# Laboratory process risk assessment for a process using a chemical

Table F-4

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Laboratory Process Risk Assessment Checklist Overview** | | | | | | | |
| **Laboratory Director / Principal Investigator:**  **Location:**  **Process Title:**  **Description:** | | | | | | | |
|  | | | | | | | |
| **Laboratory Process Risk Assessment Checklist** | **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 required for the process or material hazards? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Specialized procedures developed for the safe completion of this operation? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| **Spill and Emergency Planning** | | | | | | | |
| Does the process present risk of fire? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will any part of the process be unattended while in operation? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Are sufficient means of egress available for the nature and scale of hazards? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Are aisle spaces clear of obstructions and walking surfaces in good condition? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| **Personal Protective Clothing, Equipment and Engineering Controls** | | | | | | | |
| Is there risk of splashing materials into eyes or on skin? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Is there risk of eye or face impact? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will there be exposure to sharp objects? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| **Chemical Safety and Exposure Assessment** | | | | | | | |
| Does chemical process present risk of explosion, hazardous polymerization, or other uncontrolled reaction? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will a combustible dust be used or generated? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Is there risk of exposure to corrosive materials? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Is there risk of exposure to acutely toxic materials? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Is there risk of exposure to respiratory sensitizers, mutagens, carcinogens, reproductive toxins, materials that target specific organs, or aspiration hazards? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Are any materials classified as nanomaterials? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| **Biological Safety and Exposure Assessment** | | | | | | | |
| Will there be exposure to human blood, , tissue, fluids, or other potentially infectious materials (Bloodborne Pathogens) |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will there be exposure to bacteria, viruses, or other research biological hazards? |  |  |  |  |  |  |  |
| Will there be exposure to animals? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| **Radiation Safety and Exposure Assessment** | | | | | | | |
| Will there be exposure to non-ionizing radiation? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will there be exposure to ionizing radiation? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| **Compressed and Cryogenic Gas Safety and Exposure Assessment** | | | | | | | |
| Are compressed gases used? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| **Equipment and Physical Hazards Exposure Assessment** | | | | | | | |
| Will there be exposure to electrical hazards? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Is any part of the process conducted at elevated or low pressure? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Is any part of the process conducted at elevated or low temperature? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will the process involve generation of excessive noise? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will there be exposure to equipment that presents risk of pinching or crushing body parts? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will any part of the operation be conducted on an elevated area? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |
| Will personnel be required to lift or otherwise manipulate heavy objects? |  |  |  | No=1  Minor=5  Mod=10  High=20 |  | N/A=0  Rare=1  Poss=2  Likely=3  Certain=4 |  |

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”.

© Copyright 2015 American Chemical Society