**High Risk Laboratory Procedure Audit Tool**

| **Hazard** | **Examples** | **Present?** | **If yes, specify the substance, procedure, or equipment** | **Risk Assessment Documented?** |
| --- | --- | --- | --- | --- |
| **YES** | **NO** | **YES** | **NO** |
| **Intrinsically high-risk substances** |  |  |  |  |  |  |
| Use or generation of potentially explosive substances, including explosives (Class 1), desensitised explosives (Class 4.1.3), self-reactive solids of type A-C (4.1.2A-B), organic peroxides of type A-C (5.2A-B) | Picric acid (Trinitrophenol)DinitrophenolPowdered NitrocelluloseDibenzoyl peroxide (≥77%) |  |  |  |  |  |
| Use of substances that may ignite on contact with air (Class 4.2A) or water (Class 4.3A) or otherwise react violently with water/air | Butyllithium, sodium metal, Boron tribromide |  |  |  |  |  |
| Use of flammable gases other than reticulated LPG | Anaerobic growth chambers, hydrogenation apparatus |  |  |  |  |  |
| Use of strong Oxidizers (5.1.1A) | >60% Hydrogen Peroxide>50% Perchloric acid |  |  |  |  |  |
| Use of substances of very high acute toxicity (Class 6.1A) | Cyanides, Azides, Hydrofluoric acid, Dimethylmercury, Osmium tetroxide |  |  |  |  |  |
| Use of compressed gases of high acute toxicity, or corrosive | Carbon monoxide, Hydrogen Sulfide, Chlorine |  |  |  |  |  |
| Use of substances known to form explosive peroxides without concentration | *Butadiene, Chloroprene, Divinylacetylene, Isopropyl ether, Tetrafluoroethylene, Vinylidene chloride* |  |  |  |  |  |
| **High-risk Processes** |  |  |  |  |  |  |
| Distillation or rotary evaporation of organic solvents that may form explosive peroxides on concentration | *Diethyl ether, Dicyclopentadiene, Tetrahydrofuran, Secondary alcohols (2-butanol, 2-propanol, 2-pentanol and 2-hexanol)* |  |  |  |  |  |
| Use of flammable liquids, oxidizers, substances of high acute toxicity or corrosives in large volume (>20L) | Bulk use of acetone (>20L) |  |  |  |  |  |
| Heating of flammable liquids | Distillation, recrystallization |  |  |  |  |  |
| Use of volatile toxic or corrosive substances outside of a fume hood | Microscopy of formalin fixed samples |  |  |  |  |  |
| Large volume storage/use of liquid nitrogen (>50L) | Liquid Nitrogen |  |  |  |  |  |
| **High risk equipment** |  |  |  |  |  |  |
| Use of very high temperature equipment or materials | High temperature furnaces (>500°C), molten salt baths, oil baths, molten metals |  |  |  |  |  |
| Use of mechanical equipment that could cause serious injury | Powered saws, lathes, ultracentrifuges |  |  |  |  |  |
| Use of lasers of Class 3B or higher (where potential for exposed beam)  |  |  |  |  |  |  |
| Working with exposed energized electrical systems with voltages exceeding 50V AC or 120V DC. |  |  |  |  |  |  |
| Any other laboratory processes known to pose risk of serious injury and death, specify: |  |  |  |  |  |  |