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Institute of Basic Medical Sciences, Section of Comparative Medicine

Standard operation procedure: Importation of goods and KPM equipment to the MDU
SOP nbr: 7-06
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IMPORTATION OF GOODS AND KPM EQUIPMENT TO THE MDU AND CONVENTIONAL

1.0 PURPOSE

1.1 To ensure that equipment imported to the MDU does not present a contamination hazard for the MDU and Conventional.
1.2 To ensure that the equipment withstands the disinfection/sterilisation process.
1.3 To ensure that all equipment imported to KPM and conventional unit is handled in a way that safeguards employees, animals and the environment.

2.0 DISTRIBUTION OF RESPONSIBILITY

2.1 Everyone who imports goods and equipment to the MDU and conventional unit must have undergone thorough training.
2.2 Everyone who imports goods and equipment must follow the current routines for importation.
2.3 The room manager at KPMe is responsible for disinfecting the outside of dirty equipment before it is moved to the conventional unit.
2.4 The laundry personnel are responsible for receiving consumables at the laundry, dirty equipment from KPMe and conventional unit, and other equipment from the equipment storeroom outside the MDU.
2.5 “Purchase assistant is responsible for ordering equipment and the storeroom manager is responsible for receiving them and to get the items inside the facility.
2.6 The equipment manager is responsible for receiving equipment that he/she or KPM-user needs to get into the facility.
2.7 The equipment manager is responsible to teach and approve KPM-employees and KPM-users on how to safely get items inside the facility.

3.0 PROCEDURE

Always use personal protective equipment (PPE) when handling Virkon, Prochlor, Hydrogen peroxide (H_2O_2) and ethanol. Read up on what is needed of lab coat, personal facemask with an

A2 and particle filter (full mask or half mask with safety glasses) and chemical tolerant gloves that cover the sleeves.

Importation of dirty equipment from KPMe and conventional to MDU

3.1 All dirty cages, transportation racks, trolleys and other equipment from KPMe must be sprayed with Virkon in the sluice in KPMe. Virkon must be left to work for 30 minutes before the equipment is moved to the autoclave room at conventional unit. Use PPE!

3.2 All equipment that is heading back to MDU from KPMe or conventional unit must be autoclaved first. Smaller equipment (like igloos, tunnels etc) can be transferred to paper sacks before autoclaved. The paper sacks must be labelled with autoclaving tape.

3.3 For water bottles you will need to empty them first, then run a “dry cycle”. The bottles can be emptied into the sink by the autoclave room. In cases where all bottles are full with water, a "wet cycle" with temperature gauges can be run. NB: there can only be water in the autoclave when this cycle is running and it takes longer than a dry cycle.

3.4 The KPM employee who work at the Conventional Unit has primary responsibility to communicate with the laundry to get equipment back to the MDU. In cases where Trygg Renhold has to perform the task, this should be carried out at the end of the day and a full change of clothes and shower should be carried out before the next working day. This person cannot return to MDU the same day.

3.5 When the autoclave is done the equipment is transported to dirty side of laundry and normal procedure for cleaning of equipment is followed.

Importation of equipment and consumables

3.6 After delivery, goods are placed in the corridor, in the main reception or in the office of the purchasing and invoice officer and are fetched from these locations by KPM. Goods may also be placed on the dirty side of DU-007 by the purchasing and invoice officer. Goods and equipment must be put on the bench top or shelf and never directly on the step-over.

3.7 Goods and equipment that are to be imported must be autoclaved, gassed with H_2O_2 or disinfected with Virkon, Prochlor or 70% ethanol (preferred disinfection in said order). Staff must first check that the goods and equipment can withstand the sterilisation/disinfection process.

3.8 The importation of goods and equipment is carried out via DU-007. Goods and equipment that are to be disinfected with Virkon, Prochlor or 70% ethanol are sprayed on the dirty side of DU-007 and then placed on the step-over with a note that says it is disinfected. Use PPE!

3.9 Cage bedding and food are placed in DU-006. Because the storeroom is dirty, goods must be disinfected with ethanol before they are taken into the MDU. Use PPE! Store the spray bottle containing disinfectant in the storeroom and handle this as dirty equipment. One member of staff from the dirty side and one from the clean side work together to import goods. Make sure to change shoes before entering DU-006 from MDU side. New shoes is already inside DU-006.

3.10 Virkon and Prochlor can be used on non-sensitive items that tolerate these disinfectants and can withstand moisture. Prochlor and Virkon have corrosive properties and should, if possible, be rinsed

away after the disinfection process. Virkon (NB! must be pink!) must be left to work for a minimum of 20 minutes. Prochlor must be left to work for at least one minute.

3.11 Unopened cartons containing clean equipment that will not come into direct contact with animals can be disinfected thoroughly on the outside and then imported in their entirety. The contents of opened cartons must be disinfected/sterilised one by one. The goods must be handled with clean gloves which must not come into contact with the outside of the cartons. The task of receiving goods is often performed by the storeroom manger.

3.12 The empty cartons are then removed by the member of staff responsible for the importation of equipment on the dirty side. Any spillage of Virkon on the step-over or floor is then cleaned up with water/soapy water.

3.13 Goods are placed in the storeroom for consumables (DU-004) or in the laundry. The goods are unpacked following the principle “first in-first out”, so that the oldest goods are used first. The shelves have labels for the various types of goods. When the shelves are full, any extra cartons must be placed in a single layer on top of the rack/shelf.

3.14 All equipment to be disinfected must be assessed first. Where does it comes from? how "dirty" is it? And thus what to use of disinfectant. Clearly soiled equipment should be washed before disinfected. If the equipment is new, virkon/prochlor or sometimes ethanol can be used. If there is used equipment or equipment for the barrier/DU-044, autoclave and gassing with H2O2 must always be prioritized.

3.15 Equipment that can withstand high temperatures, moisture and pressure can be sterilised in the autoclave. Equipment that is to be moved to the autoclave must be covered and the cover must be disinfected before transport.

3.16 Gassing with H_2O_2 is used to sterilise the surfaces of larger items/large volumes of equipment and items that cannot be autoclaved or disinfected with Virkon, Prochlor or ethanol. Electronic items must be sterilised with H_2O_2- gas, using either the gas sluice or DU-007. Equipment must be covered and the cover must be disinfected before transport to the gas sluice. Contact the supplier of the equipment if unsure it can be gassed.

3.17 Only specially trained personnel may use DU-007 for gassing with H_2O_2. It is typical to use DU-007 when gassing large machines. The equipment manager will notify you of planned gassing and hang notices on doors leading into DU-007.

3.18 70% ethanol must be used when other methods are not possible, since ethanol does not have the ability to neutralise certain microorganisms. New/completely clean equipment that tolerates ethanol can be disinfected with 70% ethanol.

3.19 Chemicals must not come into contact with animals. Rinse away any chemical remains with clean water and disinfect with 70% ethanol.

How to use the autoclave:

From the dirty corridor:

3.20 Make sure the equipment withstands autoclaving.

3.21 Label the equipment with autoclaving tape.

3.22 Equipment must be covered/placed in a bag which must be disinfected before transport. Use PPE! This does not include equipment from KPMe/conventional which is already been autoclaved.

From the clean corridor:

3.23 Wear new pair of blue gloves, use a trolley to move the equipment to the autoclave.
3.24 Put the trolley inside the autoclave.
3.25 Remove the covering/bag and discard this + the outer gloves. Put on fresh gloves before closing the door.
3.26 Select the correct cycle and start the programme.
3.27 Make sure that the cycle has been completed without error and that black stripes are showing on the tape before taking the equipment out of the autoclave.

Use of the gas sluice

From the dirty side:

3.28 Make sure that the equipment tolerates gassing with H_2O_2. Cages and bottles used in cages must not be gassed, since the gas gets into the plastic and can be harmful to the animals.
3.29 Equipment must be covered/placed in a bag which must be disinfected before transport. Use PPE!

From the clean side:

3.30 Put on a lab coat and two pairs of gloves (long gloves inside to cover the sleeves of the coat).
3.31 The equipment is moved to the gas sluice on a trolley.
3.32 Make sure that there is sufficient H_2O_2 in the container. If not, mix H_2O_2 30% with filtered water from the laundry. Use PPE! Mix the amount underneath a fume hood, following the instructions on the extra 5-litre jug. H_2O_2 30% is stored in the chemicals cupboard.
3.33 Place the equipment on the shelf in the gas sluice. The items must be placed in one layer with plenty of space in between them.
3.34 Remove the covering/bag and discard this + the outer gloves. Take off your coat and turn it inside out (for delivery to the laundry). Discard the inner pair of gloves. Put on fresh gloves before closing the door.
3.35 Close the door and start programme 1. Make sure that gas is emitted from both nozzles - this is important in order to ensure that the equipment is properly disinfected/sterilised. The gas should be so thick that you can not see through the next window.
3.36 Make sure that the programme has been completed without error before taking the equipment out of the gas sluice.

4.0 HEALTH, SAFETY AND THE ENVIRONMENT (HSE)

4.1 Everyone who imports equipment must have undergone thorough training in the use of chemicals, equipment and PPE.

4.2 Personal protective equipment (PPE) when handling Virkon, Prochlor, Hydrogen peroxide (H_2O_2) and ethanol: lab coat, personal facemask with an A2 and particle filter (full mask or half mask combined with protective glasses) and chemical tolerant gloves covering the sleeves.

4.3 If disinfectant gets into the eyes, rinse them thoroughly and contact a doctor.

4.4 Remove your clothes and shoes if disinfectant is spilt onto them. Rinse the skin thoroughly with water. Contact a doctor if necessary.

4.5 In the case of major spillages: mop up the spillage with paper and put this into a double bag. Tie the bags with a double knot and dispose of them as hazardous waste.

4.6 Ring 113 in an emergency.

4.7 A risk assessment for the procedures must be carried out.

4.8 Chemicals must be stored in accordance with the regulations. All chemical remains and empty containers must be discarded as hazardous waste.

Rely+On Virkon Tablets	**CAS no.**	**Pictogram**	**Hazard statements**	**Precautionary statements**
Pentakalium-bis(peroksymonosulphate)-bis(sulphate) Malic acid Sulphamidic acid Sodium dodecylbenzensulphonate Dipotassium peroxodisulphate	70693-62-8 6915-15-7 5329-14-6 25155-30-0 7727-21-1		H315: Skin irritant. H318: Causes serious eye damage. H335: May cause respiratory irritation. H412: Harmful to aquatic life with long-lasting effects. EUH 208: Contains Dipotassium peroxodisulphate, which may produce an allergic reaction.	P102: Keep out of the reach of children. P273: Avoid escape into the environment. P280: Use protective gloves/clothing/eye and face protection. P305+P351+P338: IF IN CONTACT WITH EYES: Rinse carefully with water for several minutes. Remove contact lenses if used and easy to do. Continue rinsing. P310: Contact a POISON CENTRE immediately or a doctor. P501: Dispose of contents/container in

				accordance with local, regional and national regulations.

Contec Prochlor	**CAS no.**	**Hazard statements**	**First aid measures**
Calcium Hypochlorite	7778-54-3	H272: Flammable oxidant. H302: Dangerous if swallowed. H314: Causes serious skin burns and eye damage. H400: Extremely poisonous for aquatic life. EUH031: Releases poisonous gas in contact with acids	If in contact with skin: wash immediately with plenty of soap and water. If in contact with the eyes: rinse the eye(s) under running water for 15 minutes. Contact a doctor. If swallowed: rinse the mouth with water. If fumes are inhaled: go out into fresh air. Contact a doctor.

Ethanol	**CAS no.**	**Pictogram**	**Hazard statements**	**Precautionary statements**
Ethanol	64-17-5		H225: Highly flammable liquid and vapour. H319: Causes severe eye irritation.	P210: Keep away from heat sources, hot surfaces, sparks, open flames and other sources of ignition. Smoking forbidden. P280: Use protective gloves/clothing/eye protection/face shield. P305+P351+P338: IF IN CONTACT WITH THE EYES: Rinse carefully with water for several minutes. Remove contact lenses if used and easy to do. Continue rinsing. P370+P378: In case of fire, extinguish using foam, carbon dioxide, dry powder or water spray.

				P403+P235: Store in a cool, well-ventilated place. P501: Dispose of contents/container in accordance with national regulations.

Hydrogen peroxide 30% (Perhydrol®) for analysis EMSURE® ISO	**CAS no.**	**Pictogram**	**Hazard statements**	**Precautionary statements**
Hydrogen peroxide	7722-84-1		H271: Can cause fire or explosions. Highly oxidising. H302: Dangerous if swallowed. H314: Causes severe burns to skin and eyes. H318: Causes serious eye damage. H332: Dangerous if inhaled.	P280: Use protective glasses. P305 + P351 + P338: IF IN CONTACT WITH THE EYES: Rinse carefully with water for several minutes. Remove contact lenses if used and easy to do. Continue rinsing. P313: Seek medical help.

5.0 EQUIPMENT AND MAINTENANCE

5.1 Protective equipment: chemical tolerant gloves, lab coat, protective glasses, facemask with vapour (A2) and particle filter. The mask must be cleaned and the filter changed as shown in the instructions.
5.2 Virkon: any remains of Virkon past its expiry date must be collected in a container in DU-007/DU-004 and discarded as hazardous waste.
5.3 Prochlor: must never be sprayed.
5.4 70% ethanol
5.5 Hydrogen peroxide 30%
5.6 Soapy water
5.7 Paper towelling
5.8 Gas sluice
5.9 Autoclave

6.0 EDITING AND HISTORY

6.1 Written 31.01.2019 by Frøydis Kilmer
6.2 06.14.2021: Frøydis Kilmer and Jorge Rodas Foeller
6.3 Revised 01.08.2023 (Helene Tandberg)

7.0 REFERENCES

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7.2 Contc Prochlor 18423235_286_ab299121bd649bf5b66f93cabc7e3290.pdf (ecoonline.com)
7.3 Rely+On Virkon Tabletter - EcoOnline
7.4 Hydrogen peroxide 30% (Perhydrol®) – EcoOnline