



Potential Hazard and Risk Information Sheet

Potential Hazards	General Information	Examples
Animals	Research animals represent a variety of species, temperaments, and health conditions. They can cause physical injuries; transmit zoonotic diseases (diseases passed from animals to humans); or be a source of allergens or toxins.	Scratch, bite (physical injury) Rabies, toxoplasmosis (zoonotic disease)
Chemicals	A chemical is a refined compound that may be in the form of a solid, liquid or gas. Potential injuries include burns of the skin or eyes; respiratory problems; allergic reactions; irritation of skin, eyes, and mucous membranes; and illness. Based on their specific effect, chemicals may be classified in one or more of these categories: <ul style="list-style-type: none"> • Allergens – cause allergic reactions • Carcinogens – produce cancer • Teratogen – affect male and female reproductive systems; may cause birth defects in the developing fetus. • Flammables – burn or explode • Reactives – react explosively • Corrosives – cause tissue damage upon contact including inhalation • Toxins – cause illness or death upon exposure. (Neurotoxins specifically affect the nervous system). 	Benzene (carcinogen) Thalidomide (teratogen) Acetone, xylene, alcohol (flammables) Peroxides, acrylamide (reactives) Acids, bases (corrosives) Cyanide (toxin)
Equipment and Instrumentation	Potential hazards from mechanical or electrical equipment include loud noises, very high or very low temperatures, electrical shock, and pinching/crushing injuries.	Autoclaves/sterilizers (burns)
Gases	Gases may be toxic, corrosive, or flammable. They may cause eye and skin irritations, respiratory problems, light-headedness, asphyxiation, and fainting. Some gases are stored in metal cylinders under high pressure. Compressed gas cylinders can explode causing injury from high speed projectiles.	Nitrogen, helium, any other non-oxygen gas (asphyxiant) Hydrogen (flammable) Ammonia (toxic)
Lasers	Light of a single color emitted in a narrow beam. Hazards from lasers are classified as <ul style="list-style-type: none"> • Class 1 – No hazard • Class 2 – Insufficient power to cause eye damage within the normal aversion response time. (Class 2a is a Special-case Class 2 laser designed to be inaccessible to viewing.) • Class 3a – Direct viewing of the beam can cause eye injury • Class 3b – Direct and indirect viewing of the beam can cause eye injury. • Class 4 – Direct and indirect viewing of the beam can cause eye injury. Also, a potential fire hazard. 	Nitrogen lasers (Class3b) Examples of Class 4 lasers used at Jefferson Lab: Free Electron Laser; Argon ion laser, Ti-Sapphire laser, and diode laser
Microbiological Agents	Living organisms such as viruses, bacteria, fungi, prions, and parasites. Those that are capable of causing disease are called pathogens. The affects of these agents are organism dependent and can range from mild, treatable to severe, untreatable. Hazards from microbiological agents are classified as <ul style="list-style-type: none"> • Biological Safety Level 1 – no hazard to healthy adults • Biological Safety Level 2 – cause mild to severe illness • Biological Safety Level 3 – cause severe illness and possible death • Biological Safety Level 4 – Not allowed at UAB 	Baker's Yeast, E. coli K12 (Level 1) Influenza, Salmonella (Level 2) Tuberculosis, AIDS (Level 3)
Radiation/Radioactive Materials	High energy particles (alpha & beta) or waves (X-rays). Unprotected exposure can cause skin or eye damage, cellular damage, and long-term health problems.	Uranium, Phosphorus 32, Sodium 35 X-rays
Recombinant Materials	DNA that has been genetically engineered (altered) by combining it with DNA from another source. Viruses may be used as vectors to infect (transfect) cells with the foreign DNA. A transgenic organism is one that has had genes from another organism inserted into its genes. The consequences of introducing such foreign genes into a human body may be difficult to predict.	Adenovirus, adeno-associated virus (viral vector)
Toxins	Poisons produced by microbiological organisms, plants, or animals. These agents can cause tissue and organ damage or death.	Ricin (plant) Snake venom (animal)

*This table to be used as reference for the form: **Parental Consent Form**