The UHNMR Facility is located in the TLC² Annex Building 106 at the University of Houston. Keep all magnetic objects outside of all NMR magnet rooms.

The following are safety rules for working in large magnetic fields.

1) People with medical implants should check with the facility manager before entering the NMR Building.

2) All magnetic objects should be kept outside the NMR magnet room. This includes keys, wallets, pocketknives, tools, etc. ASSUME ANY PIECE OF METAL IS MAGNETIC UNTIL PROVEN OTHERWISE.

3) Keep electronics outside of the NMR magnet room.

4) Use only non-magnetic tools inside the NMR magnet room.

5) No one is to be present within any NMR rooms of the NMR building unless they have read and signed this form AND is present with the knowledge and explicit approval of NMR Facility staff.

6) The NMR manager should be notified prior to use of ferromagnetic objects within the 5 gauss line but outside of the NMR magnet room. Approval of this practice will be given on a case by case basis.

Magnetic fields can generate large attractive forces on ferromagnetic objects. Such objects include, but are not limited to, most tools, high-pressure gas cylinders, pocketknives, key rings, and most electronics. Any such object that gets too close to the magnet will be drawn towards the magnet with great force. A best case scenario is simply lost time and expense of removing the object from the magnet. Worst case is the death of the user or innocent bystanders that could occur in two ways. First, in object pulled with great acceleration towards the magnet could strike someone, causing injury or death. Second, the object striking the magnet could cause the magnet to quench (i.e., become resistive).
The most common danger from an object impacting a magnet is that the magnet could quench. This vaporizes the magnet cryogens (helium, nitrogen), which displace air and can result in asphyxiation. A quench can result in severe and expensive damage to the magnet, in addition to the dangers of asphyxiation. If a quench occurs, evacuate the room immediately. A developing quench can be detected by visible (and/or audible) emission of cryogenic gas from the magnet. Should any metallic object strike the magnet, get NMR Facility staff immediately. Do NOT attempt to pull the object off yourself.

Definitions:

5 Gauss line – 5 Gauss is the strength of a magnet that has a strong enough magnetic force to act upon objects. The 5 gauss line describes the distance from the center of the magnet where a magnetic field strength of 5 gauss is experienced.

Medical implants, electronic - Medical implants that have electronics (such as pacemakers) are set and/or reset through the use of magnetic fields. Thus exposure to magnetic fields can cause such devices to operate in an unintended manner or stop working altogether. People with such implants should never enter the NMR building. Signs are posted at all entrances to that effect.

Medical implants, non-electronic - Medical implants such as pins, surgical clips, etc. may be magnetic and maybe subject to the same forces described above. People with such implants should stay outside the 5 gauss line described above. Wallets, credit cards, watch, magnetic media - While not strictly a safety issue, large magnetic fields can wipe out the magnetic information on ATM and credit cards and magnetic media like computer discs. Keep your ATM and credit cards and magnetic media outside the 5 gauss line. Mechanical watches may also be permanently affected by large fields and thus should also be kept outside the 5 gauss line. Digital watches are usually okay within high magnetic fields, although some may have magnetic material. Each user is responsible for knowing if their watch is magnetic.