# Laboratory hazard risk assessment matrix

Table F-2

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| --- |
| **Laboratory Information** |
| **Laboratory Director / Principal Investigator:****Location:** |
|  |
| **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** |
| Personnel are appropriately trained (hazard communication, waste handling, process and chemical specific hazards and risks and mitigation, emergency procedures) |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Personnel are aware of all activities in the lab and associated hazards and risks |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Average experience of lab personnel |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| SDSs and other hazard documentation are available as appropriate |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Hazard communication program is in place |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Process-specific risk assessment has been conducted for all processes and processes optimized |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Process-specific risk assessments are reviewed periodically |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Average value of process-specific risk assessment for all processes |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Spill and Emergency Planning** |
| Emergency response equipment is available and appropriate (spill kits, showers, etc.) |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Means of egress |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate emergency response materials available and accessible |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| What is the worst thing that could happen in the lab? |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Personal Protection 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** |
| Hazard level of materials stored in lab |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Amount of hazardous materials stored in lab |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Adequate space and proper types of storage for materials |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Condition of containers and contents |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate material segregation |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate security measures are in place |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Current Comprehensive Inventory |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Containers are appropriately labeled |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Biological Safety** |
| Hazard level of materials stored in lab |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Amount of hazardous materials stored in lab |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Adequate space and proper types of storage for materials |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Condition of containers and contents |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate material segregation |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate security measures are in place |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Current Comprehensive Inventory |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Containers are appropriately labeled |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Radiation Safety**  |
| Hazard level of materials stored in lab |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Amount of hazardous materials stored in lab |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Adequate space and proper types of storage and shielding for materials |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Condition of containers and contents |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate material segregation |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate security measures are in place |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Current Comprehensive Inventory |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Containers are appropriately labeled |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Compressed and Cryogenic Gas Safety** |
| Hazard level of materials stored in lab |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Amount of hazardous materials stored in lab |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Adequate space and proper types of storage for materials |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Condition of containers and contents |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate material segregation |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Appropriate security measures are in place |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Current Comprehensive Inventory |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Containers are appropriately labeled |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Equipment and Physical Hazards Safety** |
| Sharps Hazards |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Trip hazards |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Electrical hazards |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Temperature extreme hazards |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Pressure Extreme Hazards |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Moving Parts Hazards |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **General Laboratory Safety** |
| Facilities are adequate for types and quantities of chemicals present |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| Facilities are adequate for types and quantities of processes occurring in the lab |   |   |   | No=1Minor=5Mod=10High=20 |   | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| **Waste Management**  |
| All waste is stored and segregated appropriately |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| All waste is appropriately labeled |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| All waste is removed on a regular basis |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |
| All waste containers and contents are in good condition |  |  |  | No=1Minor=5Mod=10High=20 |  | N/A=0Rare=1Poss=2Likely=3Certain=4 | 0 |

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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