# Traditional laboratory safety checklist

Table F-1

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| **Laboratory Information** | | | | |
| **Laboratory Director/Principal Investigator:**  **Location:** | | | | |
|  | | | | |
| **Traditional Laboratory Safety Checklist** | **Yes** | **No** | **N/A** | **COMMENTS** |
| **Training and Documentation** | | | | |
| Up-to-date inventory maintained for all hazardous materials? |  |  |  |  |
| Chemical Safety Data Sheets (SDS) maintained and readily available at all times employees are present? |  |  |  |
| Workplace hazard assessment and certification completed? |  |  |  |
| Employees know the location of chemical inventory, SDS and related reference material? |  |  |  |
| Employees received institutional safety training (typical provided by Environmental Health and Safety office) and supplemental laboratory-specific safety training for the hazards present in the laboratory? |  |  |  |
| Employees familiar with physical and health hazards of chemicals in work area? |  |  |  |
| Employees able to describe how to detect the presence or release of hazardous materials? |  |  |  |
| Employees know how to protect themselves and others from effects of hazardous materials? |  |  |  |
| Employees familiar with Chemical Hygiene Plan (or equivalent)? |  |  |  |
| **Spill and Emergency Planning** | | | | |
| Employees familiar with the fire safety and building evacuation procedures including evacuation routes, nearest fire exits, fire alarm pull stations, and fire extinguishers? |  |  |  |  |
| Emergency procedures and phone numbers clearly posted? |  |  |  |
| First aid materials readily available? |  |  |  |
| Are any "antidotes" or special first aid materials required and available (e.g., Hydrofluoric Acid = Calcium Gluconate)? |  |  |  |
| Spill cleanup materials available and laboratory staff familiar with their use? |  |  |  |
| Safety shower and eye wash accessible within 10 seconds and unobstructed (e.g., no closed doors)? |  |  |  |
| Safety shower tested and documented within past year? |  |  |  |
| Eye wash tested, flushed, & documented at least monthly? |  |  |  |
| Fire alarm pull stations, strobes, speakers, and fire extinguishers unobstructed and visible? |  |  |  |
| Exits clearly marked and unobstructed? |  |  |  |
| **Personal Protection Clothing, Equipment and Engineering Controls** | | | | |
| Personnel wear shoes that fully cover feet and full length clothing to protect legs? |  |  |  |  |
| Long hair confined? Jewelry, lanyards and other loose articles are confined or removed? |  |  |  |
| Lab coats of appropriate material available and worn? |  |  |  |
| Appropriate gloves available and worn? |  |  |  |
| Goggles, face shields, are of appropriate type and worn? |  |  |  |
| Respirators available and used in the laboratory? If yes… |  |  |  |
| Respirator training, fit test and medical evaluation completed for employees? |  |  |  |
| Respirators cleaned, stored, and inspected regularly? |  |  |  |
| Chemical hood available? If yes… |  |  |  |
| Chemical hood free of clutter? |  |  |  |
| Chemical hood inspected within last 12 months and capable of drawing at least 100 LFPM (or more if appropriate)? |  |  |  |
| Chemical hoods equipped with air flow indicator? |  |  |  |
| Perchloric acid operations conducted in specialized wash down chemical hoods? |  |  |  |
| Biological Safety Cabinet available? If yes… |  |  |  |
| Biological Safety Cabinet free of clutter and surfaces decontaminated? |  |  |  |
| Biological Safety Cabinet certified within last 12 months? |  |  |  |
| Mechanical pipetting used, no mouth suction? |  |  |  |
| **Chemical Safety** | | | | |
| Are chemicals used in this area? If yes… |  |  |  |  |
| Appropriate labels are found on all hazardous chemical containers? |  |  |  |
| Containers are in good condition (e.g., labels intact, metal cans free of rust) and closed when not in use? |  |  |  |
| Containers properly segregated by hazard class (e.g., flammables away from oxidizers, acids separate from bases, incompatible acids separated)? |  |  |  |
| Storage of chemicals above eye level is avoided? |  |  |  |
| Flammable liquids stored in OSHA/NFPA approved cabinets and safety containers? |  |  |  |
| Flammables liquids requiring refrigeration stored in either explosion proof or flammable resistant refrigerators and freezers (i.e., no regular refrigerators)? |  |  |  |
| Ignition sources avoided when using/storing flammables? |  |  |  |
| Corrosives stored in acid cabinets or other appropriate cabinets? |  |  |  |
| Peroxide formers properly labeled and inventory tracked? |  |  |  |
| Picric acid sufficiently wet? |  |  |  |
| Large containers (4L or greater) stored near the floor? |  |  |  |
| Bottle carriers or carts utilized when transporting hazardous chemicals between work areas? |  |  |  |
| Proper signs delineate designated areas where high hazard chemicals are used? |  |  |  |
| Designated area properly cleaned and decontaminated? |  |  |  |
| **Biological Safety** | | | | |
| Are biological materials used in this area? If yes… |  |  |  |  |
| Biological materials are not stored in hallways in unlocked freezers or refrigerators. |  |  |  |
| Biohazard signs are posted in labs handling infectious materials (BSL2 and higher). |  |  |  |
| Disinfectants are on hand for sanitizing bench tops and treating spills. |  |  |  |
| Biological safety cabinet(s) was certified within the last 12 months. |  |  |  |
| **Ionizing and Non-Ionizing Radiation Safety** | | | | |
| Are radioactive materials used in this area? If yes… |  |  |  |  |
| Pure beta emitters (e.g., P-32, P-33, S-35, C-14)? |  |  |  |
| Gamma and x-ray emitters (e.g., I-125, I-131, Cr-51, Na-22)? |  |  |  |
| Volatile, gaseous radioisotopes (e.g., I125) or aerosol/dust generating laboratory operations (e.g., vacuum flasks)? |  |  |  |
| Sealed sources? |  |  |  |
| Irradiators? |  |  |  |
| X-ray generating equipment (Electron Microscope, X-ray diffraction, Diagnostic X-ray, Computed Tomography)? |  |  |  |
| Is the proper shielding available for the types of radioisotopes being used? |  |  |  |
| Are appropriate meters available for radioactive material used and are meter(s) calibrated? |  |  |  |
| Are radiation workers provided personal monitoring when required? |  |  |  |
| Are all appropriate signs posted? (Radiation Labels, Notice to Employees and Emergency Procedures) |  |  |  |
| Are all spaces and items which store, handle or use radioactive materials properly labeled with “Radioactive Material”, “Radiation Area” or other applicable hazard warning labels? |  |  |  |
| Are radioactive materials secured/locked against unauthorized access from nonauthorized users? |  |  |  |
| Is non-ionizing radiation used in the area? If yes… |  |  |  |  |
| Laser – Class 1? |  |  |  |
| Laser – Class 2? |  |  |  |
| Laser – Class 3a? |  |  |  |
| Laser – Class 3b? |  |  |  |
| Laser – Class 4? |  |  |  |
| Personal protective equipment (e.g., eye protection) or shielding available specific to the Class lasers used? |  |  |  |
| Laser hazard warning signage posted? |  |  |  |
| (Laser, Electromagnetic) |  |  |  |
| **Compressed and Cryogenic Gas Safety** | | | | |
| Are compressed gas cylinders used in this area? If yes… |  |  |  |  |
| Cylinders stored upright and properly secured at all times? |  |  |  |
| Caps properly secured when cylinders are not in use? |  |  |  |
| Regulators always used, proper regulators used for type gas, pressure bled when not in use? |  |  |  |
| Cylinders in good condition and clearly marked? |  |  |  |
| Flammables stored separately from oxidizers, toxics in secure area, etc.? |  |  |  |
| Cylinders of flammable gases stored in ventilated enclosures? |  |  |  |
| Cylinders moved on cylinder trucks with regulators removed and caps secured? |  |  |  |
| Cylinders of toxic gases (e.g., NFPA health hazard 3 or 4 and 2) stored and used in continuously ventilated enclosures? |  |  |  |
| Cryogenic gas cylinder pressure relief values in proper working condition? |  |  |  |
| Oxygen monitor available in areas with increased likelihood of oxygen deficient atmospheres? |  |  |  |
| **Equipment and Physical Hazards Safety** | | | | |
| Are equipment safety signs posted and in good condition? |  |  |  |  |
| Are all guards and shields in place and secured? |  |  |  |
| Are safe work practices (long hair tied back, no loose clothing, etc.) being adhered to by all equipment users? |  |  |  |
| Is equipment in good repair with evidence of proper maintenance? |  |  |  |
| Are electrical cords in good condition, out of travel paths, and free of any cracks or breaks in insulation? |  |  |  |
| Is proper PPE available and being used by equipment operators? |  |  |  |
| Is a tagging system in place to prevent use of damaged equipment? |  |  |  |
| Is access to the equipment restricted? |  |  |  |
| Have all users been trained to operate this equipment? |  |  |  |
| Are any additional or new hazards present at or around the equipment? |  |  |  |
| Have there been any modifications to the equipment? |  |  |  |
| **General Laboratory Safety** | | | | |
| Smoking, eating, and drinking prohibited in lab? |  |  |  |  |
| Lab is maintained secure; door is locked when no one is in lab? |  |  |  |
| Appropriate warning signs posted near lab entrance? |  |  |  |
| Unobstructed aisles maintained at least 36 in. wide throughout? |  |  |  |
| Lab benches and work areas free of clutter? |  |  |  |
| Shelves and cabinets in good condition? |  |  |  |
| Shelves have seismic restraints, e.g., lips or wires? |  |  |  |
| Shelves and cabinets secured to walls? |  |  |  |
| Storage above eye level minimized and items restrained from falling? |  |  |  |
| Refrigerators and freezers clearly labeled "Not for Storage of Food for Human Consumption"? |  |  |  |
| No storage of food or drink in refrigerators, unless dedicated for such and clearly labeled? |  |  |  |
| **Waste Management** | | | | |
| Wastes are not discarded via trash or drain disposal unless specifically approved by the appropriate institutional authority (e.g., Environmental Health and Safety)? |  |  |  |  |
| Is hazardous chemical waste generated in this area? If yes… |  |  |  |
| Chemical inventory management/ordering system in place and checked before ordering new chemicals? |  |  |  |
| Waste containers tightly closed unless actively adding or removing waste? |  |  |  |
| Waste storage area has communication equipment readily available? |  |  |  |
| Satellite Accumulation Area (SAA) is located at or near where waste is generated? |  |  |  |
| Maximum SAA storage capacity not exceeded (55‐gallons per hazardous waste stream)? |  |  |  |
| Waste containers are in good condition (not leaking, rusted, bulging or damaged)? |  |  |  |
| Each container is marked with the words “Hazardous Waste”? |  |  |  |
| Each container is marked with full chemical names identifying the contents stored inside (no abbreviations or formulas)? |  |  |  |
| Waste containers are kept closed unless adding waste? |  |  |  |
| Waste containers storing liquid hazardous waste at or near sinks and drains are stored within secondary containment? |  |  |  |
| Secondary containment is in good condition (e.g., free of cracks, gaps and impervious to leaks)? |  |  |  |
| Is sharps waste (e.g., needles, syringes, scalpel blades, or other instruments that has the potential to cut, puncture, or abrade skin) generated in this area? If yes… |  |  |  |
| Sharps wastes are immediately discarded into proper puncture resistant containers? |  |  |  |
| Sharps containers are readily available and managed appropriately (e.g., not overfilled)? |  |  |  |
| Is biological waste generated in this area? If yes… |  |  |  |
| Biological waste liquids decontaminated (if applicable) prior to drain disposal? |  |  |  |
| Biological waste solids discarded as regulated medical waste and autoclaved or disinfected as appropriate? |  |  |  |
| Is radioactive waste generated in this area? If yes… |  |  |  |
| Is mixed waste (e.g., scintillation vials and any other radioactive and hazardous chemical waste mixture) generated in this area? |  |  |  |
| Are the radioactive waste containers properly labeled? |  |  |  |

This file is excerpted from “Identifying and Evaluating Hazards in Research Laboratories: Guidelines developed by the Hazard Identification and Evaluation Task Force of the American Chemical Society’s Committee on Chemical Safety”.

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