



UPPSALA  
UNIVERSITET

UFV 2019/1989

# Procedure for receiving dangerous goods

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At Uppsala University's  
goods receptions

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# Reception of dangerous goods at the University's goods receptions

## Background

This procedure is intended for staff at Uppsala University who are responsible for – or are involved in – the reception of dangerous goods at the University's goods receptions. The procedure concerns staff who are responsible for ensuring that duties within this area are executed as well as those executing such duties.

## Organisation and division of responsibilities

Area directors are responsible, as part of their responsibility as an employer, for conducting a documented risk assessment and for drawing up procedures and instructions. All staff at the goods reception are responsible for following established measures, procedures and instructions.

## Risk assessment

It is appropriate to base the risk assessment partially on the work that goes into receiving dangerous goods and partially on the inherent dangers specific to the dangerous goods. When assessing risks, it is advisable to use information concerning accidents and near-accidents that have occurred. Risk assessment forms can be found on the University's website<sup>1</sup>.

## Local procedures and instructions

There should be written procedures and/or instructions surrounding the reception of dangerous goods based on these guidelines for each goods reception. The procedures and instructions should describe in a clear-cut and simple manner the various stages that are carried out, or that may need to be carried out, in the event of an emergency situation at the goods reception, for example.

## Training

Those involved in the transportation and handling of dangerous goods should be trained in the requirements placed on their role before they carry out any duties. Each employee in question should understand the local procedures and instructions applicable to their workplace. The legislation<sup>2</sup> divides up the training into three parts:

- general training, which covers the general conditions of the provisions for transporting dangerous goods,
- function-specific training that covers the precise provisions concerning staff members' specific duties, and,
- safety training that covers the management of risk and dangers linked to the transportation of dangerous goods.

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<sup>1</sup> See Staff Portal, search "risk management". Forms are available for both "Simple risk management" and "Risk management using the risk matrix".

<sup>2</sup> MSBFS 2018:5 The Swedish Civil Contingencies Agency's (MSB) regulations on the transport of dangerous goods by road and off road, Chapter 1.3.

## Dangers linked to dangerous goods

The term ‘dangerous goods’ is a collective term for all goods that could harm people or damage property/the environment due to their properties or inherent dangers. The goods are divided up into groups, known as classes, in line with their inherent danger, so that each class contains groups of goods that have similar inherent dangers. For example, all flammable liquids belong to the Flammable liquids class. Appendix 1 includes a short overview of the classes and their inherent dangerous properties.

## The transport chain

According to the legislation governing the transportation of dangerous goods,<sup>3</sup> transportation begins with the sender as the goods are prepared to be transported. Transportation is completed when the recipient has received the goods. The actors involved in the transport chain are primarily the sender, the carrier, the unloader and the recipient. At the University there is also an end recipient, which is the customer who ordered the goods. Transportation between the recipient and the end recipient is not however covered by the legislation’s definition of transportation of dangerous goods.

### Sender

The sender should ensure that the goods are classified, marked and labelled in accordance with the legislation. The sender is also responsible for the correct packaging of the goods and for ensuring that the required documentation, in the form of a goods declaration and written instructions, is correctly supplied and sent with the goods. The sender hands over the prepared goods to the carrier.

### Carrier

The carrier transports the dangerous goods to the location specified by the sender. The carrier is responsible for ensuring that the means of transportation, for example the van, fulfils legislative requirements in terms of equipment and signage/markings. The carrier is responsible for the goods during transportation until they are handed over to the recipient.

### Recipient

The recipient first assumes responsibility for the goods when they are handed over by the carrier. The University therefore assumes responsibility for the goods upon receiving them.

### End recipient

At the University the end recipient is the person who ordered the goods.

## Reception of dangerous goods

The dangerous goods that are received at the University’s goods receptions are in principle exclusively general cargo that is often delivered in the form of small packages.

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<sup>3</sup> MSBFS 2018:5 The Swedish Civil Contingencies Agency’s (MSB) regulations on the transport of dangerous goods by road and off road, Chapter 1.4.

## Identification

The dangerous goods can be differentiated from other goods by the markings and labelling on the packaging. Each package should bear the following information, see Figure 1:

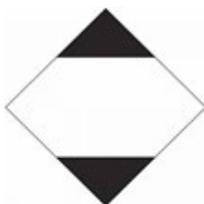
- The UN number of the goods,<sup>1</sup>
- Labels that inform the recipient about the goods' inherent danger,
- Arrows showing which way up the package

should be placed. All markings should be highly visible and legible.



*Figure 1.* Examples of markings on a package. These goods contain a substance with UN number 1090 (acetone). The red label indicates that the substance is a flammable liquid. The flame indicates that the substance is flammable, while the number 3 indicates that the substance belongs to class 3, that is, flammable liquids. The arrows show which direction is up and which is down for the goods.

The goods may also have been sent in line with exemption rules and may therefore be marked instead with the label for limited quantities (Figure 2a) or excepted quantities (Figure 2b).



*Figure 2a.* Label for limited quantities



*Figure 2b.* Label for excepted quantities

The labels for all classes are set out in Appendix 1.

## Checks

The recipient should check that the number of packages corresponds to the goods declaration. The recipient should also check that the dangerous goods are labelled as outlined above and that they are not damaged. If the recipient feels there is anything concerning about the received goods, for example dangerous goods having been jointly loaded alongside foodstuffs, this should be reported to the facilities manager and the University's security adviser.

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<sup>4</sup>The UN number is the identification number of the dangerous goods consisting of four digits.

## Receipt

Recipients should always acknowledge receipt of the goods they have received. This should always be done upon receiving the goods. The acknowledgement of receipt could be in writing, by way of a signature on a transportation bill, or electronically.

## Interim storage

It is vital that the dangerous goods are only stored short-term at the goods reception. There should be suitable storage spaces available at the goods reception. When designing these spaces, the dangerous properties of the goods should be taken into account. Only authorised staff should have access to the interim storage.

## Internal transportation

Internal transportation from the goods reception to the end recipient should be conducted in a manner that minimises the risk of accidents, such as spillages. The transportation routes should be predetermined and should consist as far as possible of corridors to which students and staff who are unaware of the risks of such dangerous goods do not have access. Dangerous goods should always be transported in a vehicle designed for the purpose. It is forbidden to ride in the same lift as the dangerous goods.

Internal transportation routes that do not branch out into public routes are not covered by the legislation governing transportation of dangerous goods.

## Delivery to end recipient

The end recipient is the actual person who ordered the dangerous goods at a department/equivalent. There should be systems or procedures in place within the campus management area governing delivery that ensure the goods reach their intended end recipient. The end recipient, or their appointed representative, should acknowledge receipt of the goods upon delivery.

## Accidents and near-accidents

All staff who receive dangerous goods should be aware of how to react in the event of an accident or near-accident. The area directors are responsible for establishing and displaying a local action plan for necessary measures and priorities linked to accidents and near-accidents.

## Training

To ensure staff are able to react correctly during an emergency situation and manage accidents and near-accidents, those who handle dangerous goods at the goods reception should have the following training:

- General fire safety training
- CPR and first aid

## Equipment

At each goods reception there should be, at the very least, first aid equipment, cordons and decontamination products. The equipment should be adapted to the risks posed by the handling of the goods. All staff at the goods reception should know how to use the equipment.

## Reporting

All accidents and near-accidents involving dangerous goods should be reported to the University's safety adviser for the transport of dangerous goods by road.

## Legislation

- The Swedish Civil Contingencies Agency's (MSB) regulations on the transport of dangerous goods by road and off road. Link to the latest version is available at MSB's homepage about transport of dangerous goods (only in Swedish).

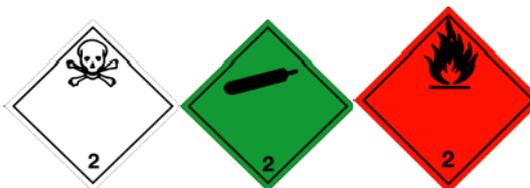
## Appendix 1. Overview of dangerous goods – the classes

This overview contains a short description of each class and its inherent dangerous properties. The symbols show how packages in each class should be labelled.

### Explosive substances and objects (class 1)



Explosive substances may be solid or liquid. This class includes items such as pyrotechnical objects, e.g. fireworks. The likelihood of an accident involving explosive substances is considered small, while the consequences of an accident could be very severe. The University only handles explosive substances in exceptional cases.



### Gases (class 2)

This class includes gases with various dangerous properties. For example, the gases may be flammable, toxic or oxidising. The gases may be compressed, as in a gas cylinder; condensed, that is, gases that are partially fluid; or cooled and condensed gases, such as liquid nitrogen. Aerosol cans are also included in this class.



### Flammable liquids (class 3)

A flammable liquid is a liquid with a flashpoint of maximum 60°C. The risk of flammable liquids is that they emit vapours that can combine with air to form a flammable mixture.

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<sup>5</sup> Def of flashpoint: the lowest temperature at which a liquid emits sufficient vapour to ignite when combined with air.



### **Flammable solids, etc. (class 4.1)**

This class contains solids that can easily be ignited upon contact with an open flame, as well as self-reactive substances that can be ignited by heat, spontaneous combustion or a shock without the presence of oxygen. Flammable solids are either powdered, granular or paste-like. Certain substances in this class can give rise to toxic gases when burning. The University only handles substances belonging to this case in exceptional cases.



### **Self-igniting substances (class 4.2)**

This class contains substances that can spontaneously combust or self-heat upon contact with air. The majority of the substances in this class are highly reactive and many of them react with other substances. The University only handles substances belonging to this case in exceptional cases.



### **Substances which, in contact with water, emit flammable gases (class 4.3)**

As the name implies, this class contains substances that generate flammable gases upon contact with water. The most common gas that develops is hydrogen, which together with air forms an explosive mixture (oxyhydrogen gas). To protect the substances in this class against moisture in the air, they are stored and transported in an inert protective case. If the substances in this class begin to burn, water should obviously not be used as an extinguishing medium.



### **Oxidising substances (class 5.1)**

Oxidising substances contain oxygen that may be released upon heating. Oxidising substances can therefore sustain a fire.



### Organic peroxides (class 5.2)

All organic peroxides contain both fuel, in the form of carbon chains, and oxygen in the same molecule, meaning the conditions for fire and explosions are “built in” to the substance. Depending on the type of organic peroxide, the reaction can be triggered by heat, friction, shocks or upon contact with impurities. Certain sensitive organic peroxides therefore need to be transported under controlled temperatures. However, organic peroxides are often mixed with stabilisers to reduce their propensity for reacting.



### Toxic substances (class 6.1)

Substances in this class have properties that can cause severe injury or death when they come into contact with humans.



### Infectious substances (class 6.2)

Infectious substances contain bacteria, viruses, parasites, fungi or other microorganisms that could spread disease to people or animals.



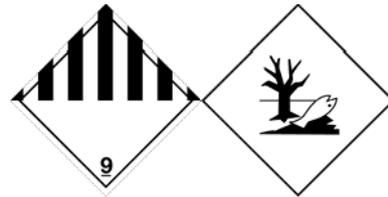
### Radioactive substances (class 7)

The substances in this class emit ionising radiation that could harm humans and animals or damage the environment.



### Corrosive substances (class 8)

Corrosive substances can rapidly destroy skin and mucous membranes upon contact. Substances that can cause damage to steel and aluminium are also contained within this class.



### **Other substances (class 9)**

This class contains substances with dangerous properties not covered by the other classes. Environmentally harmful substances belong to this class, for example. These substances are marked with the symbol for environmental damage – the dead fish and tree.