

SAFETY RULES



VIRGINIA TECH CRYSTALLOGRAPHY LABORATORY 2050 ILSB

Persons in charge:

R.J. Angel.	Director.	Tel: 7974 (Office) 540-953-0147 (Home) E-mail: rangel@vt.edu Office: 2029 ILSB.
C. Slebodnick.	Associate Director	Tel: 1848 (Office) 540-552-1662 (Home) Email: slebod@vt.edu Office: 2028 ILSB.
P. Burcham	Technician	Tel 3840 (Office) 540-577-9015 (cell) Email: pburcham@vt.edu Office: 1057A Derring Hall

Authorised Radiation User: Ross J. Angel
Chemical Hygiene Officer: Carla Slebodnick

Principal Users/ Instrument Scientists:

Xcalibur-1	Jing Zhao	jzhao@vt.edu	1-8921
Xcalibur-2	Ross Angel	rangel@vt.edu	1-7974
Gemini	Carla Slebodnick	slebod@vt.edu	1-1848
Xcalibur-PX	Carla Slebodnick	slebod@vt.edu	1-1848
Huber	Ross Angel	rangel@vt.edu	1-7974

GENERAL RULES.

Before starting work in the crystallography laboratory -

1. Users must obtain permission from R.J. Angel or C. Slebodnick.
2. Users must pass the radiation safety test for “users” as administered by the radiation safety office of Virginia Tech.
3. Users must read, at minimum, all parts of the *Chemical Hygiene Plan* that are listed on the “Training Documentation form” in the *CHP*.
4. After reading the *CHP*, users must register with the *Chemical Hygiene Officer* (C. Slebodnick) and then complete and sign the *CHP* Training Documentation form.

When working in the laboratories -

1. Before commencing experiments on an instrument that they have not previously used, users must obtain instruction in its use from R.J. Angel, C. Slebodnick or one of the *principal users*.
2. Users must fill in the log books and, where appropriate, booking sheets to record their usage of the equipment.
3. The laboratory is not to be used for work not directly connected with X-ray diffraction.
4. Users must clean up after they have used the specimen preparation facilities. Spills of any kind must be cleaned up immediately.
5. A small area for temporary sample storage is provided in the laboratory. Samples left outside these areas will be removed and destroyed without warning.
6. Users must not remove tools from the X-ray laboratories.
7. The computers in the laboratories are provided for the control of the diffractometers and for data processing and related activities. Other uses are not permitted. Attempts to break in to computer systems, to use them without authorization, or to use other persons accounts are forbidden.
8. No radioactive materials may be brought into the laboratory.
9. Significant quantities of solvents or liquid samples may not be brought in to the laboratory without the explicit written permission of the Chemical Hygiene Officer.
10. Users must abide by all policies and procedures prescribed in Parts A and B of the University Chemical Hygiene Plan.
11. Users are responsible for depositing in to the safety folder the materials safety data sheets (MSDS) for all materials they bring in to the lab. No material may be brought in to the laboratory without the MSDS being deposited.

RADIATION SAFETY.

1. Users must not attempt to over-ride any interlocks or other radiation safety systems on the X-ray generators, diffractometers and radiation enclosures. Override keys are held by the director and associate director, and may not be used without their explicit permission.
2. Users must not attempt to modify or align the equipment in any way. This includes replacement of X-ray tubes and alignment of monochromators and diffractometers. The only exception is that trained users may exchange sample holders where appropriate.
3. If you believe you may have been irradiated, follow the Emergency Procedures mandated by the X-ray Safety Handbook. In brief:

Notify the radiation safety office 231-5364

Contact the Emergency Radiation Physician on 231-5230 to obtain medical treatment.

Notify RJ Angel and C Slebodnick

Radiation burns can be received with only a very brief exposure, and there is no evidence that there is a minimum threshold dosage.

WATER.

1. If water leaks occur, or water is found on the floor of the laboratory, try to identify the source, turn the X-ray generators down to minimum power, then off, and shut off the water supply. If this cannot be done, or a substantial amount of water is on the laboratory floor turn off all electrical equipment and notify R.J. Angel or C Slebodnick. Record your action in the log book(s) of the instrument(s).

ELECTRICAL SAFETY/HIGH VOLTAGE.

1. The red buttons on the front of the X-ray generators are for turning them OFF. In case of emergency in the laboratory all generators should be turned off. Record your action in the log book(s) of the instrument(s).
2. All of the X-ray generators and tube shields have high-voltage circuits in them. Do not attempt to service or modify them. If you suspect that they are not operating correctly, notify R.J. Angel or C Slebodnick, or a principal user. Record your observations in the log book(s) of the instrument(s).
3. If there are electrical problems with an instrument or circuit, inform the director, associate director, or technician. It is forbidden for general users to attempt repairs or trouble-shooting on electrical equipment, with the exception of replacing standard items such as fuses, light bulbs etc, and to reset equipment cut-outs.
4. It is forbidden for general users to open the electrical disconnect boxes. They may only be opened with the explicit permission of the director or associate director, or the lab technician. When opened, they must be fitted with a lock-out.
5. It is forbidden for general users to open the electrical breaker boxes (located in the hallway outside of the laboratory). They may only be opened with the explicit permission of the director or associate director, or the lab technician, and must be closed and locked immediately. The key must be returned immediately to the director.

NOTICE: Users found breaking these rules will be immediately excluded from Crystallography Laboratory *without appeal*.