

Safe handling of Chemicals in the XRD-lab

Responsibilities

When working with chemicals it is your duty to examine whether the substances are poisonous, corrosive, explosive or dangerous in any way. The best way to get to know how to handle your chemical, is to read the Safety Data Sheet (SDS). Work in accordance with the SDS [and NTNU's Laboratory and workshop handbook](#).

The same HSE regulations as in any other lab also apply to the work you do in the XRD-lab, i.e. you have to do a risk assessment. Other users may have to handle your sample(s) in the XRD-lab, and it is your responsibility to ensure that others are not exposed to hazardous chemicals.

Special closed sample holders

In the XRD-lab we have special closed holders for your sample if you are working with hazardous chemicals. You'll need special training to use these holders, and the sample preparation have to be done in a fume hood. The recollection of your sample and initial cleaning of the sample holder after measurement must be done in a fume hood as well.

Chemicals with special risks

Carcinogenic and mutagenic chemicals: If the chemical you are using is tagged with  in EcoOnline, or the SDS for your chemical is marked with the hazard statements H350, H350i or H340 you must register in the exposure index. These chemicals must be prepared with special closed holders to ensure that no one get exposed. Typical compounds that must be prepared in special holders are compounds of lead, nickel, beryllium, cadmium, chromium (VI) and cobalt. Solvents may also be carcinogenic.

Nanomaterials: You need to consider the particle shape of your material. If the material is rod shaped or fiber like, e.g. carbon nanotubes, you'll have to prepare your sample in a special closed holder so no others are exposed. If you are working with titanium oxide nanoparticles, you have to use closed holders as well. In general, since the effect is usually unknown, assume nanomaterials to be harmful to both human and environment, and treat the material the way you treat other toxic or hazardous substances.

For more information or questions about hazardous chemicals or exposure index you may contact:

Kristin Høydalsvik Wells: kristin.h.wells@ntnu.no
Senior engineer XRD-lab

Silje Marie Dale: silje.m.dale@ntnu.no
Staff engineer XRD-lab

Eva Rise: eva.rise@ntnu.no
HSE-coordinator