



## Routines for disposal of solid waste from work with genetically modified microorganisms (GMM) and/or biological agents.

For disposal of solid waste containing GMM and/or biological agents from activities at Umeå University there are three options of which the last described (C) should preferably be avoided:

A) Inactivation by autoclaving within or close to the premises of the activity. Here there are two alternatives, either use tightly sealed disposable waste containers of hard plastic (i) or reusable containers of hard plastic with disposable bags (ii).

i) Tightly sealed disposable containers.

1. Collect the waste in the disposable container as it is produced. Autoclavable yellow waste containers of 35 litres (Multi-Safe steri 35) or 60 litres (Multi-Safe steri 60) can be purchased from Sarstedt (order no. 77.3899.035 and 77.3899.060, respectively) or from the Chemical Store at Umeå University.
2. When the container is full, the sealing lid is attached permanently. Mark the container with the appropriate label, for example "Smittförande avfall" (Hazardous waste).
3. Hand in the waste container for autoclaving according to the procedures available at the current facility.
4. After autoclaving, the container is treated as normal waste in accordance with the procedures available at the current facility.

ii) Reusable containers of hard plastic with disposable bags:

1. Place double autoclave bags in a dedicated waste container (with lid) made of hard plastic and fold the upper part of the bags onto the outside of the container. Collect the waste in the container as it is produced. Containers of 45 litres (order no. 129-3601) and bags (order no. 129-1753) can be purchased from VWR International or from the Chemical Store at Umeå University.
2. When the container has been filled to no more than 80%, the inner bag is folded in but not sealed, while the upper part of the outer bag is left folded on the outside of the container. Make sure that the lid is well attached.
3. Hand in the waste container for autoclaving according to the procedures available at the current facility.



4. After autoclaving, the inner bag is removed from the container and sealed before it is treated as normal waste in accordance with the procedures available at the current facility.
5. Insert a new inner bag into the container and fold the top of the bag onto the outside of the container so that it is ready to be used again.

For departments or similar within the premises of Norrlands universitetssjukhus (NUS) that have no possibility to inactivate the waste by themselves, the central autoclaves at NUS may be used.

#### B) Inactivation at the central autoclaves at NUS.

1. Contact the manager for internal transportation at NUS and request to inactivate solid waste containing GMM and/or biological agents of risk group 1 and 2, at the central autoclaves at NUS. Declare amount of waste per day and in which recycling room the waste will be left. The personnel who are transporting the waste must also be informed about the content of the waste, the risks associated with the handling of it, and the need for safety measures.
2. If inactivation at the central autoclaves is approved, the routine for "Smittförande avfall" (infectious waste) in the Environmental Management System at Västerbottens läns landsting must be complied with. Note that the containers and labels that are described in the routine must be used.

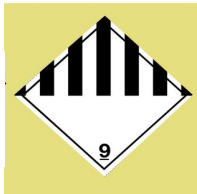

#### C) Removal of solid waste containing GMM and/or infectious substances as dangerous goods.

For departments or similar that have no possibility to inactivate waste containing GMM and/or biological agents through autoclaving there is a possibility to dispose of solid waste by sending it as **dangerous goods** according to the regulations by The Swedish Civil Contingencies Agency. GMM waste from F-activities does not count as hazardous waste because the risks associated with them are negligible. Waste from L-activities is counted as hazardous waste and shall be labelled as "infectious substances, division 6.2", if transported without being inactivated first. Waste from R-activities cannot be transported if not having been inactivated first.

**For transportation of solid waste containing GMM of risk group 1 as dangerous goods the following instructions apply:**

1. Unfold a cardboard box for hazardous waste ("*riskavfallskartong*") and insert the supplied plastic bag. If there is a risk of leakage of liquids from the waste, then fill the bottom of the box with approx. 10 cm of *vermiculite* before the waste is put into the box. Seal the plastic bag and close the box before transportation. The boxes for hazardous waste including plastic bags as well as

vermiculite can be purchased from The Chemical Store ("Kemiförrådet") at Umeå University by E-mail: [order@chem.umu.se](mailto:order@chem.umu.se) or per telephone at 090-786 51 62. State your organisational unit ("organisationsenhet") upon ordering.

2. Attach the **ADR label 9** "Miscellaneous Dangerous Good" onto the box and also on the same side of the box a label with the text "UN 3245" in which the letters and numbers must be at least 12 mm tall. Type 3245 after "UN" if you have a label without numbers. The labels can be purchased from The Chemical Store ("Kemiförrådet"), tel no. 090-786 51 62.  

3. Fill out the *dangerous goods transport document* (only available in Swedish). On the document it should say: Org. Nr. 202100-2874, EWC code **18 02 03**, "UN 3245". Fill in number of boxes. The waste is: "**UN 3245 Avfall, Genetiskt modifierade mikroorganismer, 9, (E), Miljöfarligt (M8)**". Provide name and telephone number to the responsible person. The transport document can be downloaded from this page: <https://www.aurora.umu.se/regler-och-riktlinjer/sakerhet/laboratoriesakerhet/biosakerhet/genetiskt-modifierade-mikroorganismer/>
4. For activities leaving their waste in "Miljörummet" at KBC (in the designated space), the date, name of sender, department/unit, and number of boxes, must be indicated on the list posted on the wall.
5. The carrier of the dangerous goods shall fill out their part of the transport document and leave a copy of the document with the sender. This copy must be kept by the department/similar in order to be presented for The Swedish Work Environment Authorities in case of inspection.
6. According to the ADR regulations, both the sender and the carrier shall retain a copy of the dangerous goods transport document for a minimum period of at least three months.

**For transportation of solid waste containing microorganisms of risk group 2 as dangerous goods/hazardous waste the following instructions apply:**

1. Unfold a cardboard box for hazardous waste ("*riskavfallskartong*") and insert the supplied plastic bag. If there is a risk of leakage of liquids from the waste, then fill the bottom of the box with approx. 10 cm of *vermiculite* before the waste is put into the box. Seal the plastic bag and close the box before transportation. The boxes for hazardous waste including plastic bags as well as vermiculite can be purchased from The Chemical Store ("Kemiförrådet") at Umeå University by E-mail: [order@chem.umu.se](mailto:order@chem.umu.se) or per telephone at 090-786 51 62. State your organisational unit ("organisationsenhet") upon ordering.

- Attach the label **"Smittförande avfall"** (Hazardous waste), which should include a square standing on its tip and containing the symbol for "Biohazard" at the top and the number 6 at the bottom. On the label it should also read "UN 3291" and "Avfallskod 18 01 03". If the waste also contains needles, syringes, scalpella blades or other sharp objects, then the label **"Smittförande avfall skärande/stickande"**



(Hazardous waste containing sharps) must be used instead. The labels can be purchased from The Chemical Store ("Kemiförrådet"), tel no. 090-786 51 62. **Note, fill in the requested information (e.g. date) on the label!**

- Fill out the *dangerous goods transport document* (only available in Swedish). On the document it should say: Org. Nr. 202100-2874, EWC code **18 01 03**, **"UN 3291 Smittförande avfall, ospecificerat, n.o.s., (Biologiska smittämnen) 6.2, PG II**. Fill in number of boxes. The waste is considered as "Hazardous waste. Provide name and telephone number to the responsible person. The transport document can be downloaded from this page:  
<https://www.aurora.umu.se/regler-och-riktlinjer/sakerhet/laboratoriesakerhet/biosakerhet/genetiskt-modifierade-mikroorganismer/>
- For activities leaving their waste in "Miljörummet" at KBC (in the designated space), the date, name of sender, department/unit, and number of boxes, must be indicated on the list posted on the wall.
- The carrier of the dangerous goods shall fill out their part of the transport document and leave a copy of the document with the sender. This copy must be kept by the department/similar in order to be presented for The Swedish Work Environment Authorities in case of inspection. According to the ADR regulations, both the sender and the carrier shall retain a copy of the transport document for a minimum period of at least three months.
- According to the Swedish Environmental Protection Agency (Naturvårdsverket), the receiver of hazardous waste shall send a notification of the receipt to the sender. This can then serve as a basis for the documentation of the annual amount of hazardous waste produced, which must be retained for at least three years.