Do you need more information? Please contact the AMD: amd@science.leidenuniv.nl
2 Working safely with HF

- Before you can start working with HF, you should make sure that there is a special first-aid kit, the so-called anti-HF kit (see the picture in Chapter 3) present in the lab. If the kit is not present, please ask the AMD to issue an extra kit and instructions; alternatively you may find the kit’s owner and ask him/her for instructions. Without this kit and the accompanying training, you are not allowed to start!
- Please read the first-aid protocol in the kit beforehand. Please also have your fellow room occupants read this protocol: in case of any future emergencies they are probably the first ones that are able to provide help. Swift action may limit the extent of the injury!
- That is why you should never work with HF on your own, but always in the presence of colleagues. Working with HF is allowed only during office hours, when emergency responders (BHVs) may be called in. The emergency response team (BHV team) has extra tubes of anti-HF gel for when they are needed. So, make sure you know how to sound the alarm (AMD infosheet A040) and mention the fact that it is a call about an HF-exposure, when you call it in.
- Never use your mouth to pipette HF! Use an adjustable pipette with pipette tips, or a glass pipette with a pipette bulb. Furthermore, do not pipette directly from a bottle of concentrated HF. First, pour a small amount in a beaker inside a fumehood, and work from there. If you don’t, not only the pipette tip, but also a large part of the outside of the pipette comes into contact with HF. If you put down the pipette after that, other surfaces may be contaminated, or colleagues may inadvertently touch traces of HF with their bare hands.
- Plan your actions with HF, and consider beforehand what you may need for the collection of waste or clean-up:
  - Perform a “dry” practice run of the experiment to familiarize yourself with the actions with HF. Routine lowers the chance of errors.
  - Please also keep the neutralizing agent at hand, in case you spill. You can use a calcium carbonate solution, or special HF-absorption grains.
- Please wear your personal protective equipment: a lab coat, HF resistant gloves, and safety glasses that fit your face well. Normal lab gloves are not sufficient! The concentrated acid easily penetrates latex as well as nitril gloves. As protection against concentrated solutions (up to 60%) gloves made of neoprene, butyl or viton are recommended. As protection against higher concentrations only butyl or viton suffice. [Source: Wikipedia]
- When working with HF, always use a properly functioning fumehood with the sash set at operating setting (40 cm).

3 First aid after exposure to fluorides: the anti-HF kit

After exposure to HF, a proper response is required by applying one of the emergency protocols provided by the anti-HF kit: for skin contact, eye contact, inhalation, and spills. Proper knowledge of the protocol is a must. This kit contains:

ATTENTION: The victim must always report to a hospital, because of the possibility of systemic and/or delayed effects!
• 1 tube of 25 ml “anti-HF gel” (calcium gluconate 2,5%). This is an antidote for the skin that binds fluoride ions and releases calcium ions, thus limiting the injury. When aiding as emergency responder, please only apply the gel with gloves on, so you do not come into contact with fluoride ions yourself!

• 1 eye wash pouch bottle
• 1 pair of first-aid scissors to cut away clothing
• 1 pair of thick, green, HF-resistant gloves (brand/type: KCL Camatril velours)
• 1 red plastic bag with binder for contaminated waste
• Information sheet HF-risks
• Internal emergency protocol HF
• 1 hospitalization form
• Hospital protocol NVZA/RIVM: toxicology treatment information [Dutch link]

Please register all actions that you have taken, on the hospitalization form, and hand over the anti-HF kit to the ambulance paramedics! The toxicology treatment information in it will shorten the time required by the physician, and it will make it immediately clear that it involves HF injuries.

Report every incident according to the university’s incident report procedure (see AMD infosheet A030 What to report?).