**, on the same side as other labels, the packaging is marked with:

- UN 1845.
- "Dry ice" or "Carbon dioxide (solid)".
- Net weight of the dry ice (kg) in the packaging.
- Label class 9 (see figure to right).

If an overpack is used, all marking and labelling on the packaging (including the markings belonging to the UN number of the content) must also be on the overpack together with the text "Overpack". This applies to both road and air transport. When several packages are carried in one overpack, the total net weight of the dry ice must be stated on the overpack.

Documentation

For air transport, when dry ice is used to cool other dangerous goods, such as infectious substances in Category A, which require the Shipper’s Declaration, the dry ice must also be stated on this.

Carrier

Dry ice may be sent by normal post (Postnord) within Sweden, provided that the provisions in the ICAO-Ti packaging instructions are followed. This means that the instructions for air transport above must be followed in addition to the provisions applicable to the content.

Contact the Public Health Agency of Sweden (Folkhälsomyndigheten)

Microbiology department's customer service: Tel. +46(0)10-205 24 44 or kundtjanst.mikrobiologen@folkhalsomyndighet.se

Switchboard: Tel. +46(0)10-205 20 00. The switchboard is open weekdays between 08:00 and 16:30. Outside of these hours, instructions are given by answering machine for how to get in touch with the Public Health Agency of Sweden (Folkhälsomyndigheten) on urgent matters concerning, for example, the authority's preparedness diagnostics.

Postal address: The Public Health Agency of Sweden (Folkhälsomyndigheten), Provmottagningen, 171 82 Solna

Delivery address: Tomtebodavägen 12 B, 171 82 Solna (for samples in emergency preparedness diagnostics, use the delivery address agreed with Clinical microbiologist in preparedness)

Appendix 1. Brief guidelines

	UN 2814 Infectious substances affecting humans	UN 3373 Biological substance, Category B	Exempt human/animal specimen
Requirement for training according to 1.3 in ADR/1.5 IATA-DGR	Yes	No	No
Requirement for safety advisor	Yes	No	No
Requirement for security plan	Yes	No	No
Can be shipped within Sweden by post (Postnord)	No	Yes, provided that regulations for air transport are complied with	Yes
Drivers must have ADR certificate	Yes	No	No
Packaging	see page 12	see page 15	see page 17
Marking	see page 13	see page 16	see page 17
Label			None
Itemised list of contents between secondary and outer packaging	Yes, for air transport	Yes, for air transport (but no requirement for postal items).	No
Goods declaration	Yes, for road transport.	No	No
Shipper's Declaration (in English)	Yes, for air transport. Two copies for carrier and one copy kept by consignor	No	No
Maximum permissible net volume (net quantity) for air transport and postal items (only UN 3373)	**Per outer packaging:** Passenger aircraft – 50 ml (g) Cargo aircraft – 4 litres (kg), excl. dry ice	**Per primary receptacle:** 1 litre (kg) **Per outer packaging:** 4 litres (kg), excl. dry ice	No limit

Appendix 2. Background

Why is it important to pack patient samples or cultures correctly?

For the patient:

It is important that the shipment reaches the laboratory without delay and undamaged.

For the transport personnel:

Postal and transport personnel must not be exposed to risk of infection when handling the shipment. Leaking packaging can contaminate other goods and spread infection.

For the laboratory personnel:

Laboratory personnel must be able to open a consignment without risk of infection.

Regulations for the transport of dangerous goods

Provisions

In Sweden, the transport of dangerous goods is regulated by the Act on the Transport of Dangerous Goods (2006:263) and the Ordinance on the Transport of Dangerous Goods (2006:311) and in the provisions for each of the four modes of transport;

- on roads and in terrain: The Swedish Civil Contingencies Agency's provisions on the transport of dangerous goods by road and in terrain, ADR-S. The regulation is based on the ADR regulations which is a multilateral agreement between about fifty countries, including all countries in the EU.
- by rail: The Swedish Civil Contingencies Agency's provisions on the transport of dangerous goods by rail, RID-S. Like ADR-S based on a multilateral agreement.
- at sea: The Swedish Transport Agency's provisions on the transport by sea of packaged dangerous goods, which makes the international IMDG Code regulations to Swedish law.
- by aircraft: The Swedish Transport Agency's provisions on the transport of dangerous goods by aircraft, which make the international regulations ICAO-TI to Swedish law. All airlines affiliated to the airline organization IATA require that the IATA-DGR regulations, which meet all the requirements of ICAO-Ti but which in some cases are somewhat stricter, shall be complied with. Since most commercial airlines are affiliated to IATA, this means in practice that the provisions of IATA-DGR must be complied with.

The regulations are revised regularly, and it is therefore important to have access to the current edition.

Safety advisor

By law, organisations that send and/or transport dangerous goods must have access to a safety advisor for the transport of dangerous goods. Regulations for safety advisors are described in MSB:s provisions on safety advisors for the

transport of dangerous goods gods (MSBFS 2015:9). When it comes to infectious substances, the safety advisor requirement does not apply to UN 3373 and Exempt human/animal specimens. For UN 2814, the requirement applies to all modes of transport. Additional exceptions exist in some cases and are described in MSBFS 2015:9. To become a safety advisor, you must undergo an examination conducted by MSB valid for one or more types of transport. The authority (or business) must report the name of its safety advisor to MSB.

The safety adviser's task is to work under the responsibility of the management to ensure that injuries in connection with the transport of dangerous goods are prevented and to ensure that the regulations in the Act on the Transport of Dangerous Goods are complied with. This is done by developing adapted methods and routines for steps related to the transport of dangerous goods and by giving advice to the business on the application of the regulations. If an accident with dangerous goods has occurred, the safety adviser must submit a report on this to the business management.

Appendix 3. Example of goods declaration for UN 2814 in accordance with ADR-S

In the example below, two blood culture vials cultured with suspected Brucella melitensis shall be sent by road transport from the University Hospital to the Public Health Agency of Sweden (Folkhälsomyndigheten).

Each blood culture vial contains 15 ml of cultured material (culture). The blood culture vials are packaged, marked and labelled in accordance with instructions on pages 11 to 14. Both the University Hospital and the carrier have safety advisors and security plans. The driver has an ADR certificate. The blood culture vials are packaged in two separate, type-approved packages where the outer packaging is a cardboard box. The goods declaration is issued in two copies, one given to the carrier and one stored by the University Hospital for at least 3 months.

Godsdeklaration enligt ADR-S

Innehåll	Antal kollin	Typ av förpackning	Total nettomängd (vikt/volym)
UN 2814 SMITTFÖRANDE ÄMNE, SOM PÅVERKAR MÄNNISKOR (BRUCELLA MELITENSIS) 6.2, (E)	2 stycken	lådor av papp	30 ml

Avsändare	Mottagare
Namn UNIVERSITETSSJUKHUSET	Namn FOLKHÄLSOMYNDIGHETEN
Adress SJUKHUSVÄGEN 1 840 85 ORTEN	Adress TOMTEBODAVÄGEN 12B 171 82 SOLNA

Ansvarig person	
Namn	Telefonnummer
KARL KARLSSON	070 544 44 5