

ASU FACT SHEET Respiratory Protection in ABSL-1 Facilities

The ASU Animal Care Program, University Health Services, and Biosafety & Biosecurity have developed this fact sheet to highlight respiratory protection practices for animal care workers in ABSL-1 facilities where no biological, chemical, radiological, or physical hazards are present.

Introduction

EHS 105 requires departments/units to conduct a hazard assessment for each work area to determine whether biological, chemical, radiological, or physical hazards, or the potential for these hazards, exists. If it is determined that hazardous conditions exist, the departments/units must provide appropriate personal protective equipment (PPE) to employees or assign them to an alternative work area that do not require protective equipment. Employees must use the appropriate PPE to protect themselves from potential hazards.

Respiratory protection should be utilized any time there is potential exposure in the breathing zone that is either not feasible to prevent with engineering controls (e.g., local exhaust ventilation, enclosures or other methods), or whenever these controls are not completely effective. Animal-related research can lead to exposure to allergens and chemical residues that could cause [asthma](#), allergies, or upper respiratory inhalation issues. In some cases, bedding and animal urine or feces may contain residues of potential human carcinogens.

In order to ensure the safety of those involved in animal research, ASU has established a respiratory protection program and offers a variety of options for respiratory protection. These include disposable N95 respirators, negative pressure respirators, and powered air purifying respirators. In certain circumstances the use of respiratory protection is mandatory such as when a hazard has been identified and engineering controls are considered inadequate to address the hazard. In these situations, there are requirements for training, standard operating procedures, medical surveillance, and in many cases fit testing to verify proper use. There are also situations where researchers and staff may voluntarily use respirators for personal comfort.

Potential Hazards Requiring Respirator Use

Sources of [animal allergens](#) include bedding, droppings, urine, saliva, dander, fur, and serums. There are no specific exposure limits for airborne concentrations of these types of allergens, but incidents of exposure without the use of respiratory protection have been shown to cause allergic reactions in some individuals. For that reason, personal protective equipment hazard assessments may identify a specific respirator type for specific tasks. In those cases, training will be required annually and EH&S will periodically audit this respirator usage to ensure the effectiveness of the ASU [Respiratory Protection Program](#).

Voluntary Use

Respirators are an effective method of protection against designated hazards when properly selected and worn and may provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. When [voluntarily](#) using respiratory protection, you need to take precautions to be sure that the respirator itself does not present a hazard. You will need to:

- Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
- Choose respirators certified for use to protect against the contaminant of concern. The National Institute for Occupational Safety and Health (NIOSH) of the U.S. Department of Health and Human Services (DHHS) certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and the protection provided for you.
- Not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
- Store your personal respirator securely if it not intended for single use and do not share it with others.