# Hazard assessment for a chemical

Table F-5

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| **Laboratory Chemical Hazard Assessment and Overview** |
| **Laboratory Director / Principal Investigator:****Location:****Chemical Name:****Description:** |
|  |
| **High Hazard Substance (HHS) Checklist** |
| **High Hazard Classification:**  | 🞎 High Acute Toxicity | 🞎 Carcinogen | 🞎 Reproductive Toxin |
|  | 🞎 Air Reactive / Pyrophoric | 🞎 Water Reactive | 🞎 Explosive / Unstable |
| Physical state/concentration: |
| Maximum quantity kept on hand: | Estimated rate of use (e.g., grams/month): |
| Toxicity: LD50 Oral (Rat)\_\_\_\_\_\_\_\_\_\_\_\_\_\_ LD50 Skin (Rabbit)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Reactivity and Incompatibility: |
| **Significant Route(s) of Exposure (check all that apply)** |
| 🞎 Inhalation | 🞎 Skin contact | 🞎 Percutaneous injection | 🞎 Eye contact | 🞎 Ingestion |
| **Additional Materials for Review (attached)** |
| 🞎 Safety Data Sheet (SDS)🞎 Other: | 🞎 Laboratory/Experimental Protocol |  |
| **Exposure Controls** |
| **Ventilation/Isolation: Personnel must work under/in the following equipment to minimize personal exposure:**  |
| 🞎 Chemical hood  | 🞎 Glove box/AtmosBag | 🞎 BioSafety Cabinet 🞎 Balance Enclosure🞎 Other (list): |
| If Glove box or AtmosBag, identify gas environment: |
| **Personnel Protective Equipment (PPE)/Clothing**: Laboratory coats, close-toed shoes, clothing that covers the legs and gloves (disposable latex or nitrile) are the minimum PPE requirements for all personnel working in the laboratory. Identify additional PPE requirements for work with HHS: |
| Protective clothing: | 🞎 Disposable laboratory coat  | 🞎 Fire-resistant laboratory coat (e.g., Nomex)  |
|  | 🞎 Others (list): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Face / Eyes: | 🞎 Face shield | 🞎 Safety goggles | 🞎 Safety glasses |
| Gloves (type): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 🞎 Respirator (type): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Use and Storage** |
| **Authorized personnel: Identify categories of laboratory personnel who could obtain approval to handle and use this HHS:** |
| 🞎 Principal Investigator | 🞎 Employees/Staff | 🞎 Students | 🞎 Volunteers |
| 🞎 Postdoctoral Employees | 🞎 Other (describe): |
| 🞎 Personnel must not work alone in the laboratory while handling this material |
| **Procedure:** In additional to the institution’s chemical hygiene plan, identify what procedures/guidelines are available for the safe handling and use of this HHS. Check all that apply and list below. |
| 🞎 Laboratory procedure(s) | 🞎 Journals | 🞎 Manufacturer Guidelines  | 🞎 Other |
| List all procedures: |
| Vacuum system used? 🞎 Yes 🞎 No If yes, 🞎 Cold trap 🞎 Filter 🞎 other (list): |
| Administered to animals? 🞎 Yes 🞎 No |
| **Use Location:**  | **Storage Location:** |
| Bldg(s)/ Room(s):  | Bldg(s)/ Room(s): |
| Identify location(s) where HHS is used (check all that apply):🞎 Entire laboratory 🞎 Chemical hood 🞎 Designated area🞎 Other (list): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Identify location(s) where HHS is stored (check all that apply):🞎 Refrigerator/freezer 🞎 Hood 🞎 Double containment🞎 Vented cabinet 🞎 Flammable liquid storage cabinet🞎 Other (list): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Hazard Communication and Signage:** Confirm that the hazards of the HHS are communicated to laboratory personnel and visitors where HHS is stored and used.🞎 All containers are clearly labeled with the identity of the High Hazard Substance.🞎 Designated storage and use locations within laboratory have signage identifying the HHS hazards present in those locations. |
| **Medical Attention and First-Aid** |
| Laboratory personnel should seek medical attention when:* signs or symptoms associated with a hazardous chemical exposure are experienced, or
* exposure monitoring reveals an exposure level routinely above acceptable levels, or
* a spill, leak, explosion or other event results in the likelihood of a hazardous exposure.

Emergency Medical Provider:Location:Contact Information:  |
| **Are specific first-aid supplies/procedures required (e.g., antitoxin) for work with this material?** 🞎 Yes 🞎 NoIf yes, attach the specific procedures to be followed post exposure to this form. |
| **Decontamination** |
| **Are special decontamination procedures required for this HHS?** 🞎 Yes 🞎 No If Yes, provide information below:**Identify items that require decontamination:**🞎 Work areas 🞎 Nondisposable equipment 🞎 Glassware 🞎 Disposable laboratory equipment and supplies |
| 🞎 Other (list):  |
| **Decontamination Method (describe):**  |
| **Emergency Procedures and Spill Response** |
| **Emergency Safety Equipment:** In addition to an eyewash station, emergency shower and ABC fire extinguisher, are any other specialized emergency spill control or clean-up supplies required when working with this HHS? 🞎Yes 🞎 NoIf yes, list all required supplies/equipment with locations:  |
| **Waste Management and Disposal** |
| Identify waste management methods for all research and waste byproducts associated with this HHS:🞎 Chemicals wastes are collected and disposed as EPA hazardous waste including chemically contaminated sharps.🞎 Neutralization or deactivation in laboratory prior to disposal (describe method; this method requires EHS preapproval).🞎 HHS is EPA Acutely Toxic Chemical. Collect Sharps and used containers as Hazardous Waste.🞎 Other disposal method (describe method; this method requires EHS preapproval). |
| Chemical Waste Storage Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Training** |
| All laboratory personnel must at a minimum completed safety training on an annual basis. Additionally, laboratory personnel who handle or use the High Hazard Substance must demonstrate specific competency and familiarity regarding the safe handling and use of this HHS prior to purchase or use. The Principal Investigator is responsible for ensuring all laboratory personnel handling and using this HHS are trained in the following: |
| 🞎 Review of HHS Checklist and associated documentation including Exposure Controls and PPE.🞎 Review Safety Data Sheet including Signs and Symptoms of Exposure.🞎 Hands-on training with the Principal Investigator or other knowledgeable and experienced senior laboratory staff member on the safe handling and use of the High Hazard Substance.🞎 New personnel must work under close supervision of Principal Investigator or other knowledgeable and experienced senior laboratory staff member.🞎 Other (list): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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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