# Laboratory process risk assessment matrix

Table F-3

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| **Laboratory Process and Procedure Overview** |
| **Laboratory Director / Principal Investigator:****Location:****Process Title:****Description:** |
|  |
| **Hazard and Exposure Category** | **How could you be exposed to this hazard?**  | **Given the exposure, what is negative outcome?** | **Severity of Consequences** | **Probability of** **Occurrence** | **Risk Rating****(CV\*OV)**  |
| **What is the expected harm?** | **(CV)****Value****(1,5,10,20)** | **Existing Control Measure In Place** | **(OV)****Value (0,1,2,3,4)** |
| **Training and Documentation** |
| Specialized training requirements for material hazards |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Specialized training requirements for equipment / process hazards |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Spill and Emergency Planning** |
| Means of Egress (Emergency) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Unattended Operations |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Working Alone |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Personal Protective Clothing, Equipment and Engineering Controls** |
| Skin / Hand Hazards |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Eye / Face Hazards |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Respiratory Hazards |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Eye Hazards |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Cut or Puncture Hazards from Sharp Objects |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Chemical Safety and Exposure Assessment (Global Harmonization Standard (GHS) Hazard Statement Codes in Parenthesis)** |
| ExplosiveSelf-Reactive SubstancesOrganic Peroxides (A-B) (GHS: H200-H205; H240; H241) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| PyrophoricSelf-Heating SubstancesOrganic Peroxides (C-F)(GHS: H242; H250) |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Flammable Liquids(GHS: H224-H226) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Flammable Solid or Combustible Dust(GHS: H228) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Oxidizer, Organic Oxidizer(GHS: H271; H272) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Corrosive Acid or Base(GHS: H290; H314; H318) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Acute Toxicity (inhalation) (GHS: H330; H331) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Acute Toxicity (oral, dermal) (GHS: H300; H301; H310; H311) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Other IrritantsDermal SensitizersHarmful Materials Narcotic Effects(GHS: H302; H312; H315; H317; H319; H332; H335; H336) |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Respiratory Sensitization, Germ Cell Mutagenicity, Carcinogenicity, Reproductive Toxicity, Specific Target Organ Toxicity, Aspiration Hazard(GHS: H304; H334; H340-H373) |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Impacts to the Environment(GHS: H400–H420) |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Material Handling of Chemicals (Bulk) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Compressed and Cryogenic Gas Safety and Exposure Assessment (GHS Hazard Statement Codes in Parenthesis)** |
| Flammable Gas/Aerosols(GHS: H220–H223) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Compressed Gas(GHS: H280) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Cryogenic Liquid/Gas(GHS: H281) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Biological Safety and Exposure Assessment** |
| Human blood, tissue, fluids, or other potentially infectious materials (Bloodborne Pathogens) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Bacteria, viruses, or other research biohazardous agents other than human materials |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Working with Animals |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Radiation Safety and Exposure Assessment** |
| Non-ionizing radiation (Laser) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Non-ionizing radiation (Electromagnetic) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Radiation Producing Equipment(Electron Microscope, X-ray diffraction, Diagnostic X-ray, Computed Tomography) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Radioactive Materials:Unsealed Sources |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Radioactive Materials:Sealed Sources |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Radioactive Waste:Solid (paper, plastic glass), Solid Other, Liquid (aqueous, non-aqueous), Mixed Chemical Waste |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **General Laboratory Safety and Exposure Assessment** |
| Heat/Cold |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Noise |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Walking/Working Surfaces |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Electrical Hazards and Energy Control (Lock-out/Tag-out) |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Fall Hazards  |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Equipment and Physical Hazards Exposure Assessment** |
| Pressure Vessels |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Rotating Equipment & Points of Operation |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Welding/Cutting Hazards |   |   |   | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |

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