

# Work instruction for transporting GMOs and biological material

## Introduction

Strict rules apply to the packaging and transport of biological material. To transport infectious substances and genetically modified organisms by road, they must be packaged in accordance with the statutory requirements in the ADR, the European agreement governing the international transport of goods by road. For transport by air, the rules of the International Air Transport Association must be followed.

Small laboratory animals must always be shipped in closed, shatter-proof cages, in order to satisfy measures aimed at preventing the escape of laboratory animals. You can contact the Central Laboratory Animal Facility for shipment of laboratory animals.

Waste contaminated or at risk of contamination with pathogenic microorganisms is, as outlined in the UM waste substance regulation, transported in accordance with statutory requirements by accredited companies.

## Internal transport

For internal transport, non-infectious genetically modified organisms (ML-I) are packed in closed, shatterproof, leak-tight packaging bearing the letters GMO. Such packaging might include a sealable box that can be disinfected.

Infectious material (ML-II GMOs and pathogens and microorganisms in risk class 2 or above) must be internally transported in closed, shatterproof, leak-tight packaging bearing a biohazard symbol. This must be a box that is both sealable and that can be disinfected.



## External transport

Triple containment is always required for external transport and shipment of biological material, comprising:

- A hermetically sealed, leak-tight, shatterproof first container (Eppendorf tube, flask, etc.), bearing the contents and the required containment level.
- A hermetically sealed, shatterproof, leak-tight second container encasing the first container with sufficient absorbent material for the entire contents, e.g. a 50 ml Greiner tube, sealed with a screw stopper and sealed, containing tissues capable of absorbing the contents of the first container.
- The external packaging of the triple containment must be a sturdy package, such as a sturdy box.

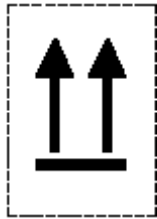


If packaging contains ice, dry ice, or another coolant, the packaging must be suitable for the purpose.

Specific packaging and labelling requirements apply to the transport of various types of samples by road, as specified in the table.

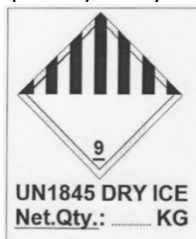
In addition, the following stipulations also apply:

- 1) For the transport of liquids, the following package orientation label must be displayed on two opposite sides of the packaging exterior. The label must be black or red on a white background.



- 2) Additional specifications for material shipped on dry ice:
  - Maximum total weight per shipment: 25 kg
  - Minimum box dimensions: 25 x 25 x 25 cm

For transport by road, the packaging must be labelled with an additional label: UN 1845 stating the quantity of dry ice. For transport by air, a class 9 label must be affixed.



The quantity of dry ice must be sufficient for a minimum of 3 days (10 kg).

In all cases, the box must be filled with polystyrene or another dry filler. The packaging must be such that pressure build-up inside cannot occur. The primary and secondary packaging must also be able to withstand the low temperatures.

- 3) If liquid nitrogen is used for shipment, a package orientation label must be affixed to the exterior (see 1) as well as an ADR class 2 and a UN1977 label (integrated, if applicable, as in the example below).


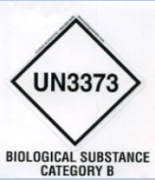

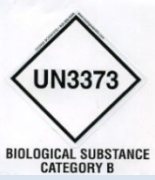

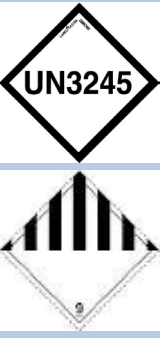







All transport by road or by air must be accompanied by a consignment note stating:

- Place and date of preparation
  - Name and address of sender
  - Name and address of carrier
  - Name and address of recipient
  - Place and date of receipt of goods and place intended for delivery of goods
  - Correct shipping name of material: see column 4, table 1
  - Gross weight or quantity of goods,
- 4) A trade document must be added for the transport of animal by-products (see form [Trade document ABP](#)). For transport of animal material to non-EU countries, the requirements/rules that apply in the destination country must be satisfied. An import exemption must be requested for the import of animal material from non-EU countries. There is an institute-wide import exemption available that can be requested from the BVF. Please note that this institute-wide import exemption has a limited validity period, check whether you have the most recent version.

If transporting animal by-products yourself, the registration number of the vehicle must be specified on the trade document. A Cat. 1, for Research and Diagnostics sticker in black with white lettering, must also be placed behind the windscreen of the vehicle (see from [Cat 1 label](#)).

*Table 1: Overview of packaging and labelling requirements for shipment of biological material*

	Packaging material	Labelling:	Documents in addition to consignment note and designation	Remarks for transport by air
Human diagnostic and research material, not contaminated with class 3 or 4 pathogens	Triple containment with sturdy outer packaging 		Biological Substance B	Max. 4 kg total material content
Animal diagnostic and research material, not contaminated with class 3 or 4 pathogens		 For Research and diagnostics only in black with white lettering.	Trade document if the shipment is within EU member states (see <a href="#">form 8</a> and <a href="#">form 8a</a> ). Country-specific requirements apply outside the EU.	Max. 4 kg total material content
Non-infectious GMOs			The consignment note must bear the designation: 'Genetically modified organisms'	
Infectious material, pathogenic for people and animals of risk class 2 or above and designated as Cat. A	UN-approved sturdy packaging for 2814; 		The consignment note must bear the designation: 'infectious substance affecting humans'	Max. content of primary container: 100 g Shipper's declaration is supplied and signed by the accredited carrier.

				
Infectious material, pathogenic for animals	UN-approved sturdy packaging also applicable for 2814 	 + UN2900 label	Consignment note bearing the designation: 'infectious substance affecting animals'	Max. content of primary container: 100 g Shipper's declaration signed by the accredited carrier.

Note, follow air transport rules in the event of combined transport by air and road.

## Abbreviations

ADR	Accord européen relatif au transport international de marchandises Dangereuses par Route
BSO	Biosafety Officer
GMO	Genetically Modified Organism
ML-I/ML-II	Microbiological Laboratory Class I/II
UM	Maastricht University

## References

- Decree and Regulation on Genetically Modified Organisms, Environmental Management 2013, IenW April 2014.
- [Website HSB Maastricht](#)

## Further information

For further information, please contact the [BSO](#)